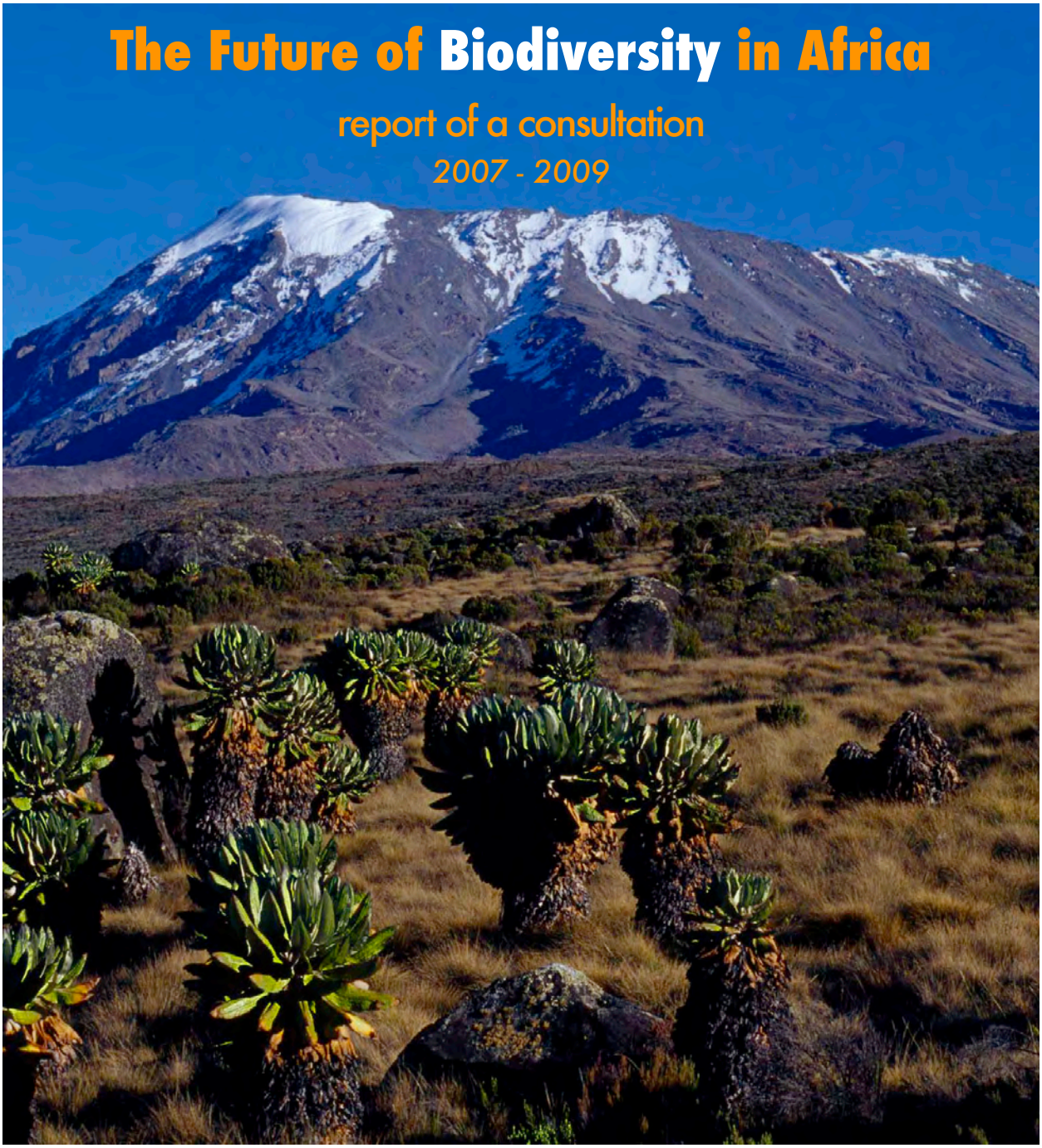
AFRICA BIODIVERSITY COLLABORATIVE GROUP

The Future of Biodiversity in Africa

report of a consultation

2007 - 2009



AFRICAN WILDLIFE FOUNDATION®

CONSERVATION INTERNATIONAL

the Jane Goodall Institute

The Nature Conservancy
Protecting nature. Preserving life.™

WILDLIFE CONSERVATION SOCIETY

WORLD RESOURCES INSTITUTE

WWF

Introduction

Background

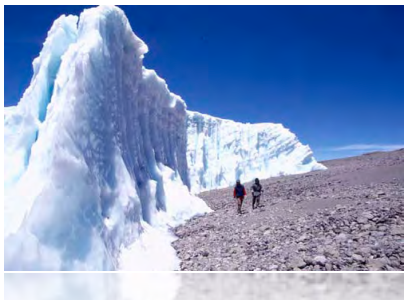
The Africa Biodiversity Collaborative Group (ABCG) is a partnership of US-based conservation organizations with field programs in Africa. Members include: the African Wildlife Foundation, Conservation International, the Jane Goodall Institute, The Nature Conservancy, Wildlife Conservation Society, World Resources Institute, and World Wildlife Fund. ABCG was commissioned by the U.S. Agency for International Development (USAID) through the Biodiversity Analysis and Technical Support (BATS) Program for Africa to consult with experts in the USA and in Africa on the future of biodiversity there in a ten to thirty year time horizon and to identify issues and options for possible consideration by USAID.

This process involved an expert consultation in Washington, DC, with the conservation NGOs and U.S. government agency partners (May 2008); an expert consultation in Dar es Salaam, Tanzania, with leading conservationists from throughout Sub-Saharan Africa (September 2008). It also involved discussions at the IVth World Conservation Congress in Barcelona, Spain (October 2008), the (US) National Council for Science and the Environment conference on biodiversity in Washington, DC (December 2008), and the Society for Conservation Biology-Africa conference in Accra, Ghana (January 2009).

Reflections on 30 Years

USAID commissioned Chemonics International, under a task order of the Environmental Policy Indefinite Quantities Contract (EPIQ II) to produce a review of 30 years of USAID experience in biodiversity conservation in Africa. *Protecting Hard-Won Ground: USAID Experience and Prospects for Biodiversity Conservation in Africa* (Hecht et al, 2008) reviews conservation and natural resource management efforts in Africa over the past 30 years. It considered the evolution of USAID's approach to conservation, identifying major programming epochs:

- Agroforestry and energy (primarily in Sahelian West Africa in the early 1980s)
- Integrated Conservation and Development Projects (primarily in Afro-Montane East Africa in late 1980s)
- Community-Based Natural Resource Management (primarily in Southern Africa in the 1990s)
- Landscape Approaches (primarily in the Congo Basin of Central Africa in the late 1990s)
- Multisectoral conservation approaches (community needs and interests broader than conservation in the 2000s). *See Figure 1: USAID/Africa Natural Resource Management Epochs, Early 1980s to Late 1990s.*



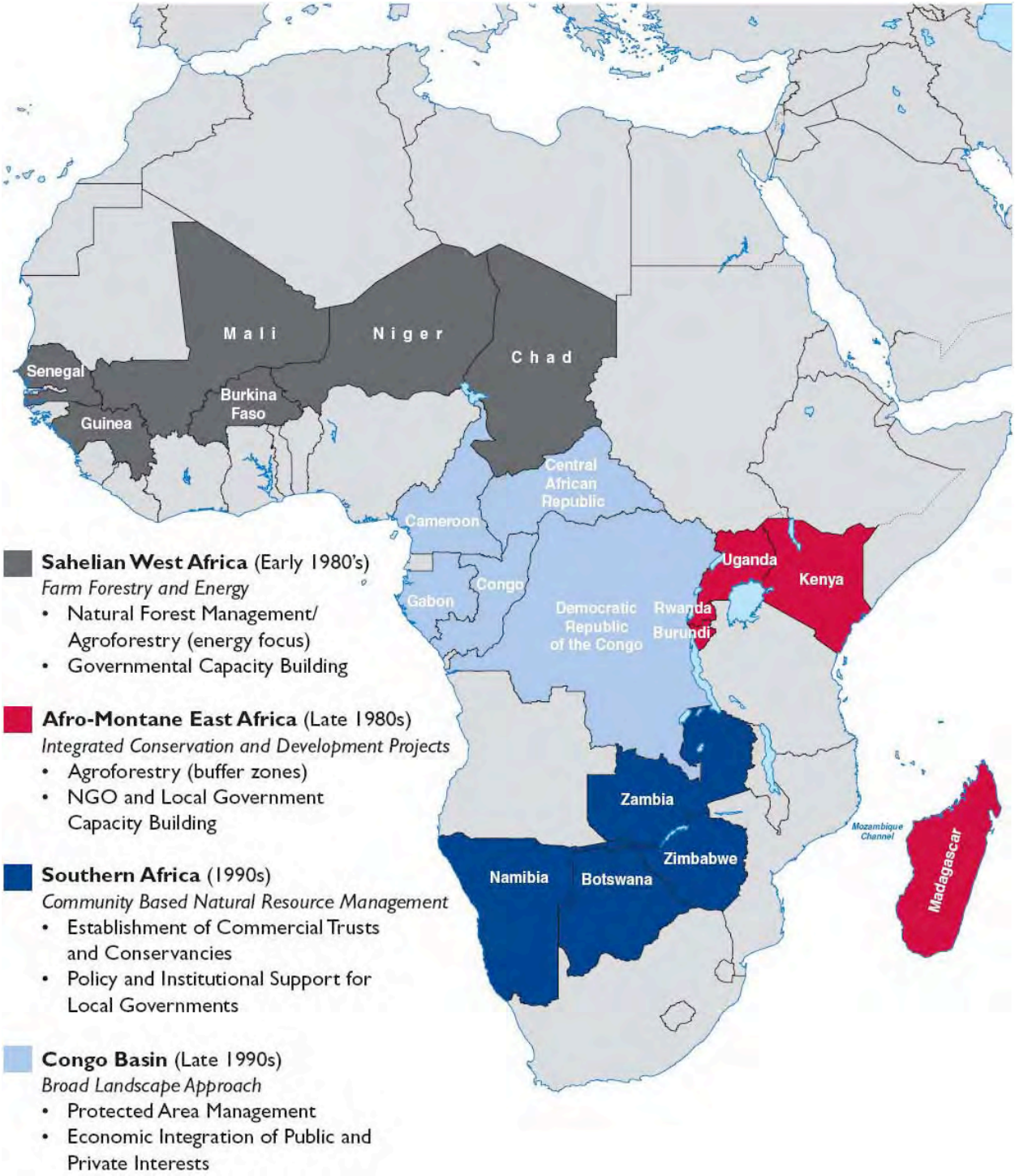


Figure 1: USAID / Africa Natural Resource Management Epochs, Early 1980s to Late 1990s, from Hecht *et al*, 20008

The past 30 years have seen an evolution of approaches to conservation within USAID and in the variety of partners with which the agency works, in particular non-governmental organizations. During the same 30 years the brands of non-profit conservation organizations grew in worth to 10 billion dollars, 1/3 of which is estimated to be from African conservation initiatives[1]. African conservation organizations have emerged and are beginning to prosper too, but not at the level of the US and European based organizations. There has been a tremendous growth in civil society participation and environmental action in Africa. In fiscal year 2008, Congress earmarked $195 million dollars for biodiversity conservation in USAID's budget (out of $250 million recommended by conservation organizations). With these resources, USAID is a leader in biodiversity conservation within the official development assistance community. Current work focuses on cross cutting issues – marine/freshwater, landscape-level approaches, policy, and partnerships.

Key needs and opportunities for biodiversity conservation identified in *Protecting Hard-Won Ground* include globalization, climate change, conflict, population growth, and linkages between health and conservation.

Ongoing needs include the identification of appropriate scales for interventions, the interrelated and self-reinforcing nature of issues such as climate change and globalization, and the continued need to demonstrate the value of biodiversity and the means of integrating biodiversity considerations into decision-making.

Drivers of Change

The history of conservation in Africa is tied to colonial policies. In some quarters, conservation was seen as a form of economic and cultural domination especially when conservation was based on the intrinsic value of nature. The romance of nature that drove much of the modern conservation movement and the establishment of national parks and modern wildlife protection is arguably alien to the African experience. This doesn't make the intrinsic value of wildlife and of biodiversity irrelevant, but it does frame some of the difficulties that persist in conserving biodiversity in Africa.

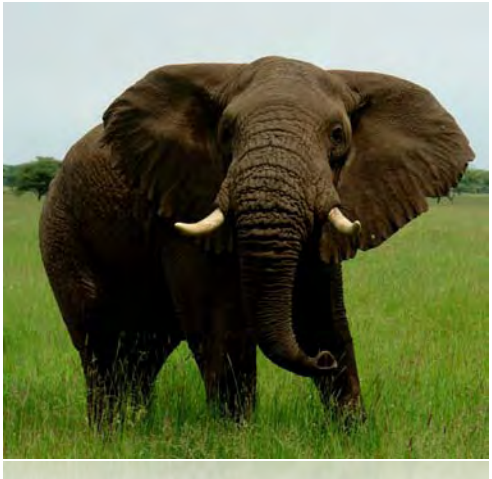
The concept of protected areas has evolved from a romantic impulse to preserve relicts of an antediluvian and uncorrupted world to a vastly more complex initiative to create landscape linkages for biological resources and the protection of critical ecosystem services. And yet, rarely have credible alternatives to the exclusion of human use from specific fixed areas for the protection of biodiversity caught on. Fifty years ago, 90 percent of wildlife was outside of protected areas in Africa; today that figure is estimated to be 20 percent.

Our challenge today is to communicate the astonishing enterprise of conservation in Africa, in all its complexity, to a world preoccupied with economic purposes. One lesson from thirty years of biodiversity conservation in Africa is that the dichotomy between conservation and development is a false one. Tourism in national parks and protected areas in some countries of East and Southern Africa, for example, has become a huge source of income for some countries.

---

[1] Weatherly, P. 2008 Presentation on "Entrepreneurship and Sustainable Use" at 15 May 2008 Africa Biodiversity Collaborative Group Meeting on Mapping Future Trends and Interventions in Africa In the Next Ten Years. (www.abcg.org)

In a recent informal survey[2] of African views of security, four concerns were prominent:



- Public security sector (the police and military apparatus of government) itself and the need for reform
- Health and the freedom from disease
- Poverty and the freedom from want, and
- The environment.

Security, the freedom from arbitrary and uncontrollable forces that bring chaos into human lives, is a core driver of governance, in areas of economy, community, health, and the environment. Nature, raw in tooth and claw, can be threatening and even lethal, but the environment, understood in the context of ecosystem services, can be repositioned as a force for stability and security. It is essential that the value of conservation is communicated and discussed widely with the public and promoted to other sectors.

True security requires unconventional partnerships to get to the drivers of entropy and chaos. Today's challenges call for a systems approach; a concatenated chain in which all links must be mutually reinforcing. When a link breaks it becomes a security issue. Many partners working together are required to keep the chain long.

But large mammal populations and vast tracts of forest and savannas don't have the time that the conservation community is taking. Time is running out and urgent action is required on a number of fronts. This section discusses some of the drivers of change; subsequent sections will discuss prospects for the future and the leverage points for intervention.

Hunger, Poverty and Globalization

After a period of falling inflation and growing economic output in the 1990s and early years of the 2000s, the economic outlook for Africa has dimmed significantly. Gains are at risk due to falling demand for African products, slackening of remittance flows, tighter credit, and softening foreign investment (IMF 2009). Debt burdens on donor countries are likely to limit the availability of official development assistance well into the future. As a result, there are recently documented increases in malnutrition, and stagnation in the rate of poverty reduction. The situation threatens to reverse the gains made in the past decade. Food insecurity is a major concern. At the same time, rising commodity prices may return farming to an economically viable occupation, a condition that the globalized economy has made very difficult. In our Internet-mediated economy, farmers in Africa compete with producers in every corner of the globe. After a decade of sinking food costs, the weak dollar and high energy costs have driven up the cost of basic commodities.

There is an overlap between poverty and biodiversity. Inhabitants of remote rural areas have less access to markets and services, so their direct dependence upon ecosystem services, including biodiversity, has conservation implications. Most rural poor near highly biodiverse areas are small-scale farmers, dependent upon charcoal and wood for energy, and wildlife and wild plants to supplement the food that they grow. They are also consumers of land - and are often competitors for conservation land.

---

[2] Beebe, Shannon. 2008. Presentation on "Conflict and Security" at 15 May 2008 Africa Biodiversity Collaborative Group Meeting on Mapping Future Trends and Interventions in Africa In the Next Ten Years. (www.abcg.org)

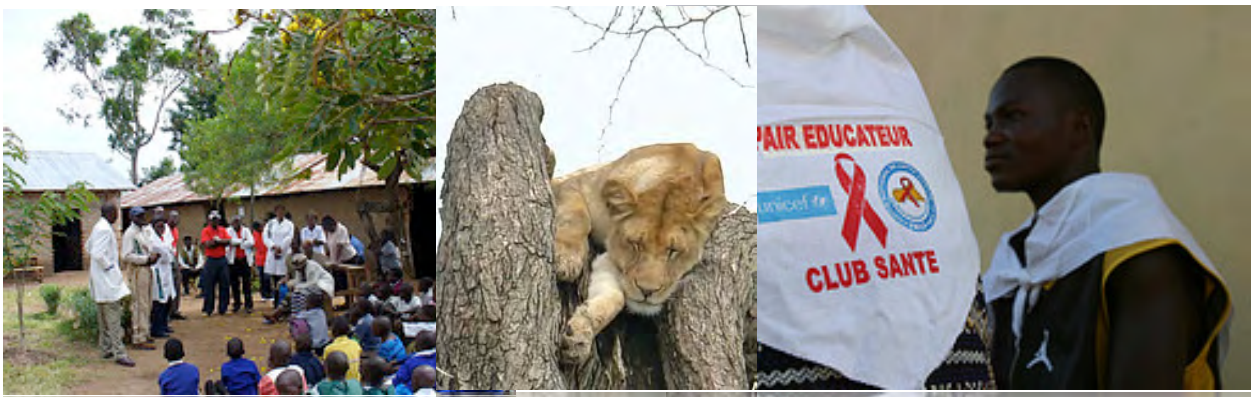
Private investment in Africa dwarfs multilateral and bilateral aid, but Africans need opportunities to benefit from their resources. They have limited opportunities to participate in economic value creation, which resides in value chains, rather than in raw commodities. Instead value is captured by external actors who ship, process, brand and sell the products of Africa. Ownership of value chains would help Africans to capture more value and step out of the poverty trap. By 2050 commodity demand is estimated to double as population and economy grow. Increased demand for internal and externally produced commodities creates important opportunities for growth in African agriculture, and simultaneously, risks to African biodiversity through habitat conversion, pollution, and competition for water (FAO, 2006).

As the discussion on the agriculture sector below will show, food security is compounded by risks of invasive species, including plant diseases, across boundaries, and the need to develop the infrastructure for protection of important food crops from disease.

Health

Human health has profound implications for biodiversity. Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is responsible for two million deaths per annum in Africa[3]. Communities in Africa ravaged by HIV/AIDS have lost much of the working adult population, leaving food production to the very young and very old, which may lack the strength or the indigenous knowledge to carry out complex farming tasks, leading to environmentally damaging shortcuts, such as inappropriate uses of fire. The epidemic places heavy stress on medicinal plants, and additional timber for coffins. The full economic impacts of HIV/AIDS have not yet arrived. Diseases such as HIV undermine Africa's economy, which, as we have seen, is correlated to biodiversity loss. There are widely reported increases in natural resource use by HIV/AIDS impacted communities who turn to these resources as their ultimate safety net. This increase might not be sustainable and can have long term impacts on community livelihoods and biodiversity. HIV/AIDS also results in changes of land use and agricultural practices change due to loss of labor and tenure issues and land grabbing can ensue. Conservation organizations and the local communities who they partner with on community-based natural resource management have been seriously affected by HIV/AIDS as people succumb to the disease. This impacts their abilities to perform conservation activities (WWF 2007).

Environmental degradation is implicated in disease as well. The connections between environmentally destructive development and waterborne disease such as helminths and schistosomiasis are well established. Environmental harm is increasingly implicated in emerging infectious diseases, as well as infectious diseases that are increasing their range. The precise mechanisms often remain unknown, but improved disease surveillance and reporting, when



[3] UNAIDS. 2008 Report on the global AIDS epidemic. 2008. Accessed July 2009

combined with environmental monitoring, is expected to yield correlations between new avenues of access into remote areas and emerging infectious disease due presumably to human, wildlife, and livestock interactions. Humans are increasingly exposed to the wildlife hosts of zoonotic diseases, some of which then infect humans. Bushmeat slaughtering and consumption are particular risks. Other risks include storage of grain in places accessible to rodents carrying hemorrhagic fevers like Lassa fever.

It is also assumed that climate affects disease vectors, and that climate-induced environmental change will translate into different, and possibly increased, risks of exposure for human populations. The transmission of diseases is assumed to be two-way, as indicated by the occurrence of the human disease tuberculosis in mountain gorilla populations. Human, wildlife populations, and livestock could be at risk as a result of increased interactions as human populations encroach upon natural areas.

The complex factors governing disease transmission make eradication difficult. Poor planning and risky behavior may result in long-term challenges, especially in Africa, where public health infrastructure is particularly weak and where human/wildlife/livestock interactions are still common. Disease resulting from environmental change constitutes a hidden cost to economic development.

The search for solutions calls for a multi-disciplinary, multinational approach, unifying the diseases of humans, livestock, and wildlife through the "One Health" approach pioneered by the Wildlife Conservation Society and Envirovets, and increasingly embraced by the medical and veterinary establishment worldwide.

Demography

The current population growth rate in Sub-Saharan Africa is 2.39% and it is projected to decrease to 1.98% by 2025 and to 1.27% by 2050. Although population growth rate will slowly decline in the next 40 years, there is still considerable population growth because of the population momentum from the large cohort of people moving into reproductive age in the next 10-15 years. Sub-Saharan Africa's population is projected to total somewhere between 1.5 – 2 billion people by 2050 (with 1.5 being the low variant and 2 billion the high variant projection), after which it is expected to plateau (UN, 2008). Growth in population is holding steady at 1.2% per annum, representing the natural rate of increase from the large cohort of people now entering into reproductive age, which means that the growth will continue to increase for at least the next 20 years. One of the reasons for continued high population growth rates in sub-Saharan Africa is the great unmet need for family planning in the region (Sedgh et al, 2007). 24% of married women in sub-Saharan Africa do not want to have a child in the next two years or wants to stop childbearing; and is not using any method of contraception. Despite this great need much of sub-Saharan Africa is experiencing a fertility stall, that is, a leveling off of the use of modern contraceptives (Bongaarts, 2008). It is thought that higher population growth occurs in remote areas, including areas near protected areas (e.g., 3-4%). Remote rural communities have the least access to family planning and reproductive health services. Sites around protected areas are generally hard to reach.

In 2007, urban dwellers became the majority of the world population. Rapid population growth is expected to continue in urban populations in Africa, resulting in a doubling of number of people living in cities by 2050, due to natural increase, rather than migration.

Although growing rural populations have the largest direct impact on the environment, cities also have impacts, e.g., in the demand for ecosystem services such as water and fuel. The biggest biodiversity impacts are rural to rural migration and urban to rural migration (such as may occur during economic downturns – for example when the mines played out in Zambia many migrated to the miombo woodlands). Migration into rural areas has the potential to produce conflict, and increased pressure on wildlife populations for bushmeat.

Climate

The expected impacts of climate change in Africa include shifting rainfall patterns, rising temperatures, shifts in seasons, and sea level rise. The sectors that are most vulnerable to climate change in Africa include agriculture, water, and health; coastal areas and islands are expected to be heavily impacted. The Intergovernmental Panel on Climate Change projects an economic loss of approximately 10% due to climate change. Biodiversity impacts of climate change include shifts in species distribution and range, the impacts of mitigation activities, and increased human/wildlife conflicts.

Climate is tied to land use, which of all the variables, is the one humans have some control over. Opportunities arising from efforts to address climate impacts may include payments for ecosystem services through mitigation efforts combined with careful land use planning and environmentally sensitive agricultural development may produce effective adaptation strategies.

There is concern that existing protected area networks may not be adequate for biodiversity conservation in a time of changing climate, and a stronger emphasis on landscape level approaches is required.

Sectors and sectoral issues

Wildlife Populations and the Bushmeat Trade

The use of wildlife for meat is customary practice throughout Africa. Growing populations, colonization of remote rural areas, and increased access to these areas through infrastructure created for extractive industries such as logging, oil, and mining have raised serious concerns that this epoch marks the "end of the wild" (Meyer 2006). "The bushmeat trade refers to the illegal, over-hunting of wildlife for meat and income" (BCTF 2009). The easy access to automatic small arms in zones of conflict has made commercial, or bushmeat hunting more efficient.

Industrial settlements for extractive industries often create markets for bushmeat. Employers may not provide food supplies at the site, and bushmeat may also be a preferred alternative in the Africa diet.

Although wild meat may be customary, it is not without risks. The handling and consumption of bushmeat is implicated in the transmission of zoonotic diseases such as Ebola from wildlife populations to humans (BCTF 2009, BEAN 2009).

ILLEGAL BUSHMEAT TRADE AND EXTRACTIVE INDUSTRIES

Bushmeat applies to all species of wildlife that are hunted and consumed or sold as meat. The concern for extractive industries is about bushmeat that is illegally, commercially and/or unsustainably derived from wildlife. This may involve illegal methods of hunting such as wire snares and unregistered guns; the illegal killing of endangered, threatened, or protected species; wildlife being illegally poached from protected areas; and the unsustainable off-take for commercial trade or non-commercial uses (see: Bushmeat Crisis Task Force website, www.bushmeat.org).

In the densely forested countries of West and Central Africa, road construction associated with extractive industries such as logging, oil development and mining, dramatically increases hunters access to isolated areas and can decrease the cost of transporting bushmeat to urban markets thus increasing the supply and profitability of the illegal commercial trade. According to the BCTF, per capita bushmeat consumption is highest in logging concessions due to the large numbers of company workers and their families desiring meat, having guns and ammunition, and motorized access to the forest to hunt. Logging concessions control much of the remaining intact forests outside of national parks and protected areas. Thus they can play an important role in wildlife conservation, by ensuring that their practices do not directly or indirectly promote the unsustainable consumption of bushmeat. Among other things they can partner with government and conservation NGOs on private-sector conservation partnerships (PSCPs) for wildlife management (ABCG 2009). Through the adoption and enforcement of appropriate forest and wildlife management policies and practices, extractive industries can effectively control the commercial bushmeat trade (BCTF, 2000).

Wildlife both inside and outside protected areas in Africa has declined significantly in the last thirty years. In the late 1980's Kenya Wildlife Service reported that the majority of wildlife was found outside protected areas (KWS 1990). Recent studies indicate that dramatic declines both inside and outside protected areas have taken place [e.g. 58% decline in non-migratory species between 1977 and 1997 in Masai Mara Ecosystem (Ottichilo et al. 2000), most species showed declines in over 50% of the areas where they were surveyed in Tanzania from late 1980's to early 2000's (Stoner et al. 2007)]. Reasons for these declines are interconnected and include expansion of commercial agriculture, human population growth and land-use, cycles of drought, and increased commercialization of bushmeat (MENTOR Fellows Reports 2008). Under current rates of off-take for the table and pocket, large animals are unlikely to survive outside of protected areas, and only with extreme effort within protected areas. If climate change shifts wildlife populations away from established protected areas, the prospects for conservation are bleak.

The commercialization of bushmeat through large-scale market hunting has impacts on the food security of local populations of subsistence farmers who depend upon wild meat to supplement their diet.

Because of the unsustainability of large scale bushmeat production, the concerns over food security in rural areas, the added risks from extractive industries and armed parties, and health risks, bushmeat is an issue that requires a multidisciplinary approach involving the cooperation of conservation, development and education sectors. This will entail a global commitment and large-scale investments over extended periods to conserve wildlife.

Similarly, in Eastern Africa there is a large commercial bushmeat trade that has increased in recent decades. Driven by the lack of alternatives, ineffective enforcement and increased demands that result from large human population growth and shifts in land-use, wildlife across the region is being impacted by over-hunting. Unlike Central Africa, wildlife-based tourism is a major source of income for many areas in Eastern Africa. If current bushmeat trends continue it is likely that there will be negative impacts on the tourism industry, national economies and ecological services throughout the region (BEAN, 2009).

Water

The world water crisis is not a myth; there has been a six-fold increase in water consumption in the past century. We are struggling to monitor and document water resources and the impacts to water resources, but data for analysis is inadequate. What appears to be clear at this time is that, overall, Africa does not have a deficit in water but a deficit in access to water. There is a lack of infrastructure to supply water to people. There are significant localized declines in water supply. Ninety percent of Lake Chad's surface water has disappeared, for example, and twenty million people depend upon Lake Chad for their water supply (World Bank 2003, Campbell 2008).

Africa stands to be hard hit by climate change, and, although an inadequate baseline complicates projections it is thought that climate change will account for 20% of future water scarcity. A lack of capacity to address water scarcity is localized, without a single general solution. The allocation of water resources is a critical process. Much of the discussion under the Millennium Development Goals for water focuses on the need to reserve water in impoundments. For biodiversity, it is essential that environmental flows, the amount of water necessary to maintain ecosystem functions in riparian and aquatic systems, be maintained.

Most major water systems are transboundary, and the issues of allocation, including environmental flows, have the potential to become sources of conflict. Historically, tension has often existed between up-

stream suppliers and downstream users of water. Climate change is expected to exacerbate these tensions, even as new investments in African water infrastructure by China are bypassing environmental safeguards.

Water requires long-term commitment by donors; many water projects are now experiencing "donor fatigue". The future of investment in water is within the context of landscape level planning taking into account a full range of ecosystem services, including biodiversity (FEOW, 2009).

Extractive Industries

Nowhere is the tension between the demand for short-term economic gain and for protection of biodiversity manifested as directly and immediately as in resource extraction. The costs and benefits of resource extraction are seldom borne equally. Addressing generational and social equity, including the environmental legacy, is a major challenge facing extractive industries. It generally falls to governments to referee the trade-offs. Transparency, public access to information (in forms useful to the public) and stakeholder participation in decision-making are elements of effective governance. Governments are often ill equipped to arbitrate trade-offs, however, as they lack information, capacity and resources. There has been exponential growth in the demand for natural resources in Africa over the past decade, buoyed by a sharp rise in commodity prices. The rise has been particularly sharp for non-renewable resources such as crude oil (300%, copper (400%) and gold (200%). Timber costs have risen over 25%. This demand has resulted in new infrastructure development, including in areas once considered inaccessible or dangerous. It has also brought in new investors, especially China, which is dependent upon imports for 80% of the raw materials with which it manufactures the vast array of consumer products for global consumption. China has thus become a key influence in extractive industries.

A challenge with extractive industries is the achievement of effective environmental and social safeguards. This is a particular concern for Chinese and other Asian investments, as these extractive industries generally lack the safeguards considered best practices within the industries (e.g., the Initiative for Responsible Mining and the Energy and Biodiversity Initiative).

The solution to unsustainable extractive industries lies in governance, including respect for the rule of law, monitoring and enforcement of the laws, revenue transparency, and access to independent information. There is an urgent need to build capacity within African governments and civil society to effectively negotiate extraction concessions, monitor resource extraction and ensure equitable sharing of benefits.

The assessment of social and environmental impacts requires that assessments of proposed extractive industry operations go beyond conventional site-focused environmental impact assessments to address cumulative and cascading impacts, including project contributions to overall environmental impacts and mitigations at a landscape level. Undertaking this type of broad assessment may require new multidisciplinary institutional arrangements involving

community development, food production, health, conservation, and infrastructure sectors in government and civil society.

Resource extraction should be required to protect biodiversity under a mitigation hierarchy seeking first avoid harm, and that is not possible, to minimize, mitigate, and compensate (in descending order of preference). Where avoidance of harm to biodiversity through careful selection of sites and technologies is not possible, biodiversity offsets - the protection of higher value sites elsewhere - may provide some biodiversity benefit[4]. Offsets are not a panacea, however, as the transaction can still result in a net loss of biodiversity.

Agriculture and Biofuels

Globally, agricultural development is a major threat to biodiversity, due to competition for the most productive lands. A tripling of global demand on food is anticipated. Agricultural investment in Africa has been low but the opportunity for investment has improved with improved governance (q.v.) and is expected to increase. Export markets are maturing in several countries as a result of agricultural investments. Their impact upon biodiversity depends upon whether the investments are well-planned or whether they constitute asset stripping. Effective governance can create a more secure environment for long-term investment, lowering the risk of asset stripping for short-term gains, and provide better oversight of production to ensure sustainability.

According to the EcoAgriculture Partners[5], planning for agricultural development at landscape levels can provide necessary ecosystem services while protecting biodiversity. Private foundations including the Gates and Rockefeller Foundations are supporting a new 'green revolution' in Africa through plant science research, and the subsidization of external inputs. Some have argued that higher-yielding crop varieties are required to supply demand while reserving land to protect biodiversity and ecosystem services. Improved crop varieties are only one aspect of sustainable agriculture. Agriculture and ecosystem services coexist across many landscapes. Institutions that span both agricultural development and ecosystem services are critical for development planning. Often, however, institution building is neglected in favor of purely technological approaches.

Veterinary and plant health sciences should not be neglected either. Plant and animal diseases, including invasive species and their vectors, incur a heavy toll on agriculture throughout the region, and may close access to markets. International cooperation on improved sanitary/phytosanitary measures at ports and borders, including better access to taxonomic resources for the identification of non-native species, is very important. Landscape level approaches should integrate public health and veterinary services, as well as plant health, and careful assessment should be made of crops, organisms for integrated pest management, agroforestry stocks, and biofuel feedstocks to determine risks of biological invasion. Biofuels pose a particular risk of invasive species introduction.

[4] see for example the Forest Trends led Business and Biodiversity Offset Program, http://bbop.forest-trends.org

[5] www.ecoagriculturepartners.org

There is considerable debate about the risks and benefits of biofuels production in Africa, including concern about the impacts of larger scale land acquisition for agriculture and other purposes. Concern has been expressed over increased demand for land and water in biofuel production for export, and the implications for both biodiversity and African food security. Local level biofuel production could address critical energy shortages in rural Africa, but must be planned in the context of food production and ecosystem services needs. The biofuel sector is moving quickly and may outstrip the capacity of the conservation community to respond without immediate action. The question is not one of approval or rejection, but how to identify the best overall solutions. As with other fast moving sectors such as extractive industries, the time required to build multisectoral approaches is insufficient in light of the speed of the investments. Without effective governance processes, development may foreclose biodiversity conservation options.

Policies that will support sustainability in food and biofuel production include an emphasis on multidisciplinary and multistakeholder participation in planning and impact assessment at landscape scales. Conservation organizations should form alliances with the agricultural community, including factoring support for sustainable agriculture within priority conservation landscapes and near conservation areas.

Leverage Points

Governance

Improvements in governance offer the greatest opportunity to secure biodiversity and promote environmental management. Over the past twenty years, Africa has experienced huge changes in governance, with the emergence of multiparty states, eleven countries with democratically elected governments, and a proliferation of constitutions. Compared to the rest of the world there is still a long way to go. Despite huge reforms, an authoritarian orientation of governments makes it difficult to reform institutions. However, the trajectory is clear. For example, some African leaders have sought to revise their constitutions regarding presidential term limits and have made all minerals the property of the state.

Environmental lenses help to shape reform. There is a positive correlation between trends in governance and biodiversity conservation, resulting in improved environmental governance and environmental performance. Increased accountability, access to information, and public participation has produced increased public support for conservation, and new centers of power are emerging with new rule making and oversight roles being taken seriously, resulting in a broader, more accountable set of institutions.

There is some chaos in the transition from authoritarian to democratic regimes. People are reclaiming lands taken illegally for protected estates. A spotlight has been turned not only on the adverse effects of environmental degradation on people, but also on the adverse effects of conservation on people. There is a need to deal with short-term consequences of this dialogue.

Because of the high dependency of people on natural resources, environmental problems are both household security and national security issues. Conflict is inevitable. Creeping vulnerabilities resulting from the drivers discussed here can become threats to governance and hence to biodiversity. Solutions must incorporate all elements of a multisectoral approach at landscape levels employing the principles of good governance:

- Rule of law, including legislation and regulations
- An informed and impartial judiciary

- Enforcement capacity
- Revenue transparency
- Public access to information, including in relevant local languages
- Public access to decision-making processes
- Respect for human rights.

Market Transformation

Poor environmental performance by industries is increasingly viewed as a business risk to be avoided. Inequitable sharing of benefits and collateral social and environmental damage can create tremendous resistance to industries, leading to pressure upon governments to ban such activities as resource extraction, resistance on the part of affected communities and stakeholder groups, effectively revoking the "license to operate". There is therefore an incentive for businesses to go beyond mere legal compliance to ensure good environmental and social outcomes. A business case for going beyond basic legal requirements helps to articulate benefits to the stakeholders in a business. Since achieving high social and environmental performance may require skills not available within the company, strategic partnerships with other stakeholders may assist companies in improving environmental performance.

Corporate social responsibility is a business response to market pressure for sustainability. An important challenge is to broaden the scope of market transformation in Africa through private-sector partnerships for conservation (ABCG, 20009), technical exchange, and education. However, investors from command and control economies may respond to different stimuli and engagement in social and environmental best practices may require a combination of regulation and diplomacy.

Landscape Level Approaches

Increased capabilities to monitor biological resources and human populations have demonstrated the extent of cumulative and cascading environmental and social impacts at the landscape level. Data collected has permitted the modeling of impacts of global forces such as climate change at the same landscape level. The current epoch of biodiversity conservation is that of landscape conservation, with origins in conservation science in Africa and elsewhere, and with the support of donor programs such as USAID. There are emerging sciences of landscape planning and agroecology.

Partnerships

Multisectoral, multistakeholder approaches loom large in discussions of governance and landscape level management. Under certain conditions, innovative partnerships may combine talents and other assets to achieve more than would be possible through individual institutions.

In governments, ministries may compete with each other for resources and influence to the detriment of the public. Partnerships between government agencies may be facilitated through crosscut budgets that can only be accessed through cooperative mechanisms. Donors can support cooperation and reduce "stovepiping" through incentives built into technical cooperation, grant and loan programs.

Public/private partnerships can be used to mobilize support for conservation and sustainable development through programmatic cooperation to achieve specific objectives. They are potentially effective when they can provide incentives to landowners to cooperate in a joint activity. Public/private partnerships can be an important tool for landscape level conservation. A variation on the theme more common in Africa, where land tenure may be communal rather than private, is in the form of community alliances with businesses and/or government. This often takes the form of community development grants, which can however be problematic when not undertaken according to the principles of good governance, including transparency of transactions. The distribution of benefits and the legitimate authority of the negotiators should be clear. Securing passive support for a development is more a bribe than a partnership.

The same holds true of NGOs and businesses; true partnerships have higher transaction costs and may not be appropriate in all situations; the temptation will be strong for businesses to cultivate support among civil society organizations through grants and other benefits rather than enter into a detailed partnership. This behavior, however, can convey risks to businesses in the form of accusation of "greenwashing" or investing in the appearance of environmental responsibility, and for the NGO in the form of suspicion of policy capture and loss of independence.

Effective partnerships can bring significant assets to bear on an issue, but require a bond of trust between the partners, which may extend to sharing of proprietary information for planning purposes. Partnerships are most effective when deployed at the beginning of a project during the design phase, and well in advance of the impact assessment phase. This suggests that the seeds of partnerships might be established through open lines of communications between potential partners before specific problem areas arise.

Partnerships are not a substitute for effective governance, but may bring added value when there is a significant impetus on the part of all parties to produce a result beyond the minimum standards of compliance with laws and regulations.

Pro-Poor Conservation

Landscape level approaches must take into account the presence of established, generally poor and underprivileged, rural populations. Earlier conservation epochs sought to rationalize land use by resettling remote inhabitants in places where they could gain better access to the benefits of government such as education, health and social services, leaving land for conservation purposes. This approach was culturally naive, often unjust, and generally unsuccessful.

Current approaches recognize the important stewardship roles of communities and community interests in conservation. Pro-poor conservation explicitly addresses the human needs of rural subsistence communities that depend in a direct and immediate way upon ecosystem services and natural products - non-timber forest products, fish, wild meat, soils for agriculture and water. Pro-poor conservation seeks to create well-functioning habitats specifically to meet human needs, habitats that are threatened and often degraded from overuse or alternative, unsustainable uses such as resource extraction. "…Conservation can and should address broader, more diversified, and more democratically defined goals, and should recognize and address the needs and aspirations of local people: especially the poor and vulnerable. Such efforts might allow people to live happier and more productive lives, and could also strengthen local support for conserving species for their own sake" (Kaimowitz and Shell 2007).

Tools for pro-poor conservation include integrated biodiversity and livelihood assessments, and ecological restoration where appropriate for the improvement of assets.

EXAMPLE: SHINYANGA

The semi-arid Shinyanga region of Tanzania, over 800 villages and their inhabitants improved their livelihoods by working in partnership with the government to revitalize a traditional practice of natural resource management using traditional ecological knowledge. Nearly 500,000 ha of acacia and miombo woodlands have been restored since 1980 to provide much needed forest products for local use, including fuel and building material, food and medicine, as well as important products to meet contingency needs. The Shinyanga restoration project demonstrated that with the right incentives, farmers will restore native forest cover.

The benefits of wildlife restoration are also shared; in addition to improved local opportunities for subsistence hunting, those districts that share boundaries with protected areas share 25% of the revenue from sport hunting.

(sources: Barrow et al 2003, Monela et al, 2005)

Lessons

A piecemeal approach always leads to loss for Africa. In the face of global change forces, we need landscape approaches that include strategies for resilience to climate change. This requires participation of multiple sectors and stakeholders. Integrated approaches cannot be allowed to be come another fad, either; we need to move away from fads based upon theory and work with empirically demonstrated successes. And lay out scenarios ahead of time considering the long term.

The environment is economic in Africa. Pro-poor conservation strategies, including ecological restoration, are essential at the landscape level. Entrepreneurship is on the rise, and opportunities should be created for equitable African participation in the global economy, including in the value chain for the natural resources it produces.

Poor public health is a hidden cost of environmental degradation. HIV/AIDS in particular is really weakening Africa; we need to tackle the problem systematically as part of an integrated approach. Human health in general needs to be better integrated into landscape approaches including wildlife and ecosystem health.

People suffer if systems collapse. We must do a better job of articulating the societal benefits of biodiversity, including the linkages between biodiversity, security, and livelihoods.

Continued support for education and training is essential in nurturing future conservation leaders. The next generation of conservationists must be prepared to address critical and emerging conservation challenges, and able to innovate and adapt to the use of new technologies. Mentoring is crucial.

Investment in human resources and capacities remains important. Professional collaboration including multidisciplinary peer-to-peer networks and partnerships can yield important lessons for meeting current and future challenges. Learning networks to capture these lessons are key to building capacity.

Empowerment is good for conservation, and conservation is good for empowerment. The environment may serve as a gateway to democratic reform through fair and participatory process for the allocation of resources and benefits.

The Vision[6]

Biodiversity remains the fundamental basis of Africa's development, and underpins the well-being of current and future generations. With swelling human demand upon natural resources and inadequate institutional infrastructure, however, Africa has witnessed the destruction and degradation of vast natural areas, from forests and savannas to freshwater and marine areas. Nevertheless, significant areas in Africa still remain where the habitat is relatively intact, and Africa holds much of the world's biodiversity and natural resources. However, climate change, ongoing population growth till late in the century and globalization of trade pose serious threats for the future. But there are also opportunities which we must seize, building on existing successful approaches to biodiversity conservation as well as new innovation, to take urgent and renewed action. For the great majority of Africans, biodiversity represents the only lifeline that can no longer be ignored.

By 2025, environmental degradation and biodiversity loss in Africa have been significantly slowed, people and nature are adapting to climate change, and species and ecosystem services are providing a foundation for human welfare in a society committed to sustainable economic development and equitable sharing of natural resource benefits.

Implementing the Vision

1. Mainstream biodiversity in human well-being and development agendas

Bridge and harmonize biodiversity conservation, vulnerability assessments and implementation. Clarify the concept of adaptation. Link implementation across conventions to avoid duplication and overlap. Support strengthening of the state parties.

Pay attention to growing scarcity of water, especially in light of need to increase agricultural productivity. In general, greater attention must be paid to the harmonization of the Millennium Development Goals, as the implementation of goals for water and food production, as well as other goals, can if unchecked work at cross-purposes to one another. Cross-sectoral partnerships are needed.

Promote climate change mitigation, and climate adaptation for biodiversity and people (including: ensuring Africa plays a significant role in climate change mitigation advocacy; keeping African greenhouse gas emissions low; linking carbon credit schemes to poverty alleviation and biodiversity conservation, integrating climate science in vulnerability assessments; undertaking disaster preparedness and mitigation efforts; ensuring multi-sectoral and multi-level collaboration and partnerships; and networking to share solutions).

Harness biodiversity and ecosystem services for improved agriculture (including using innovative techniques to increase productivity and yields and improve food security; and adopting conservation agriculture or "ecoagriculture" approaches).

---

[6] developed at the Dar es Salaam workshop (September 2008), the "Dar Vision Statement" has been widely circulated and refined since then. It is a living document that will continue to evolve as African conservationists and their allies and supporters worldwide adapt to and learn from a complex and rapidly changing environment.

Enhance greater accountability for sustaining biodiversity and ecosystem services by private sector institutions (including developing alternatives; promoting fuel efficiency and alternative energy sources; and limiting pressure on freshwater sources through more efficient uses of water).

Promote restoration/rehabilitation of degraded systems and natural resources (including research, monitoring and evaluation of montane, forest, arid, savannah, mangrove, coral, and freshwater systems) in order to provide livelihoods while increasing biodiversity.

Enhance the role of healthy ecosystems in mitigating risk and impact of emerging diseases (e.g. reducing risk of disease transfer among wildlife, people and livestock; mitigating the impacts of emerging diseases on wildlife and the environment).

Promote increased understanding and awareness of biodiversity and environmental issues (through greater scientific research, improved communication of scientific results and issues, and enhanced awareness raising).

2. Promote good conservation practices

Refine landscape approaches to natural resource management, using "matrix" approaches for the horizontal integration of activities. Work within the landscape to understand the relationship between factors such as emerging infectious disease, food production, and environmental change, including especially climate change, changes in land use and land cover, and invasive species.

Improve monitoring of climate and land use/land-cover change. In particular, extend the use of satellite earth observations for Africa. Identify key indicators and tools for measurement, including indicators accessible at the community level. Develop early warning systems for climate change in order to protect vulnerable communities and ecosystems.

Promote conservation of existing biodiversity (by practicing effective management of protected areas and endangered species management, and adopting matrix approaches to conservation using broad landscape areas).

Promote sound nature tourism development (including empowerment and strengthening capacity of local communities for to have greater control and ownership of ecotourism).

Demonstrate biodiversity and ecosystem services as fundamental bases of human well-being (promoting livelihood security and reducing pressure on biodiversity through alternative economic activities).

Promote sound governance and rights-based approaches (promoting rights of local people, sharing benefits, engaging civil building capacity, ensuring stakeholder access to information and decision-making

processes, empowering women, undertaking multisectoral approaches and partnerships; and promoting sound policy at all levels).

Encourage innovative conservation funding mechanisms (including promoting conservation investment and new funding mechanisms; promoting payment for environmental services).

Address the linkages between HIV/AIDS and natural resource management using coping strategies to deal with the impacts of the disease to conservation capacity, increases in natural resource use, and changes in land use.

3. Strengthen the role of Social and Development Institutions in Conservation and Human Well-Being

Support African innovation. Identify African strengths. Link donors and implementers, and assist in preparing research and pilot projects that are relevant to African needs and brokering them to donors.

Reach out to faith communities for dialogue and collaboration - The global urgency for a sustainable world demands multidimensional approaches and a persistent push for ideals based on innovative and pragmatic strategies. Faith-based communities comprise the largest social organizations in Africa, representing a repository of opportunities to spread the cause for sustainability in the continent. Conservation leaders should reach out to religious communities to collaborate in implementing these recommendations, with a view to enhancing the capacity for value-based sustainability decisions that link nature and human well-being.

Participants, Dar es Salaam Workshop, 2008

Reach out to relief and development organizations for mitigating impacts of migration, HIV/AIDS and natural population growth (including improving access to healthcare and family planning services and information; promoting girls education and women's empowerment; and reducing the impacts of migration).

Improve environmental literacy in all sectors of society, and support it through improved information collection and exchange. Make climate models more accessible. Develop community centered climate mitigation and adaptation strategies supported through participatory planning processes. Ensure access to both information and benefits. Extend the discourse through common African modes of social organization, especially the faith communities. Provide for horizontal learning exchanges through peer-to-peer networks to address emerging issues. Translate knowledge, build community capacity, and make shared experiences accessible to communities.

Image Credits

All photos are from Flickr.com, and licensed under Creative Commons for non-commercial use with attribution, with the exception of those from Ephraim Mwangomo, which are copyrighted and used with permission of the artist. For information on the Creative Commons license, visit http://creativecommons.org/licenses/by/2.0/deed.en.

Cover: Mount Kilimanjaro, © Ephraim Mwangomo

p 3: (left to right):

Water pump. South Kivu, DRC. Julien Harneis. http://www.flickr.com/photos/julien_harneis/

Fabricators workshop. Eric Hersman. http://www.flickr.com/photos/whiteafrican/

Melting glacier of Mt. Kilimanjaro NP, Tanzania. © Ephraim Mwangomo

p 5: Mt. Kilimanjaro NP, Tanzania. © Ephraim Mwangomo

P 6: Melting glacier, Mt. Kilimanjaro NP, Tanzania. © Ephraim Mwangomo

p 7: (left to right):

HIV education, Central African Republic. Humanitarian and Development Partnership Team in the Central African Republic (hdptcar). http://www.flickr.com/photos/hdptcar/

Lion, Serengeti NP, Tanzania. © Ephraim Mwangomo

Health workers address children, Kenya. Jubilategemeinde. http://www.flickr.com/photos/jubilatewest/

p 8: "There is no Africa", T U R K A I R O. http: //www.flickr.com/photos/turkairo/

p 9: (top): Elephant, Serengeti NP, Tanzania. © Ephraim Mwangomo

(left to right):

Mt. Kilimanjaro NP, Tanzania. © Ephraim Mwangomo

Drought in Goraye, Ethiopia. Andrew Heavens. http://www.flickr.com/photos/andrewheavens/

Flood in Southern Africa. The Humanitarian Coalition. ©TheHumanitarianCoaliton.ca

p 10: Roadside bushmeat market, Equatorial Guinea. John and Melanie Kotsopoulos.

http://www.flickr.com/photos/melanieandjohn/

p11 Tsitsikamma, South Africa. Sean Jackson. http://www.flickr.com/photos/sean-b/

p12 (left to right):

Tongo diamond mine, Sierra Leone. Adam Cohn. http://www.flickr.com/photos/adamcohn/

Logging truck, Cameroon, Mark Knobil. http://www.flickr.com/photos/knobil/

Artisanal fishing, Senegal, Frostis http://www.flickr.com/photos/frostis/

p13 (left to right):

Impala, Serengeti NP, Tanzania. © Ephraim Mwangomo

Women's group at Jatropha nursery, Senegal. Trees for the Future.

http://www.flickr.com/photos/plant-trees/

Farm in Ulugurus, Tanzania. Meaduva. http://www.flickr.com/photos/meaduva/

p 15: (top): Village meeting, Tanzania. Quarsan. http://www.flickr.com/photos/quarsan/

bottom (left to right)

Klipheuwel wind farm, South Africa, Warren Rohner. http://www.flickr.com/photos/warrenski/

Gorilla trekkers, Rwanda, Scott Chacon http://www.flickr.com/photos/chacon/

Allée des baobabs, Madagascar, gr0uch0 http://www.flickr.com/photos/groucho/

p 16: (left to right):

Hoodia parviflora, Namibia. Martin Heigan. http://www.flickr.com/photos/martin_heigan/

Stapelia flavopurpurea, Namibia. Martin Heigan. http://www.flickr.com/photos/martin_heigan/

Market day in Djenne, Mali. Emilio Labrador. http://www.flickr.com/photos/3059349393/

p18: Namuwongo Community Development Organization, Uganda, Matthew Berry http://www.flickr.com/photos/matthewberry

p 20: Femme à Senzana, Cyril Maillet (TV Boy) http://www.flickr.com/photos/nightblue/

Baobab in sisal plantation, near Mombasa, Kenya. Whatsthatpicture. http://www.flickr.com/photos/whatsthatpicture/

p 21: Reafforestation after mining, South Africa. Mark Surman. http://www.flickr.com/photos/marksurman

Dar es Salaam workshop participants. © IUCN

References

ABCG 2007. HIV/AIDS and Natural Resource Management Linkages. Africa Biodiversity Collaborative Group. Online at http://www.abcg.org. Accessed July 2009.

ABCG 2009. Private-Sector Partnerships for Conservation. Africa Biodiversity Collaborative Group, Washington DC. July 2009. 8 pp.

Barrow, E, B Kaale and W Mlenge, 2003. Forest Landscape Restoration in Shinyanga, the United Republic of Tanzania. paper submitted to the 12th World Forestry Congress, 2003, Quebec. Available online at http://www.fao.org/DOCREP/ARTICLE/WFC/XII/0164-B3.HTM, accessed July 27, 2009.

Bongaarts, John. 2008. "Fertility transitions in developing countries: Progress or stagnation?" Studies in Family Planning 39(2): 105–110.

BCTF 2009. Bushmeat Crisis Task Force, online at http://www.bushmeat.org. Accessed July 2009.

BEAN 2009. Bushmeat-free Eastern Africa Network. Online at http:// www.bushmeatnetwork.org. Accessed July 2009.

Campbell, Robert Wellman, ed. 2008. "Lake Chad, West Africa: 1963, 1973, 1987, 1997, 2007." Earthshots: Satellite Images of Environmental Change. U.S. Geological Survey. http://earthshots.usgs.gov. This article was released on 14 February 1997 and revised 14 August 1999, 14 August 2001, and 14 August 2008.

FAO, 2006. World agriculture: towards 2030/2050: Interim report - Prospects for food, nutrition, agriculture and major commodity groups. Rome: UN Food and Agriculture Organization, 2006

FEOW 2009. Freshwater Ecosystems of the World, http://www.feow.org. World Wildlife Fund and the Nature Conservancy. Accessed July 27, 2009.

Hecht, J., D. Gibson, and B. App. 2008. Protecting Hard-Won Ground: USAID Experience and Prospects for Biodiversity Conservation in Africa. Biodiversity Assessment and Technical Support Program (BATS). USAID Bureau for Africa, Office of Sustainable Development (AFR/SD). USAID, Washington, DC. Accessed July 2009: http://pdf.usaid.gov/pdf_docs/PNADM480.pdf

IMF, 2008. Regional economic outlook : Sub-Saharan Africa. -- Washington, D.C., International Monetary Fund, 2009.

KWS. 1990. A Policy Framework and Development Strategy 1991-1996. Kenya Wildlife Service. Nairobi, Kenya.

MENTOR Fellows Bushmeat Assessment Reports 2008. Available through the US Fish and Wildlife Service MENTOR fellowship program at http://www.mentorfellowshipprogram.org.

Meyer, S. 2006. End of the Wild. MIT Press, Cambridge, MA.

Monela, G.C., S.A.O. Chamshama, R. Mwaipopo and D.JM. Gamassa. 2005. Final Report: A Study on the Social, Economic and Environmental Impacts of Forest Landscape Restoration in Shinyanga Region, Tanzania. Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division, and the International Union for Conservation of Nature.

Ottichilo, W.K., J. De Leeuw, AK Skidmore, HHT Prins, and MY Said. 2000. Population trends of large non-migratory wild herbivores and livestock in the Masai Mara ecosystem, Kenya, between 1977 and 1997. African Journal of Ecology 38(3): 202-216.

de Queiroz, J., B. App, R. Morin, and W. Rice 2008. Partnering with Extractive Industries for the Conservation of Biodiversity in Africa: A Guide for USAID Engagement. USAID: Washington, DC. Accessed July 2009: http://frameweb.org/adl/en-US/2909/file/358/BATS_EI_Guidebook_FINAL.pdf

Sedgh, G., et al, 2007. Unmet need for contraception in developing countries: levels and reasons for not using a method, Occasional Report, New York: Guttmacher Institute, 2007, No. 37.

Stoner, C. T. Caro, S. Mduma, C. Milingwa, G. Sabuni, M. Borner, and C Shelten. 2007. Changes in large herbivore populations across large areas of Tanzania. African Journal of Ecology 45(2): 202-215.

United Nations (Population Division of the Department of Economic and Social Affairs) 2008. World population prospects: the 2008 revision, highlights. United Nations, New York, N.Y. Accessed July 2009. www.un.org/esa/population/publications/wpp2008/wpp2008_highlights.pdf

Unruh, J., D. Gibson, and K. Woods. 2008. Biodiversity Conservation and Crisis: Key Issues for Consideration. USAID, Washington, DC. Accessed July 2009: http://frameweb.org/adl/en-US/2915/file/360/Biodiversity_Conservation_and_Crisis._Key_Issues_for_Consideration.pdf

World Bank, 2003. Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem: Project Appraisal Document. Washington DC, 2003. Available online at http://lakechad.iwlearn.org/ publications/projectdocuments, accessed July 27 2009.

WWF. 2007. "HIV/AIDS and the Environment: Impacts of AIDS and Ways to Reduce Them. Fact Sheet for the Conservation Community." World Wildlife Fund, Washington, DC.

This project was made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of Cooperative Agreement No. RLA-A-00-07-00043-00 Under LAG-A-00-99-00048-00. The contents are the responsibility of the Africa Biodiversity Collaborative Group (ABCG) and do not necessarily reflect the views of USAID or the United States Government. This brochure was produced by IUCN/US on behalf of ABCG.

USAID
FROM THE AMERICAN PEOPLE

AFRICAN WILDLIFE FOUNDATION®
CONSERVATION INTERNATIONAL
the Jane Goodall Institute
The Nature Conservancy
Protecting nature. Preserving life.
WILDLIFE CONSERVATION SOCIETY
WORLD RESOURCES INSTITUTE
WWF