



USAID
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PROTECTING HARD-WON GROUND:

USAID EXPERIENCE AND PROSPECTS FOR
BIODIVERSITY CONSERVATION IN AFRICA



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Biodiversity Assessment and Technical Support Program (BATS)

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FRONT COVER: Kwando River, Caprivi Strip, Namibia

BATS /Brian App

ACRONYMS

ABCG	Africa Biodiversity Collaborative Group
AWF	African Wildlife Foundation
BATS	Biodiversity Assessment and Technical Support Program
BCN	Biodiversity Conservation Network
BIOME	Biodiversity Monitoring and Evaluation Project
BSP	Biodiversity Support Program
CAMPFIRE	Communal Areas Management Program for Indigenous Resources
CARE	Cooperative for Assistance and Relief Everywhere, Inc
CARPE	Central Africa Regional Program for the Environment
CB	Community-based
CBNRM	Community-based natural resources management
CI	Conservation International
COMPASS	Community Partnerships for Sustainable Resource Management
DRC	Democratic Republic of the Congo (formerly Zaire)
EAME	Eastern African Marine Ecoregion
FAO	Food and Agriculture Organization of the United Nations
ICDP	Integrated conservation and development project
IPC	International Programs Consortia
IUCN	World Conservation Union (formerly the International Union for the Conservation of Nature)
IWRM	Integrated Water Resources Management
NEAP	National Environmental Action Plan
LIFE	Living in a Finite Environment
MWG	Mariculture Working Group
NEPA	National Environmental Policy Act
NFM	Natural Forest Management
NGO	Non-governmental Organization
NRDC	National Resources Defense Council
NRM	Natural Resources Management
NRMP	Natural Resources Management Project
RDC	Rural District Council (Zimbabwe)
REDD	Reducing Emissions from Deforestation in Developing countries
PHE	Population, Health and Environment
TFAP	Tropical Forestry Action Plan
TNC	The Nature Conservancy
TRA	Threat Reduction Assessment Index
UNEP	United Nations Environment Programme
USAID	U.S. Agency for International Development
USFS/IP	U.S. Forest Service Office of International Programs
WCS	Wildlife Conservation Society
WRI	World Resources Institute
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

The last three decades have brought economic opportunity and unprecedented challenges to Africa's ecosystems. Swelling human populations, dependent on unprepared institutional infrastructure, have witnessed the encroachment and destruction of vast natural areas. Agriculture expansion has led to fragmentation, with one percent of Afrotropical forests converted each year and the Democratic Republic of Congo and Sudan together losing more than one million hectares annually.¹ Overgrazing and climate change have caused desertification over vast areas of West Africa and serious bush encroachment across an estimated 50 million hectares in Southern Africa alone. Sub-Saharan Africa holds much of the world's biodiversity, with some locations eight times as diverse as the world average.

Increasing populations are living near fragile and biologically diverse zones, and human impacts are increasingly severe. The full range of ecosystems, from forests and savannahs to coastal and marine areas, and including protected areas and reserves, are being degraded rapidly. Compounding habitat fragmentation and outright loss is the surging prevalence of aquatic and terrestrial invasive alien species.

Significant areas in Africa, nevertheless, still remain where the habitat is relatively intact, and biodiversity remains high. Throughout the last 30 years, USAID has provided important leadership and support for the conservation of individual species, key protected areas, selected ecosystems, and critical landscapes in Africa. Beginning with oblique sustainable agriculture and agroforestry programs, which evolved into natural forest management and protected area planning actions, USAID's current environmental programs in Africa most often explicitly address biodiversity conservation. 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.

Epochs in USAID Conservation Programming

The evolution of conservation approaches has been gradual and cognitive rather than discrete steps and remarkable paradigm shifts. Nevertheless, when examining the gradual shifts in USAID biodiversity interventions in Africa, "epochs" can be identified, providing an analytic lens through which to view changes over time. This evolution in USAID approaches reflects a parallel change in conservationists' thinking. The evolutions within USAID and the conservation community influenced each other and were mutually reinforcing.

Agroforestry and energy. Influenced by the global energy crisis, the drought in the Sahel in the 1970s to early 1980s, and the anticipated fuelwood shortage in Africa, early USAID programs focused on plantation forestry and natural forest management. Without an explicit emphasis on biodiversity, natural forest management aimed to improve access to energy, construction materials, and ethno-botanical products, while promoting a sustainable timber harvest to protect future supplies. At the same time, agroforestry technologies reintroduced trees into farming systems to improve water and soil management, and diversified farm production by mimicking the benefits of natural ecosystems. These efforts dovetailed with FAO-led Tropical Forestry Action Plans (TFAPs) which gave support to commercial, plantation, and community forestry.

¹ Food and Agriculture Organization of the U.N.: The State of the World's Forests 2003

Although biodiversity conservation was not a target, USAID gained valuable understanding of biology of forest systems for later programs. An example is the Senegal Reforestation and Anti-Desertification Project launched in the late 1970s to respond to fuelwood shortages in the Dakar area. For this program, large areas were cleared for eucalyptus and other fast-growing exotics and villagers were paid for planting but otherwise had little interest in seeing the program succeed.

Integrated conservation and development projects (ICDP). Building on the lessons of earlier efforts, ICDP projects were developed with the underlying assumption that rural poverty drives environmental degradation and that if local communities would benefit more directly from conservation they would be willing to support it. Generally focusing on single species or protected areas and their adjacent communities, ICDPs worked actively to understand and incorporate local communities. Many of the endeavors, however, were viewed as unsuccessful,² with critiques including they were expensive, protected areas are generally too small to ensure the survival of viable wildlife populations, and many of the conservation groups implementing them did not have broader development expertise required to make them work. Furthermore, the benefits from these programs were often restricted populations adjacent to protected areas, were too low to compensate for the loss of resources from forgoing protected area resources, and were not directly linked to conservation activities. In the case of USAID supported nature-based community development in Uganda, there was a hesitancy to habituate the gorillas for ecotourism, an activity for which local communities could see the direct benefits of conservation through tourism revenues. Furthermore, activities in the protected area and adjacent communities were principally conducted by different conservation and development organizations, and their work was not sufficiently integrated.

Community-based natural resource management (CBNRM). These activities took many of the best elements of the ICDPs for their design, and emphasized the importance of land and resource tenure, ownership of natural resources, decision-making authority, and the governance structures that made those elements possible. This approach has been quite successful in areas where the value of the resources is high enough to compensate the communities for immediate foregone benefits. This was particularly true in Southern Africa where CBNRM focused on sport hunting which provided the greatest source of revenue for the communities and community members. In others areas, such as the Sahel, programs focused on trees, forest products, and forest tenure, in the belief that if communities benefit, they will manage sustainably. The Living in a Finite Ecosystem (LIFE) project in Namibia is an example of a successful CBNRM program where USAID facilitated CBNRM legislation for conservancies (50 have been registered to date), granting ownership rights over wildlife and tourism revenues to communities and helped to build a network of organizations and associations to help support the conservancy movement. This led to the recovery of wildlife populations as well as increased revenues and governance rights for communities.

² This view was expressed by many of the individuals interviewed for this project. On the other hand, some interviewees, notably Michael Brown of Innovative Resources Management, suggested that ICDPs could have succeeded had they been implemented more effectively, and felt that they developed a poor reputation because of problems that could, in fact, have been resolved.

Broad landscape approach. By the end of the 1990s, approaches to conservation broadened further to focus on landscapes, enabling conservationists to address wildlife protection within parks as well as managing the impact of surrounding activities on habitat, migratory patterns, and animal populations. Landscapes are generally selected for their conservation value, taking into consideration species abundance and diversity, total area and connectivity, endemism, threats, and ecological processes. The spatial breadth of the landscape approach is complemented by a broader economic and policy perspective, and a more inclusive representation of partners and stakeholders. This approach, however, requires working at a greater variety of scales, from local to global, and working with numerous partners across many sectors, presenting logistical, facilitation, and coordination challenges. The Central Africa Regional Program for the Environment (CARPE) is a 20-year USAID initiative (currently in its 13th year) with three strategic phases operating in nine central African countries. In 12 landscapes encompassing 38 percent of the Congo Basin forest or 685,400 km², this program involves implementing sustainable forest and biodiversity management practices, strengthening environmental governance, and working to monitor forests and other natural resources throughout the region.

Multi-sectoral conservation approaches. Continuing the pattern of increasingly inclusive approaches, USAID biodiversity programming today generally shows increased collaboration with other sectors, including health, agriculture, and governance, as well as new sources of support such as public-private partnerships, including with extractive industries. This approach is shaped by factors including the recognition that community needs and goals are not necessarily aligned with conservation objectives and should be better taken into account, an acknowledgement that a holistic approach to conservation may be the most effective, and by trends in government financing. Multi-sectoral programs may have conservation as a primary or secondary goal, or may simply acknowledge the importance of a healthy environment in achieving program objectives in, for example, health or governance. Other times, USAID takes this approach to help to define the direction of, and ensure integration of conservation into, ongoing private-sector activities. In the example of Guinea, USAID has worked with extractive industry partners to continue support of a chimpanzee program in a region where mining activities are ongoing, and has formed a Global Development Alliance with another company to conduct biodiversity assessments in prospective areas for mineral exploration.

Cross-Cutting Issues

Concurrent with the epochs described above, cross-cutting issues have influenced, and been influenced by, the evolution in USAID biodiversity programs.

Marine and freshwater issues. Marine and freshwater programming is one such issue that paralleled terrestrial conservation in a broad sense, but merits a discussion apart from the epoch framework. Early water programs were geared towards infrastructure (dam construction) and the provision of water services (irrigation and community water supply). As was the case with conservation programs, USAID marine and freshwater programs gradually broadened with the inclusion of a health emphasis in the 1980s and the wide recognition of environmental and cross-sectoral linkages in the late 1990s.

U.S. and international policy. Another important cross-cutting issue for biodiversity conservation has been the development of U.S. and international environmental policy. In 1986, the U.S. Congress amended the Foreign Assistance Act to require increased attention to biodiversity and tropical forests, and began earmarking funds within the USAID budget to be spent on conservation. This spurred a great expansion in conservation activities in Africa, particularly among the conservation NGOs. The Amendment also helped the conservation and development communities come together by the 1990s with a focus on community-based resource and wildlife management. Beginning in 1986, at a modest level of \$1 million, and growing steadily to a current level of about \$195 million in FY 2008, biodiversity earmarks in congressional appropriations have been an important driver of USAID funding of biodiversity activities and an indicator of the growing importance of biodiversity in the foreign assistance portfolio. During this same period there has been a development of a suite of important international conservation conventions which have created a framework to support biodiversity conservation in Africa and throughout the world. By becoming parties to these conventions, countries acknowledge the importance of conservation activities, and generally commit to national level conservation plans. Preeminent are the Convention on Biological Diversity (CBD) which aims to maintain the world's ecological assets in the context of economic development and the Convention to Combat Desertification. Antecedent are the Convention on International Trade in Endangered Species (CITES) which limits trade in listed (endangered) species and the Ramsar Convention on Wetlands of International Importance.

USAID partners. In the course of implementing conservation activities, USAID has partnered with other US Government agencies, such as the Peace Corps, the Fish and Wildlife Service and the USDA Forest Service, international conservation and humanitarian NGOs and consulting firms, and, importantly, a suite of governmental and non-governmental African institutions. The interaction and capacity building that has transpired among these partners have been critical to conservation objectives and long-term sustainability of USAID programs. These relationships increasingly include a broader base of partners, more diverse interests and experience, and new and innovative mechanisms which capture the synergy between potentially wide-ranging organizational objectives.

Challenges for the Future

To target future programs, in addition to understanding the experience of USAID conservation programming, it is important to examine current and projected challenges. These challenges, also present opportunities which are important to consider if future conservation efforts in Africa are to be successful.

Globalization. The growing demand for timber, minerals, and land for agriculture fueled by globalization presents a challenge with the potential impacts of harvest, extraction, and the infrastructure investments necessary to reach them and bring them to market. Global certification systems for sustainably harvested or produced goods can create opportunities consistent with biodiversity conservation and, by providing options to consumers, provide space for market pressures to move production to sustainable models.

Climate change. Although its contribution to global climate change is relatively small, Africa is hugely vulnerable to global climate change and has few resources with which to combat it or

adapt to the new conditions. With the support of the conservation sector, Africa is well-placed to benefit from investments or payments for ecological services in carbon, water, and biodiversity offsets.

Links between health and conservation. Links between human, livestock and wildlife health and conservation objectives have been long recognized. USAID supports population, health, and environment (PHE) projects that improve access to health services while helping communities manage their natural resources and protect the environment. The loss of human capacity in natural resource management due largely to HIV/AIDS, have compromised conservation efforts in heavily hit areas. Recent years have seen the outbreak of diseases which affect humans, their livestock and wildlife populations including Avian Influenza (H5N1), which kills many bird species, and the Ebola virus which has devastated some great ape populations in Central Africa.

Conflict and security. Conflict in important biodiversity regions (e.g. the Mano River of coastal West Africa and Great Lakes regions) has presented a challenge for conservation before, during and after times of conflict. During times of crisis, environmental concerns justifiably take on less significance but can also result in loss of rebuilding assets. Competition for Africa's rich natural resources can spark, fuel or enable conflict, bringing negative environmental impacts such as habitat destruction, degradation of the natural resource base, and water and air pollution.

Population growth. Population growth in Africa over the past 50 years has been unprecedented and some projections have it doubling again by 2050. With 46 percent of the Sub-Saharan population living below the poverty line and with impoverished communities often living in areas of high biodiversity, we expect increased pressure on biodiversity and natural resources, including marine ecosystems. Additionally, the growth of urban populations has projected negative environmental impacts, especially for regions surrounding urban areas. Population growth, however, may also be framed as an opportunity where although there will be more demand on natural resources, there will also be more labor available for production.

Conclusions

Several salient features emerge from this review of USAID biodiversity conservation work. While significant learning efforts have been made, there have also been gaps and only sporadic attempts to analyze and archive hard-won ground. While most mission-led bilateral programs have made important strides, only the regional and global projects have consistently partnered in experiential learning and drawing key lessons and conclusions.

Through the research and interviews that went into the preparation of this report, the difficulty of finding effective ways to integrate conservation and development, and of tying intrinsic conservation values to revenue streams for local communities, was made clear. While primarily a review document, there are several key findings which can help to further inform future USAID programming decisions in the conservation sector:

- The need to engage stakeholders in the design and implementation of projects has become increasingly clear, as has the need for conservation and development interests to continue to work together and recognize the importance of diverse partnerships.

- Future challenges are interrelated and self-reinforcing. For example, with climate change predicted to undermine food production capacity, and population growth increasing demand, conflict over resources is more likely, which may further undermine food production. These threats can come together quickly with potentially dramatic impacts on biodiversity across Africa.
- For conservation to succeed ensuring that the financial returns from conservation efforts are sufficient to compensate communities for the loss of resource use is critical. To the extent possible these returns should be inextricably linked to conservation activities, but it should be acknowledged that it may be necessary to provide funds to other stakeholders whose cooperation is needed.
- Opportunities to use the knowledge gained through USAID's experience must take place in the context of current U.S. foreign policy and available funding. It is, therefore, essential to demonstrate to USAID policymakers the connection between biodiversity and U.S. foreign policy issues such as governance, helping countries recover from conflict, and responding to the problems of the HIV/AIDS pandemic,
- The experience of the past 10 to 15 years has highlighted both the importance of good governance for community management of natural resources and the opportunity provided by community-based conservation to provide a context for improving governance. Because of this experience, the conservation community is well placed to integrate biodiversity into some of USAID's key priorities for the coming years.

Many challenges remain to be addressed in the area of African conservation. There is considerable opportunity, however, to integrate biodiversity conservation into priority areas, including conflict recovery, heading off future conflicts and security risks, improving governance, encouraging international trade, as well as helping communities deal with the consequences of HIV/AIDS and achieve other Millennium Development Goals (reducing poverty, improving health, universal primary education and environmental sustainability.). Indeed, multi-sectoral integration of biodiversity concerns has become common in USAID programs in Africa. Although expanding work into such new areas will pose great challenges to the conservation community, it can contribute greatly to protecting biodiversity in the future.

SECTION I: INTRODUCTION

USAID has helped pioneer and integrate biodiversity conservation into development activities across Africa since the late 1970s. Over the past 30 years, the agency's conservation objectives have evolved along with its working approaches and implementing partnerships. From its inception, USAID was mandated with development goals which did not necessarily coincide with conservation objectives, but biodiversity objectives have continually become more of a concern, and the agency now officially recognizes the value of biodiversity on its own terms.

According to the USAID Web site, "In recognition of the importance of biodiversity, USAID has made biodiversity conservation a key goal under its program to protect the environment." USAID is supporting conservation activities in more than 50 countries, seeking to maintain the variety of species and the habitats in which they occur."³ For the purposes of this paper, we will take USAID's definition and consider biodiversity to be the variety and variability of life on earth. This includes all of the plants and animals that live and grow on the earth, all of the habitats that they call home, and all of the natural processes of which they are a part.⁴

The past 30 years have been a period of great learning within USAID and in the agency's non-profit and for-profit partners, both in Africa and in the United States. This period has also seen some huge gaps in applying the learning, and only sporadic attempts to analyze this rich experience. This paper offers a brief overview of those experiences and that learning, as a prelude to considering where USAID may want to go in the decade to come.

This paper has been prepared under the Biodiversity Analysis and Technical Support (BATS) project, which is implemented by Chemonics International in partnership with the World Wildlife Fund (WWF), the World Conservation Union (IUCN), and the International Program Consortium (IPC) with support from the U.S. Forest Service Office of International Programs (USFS/IP) and the Africa Biodiversity Collaborative Group (ABCG). It is based on a review of documents and interviews with key conservation and development personnel. By nature this report is a somewhat subjective assessment of the significant trends and advances of the past 30 years. It is not the intention of this report to present a comprehensive account of USAID biodiversity activities in Africa, but instead to provide a spotlight on important events and programs as well as an analytic lens through which to view the evolution of programming in this area. Likewise, while conservation science is referenced and discussed throughout the report, it is done so only to provide the context for the evolution of USAID biodiversity programming, not to provide a full account of the evolution in conservation thinking and approaches.

The report is organized as follows: Section I provides an introduction to the process and methodology for the report. Section II provides an in-depth treatment of the epochs and cross-cutting themes in USAID biodiversity programming. Section III examines the challenges that lie ahead for conservation in Africa. Section IV draws the conclusions for the document, and discusses potential areas for USAID future programming.

³ USAID Web site: Environment: Biodiversity. http://www.usaid.gov/our_work/environment/biodiversity/

⁴ Ibid.

SECTION II. EPOCHS AND THEMES IN 30 YEARS OF USAID BIODIVERSITY PROGRAMS IN AFRICA

The broad pattern of the past 30 years of biodiversity conservation in Africa has been one of evolving perspectives on threats, strengthening public sector and community management capacity, and engagement of economic actors. Within USAID and among the organizations that have implemented many of the conservation projects funded by the agency, there has been a growing appreciation that wildlife and human ecology are inextricably linked, and that threats to biodiversity must be managed on larger scales and often outside of protected or state-managed areas. Biodiversity conservation is now acknowledged as one of many objectives of a wide range of stakeholders.

Practitioners' actions have expanded from protected areas or species-specific programming (e.g. gorillas, elephants, and rhinoceros) to a more place-based perspective, working on a larger scale and in communal areas. Acknowledging that conservation cannot work without the cooperation of communities, this evolving perspective increasingly engages commercial actors including agriculture and forestry, livestock, mining, and allied industries in community development activities. These activities, however, are in addition to conventional conservation in and around protected areas and not in place of them. With the tremendous growth in number and coverage of protected areas in Africa over this same period, African governments, international donors, and conservation organizations have maintained the importance of protected areas while at the same time acknowledging the importance of engaging the neighboring (or in some cases internal) communities, and better managing bordering areas as buffer zones to the protected areas.

The cast of implementing partners has grown as well. Most conservation activities have been led and continue to be led by international conservation organizations, with varying degrees of support and cooperation from national conservation organizations and governments. In these partnerships, many NGOs work closely with national governments, and capacity building is often an explicit objective of conservation programs funded by USAID. The number of conservation NGOs operating in Africa has expanded, and many new innovative partnerships between conservation NGOs and development organizations have evolved in, and been tested under, a variety of circumstances. Finding and cultivating common fertile ground between conservation and development organizations has been critical to help the art and science of sustainable protected area management with the inclusion of local economic communities. In recent years, the private sector has become an increasingly important partner in conservation activities, as the value of conservation has become more widely recognized (e.g. tourism, sustainable agriculture, ecolabeling, and limited environmental liability).

While the evolution of USAID conservation programs may be framed as a series of discrete paradigm shifts or “epochs,” in fact the different approaches have strong similarities in integrating conservation and development. Many components of conservation projects have been constant throughout the past 30 years, although emphases have shifted and thinking has matured. Nevertheless, further exploring the broad patterns in USAID natural resource and conservation programming, including approaches and geographic groupings, can help to facilitate a dialogue on the history of USAID conservation activities. Figure 1 on page 10 shows USAID conservation programs by program area as they have evolved over time. The table's blended bars

are meant to show that although there is a timeline, programs did not immediately start, stop, or change on the eve of the next five-year interval.

Figure 1: USAID Natural Resources and Conservation Programming Trends, 1980-2005

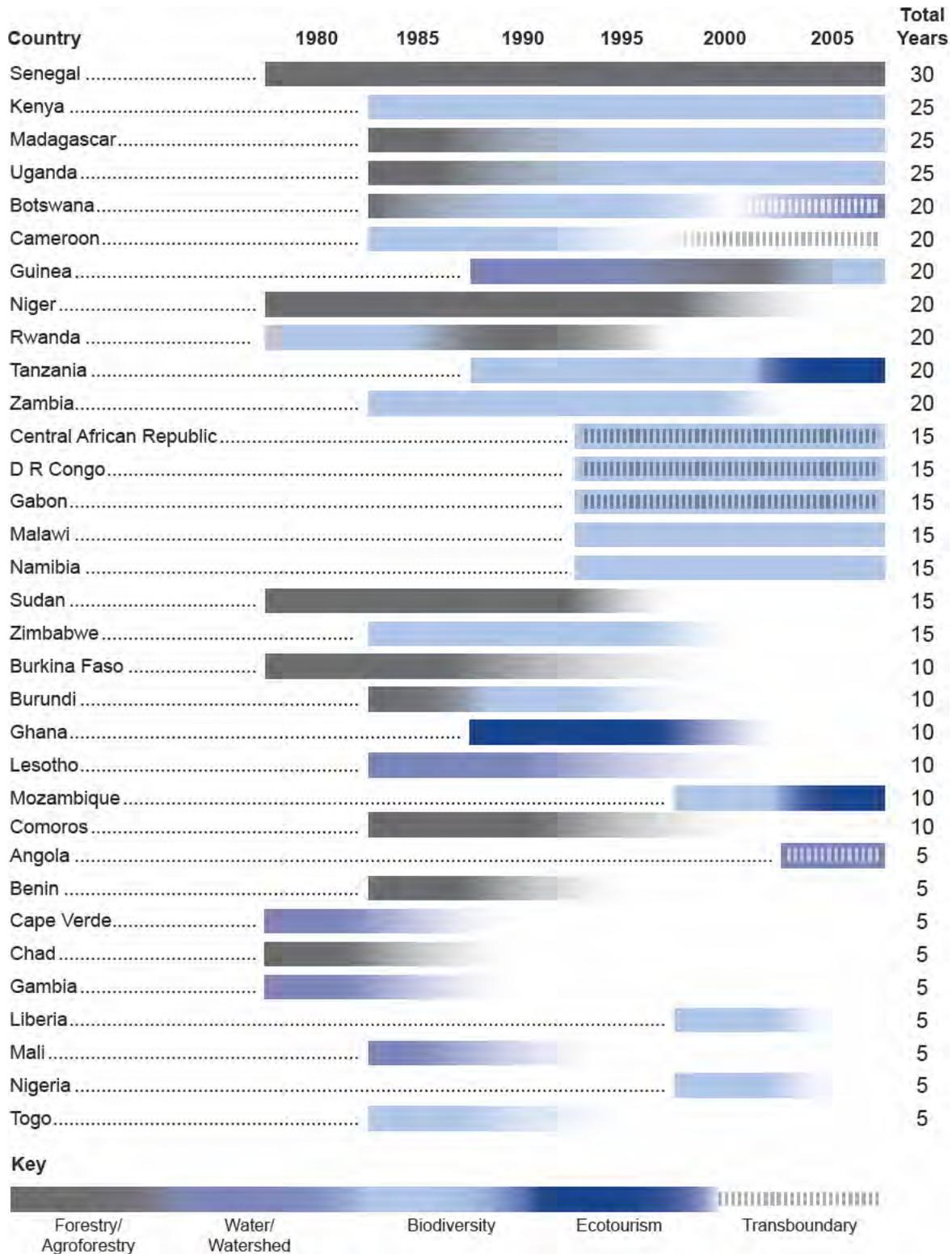


Figure 2: USAID/Africa Natural Resource Management Epochs, Early 1980s to Late 1990s

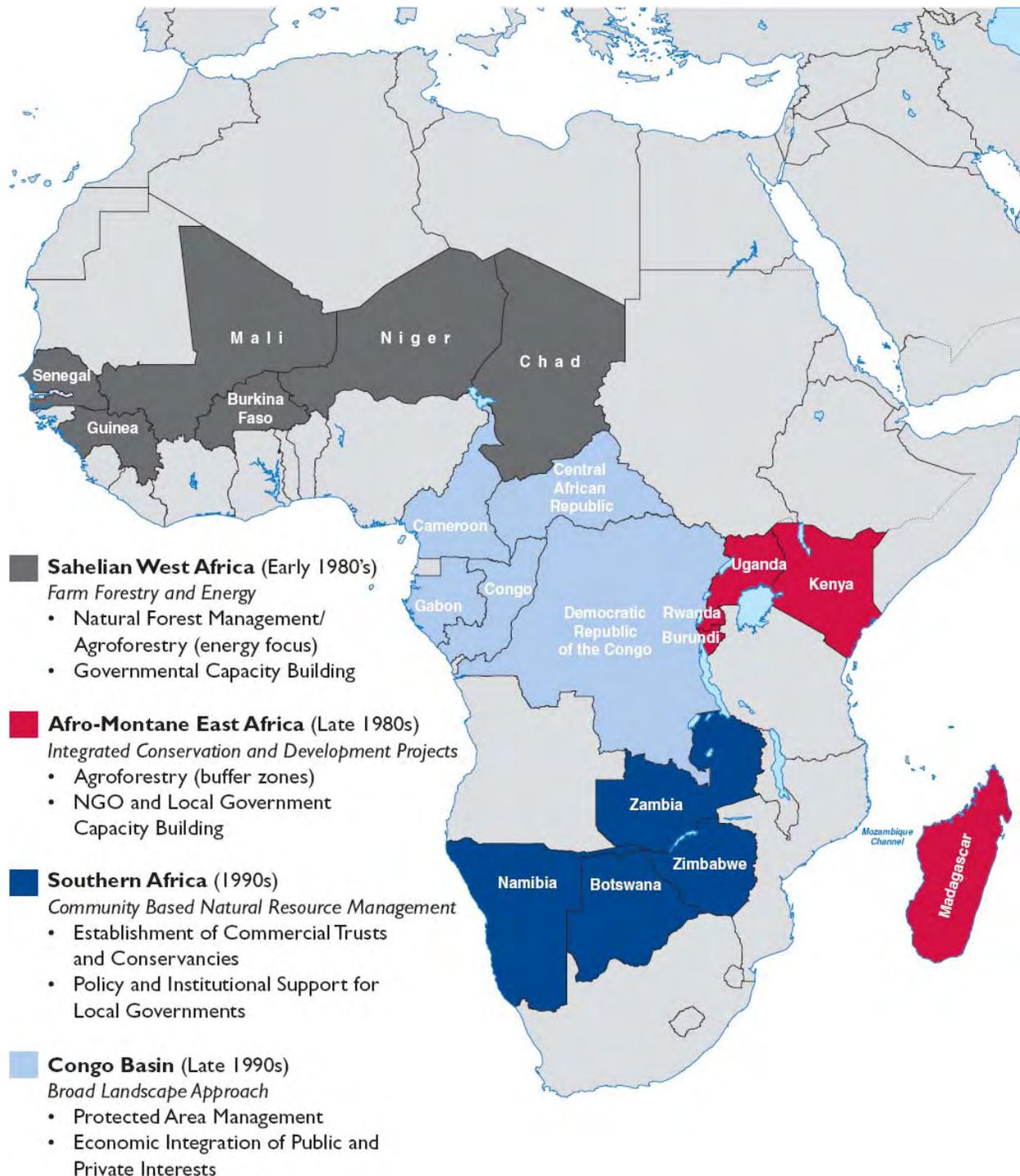


Figure 2 depicts an overview of interventions in Africa with the geographic grouping, conservation approach, and principal partners for USAID activities. This map illustrates the geographic and programmatic approach for the first four epochs described in detail in Section III. The fifth epoch, Multi-Sectoral Integration, is not pictured, as the approach and geography vary

widely throughout the continent. This map is not meant to be comprehensive. Rather, it is meant to provide a “roving spotlight” to illustrate the region of USAID that typifies the epoch. The changes in the character of USAID biodiversity programming in Africa can be seen through multiple lenses, and can be categorized in different ways. The following sections view this evolution through five USAID programming epochs as well as three cross-cutting themes.

A. USAID PROGRAMMING EPOCHS

The five epochs described represent general patterns in USAID interventions that have broadly followed changes of regional focus, approaches, and principal partners. However, it is important to note that while this can be viewed as an evolution from the 1970s to the present, some elements of the previous approaches have remained, and others that had “fallen out of favor” have been re-incorporated in one form or another. Similarly, although the regional focus has changed, USAID continues to conduct environmental programming in all regions of the continent.

This evolution in approach for USAID reflects the parallel change in the thinking of conservationists, which has informed the changes in USAID and has been affected by the shifts it helped to create. The changes in conservation science have shown a progression away from addressing threats to individual species through the establishment of parks and protected areas and towards working with communities in buffer zones, building wildlife corridors allowing for migration and interbreeding between isolated populations, and scaling up to efforts to the ecosystem and landscape levels to deal with the more complex threats to biodiversity. The following pages examine in more detail the changes in USAID biodiversity programming and touch on the conservation approaches that informed them.

A.1 Setting the conservation stage: Agroforestry and energy

USAID became actively engaged in forestry work in the late 1970s. Many activities at the time were influenced by the global energy crises, the Sahel drought of 1972 to 1984 and associated famine, and anticipated fuel-wood and charcoal shortages in African cities. Other USAID activities were oriented toward improving watershed management in order to increase available water resources for agriculture. These activities were strengthened by the introduction in 1985 of the FAO-led Tropical Forestry Action Plans (TFAPs), which gave additional support to commercial, plantation, and community forestry. These projects involved a mix of plantations, woodlots, and agroforestry to meet both energy and watershed management objectives. While biodiversity conservation was not their primary target, they led to increased understanding of the biology of forest systems — information which would prove very valuable later, as forest conservation became an explicit objective of USAID projects.

In the early stages, the orientation of these projects did not always allow them to respond to the needs of rural communities, leading to an array of problems. Villagers were paid for tree planting, often in food-for-work programs, but little attention was given to whether the resulting forested areas were, in fact, of any use to those expected to benefit from or manage the areas. Areas of natural vegetation were replaced with tree species that may have grown rapidly, but were not well suited either to the climate or to local wood needs. Consequently, they were not economically viable, and the resulting plantations often were not well managed. One study even found that local residents hired to plant trees had so little interest in their work that they planted the trees upside down, roots in the air and branches in the ground.⁵

The Senegal Reforestation and Anti-Desertification Project is a good example.⁶ Launched in the late 1970s, the project was driven by anticipated fuelwood shortages in the Dakar area. Large areas outside the city were cleared of natural vegetation for plantation with eucalyptus and other fast-growing exotics. Local villagers were paid for planting the new forests but had little interest beyond remuneration for their services. Because the diverse natural vegetation upon which they depended for so many medicinal and cultural products was being replaced with plantations under control of the national forest department, the project may have decreased their access to needed resources, creating a disincentive to see the plantations do well.

EXTENDED TIMEFRAMES AND MULTI-PHASE USAID PROGRAMS

Although USAID environmental activities are normally framed in a particular time period and subject to the prevailing trends in conservation and U.S. foreign policy, some programs have shown a long-term commitment to a particular country and/or approach. Two such examples are described below.

Guinea Natural Resource Management (1993-2007). Beginning in 1993, the Guinea Natural Resource Management Project worked on agroforestry interventions and sustainable resource management, and helped to lay the groundwork for forest co-management and community forestry in Guinea. The second phase, Expanded Natural Resource Management Project, looked to expand the reach of the activity to include more forests and communities. The final phase, Landscape Management for Improved Livelihoods, worked to consolidate the successes of its predecessors but incorporate landscape, governance, and livelihoods aspects. The progression of this program shows the commitment of USAID in taking the successful approaches from previous projects, or epochs, as well as adapting subsequent iterations of programs to match current “best” approaches.

A similar evolution of programs was seen in Namibia through the *Living in a Finite Environment* projects, which are described in more detail in the CBNRM section.

Central African Regional Program for the Environment (1995-2015). In contrast to the more “organic” development of the Guinea and Namibia programs, CARPE was designed as a 20-year USAID initiative with three strategic phases. Phase I centered on gathering information on the Central African forest ecosystem, while simultaneously building regional human resources and institutional capacity. Phase II is specifically concerned with intensive implementation and the establishment of improved natural resource management capacity in order to reduce deforestation and conserve biodiversity. Phase III is projected to consolidate results of the program and to facilitate the final transfer of CARPE activities to the Central African institution with which it works. CARPE operates in nine Central African countries (including Sao Tome and Principe) and is described in more detail in the Broad Landscape approach section.

⁵ Bruce, 1989, Chapter 2. This anecdote is available at <http://www.fao.org/docrep/006/t7540e/T7540E02.htm>.

⁶ Personal communication to Joy Hecht by David Gibson, then employed by Chemonics, now by International Finance Corporation.

Conservation work in the 1970s focused largely on individual species and on the strengthening of IUCN category I and II protected areas, in which no human activities are permitted.⁷ Within the United States, funding came primarily from private sources — membership dues, major private donors, and foundations — and was often driven by an interest in protecting charismatic species including elephants, rhinos, and mountain gorillas.⁸

By the 1980s, the emphasis of USAID forestry projects moved towards agroforestry and community management of natural forests, with increased emphasis on meeting local needs and increased recognition of the interactions between communities and the forests on which they depend. The shift was gradual, as in many African countries, *de facto* and *de jure* tree tenure systems discouraged individual or community investments in tree planting. In some areas, trees were considered the property of the government, irrespective of who planted them, creating a strong disincentive to plant trees and an incentive to cut and use them illegally.

In response to these challenges, USAID undertook extensive work on land and tree tenure, and contributed to development of new forest codes in many African countries.⁹ This pointed to the need for decentralization of decision-making about forest management, away from the national forest services, and towards regional authorities and local communities.

An assessment in 1985 of USAID forestry activities recognized that change was underway in forest management activity, but highlighted that much remained to be accomplished.¹⁰ This assessment recognized some of the problems with the plantation projects, and called for integration of forestry with agriculture and village industries, an increased sensitivity to social issues, and identification of non-technical solutions to forestry problems. While it still justified the need for forestry investments to meet urban fuelwood demand, the report neither addressed the tenure issues that created disincentives for sustainable forest management nor the importance of forests for maintaining wildlife habitat and biodiversity.

By the end of the 1980s, however, the focus of USAID forestry work in Africa had moved firmly towards community forest management. This was part of the broader shift towards community-based natural resources management discussed below. Although much of this work did not specifically target biodiversity conservation, it is closely related to the protection of forest-based wildlife habitats. As USAID moved further into the area of conservation with the introduction of integrated conservation and development projects, bridges could be built easily between natural forest management and the management of forests for species conservation.

⁷ IUCN has developed a classification system for protected areas based on how they are managed and the activities that are permitted in each. This system has been adopted by the United Nations Environment Program and has become an internationally-accepted standard. Category I includes nature reserves managed for scientific research and wilderness areas managed for conservation. Category II includes national parks, managed for both conservation and recreation. See http://www.unep-wcmc.org/protected_areas/categories/index.html for an overview of the categories and links to full detail on their application.

⁸ Personal communication to Joy Hecht by Michael Wright, then employed by the MacArthur Foundation, formerly and currently with WWF.

⁹ See, for example, the descriptions of work by the Land Tenure Center of the University of Wisconsin, at <http://www.ies.wisc.edu/ltc/africa.html>.

¹⁰ Borlaug et al, 1985.

A.2 Integrated conservation and development projects

Integrated conservation and development projects (ICDPs) evolved out of the buffer zone projects of the 1970s. Like their predecessors, they worked in zones around protected areas. Unlike their predecessors, however, they gave more explicit attention to the development of economic activities designed to provide sufficient income to reduce the need to encroach in the protected areas. ICDPs sought to balance environment and development goals by both improving living standards in biodiversity-rich areas and promoting conservation and sustainable management of that biodiversity. The assumption underlying this approach is that rural poverty drives environmental degradation, so by raising living standards, this pressure will be reduced, making it possible for rural communities to depend less on protected resources. Although ICDPs broadened the conservation programs to include critical elements of livelihoods, they did not yet take a holistic approach that included other issues such as gender and health.

With hindsight, many regard ICDPs to have been a failure.^{11,12} Several related factors play into this impression. As in the case of buffer zone projects, the benefits were often restricted to populations immediately adjacent to parks, or too low to compensate for the loss of protected area resources: food, fuel, fiber, and grazing. While a more concerted effort was made to develop viable economic activities and marketable products in order to reduce the need for unsustainable resource use, they were often not lucrative enough to make up for the foregone resources. Additionally, the benefits offered to the community were often payments in return for conservation, but were not inherently dependent on sustainable management of biodiversity. Nevertheless, ICDPs, are still being implemented today, taking lessons learned from past efforts and incorporating more local inputs.

Many ICDP projects were early supply-chain interventions in immature markets, where rent-seeking opportunities exceeded sustainable extraction prices. In addition, governments had not yet determined how best to incorporate communities within the tourism revenue streams more directly. Early ICDP projects were unable to expand markets for community products and most often worked on modest scales in discrete sites, preventing projects from achieving economies of scale in implementation costs. Consequently, the support needed in each community was costly relative to the number of people served. In retrospect, ICDPs were an expensive way to benefit a rather small number of people.

An additional limitation of ICDPs is that the implementers were often stronger in conservation than in development. Many ICDPs were implemented only by conservation groups, and while their expertise in conservation was excellent, they did not always have the knowledge and experience needed to undertake the development portion of the projects. This thwarted the process of integration between conservation and development. Conservation experts added to their development experience, but may have limited the effectiveness of the projects as a whole.

¹¹ This view was expressed by many of the individuals interviewed for this project. On the other hand, some interviewees, notably Michael Brown of Innovative Resources Management, suggested that ICDPs could have succeeded had they been implemented more effectively, and felt that they developed a poor reputation because of problems that could in fact have been resolved.

¹² Also see Oates (1999) *Myth and Reality in the Rain Forest: How Conservation Strategies are Failing in West Africa*

In consequence, the actual integration of conservation and development often was not as effective as hoped.

In Uganda, for example, biologists focusing on gorilla conservation in the Bwindi Impenetrable Forest were hesitant to allow the animals to become habituated to humans. This prevented the development of gorilla tourism, which could have been a significant revenue stream for local communities and an opportunity for economic diversification. Under the suite of USAID supported nature-based community development activities, the conservation within the park was the responsibility of WWF, and the buffer zone activities were handled by CARE. These programs, however, were not sufficiently integrated to allow for development to depend on conservation. Under the Development Through Conservation project, CARE pursued agroforestry and soil conservation interventions in communities around the park, but the economic benefits of those activities were divorced from park management activities¹³. Combined with the fact that no appreciable income was generated from tourism, the gap between conservation and development was not bridged.

ICDPs are now regarded as passé, and the term is no longer used to describe current activities. In some respects, though, ICDPs concepts are still widespread but have been renamed. An analytical study published in 1992 focused on strategies for designing and implementing successful ICDPs. The authors' recommendations look very much like the descriptions of later approaches to conservation and development. They emphasize the need for effective community participation in project design and the importance of ensuring that communities perceive the economic returns from the ICDP to be linked to effective conservation, rather than simply being part of the same overall project.¹⁴

In some respects, more recent approaches to conservation do go beyond ICDPs, but in many other ways, much current work can be understood as a refinement of the earlier activities, rather than a total replacement. Simplistically, this evolution can be seen as a geographic expansion that better accommodated the ecology of critical habitats while embracing economic and financial interventions at scales that helped capture the value of environmental services.

It was in this context that USAID's dedicated funding for biodiversity came into play. With the launch of dedicated conservation funding came the Biodiversity Support Program (BSP), which began in 1989 and continued through 2001. (See box on page 19.) The goal of this project was to "promote conservation of the world's biological diversity believing that a healthy and secure living resource base is essential to meet the needs and aspirations of future generations."¹⁵ The inclusion of goals such as a "secure resource base" alongside conservation objectives helped to define ICDP projects, which looked to bridge the gap between conservation and development projects. To this end, BSP examined both traditional and innovative approaches to conservation, through research and capturing lessons learned. This informed the approach of numerous ICDPs and eventually their successors.

¹³ It should be noted that there was a park component under this program, but it focused on capacity building for park management and was not directly linked to the development activities the project was undertaking.

¹⁴ Brown and Wyckoff-Baird, 1992

¹⁵ Biodiversity Support Program: About us <http://www.worldwildlife.org/bsp/aboutus.html>

Funded through a cooperative agreement with the consortium of WWF, The Nature Conservancy and the World Resources Institute, the Biodiversity Support Program enabled the NGO community to work together to learn how to achieve conservation goals in a development context. Over the 12 years of the program, staff engaged in detailed work on such issues as the design of ICDPs, capacity building needs for protected area management, sustaining conservation activities in a context of conflict, strategies for effective local participation in community-based activities, and ensuring that women's voices are heard in conservation.

Several BSP products were of particular importance in the evolution of work on conservation. *African Biodiversity: Foundation for the Future*¹⁶, published in 1993, marked a significant shift in NGO approaches to conservation. It moved the community away from the earlier focus on scientific values of specific species or ecosystems and towards the recognition that local communities depend on biodiversity and natural resources and that their needs must be integrated into conservation. For the conservation community, this report marked an explicit acceptance of the idea, first launched in the early 1980s, that they had to factor development needs into their activities. The report was one of the first to undertake an in-depth analysis of how to meet that goal, focusing on how to build on local knowledge, involve local communities, and conserve resources throughout the continent rather than limiting work to areas rich in endemic species. While these points may seem obvious with hindsight, this broad consensus was new at the time, and this document had considerable influence on subsequent conservation work.

BSP also undertook several activities to learn from experience with the implementation of conservation projects. The Biodiversity Monitoring and Evaluation Project (BIOME) involved the staff of 11 African projects in analyzing each other's projects to identify lessons learned and principles for effective conservation. In the area of community participation, they observed that, in general, the more active the participation, the more the community is likely to support and benefit from conservation. Looking at mechanisms through which communities could reap economic benefits from conservation, they found, as had many other studies, that problems arise when the total economic returns are modest compared with what communities feel they are losing to conservation. The BIOME study also identified problems arising when members of the community disagreed about how economic benefits should be allocated among them.¹⁷

BSP also provided an opportunity for the NGOs to tackle one of the big challenges facing them: knowing whether they are actually succeeding in conserving wildlands and wildlife. Even at best, monitoring the status of species or ecosystems is difficult, time-consuming, and expensive. "At best" includes such technologies as counting elephants in open grassland from aerial photographs, or measuring forest cover from satellite data. More often, conservation biologists are trying to quantify populations of animals that cannot be seen in their habitat — fish in the sea, or lemurs in the forests of Madagascar.

Collecting systematic data on such species or population changes requires resources beyond the scope of many conservation projects. This is a serious challenge both for conservation groups, anxious to ensure that they are accomplishing their goals, and for USAID, faced with

¹⁶ Biodiversity Support Program, 1993, *African Biodiversity: Foundation for the Future. A Framework for Integrating Biodiversity Conservation and Sustainable Development*. (Washington, DC: Biodiversity Support Program)

¹⁷ Yaa, 2000

congressional pressure to show measurable results. Through BSP and subsequent projects, the international conservation NGOs have collaborated in seeking ways to measure their accomplishments without tying up extensive resources in monitoring. One key element of BSP's legacy was the promotion of adaptive management and the production of several publications that have become classics in this field, such as *Measures of Success*.¹⁸ Another result is the development of a threats-based approach to conservation, and monitoring through the threat reduction assessment (TRA) index rather than by direct monitoring of the status of wildlife or wildlands.¹⁹

The TRA is a composite index of the extent to which a set of clearly identified threats to biodiversity has been reduced because of the actions of the project being evaluated. It is based on risk assessment theory and has several distinct advantages over direct measurement of biodiversity including the following: It does not depend on access to baseline data about species or habitat distribution; threat reduction data are much easier to collect and do not call for highly specialized technical skills; and defining targets for threats is often easier than for biological conditions. Additionally, threats may change much more quickly than biological conditions, so TRA provides a more "real time" tool for quick response generation.

Threat reduction also has disadvantages well documented in the risk assessment literature. First, it cannot completely replace biological monitoring, since many ecosystem processes are incompletely understood. Second, there may be only an indirect and hypothetical relationship between the TRA and the actual biological condition. Third, the calculation of the index subjectively weights threats in a linear way. Fourth, it may poorly depict either the frequency or severity of an event. The developers of the TRA are well aware of these limitations, but conclude that the practicality of the TRA approach makes it more appropriate than biological monitoring nevertheless.

While USAID has not adopted the TRA for its own monitoring, it has adopted the threats-based approach as a way to conceptualize biodiversity problems and design appropriate interventions. This is very clear in the CARPE project (discussed below), which uses this approach in developing plans for conserving biodiversity throughout the Congo Basin. The threats-based approach is also a key element of *Biodiversity Conservation: A Guide for USAID Staff and Partners*,²⁰ produced by the USAID Biodiversity team in 2005. The assessment of threats is also now included as a condition in USAID's Biodiversity Code.²¹

¹⁸ Biodiversity Support Program, 1998, *Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects*. (Washington, DC: Biodiversity Support Program)

¹⁹ See Margolius and Salafsky, 2001, for more detail.

²⁰ USAID, EGAT Biodiversity Team, 2005, "Biodiversity Conservation: A Guide for USAID Staff and Partners." Prepared through the BIOFOR contract by USAID and Associates in Rural Development (ARD). (Washington, DC: USAID)

²¹ http://www.usaid.gov/our_work/environment/biodiversity/code.html The biodiversity code will be discussed in section B.2.A. below

BIODIVERSITY SUPPORT PROGRAM 1989-2001

The Biodiversity Support Program (BSP) operated as a consortium of World Wildlife Fund (WWF), The Nature Conservancy (TNC), and World Resources Institute (WRI) and was funded by the United States Agency for International Development (USAID). BSP's mission was to promote conservation of the world's biological diversity believing that a healthy and secure living resource base is essential to meet the needs and aspirations of future generations. It carried out its mission by supporting projects that combined conservation with social and economic development. Many of its activities were cutting-edge, developing new approaches for the young discipline of biodiversity conservation. Specifically it undertook:

- Analysis of traditional and innovative approaches to biodiversity conservation to determine the most effective conservation practices; BSP was able to do this impartially because it did not implement projects at field level, but worked through partner organizations.
- Neutral facilitation of processes involving multiple stakeholders, sometimes with competing interests, and catalyzing partnerships and activities.
- Capacity strengthening of individuals and organizations through enhancement of technical, organizational, and strategic skills.
- Technical assistance to partners, including USAID.

BSP worked with many partners, including nongovernmental organizations, governments, communities, donors, academics, and the private sector. Its regional programs formed the framework for its work around the world:

- [Africa and Madagascar Program](#)
- [Asia and the Pacific Program](#)
- [Eastern Europe Program](#)
- [Latin America and Caribbean Program](#)
- [Biodiversity Conservation Network \(BCN\)](#) which worked in Asia and the Pacific, testing an enterprise-based approach to conservation.

BSP Africa & Madagascar Projects included:

- [Central African Regional Program for the Environment](#)
- [Armed Conflict and the Environment](#)
- [Trans-boundary Natural Resource Management](#)
- [Agriculture and Biodiversity](#)
- [Behaviors in Conservation](#)
- [Biodiversity Analysis for Africa](#)
- [Biodiversity Monitoring and Evaluation](#)
- [Environmental Governance in East and Southern Africa](#)
- [Global Climate Change](#)
- [Protected Area Conservation Strategy](#)
- [Sustainable Use and Biodiversity](#)
- [Wildlife Trade in Medicinals in East and Southern Africa and Madagascar](#)

During its 13 years, BSP played a key role globally in learning lessons about different approaches to biodiversity conservation and developing new conservation concepts and tools. These have been documented in BSP's library of around a hundred publications for conservation practitioners and decision-makers around the world (www.bsponline.org). BSP worked closely with USAID, enhancing access to current developments in biodiversity conservation and helping USAID to maximize the impact of U.S. Government resources directed toward international biodiversity conservation. BSP carried out hundreds of conservation activities in countries including 75 percent of the countries where USAID works.

With the end of BSP, two key members of the monitoring team created a new NGO called Foundations of Success to continue working on similar issues. They teamed with the Conservation Measures Partnership, composed of the major conservation NGOs, in an effort to standardize the nomenclature for conceptualizing the project life cycle, so that projects of

different groups can be compared in a common framework. As discussed in A.4 below, the successor to BSP, the Global Conservation Program, adopted a threats-based approach to conservation and helped to broaden conservation strategies to the landscape level. This project also helped to expand the TRA approach to create a standardized framework for adaptive management and standard nomenclature for use in planning, implementing, and monitoring conservation projects.²²

A.3 Community-based natural resource management

By the late 1980s, a strong shift was made in resource management activities, including conservation, towards community-based (CB) approaches. Though there is some range of opinion on precisely what differentiates CBNRM approaches from ICDPs, at their core is a focus on land or resource tenure, ownership of the products of nature, and who has the authority to make decisions about resource use. CBNRM approaches go further than ICDPs in their emphasis on community ownership as the basis for creating wealth from natural resources. However, many projects have shades of both, and they may be viewed on a continuum between a compensation of immediate foregone benefits from protected areas (ICDPs) to ownership/management of resources (CBNRM). Brown and Wyckoff-Baird suggest that for ICDPs to succeed, communities must recognize the benefits they receive as inextricably linked to conservation. But CB approaches go further, suggesting that financial benefits to the communities must be realized only if biodiversity is effectively conserved and in exchange for explicit management responsibilities. Above and beyond its conservation outcomes, CBNRM has in some cases given communities a larger voice within the politics of their countries and within the conservation and development communities. This voice has helped communities move their priorities into the agenda of conservation programs and emphasized the importance of economic and health outcomes to communities.

With the support of major international aid and conservation organizations, several African countries have created national programs to promote CBNRM. These mainly focus on wildlife, since hunting — especially trophy hunting — provides by far the largest source of revenue for the communities. As noted in Figure 2 on page 11, the shift of focus from ICDPs (which were limited to protected areas) to CBNRM (which was generally implemented in communal areas) occurred along with a major sub-regional shift. CBNRM activities have occurred in countries with large expanses of high-value assets, such as large populations of wildlife that is easily viewed, hunted, and ranched. In the conservation community, the clearest examples are projects like Communal Areas Management Program for Indigenous Resources (CAMPFIRE) in Zimbabwe, the Natural Resources Management Project (NRMP) in Botswana, and Living in a Finite Environment (LIFE) in Namibia.

In all three of those projects, communities that historically had been relegated to an adversarial relationship with wildlife in areas surrounding national parks or reserves were given the right to earn money from it and the responsibility to ensure that it was sustainably managed rather than poached. These projects all sought methods to directly transfer natural resource equity to communities with vested interests but limited access. While this started with wildlife use and

²² The standards have been adapted and adopted by many of the large international conservation NGOs (e.g. <http://www.panda.org/standards>)

safari hunting, it moved quickly to tourism and eventually to development of veldt products including thatching, baskets, boutique drinking water, medicinals, and other resource-based products. Success in these projects results from the transfer of natural resource equity to the communities under well defined conditions that were established and protected.

In areas like the Sahel, where wildlife is scarce and does not offer major financial returns, CBNRM has focused on trees, forest products, and forest tenure, with the expectation that if communities can benefit from forests, they will have an incentive to plant or conserve forests and manage them sustainably. Because trees have historically been the property of the state, it has taken a long time for these approaches to take effect. Gradually, however, systems of tree tenure have been modified, and recently there have been signs of significant success in re-introducing trees into the agricultural systems of Sahelian countries such as Niger.²³

Because CBNRM approaches deal with tenure and authority over resources, they can be tied to real changes in local governance as well as to conservation and economic development. This makes them an effective way to integrate several different USAID development objectives: sustainable resource management, improved livelihoods, improved welfare through better social services, and strengthening governance and democratic processes.

The LIFE project in Namibia offers a good example of how this can work. (See the sidebar for the evolution of the LIFE program in Namibia.) In 1996, the Government of Namibia created a legal

PHASES OF “LIFE” IN NAMIBIA

The LIFE project (1992-1999) was designed to increase benefits received by historically disadvantaged Namibians from sustainable local management of natural resources in communal areas. Key accomplishments of LIFE included:

- Contributions towards major policy/ legislative reform including the 1995 Policy on Wildlife Management, Utilization and Tourism in Communal Areas, and the 1996 Nature Conservation Amendment Act
- Community mobilization and awareness raising of CBNRM development opportunities, and demonstration of tangible financial benefits from wildlife and tourism based enterprises
- Capacity building of Namibian institutions

The LIFE 2 project (1999-2004) was designed to keep the approach of the LIFE project, expand which the project was reaching. Key accomplishment of LIFE 2 included:

- The establishment of financially viable, well-managed conservancies that led to improved management of their natural resources
- 31 communal conservancies gazetted, covering an area of 78,708 km² and involving close to 100,000 rural area residents, with some distributing cash to members or investing funds in interest earning accounts
- Financial and in-kind benefits exceeded N\$14 Million in 2004, leading to 13 conservancies covering their operating costs either partially or fully (including staff employment)

The LIFE Plus Project (2004-2008) was designed to support the broader national CBNRM program to strengthen conservancies as rural, democratic institutions, enhance the livelihood of conservancy members, and expand the range of natural resources that conservancies may manage in an integrated fashion. As of September 2007:

- 50 conservancies have been registered, involving over 220,000 Namibians and encompassing more than 14 percent of the country
- Land under conservation oriented management in Namibia effectively doubled (when compared to nature reserves and national parks)
- Financial and in-kind benefits to conservancy members exceeded N\$26 Million (US\$3.6 Million) in 2006, leading to 15 conservancies

²³ Polgreen, 2007.

mechanism through which communities may create resource management conservancies. This legislation was a key step in the CBNRM process, as it empowered communities to essentially “own” their wildlife in a manner similar to private landowners. These organizations are given the authority to manage local resources and the right to retain some of the profits they bring in. The authorities granted in the gazetted areas include the rights to hunt game (oryx, springbok, kudu, warthog, buffalo, and bushpig) for the residents’ own purposes, to capture, sell or cull it, and to apply for permits for trophy hunting of protected animals. As a conservation program, LIFE has been quite successful, with a decrease in poaching and a greater understanding of the needs and value of wildlife on the part of local communities, leading to the rebounding of wildlife populations.

More than 50 conservancies have been registered in Namibia, and another 40 communities are in the process of developing them. In total, registered conservancies manage more than 118,704 km² of communal land (almost 40 percent of communal land and more than 14 percent of the total land area of Namibia) with about 220,620 people living within them.²⁴

In the best cases, conservancies have been created in areas with significant potential for wildlife viewing or sport hunting, where substantial profits are possible. In such cases, the financial returns to the communities from sustainable management are large enough to compete with poaching and land use conversion, making conservation truly financially viable at the local level. This also requires institutional inputs from the LIFE project, to help communities form the conservancies, manage them, negotiate agreements with tour operators, and establish equitable procedures for deciding how to use their profits. Therefore, the core difficulty that has confronted conservation projects since the 1970s is resolved: the benefits can actually outweigh the short-term loss of resources inherent in conservation.

One of the particularly interesting features of LIFE is that communities have begun creating conservancies even in areas where the value of wildlife or other resources is quite low.²⁵ Although initially designed to increase benefits from sustainable local management of natural resources, the creation of a conservancy has come to be perceived in the region as a way to have a voice in local government, and is considered desirable for this reason even if it will not necessarily bring significant financial returns. This trend may be explained, in part, but the projects focus on support of local organizations.

This support spans the spectrum from specific technical training for service provider organizations to general skills such as developing common goals and implementing common plans for conservancies and CBNRM sector associations. In some cases, this required the creation of new organizations such as Namibia Association of CBNRM Support Organizations (NACSO) and Namibia Community-Based Tourism Association (NACOBTA). In the NACSO instance, there was a need for an umbrella organization based in Windhoek to represent the support organizations, whereas NACOBTA was needed as an umbrella organization for community-based tourism enterprises. In other cases, this required educating community conservancies of their rights, providing reasonable returns on partnerships, and helping to instill

²⁴ NASCO 2007. “Namibia’s Communal Conservancies: a review of progress in 2006”

²⁵ Personal communication to Joy Hecht by Richard Carroll, WWF.

a sense of empowerment when dealing with the private sector to negotiate a lease for a lodge or a concession for a professional hunter. Simply bringing parties together would have been insufficient as negotiations were likely to be biased by imperfect information and historical power relationships that did not favor communities. Strengthening, and in some case helping to create, local partners in the CBNRM sector, is an important element in the sustainability of the work of the LIFE program, and puts conservancies in a good position to continue to succeed after support by USAID and the LIFE program has ended.

Similar to the LIFE program, the Botswana NRMP also introduced a legal structure for establishing trusts with the authority to own and manage wildlife resources in “controlled hunting areas” through the administration of hunting quotas. To participate in this program, a community needed to be a legally recognized community-based organization (such as a trust, association, society, or cooperative) and meet a set of requirements to obtain “resource use head leases” allowing for commercial activities. These leases grant the community the sole authority to negotiate contracts for hunting (within established quotas), tourism, and other uses for a 15-year period. It is important to note that the leases do not grant the community ownership of or the right to control access to their territory.

Approximately 20 trusts were created under this program in areas suitable for safari hunting and wildlife tourism. They then expanded across the entire country, and eventually more than 65,000 rural families were obtaining direct payments for their game harvesting quotas. Poaching dropped off dramatically, and new joint ventures sprang up. Some of the trusts diversified into new enterprises, including value-added processing of veldt products such as marula fruit preserves and oil extraction, mopane worm, thatching grass, and some less successful enterprises in cochineal production, as well as enterprises such as spring water sales and liquor stores. While the variety of activities has given communities a number of options to pursue, it is thought that this lack of focus may discourage sustainable resource management.²⁶

Although the program requires that revenues and benefits go directly to the community-based organization which can then apply them to communal projects or distribute them to families, in reality distributions to families have been very limited. Families can, however, earn income directly under this system, and individuals are therefore encouraged to develop independent natural resources enterprises in addition to participation in communal activities. There remains much discussion about the transparency of the income distribution and decision making, with the Government of Botswana reclaiming 65 percent of the total revenue stream for more directed conservation.²⁷

When individual conservancies fail, many are quick to blame corruption and inequitable distribution of community revenues. Others, however, believe that such failures lie in an inadequate support infrastructure for community-based organizations or normal failures of small business. Regardless of the reasons for failure of some conservancies, the trusts in Botswana have, as a whole, added an important new engine of growth that continues to this day and

²⁶ Environmental Guidelines for Small-Scale Activities in Africa: Environmentally Sound Design for Planning and Implementing Development Activities. Chapter 2 CBNRM, USAID. January, 2007.

²⁷ Personal Communication to Dave Gibson by Steve Johnson

provides a realistic alternative to less financially or economically attractive traditional agriculture practices for rural dwellers across the region.

Established in the early 1980s to protect wildlife (particularly elephants) from unsustainable poaching, the CAMPFIRE project in Zimbabwe is another key example of community-based wildlife management. CAMPFIRE encouraged sustainable trophy hunting of big game and has been the model for many subsequent projects, including LIFE. Under CAMPFIRE, authority over wildlife was given to the Regional District Councils (RDCs), which receive revenue from hunter's fees that are then distributed at the community level and/or to individual households, according to the particular RDC's policies. Unlike similar activities in Botswana and Namibia, which depended on protection for specially established trusts and conservancies for decision making, CAMPFIRE gave ultimate decision-making and management authority to the elected Village and Ward Development committees (lower-level political structures).

During the 1990s, CAMPFIRE was largely regarded as a successful project, with clear benefits to communities engaged in conservation and wildlife, with studies showing increases in wildlife populations and habitat retention.²⁸ Nevertheless, some critics identified substantial shortcomings of CAMPFIRE, where many districts showed revenue from safari hunting as too small for the local population who bear the direct costs of wildlife protection (e.g. crop destruction by elephants).²⁹ Furthermore, after the political changes in Zimbabwe that began in 2000, donor support ended, and the local NGOs that had been providing institutional support to local communities and RDCs ceased their involvement. This reduced the auditing of the RDCs, which in turn led to decreases in funding transmitted to the local communities. This highlights the importance of institutional support in creating effective CBNRM systems. The existence of valuable natural resources is not sufficient to ensure success and careful choices must be made between commercial and political structures when seeking to transfer authority over natural resources to rural communities.

Not all CBNRM activities have been as successful in achieving conservation goals as LIFE, Botswana NRMP, and CAMPFIRE. In the Banyang-Mbo forest of Cameroon, on the border with Nigeria, the Wildlife Conservation Society worked for 10 years to encourage sustainable harvesting of bushmeat as a strategy for protecting key species. According to WCS staff, these community-based approaches were not sufficient to prevent poaching,³⁰ which they attributed to several factors. Unlike the sparsely settled regions of Namibia where LIFE has worked, the Banyang-Mbo Forest is very densely settled, and is characterized by highly mobile populations representing four distinct and sometimes conflicting ethnic groups. This made it difficult to obtain consistent community buy-in on conservation and on a system for distributing the returns for a sustainable use of wildlife. Moreover, soils are very fertile in this region, so unlike Namibia, agriculture here offers a lucrative alternative to forest conservation. In this ecological and social context, sustainable bushmeat harvesting through a community-based regulatory and marketing framework did not offer enough returns to prevent widespread poaching.

²⁸ Mashinya 2006

²⁹ Environmental Guidelines for Small-Scale Activities in Africa: Environmentally Sound Design for Planning and Implementing Development Activities. Chapter 2 CBNRM, USAID. January, 2007.

³⁰ Personal communication to Joy Hecht by James Deutsch, WCS.

Originally funded as a regional project, the interventions in Botswana, Namibia, and Zimbabwe were separate. While they shared common goals, they differed in their approaches to engaging local communities, sorting out the shortcomings and needs of national and local governments, the nature and extent to which they were willing to partner with private enterprise, the policy environments within which they operated, the degree of decentralization that was possible, and the extent to which they were able to build national level support infrastructure for post-project sustainability. One useful joint activity was creation of a regional information clearinghouse managed through a cooperative agreement with IUCN's regional office for Southern Africa.

These examples shed some light on the contexts in which community-based approaches to conservation are likely to be effective and where they may not. In general, CBNRM is likely to work where there is high-value resource and a market for it from which communities can earn more than the next most valuable use of the resource (what economists would call the "opportunity cost" of conservation). The best-known successes have involved wildlife tourism, either for viewing or for sport hunting. These activities cater to a wealthy international market that is willing and able to pay high prices for recreation.

Even among these cases, the most successful are in places where there is a unique wildlife resource such as the mountain gorillas of Rwanda, Uganda and the DRC that cannot be seen anywhere else (a monopoly, to economists), or open savannah as in East and Southern Africa in which it is easy to see the animals. In the dense lowland jungles of the Congo basin, where wildlife biomass is much lower and seeing charismatic species is more difficult, such approaches have not been as successful.

In addition to reaping enough resources to create

CBNRM ON MALAWI'S MT. MULANJE

The mountain's steep slopes are covered with miombo woodlands, valued as fuelwood, and sprinkled with a high-value endemic species of cedar. The upper slopes and top of the mountain are a forest reserve, where extractive activities are permitted but in principle regulated. In reality the slopes are being overharvested for fuel-wood, and the cedar is being cut illegally at a rapid rate. Community-based conservation activities in the area focus on allocating specific buffer zone villages enough land to meet their fuel-wood needs if they manage the forests sustainably.

The population in the region, however, is very dense and overall demand for fuel-wood greatly exceeds the sustainable yield of the mountain's woodlands. Or expressed differently, there is not enough miombo woodland on the mountain for each village to have its own area to manage sustainably in order to meet its own needs. It is therefore difficult to envision how the communities that receive woodland allocations will keep their neighbors from gathering fuel-wood there, at least not without creating considerable conflict among villages in the Mulanje buffer zone.

This is the approach anticipated by the Mulanje Mountain Conservation Trust (MMCT) in its work on sustainable management of the miombo woodlands in Malawi. Although they recognize that, as discussed above, the total area of woodlands is not sufficient to meet fuel needs for everyone in the region, they feel that it is acceptable to ensure conservation by limiting access to fuel-wood to the closest communities and excluding those further away. They assume that the more distant communities will find alternate energy options, but do not consider their energy problems to be MMCT's responsibility.

The MMCT represents a synthesis of past and present approaches. Although the conservation community has developed different methods in some places, in other sites, old approaches continue to be applied to remaining challenges that are difficult to deal with.

incentives for conservation in the local community, CBNRM is likely to be more effective where profits are high enough that they can also be shared with several levels of government and with the local organizations that provide institutional support to the communities. Where a national park is involved, it will also need a share of the profits, to invest in making the park an attractive venue for the tourists on whom the activities depend. In CAMPFIRE, for example, the regional district councils, local NGOs, and the communities each received a share of the profits, and all of those shares had to be high enough to enable the recipient institutions to continue working with the project. These competing demands for the profits mean that the resources may have to be very valuable indeed for such projects to be economically sustainable.

Community-based resource management works better when the community to control the resource is well defined and can keep out outsiders who might be attracted by the resource. It is not necessary that outsiders be totally excluded — only that regulations be in place to monitor access and define conservancy members (living in an area for a certain period of time, for example). In areas of dense and highly mobile wildlife populations, however, this can be very difficult, and CBNRM may not be an effective strategy.

In some areas, project resources have been allocated to keeping immigrants from tapping into the resource base, and limiting access to those who are part of the “authorized” community. The community game guards hired by many projects are an example of such resource use. Guards may also be effective when they are keeping a few members of their own community from overusing a resource from which the potential poachers will benefit through cooperation with the project. On the other hand, where demand and external pressure are greater and alternative livelihood sources fewer, this may not be effective.

CBNRM has become widely accepted as a standard approach to resource management in the past ten years. Within the development community, it fits well with the increasing focus on finding solutions that will be financially self-supporting once donor funding is no longer available. In the conservation community, some practitioners see it in much the same way — as a viable tool that can sustainably benefit both human and animal communities.

Others in the conservation community, however, have doubts about turning the authority for wildlife management over to local residents. While they agree that it is effective at present in some areas, the fact that community-based conservation depends in part on economic incentives, which can change in response to a wide range of uncontrollable market forces, makes them question whether it is a reliable way to protect wildlife and wildlands over time. While there are success stories such as LIFE in Namibia, there are also examples such as Malawi’s Mount Mulanje, where community-based management is being tried but may not be successful.³¹ (See the sidebar on page 25.)

Another important aspect of CBNRM is its links to governance. At the community level, policy reforms have empowered communities to have larger voices in policy issues that affect them. Links to governance such as those observed in Namibia suggest that there is considerable opportunity to build bridges between conservation work and the governance and democratization

³¹ Based on Joy Hecht’s work in Malawi; see Hecht (2006).

issues that are a major USAID priority at present. Improved governance does not occur in a vacuum; it must be tied to decision-making and authority over something. Because natural resources and biodiversity are core elements of rural life and economy in sub-Saharan Africa, they provide a strong context within which to introduce both the substantive legal changes in ownership and the institutional reforms necessary to work towards more democratic societies.

The basic question for the success of CBNRM projects involves the profitability and return on investment for the communities. For this reason, CBNRM ventures have tended to focus on trophy hunting, which can generate large and rapid returns. But production of timber and non-timber forest products can also be profitable, while tourism, although potentially profitable, is often difficult to establish and subject to declines driven by national or regional events creating instability. Nevertheless, there is great hope that the tourism industry will help develop economically marginalized areas while promoting sustainable management of resources. This hope is clear in the text box at right, excerpted from the CBNRM chapter of USAID's 2007 *Environmental Guidelines for Small-Scale Activities in Africa*.

The potential interest of tourism/safari industries operating in Africa has barely been tapped. They represent one of the strongest economic forces available in Africa to promote sustainable management of the ecological resource base, areas and sites of special tourism value, wildlife populations, and unique fauna and flora.

With modest organizational support and incentives they could play a critical role in convincing national and local governments that the entire country would benefit economically from:

- Creating a secure and attractive experience for visitors
- Improving monitoring of resource use
- Developing regional land use and ecological resource management plans
- Allocating increased financial and technical resources for policing and PA management
- Ensuring adherence to resource use standards and quotas
- Pushing for reform of patronage systems, fiscal mismanagement or malfeasance, and judicial impropriety

Marine ecosystems will be addressed below in section B.1 as a cross-cutting issue. It bears mentioning here, however, that CBNRM has played a role in USAID's conservation and natural resource management activities for marine ecosystems. For example, throughout East Africa, USAID has helped communities to establish community marine sanctuaries that delineate no-take zones that enhance long-term fishery resources by providing safe breeding grounds for fish. Work in the establishment of an East African Marine Ecoregion is described in the sidebar in the following section.

A.4 Broad landscape approach

By the end of the 1990s, approaches to conservation and development were broadening further to what is known as the broad landscape approach (with terms such as ecoregions, hotspots, corridors, living landscapes, heartlands used by different conservation organizations). This approach evolved as it became clear that, while strict protected areas play a crucial role in biodiversity conservation, they are insufficient to ensure minimum viable populations of species and other conservation goals. Acknowledging the limitations of protected areas, conservation organizations recognized the importance “of planning and action at broader spatial scales that are

more ecologically meaningful, and have developed approaches to planning their conservation activities at ‘landscape and seascape scales.’³²

In spatial terms, instead of addressing a geographic area defined by a protected area and its buffer zone, landscape projects work in much larger regions that are defined by biomes and by ecological and evolutionary processes. A broad landscape typically includes protected areas, community areas near them, unprotected areas where wildlife roam, and extensive areas of commercial forest lands, commercial agriculture, settlement, and perhaps mining. Working in a much broader spatial area, it is possible to encompass the biodiversity and ecological processes that are not fully covered by protected areas, as well as allowing for the incorporation of the roles of other economic activities and land uses in conservation plans.

Given limited resources and the impossibility of protecting all elements of biodiversity within a landscape, conservationists must target landscapes for intervention and for conservation. By selecting the optimal areas and species, landscape conservation programs hope to create functional areas that are large enough, well connected, and contain the optimal mix of land-use to meet the needs of wildlife and of people.

Approaches to priority selection vary, with some organizations using highly quantitative and detailed species-targeted approaches, while others use take a more qualitative approach prioritizing areas with harder to define assets such as representativeness of species or communities, high value ecosystem services, or the extent to which an area is considered pristine. Despite the differences in methodology for prioritizing areas for conservation activities, there is a high correlation of areas considered “critical” by different organizations, and general agreement in setting conservation priorities in Africa. For example, in a recent assessment of protected areas in Africa³³ funded by the European Commission, the authors found that of the 144 areas that they classified as “critical” (due to value and pressures) 75 percent were CI Hotspots, and 71 percent were WWF Global 200 Ecoregions.

With any approach to selecting targeting landscape programs, several fundamental issues need to be considered. As stated in a recent report³⁴ examining the targeting approaches of five major conservation NGOs, some of the relevant questions that have emerged are:

- Over how big of an area do we need to work to successfully conserve the biodiversity we value?
- What kind of ecological or habitat elements need to be present, and in what amount and spatial configuration?
- How connected do the ecological elements need to be?

³² *Selecting conservation targets for landscape-scale priority setting*: Bottrill, Didier, et al., Global Conservation Program, 2006.

³³ *The Assessment of African Protected Areas: A characterisation of biodiversity value, ecosystems and threats to inform the effective allocation of conservation funding*: A.J. Hartley, A. Nelson, P. Mayaux and J-M. Grégoire, 2007

³⁴ *Selecting conservation targets for landscape-scale priority setting*: Bottrill, Didier, et al., Global Conservation Program, 2006.

Instead of limiting work to protected area management and a narrow set of development activities, landscape projects may consider much broader conservation and policy issues and economic decisions about investment of both public and private resources. Activities in such projects work at different levels: landscape, local, regional, national, and even global. For example, they may include conservation activities such as habitat restoration, connecting isolated populations of endangered or threatened species, assistance to protected area managers, but also policy and economic activities such as support along the value chain for marketable conservation-based products.

Thus where an early project might have worked with village women on the production of handicrafts to sell to tourists in local markets, a landscape project might think about global-level action on European Union policies that affect local communities' ability to produce sustainably-harvested foods for export. In addition to working with individual villages to plant trees, a landscape project might also work with the national government to define transparent procedures through which international forestry companies can sustainably harvest timber for export.

While addressing this broader set of issues makes the projects much more complex, it also allows modification of the larger context within which decisions affecting conservation are made. This can be a powerful way to leverage change, taking advantage of opportunities and heading off threats to biodiversity. For example, working with a few importers of coffee or shrimp to the United States to introduce sound production and harvesting practices might be much easier than working with millions of small-scale farmers and fishers in several countries. This broader approach can introduce a system of payments for environmental services through the returns from the sale of resource-based products dependent on those services, even when those protecting the services are not the same as those who sell the products.

Such vertically integrated activities can also tie into the creation of markets for “green” products such as sustainably harvested timber, organic foods, palm oil, shade-grown coffee, or bottled water. The advent of certification systems for timber, coffee, and other commodities, by establishing norms that assure consumers of the validity of “green” claims, has made it possible to identify willingness to pay a premium for such products. Producers along the value chain for such products use these standards to evaluate potential markets for green products, easing the integration of biodiversity conservation into the market economy.

The definition of landscapes must factor in the connectivity of areas within and outside of the landscape, to ensure that wildlife is able to move freely between them. This passage is normally facilitated through the creation of conservation corridors or protected areas, which can help to allow wild flora and fauna to find new habitat beyond areas that have reached their carrying capacity for their particular niche. Such passage allows far-ranging species greater areas in which to search for sustenance, and helps small populations to breed with outside groups and increase their gene pools.

Working in 12 landscapes encompassing 38 percent of the Congo Basin forest or 685,400 km², the CARPE program involves implementing sustainable forest and biodiversity management practices, strengthening environmental governance, and working to monitor forests and other natural resources throughout the region. This program has placed a major emphasis not only on

implementing the landscape approach, but also on to learn about deforestation and biodiversity loss, identifying the main threats to Congo Basin forests and testing approaches to combat them. As outlined in the sidebar on page 13, CARPE has been operating since 1995 (projected to run through 2015), and is currently in its Phase II. This program showed that USAID was willing to make long-term investments for conservation in areas that were not politically stable and where USAID did not show a presence.

The first phase was managed from the United States, with a coordinator based in the Africa Bureau and with support from BSP. Through a significant grants program, CARPE funded numerous studies, undertook the capacity building of local partners, and supported the creation and management of protected areas. In 2003, CARPE began Phase II and officially transferred management of the program from the United States to the region, and aimed to support sustainable natural resource management in the field, improving environmental governance and strengthening natural resource monitoring capacity in Central Africa.

The implementation of Phase II corresponded with the launching of the Congo Basin Forest Partnership (CBFP), an association of some 30 governmental and non-governmental organizations established to “improve communication between members and coordination between their projects, programs and policies in order to enhance the sustainable management of the Congo Basin forests and

THE GLOBAL CONSERVATION PROGRAM

The Global Conservation Program (GCP) is a partnership between USAID and six leading U.S.-based NGOs that aims to conserve globally significant areas of biodiversity. This partnership began in 1999 and is now USAID’s only global conservation initiative, complementing a wide array of USAID Mission-supported biodiversity activities around the world. GCP partner organizations implement site-based conservation programs that seek to contribute to human livelihoods while addressing the most pressing conservation threats. These programs are designed to test innovative approaches to achieve greater conservation impact at multiple scales, from the community level to large landscapes and seascapes.

Since the program’s inception, GCP partners and USAID have supported conservation efforts in 29 biologically diverse sites and through several policy initiatives. Now in its second phase, GCP II currently supports partner activities in 17 sites throughout Africa, Asia, and Latin America and the Caribbean.

East African Heartlands: AWF is working to establish integrated and sustainable natural resource management in African Heartlands on a landscape level by and for the benefit of communities, and local and national governments. Far larger than any park or reserve, the heartlands combines national parks and local villages, government lands, and private lands into a large, cohesive conservation landscape that often spans international borders. AWF works with stakeholders to design land conservation strategies, protect species through applied research and conservation efforts, and empower people through training and economic development.

East African Marine Ecoregion: WWF is working in this large, biologically distinct area recognizing the need to balance the needs of all users with conservation objectives. WWF is helping to establish zoning schemes, whereby clearly defined activities (e.g. fishing, tourism, and mariculture) are permitted in specific areas, while core zones may be totally protected from all extractive or damaging activities. Goals include preservation of the genetic and ecological basis of the region, provision of safe refuges for breeding stocks of fish, provision of a baseline for comparison with other areas (and the future), and the attraction of environmentally aware tourists to generate alternative incomes.

Conservation Standards and Adaptive Management: GCP built on the conservation standards work of its predecessor, BSP. GCP supported work that moved beyond standardizing nomenclature and helped to create a framework for adaptive management, which have been adapted and adopted by many of the large international conservation NGOs (see www.panda.org/standards).

improve on the standard of living of the inhabitants of the region.”³⁵ Phase III is scheduled to begin in 2011, with the aim of transferring activities to Central African institutions.

Landscape planning is a major component of current work in the CARPE landscapes, as well as with several other USAID supported programs in Africa. (See the sidebar on page 30 for landscapes supported by the GCP program). This process, based on procedures developed by the U.S. Forest Service, involves multi-stakeholder consultation about biology, land use, institutional and cultural contexts, and other factors influencing potential land use and conservation strategies.

The planning process takes a “desired conditions” approach to conservation within the landscapes, outlining overall goals and objectives and describing how stakeholders want the landscape to look and what resources the landscape should continue to offer. The results of this process should be used to guide all future resource management decisions. This approach allows planning to address existing threats to wildlife and wildlands as well as unforeseen future threats and non-threat management targets. The landscape plans designed through the CARPE process do not carry legal weight, but the hope is that if all stakeholders are involved in developing them, they will then be willing to take the steps needed to implement them.

Most of the organizations involved with CARPE are conservation-oriented rather than development groups. This has led to concern that, while CARPE is effective in conservation, it is not devoting enough attention to improving livelihoods in the communities within the landscapes.³⁶ Most of the large international conservation groups have now taken major steps to build expertise on economic development in the context of conservation projects, as well as incorporating other concerns such as health, poverty, and population.

However, there is still a tension in the balance between wildlife conservation and improvements in human livelihoods and welfare in landscape conservation projects. To mitigate the problem and to take a more holistic approach to conservation activities, conservation NGOs often partner with development NGOs or consulting firms to bring in expertise on the development side. Nevertheless, the challenge of effectively linking conservation and development is ongoing. It can be linked to several discrete issues, including the fundamental differences between the two kinds of activities, the difficulty of building expertise in both areas, and the institutional differences between NGOs and consulting firms working for USAID.

A.5 Multi-sectoral conservation approaches

The current evolution of biodiversity conservation and USAID biodiversity programming has included expanded work with many other sectors, including traditional development activities such as health, agriculture, and governance. It also involves new areas of support, including public-private partnerships and extractive industries. These changes have been driven by a variety of factors, such as a recognition that community needs and interests must be better taken into account, an acknowledgement that a holistic approach to conservation may be the most effective, and trends in government financing. Because conservation organizations are often the

³⁵Congo Basin Forest Partnership: About the Partnership <http://www.cbfp.org/en/index.htm>

³⁶ For example, Pielemeier et al February 2006 and personal communication, Jim Graham, former director of CARPE.

only groups working in remote areas with poor and marginalized communities, it is efficient — and perhaps a moral and practical imperative — to help those communities address issues of livelihoods, sanitation, population, and health in conjunction with conservation.

Additionally, as will be discussed in Section IV: Synthesis and Challenges for the Future, external factors such as the challenges of globalization, the rising economic importance of China, climate change, and the HIV/AIDS crisis have emphasized the importance of considering the larger issues in addressing conservation.

Multi-sectoral approaches to conservation take several forms: conservation programs with significant elements from other sectors, programs from other sectors with significant conservation elements, and programs that hold objectives such as governance or civil society as equal to and critical for achieving conservation objectives. The increases in biodiversity earmarks in USAID appropriations and the increasing popularity of public-private partnerships and the GDAs, conservation objectives are being increasingly integrated into economic growth activities — including those traditionally considered antithetical to conservation, such as extractive industries. USAID and its partners are increasingly engaging such actors to get a seat at the table of private sector investments and ensure that activities are conducted in the most appropriate manner possible.

The sidebar at right illustrates the case of Guinea, where the coincidence of minerals and biodiversity of high value have brought together USAID, NGOs, and mining companies for partnerships to incorporate conservation and biodiversity concerns into current and proposed extractive operations. The reason for the popularity of these partnerships for USAID is that they allow for leveraging of private sector funds to match USAID contributions and support a healthy economy driven by civically engaged industries. Whether motivated by marketing, legal requirements, or a sense of corporate social responsibility, partnerships with

EXTRACTIVE INDUSTRY PARTNERSHIPS IN GUINEA

With vast mineral wealth and the world's most viable population of west African Chimpanzees, Guinea is the focus of a great deal of attention from conservationists and mining companies. Guinea is also a country where USAID has made a considerable and sustained investment in the natural resource management and conservation sectors.

Chimpanzees in the Boké Region.

Supported by a USAID Chimpanzee Conservation Program (ended in 2007) the Jane Goodall institute has been working with Alcoa (a large U.S. based mining company) to conduct biodiversity surveys, a multi-stakeholder workshop to form an action plan for conserving biodiversity, and to continue the chimpanzee conservation work previously funded by USAID.

Mineral Exploration in Forests and Highlands.

Rio Tinto (a large UKL/ Australian mining company) is currently conducting mineral explorations in several sites in the eastern provinces of Guinea (Haute Guinée and Guinée Forestière) to determine viability and location for future mining operations.

To coincide with this exploration, Rio Tinto, through a GDA with USAID, is supporting Conservation International to conduct biodiversity assessments in sites where future mining operations are under consideration and to identify existing and potential threats and opportunities for biodiversity conservation. This partnership also helped Rio Tinto develop a corporate biodiversity strategy, the principles and objectives of which are applied directly to Rio Tinto's operations in Guinea.

These partnerships have allowed USAID and partner organizations to help define the direction and ensure integration of conservation concerns in extractive industries in Guinea.

USAID and conservation organizations provide industry partners' conservation/mitigation efforts with a greater sense of legitimacy as well as lowering the total cost of the investment.

Nature, Wealth, and Power,³⁷ a USAID report published in 2002, has also contributed to the expansion of multi-sectoral approaches to conservation. Examining lessons learned from USAID's experience of rural development in Africa, it posited that sound environmental management (nature) that include economic concerns (wealth) are insufficient without the inclusion of good governance (power), and all three are critical for successful natural resource and conservation programs.

Nature, Wealth, and Power formed a framework for examining the relationship of these elements in conservation interventions, and has helped to inform present and future interventions in this sector. More recently, health has been commonly added to this discussion as a fourth critical element, and has helped guide multi-sectoral approaches to conservation. An example of this approach can be seen through a congressional earmark that mandates funding of family planning in areas of high biodiversity.

Based on the *Nature, Wealth, and Power* framework, the Wula Nafaa ("Benefits of Nature") project was developed by USAID/Senegal to improve natural resource management, raise incomes in rural areas, and to facilitate the decentralization process. As explained in the Weidemann Associates evaluation of this program, "[t]he key hypothesis underlying this activity was that if interested communities can effectively exercise their rights to natural resources, and there was an increase in community benefits from those resources at local levels closest to those who actually use them, then there would be more sustainable, local management and use of natural resources."³⁸

Wula Nafaa has shown success in all three sectors, with impacts in one reinforcing the progress in the others. The project has been able to expand the markets and profitability of new and existing enterprises for non-traditional agriculture (e.g. non-timber forest products, tree crops, and charcoal) while helping communities take a greater interest in the sustainable management of their natural resources on which they and their enterprises depend. By linking sustainable resource management to economic prosperity, the project has given people a reason to support conservation and motivation to assume a more substantial role in the management of their resources.

The motivation, however, is not in and of itself sufficient for a community to control its natural resources. The project has therefore facilitated local control through the rights accorded to local communities by the decentralization process and through the establishment of local conventions and forest management plans. With sales of most of the natural resource-based products increasing, and revenues increasing for participating producer groups, project beneficiaries understand the link between successful natural resource enterprises, the need to conserve the

³⁷ USAID, 2002. "Nature, Wealth, and Power: Emerging Best Practice for Revitalizing Rural Africa". http://www.usaid.gov/our_work/agriculture/landmanagement/pubs/nature_wealth_power_fy2004.pdf

³⁸ Evaluation of USAID/AGRICULTURE and Natural Resources Management Program "Wula Nafaa" Weidemann Associates, Inc., 2007

community forests, and the importance of codifying rules which control the use and the management structures for their “commons.”

This integrated approach is seen more and more often in the work of USAID, as programming has evolved from projects narrowly focused on a particular species or protected area to those that include poverty alleviation, democracy, and decentralization as integral to the conservation goals. It is important to note, however, that this evolution does not mark the jettisoning of “old” methods in favor of the “new” approaches, but rather that the best elements of past approaches have been retained and integrated into current approaches.

This may be seen in the example of the Wula Nafaa project, where elements of the much earlier agroforestry and energy strategies are seen in the support for charcoal and tree crop activities. The local income generation that was key to ICDPs is seen in the enterprise and poverty reduction elements. The community management and forest plans derived from CBRNM are also included in Wula Nafaa, while the holistic landscape approach that includes a variety of partners binds the elements of the program together.

Poverty alleviation, human rights, and governance have long been addressed in conservation programs. What is new is that these goals are now treated as substantial elements of conservation programs that are integral to its success, rather than simply as “other” elements to be considered in addition to the conservation objectives. Broad partnerships with private sector enterprises, development organizations, conservation organizations, governments, and the donor community have helped to ensure that disparate but integral elements are being included for successful programs.

B. CROSS-CUTTING THEMES

In addition to the epochs as framed in the first part of this section, cross-cutting themes have influenced, and been influenced by, the evolution in USAID biodiversity programs. Although these themes have been touched upon throughout the epoch section, due to their importance to the work of USAID, the themes of marine and freshwater, policy, and partners should be more closely examined.

B.1 Marine and freshwater issues

During the past 30 years, as the approach to conservation and development has evolved from individual species protection to the current broader landscape approach, the focus on marine and freshwater issues has slowly gained momentum. Historically, only a few international NGOs (for example, the IUCN, the Wildlife Conservation Society through the Coral Reef Conservation Project in Kenya, World Wildlife Fund, Wetlands International, and BirdLife International) have focused their efforts on aquatic issues. Yet USAID has spent around \$11 billion in the past 30 years on water resources management worldwide.

USAID has only recently begun to look holistically and integrate the various sectors that have overlapping responsibilities for water resource management.³⁹ In Africa, with increasing human populations in coastal and riverine areas, as well as the problems of pollution, degrading land use

³⁹ USAID Water Team, 2002

practices, exotic species, overfishing, drought and global climate change, it is a critical time for a multi-sectoral approach with more efforts on protecting freshwater and marine resources.⁴⁰

This is a significant change from early USAID approaches to water. In the 1960s and 1970s, these involved dam construction, irrigated agriculture, community water supply, and assistance to water user associations to improve the water service sector. These approaches evolved to include health-related activities in the 1980s, with USAID's development of the Water and Sanitation for Health (WASH) Program that addressed wastewater treatment and sanitation and providing clean drinking water for child survival development objectives. During this time, USAID began to look at the impacts of industrial pollution on water resources, and began addressing watershed management in forestry and agricultural contexts.

Objectives of USAID-supported Marine Protected Area Programs

- Strengthened management of protected areas
- Habitat and biodiversity conservation by addressing threats to the biodiversity
- Improved environmental management by public and private organizations and individuals
- Sustained livelihoods, employment diversification, income generation and poverty prevention
- Reduction of negative impacts from international trade and destructive fishing practices
- Sustainable tourism and fisheries
- Reduction of land-based sources of pollution and improved coastal watershed management

This was also a time when coastal resources management began to be supported for the first time, with increased attention to environment in development activities. In the 1990s, even more attention was focused on water, as the need for adequate supplies of clean fresh water became more apparent in addressing development challenges and coastal resources became more threatened. As a result, USAID established the Water Team in 1998 to support “environmentally sound, cross-sectoral and participatory approaches to managing, conserving, and sustainably using freshwater and coastal resources.”⁴¹ The Water Team provides technical assistance on integrated water resources management (IWRM)⁴² to USAID missions in order to implement water projects and communicate its experiences with host governments, NGOs, and the private sector worldwide.⁴³ In the biodiversity conservation arena, USAID's water programs are broken into the management of marine, coastal, and freshwater resources.

Since the establishment of the Water Team and its IWRM approach, USAID has promoted a “blue revolution” in its programs around the world, forging links across sectors such as agriculture/irrigation, public health/water supply and sanitation, urban development, economic development, habitat protection, and biodiversity.⁴⁴ This large-scale application of IWRM has only recently been implemented, making it difficult to truly appreciate the results of such a multi-sectoral approach. But USAID's commitment to this approach will enable lessons learned

⁴⁰ Shumway, 1999

⁴¹ USAID Water Team, 2002

⁴² Integrated Water Resource Management is a “participatory planning and implementation process, based on sound science, that brings together stakeholders to determine how to meet society's long-term needs for water and coastal resources while maintaining essential ecological services and economic benefits.” (USAID Water Team, 2002)

⁴³ Findley, 2001

⁴⁴ USAID Water Team, 2002

to be integrated into future programs. The text box at right from the FY2004 program report shows the objectives for USAID supported Marine Protected Area Programs as of December 2005.

An example of USAID's multi-sectoral approach is the Tanzania Coastal Management Partnership program, implemented by Africare, African Wildlife Foundation, Tuskegee University, University of Rhode Island/Coastal Resource Center, and World Wildlife Fund. Managing the Tanzanian coastal watershed involves not only protecting the ecosystem but also addressing the human population needs of the coastal area that the Tanzanian government was unable to address on its own, due to lack of guidelines and institutional capacity.

This program enabled the Tanzanian government to partner with a multidisciplinary and inter-sectoral Mariculture Working Group (MWG) from the public and private sector, to manage sustainable mariculture development without compromising the health of the coastal ecosystem. The MWG was able to provide the government with ecological and developmental information, which was compiled into a comprehensive mariculture profile. The profile was endorsed by the Government of Tanzania in January 1999 and led to the signing of the National Integrated Coastal Management Strategy in 2002. The strategy initiated a new way of approaching coastal management in Tanzania and has become an example for other countries of a participatory, multi-sectoral approach to coastal management.

USAID's Global Conservation Program is also taking a holistic approach by partnering with a wide range of stakeholders from academic institutions, development organizations, government, and NGOs to protect marine areas in the Eastern African Marine Ecoregion (EAME), which includes Somalia, Kenya, Tanzania, Mozambique and South Africa. In 2001, a 50-year Biodiversity Vision was created by representatives from the EAME countries, which led to development of a strategy for large-scale conservation along the eastern coastline. The strategy focuses on protecting 21 priority conservation areas and their migratory species, building national and regional capacity to introduce environmental legislation, and developing sustainable economic opportunities that support a healthy coastal ecosystem.

Although the scope of USAID's freshwater biodiversity projects has been more limited, the Agency has been involved in the protection of aquatic wetlands and ecosystem management in Africa. For example, in 2000, the Agency provided \$1 million to protect Lake Victoria from the invasion of the water hyacinth, an exotic species covering the lake surface, competing against native species, and threatening the livelihoods of the surrounding fishing communities. In order to mitigate the environmental and economic impact of the water hyacinth, the program undertook an aggressive removal of the exotic species from key areas of the lake and introduced two species of weevils that feed on the water hyacinth. As a result, there was a significant reduction in the water hyacinth distribution. USAID provided expanded support to Kenya, Uganda, Tanzania, Rwanda, and Burundi to use this approach as a model for water hyacinth control for the entire Lake Victoria ecosystem.

The success of this program has also encouraged USAID to consider implementing similar exotic plant species control activities in other threatened watersheds in Africa. The Agency is involved in freshwater management at Lake Tana in Ethiopia through the World Lake Basin Management Initiative, which helps countries around the world to protect freshwater and

wetland biodiversity through sustainable watershed management. In addition to its international significance for conservation, Lake Tana is also an important resource for local fishing communities. The initiative brings together partners including St. Michaels College of Vermont, LakeNet, Global Environmental Facility, Shiga Prefecture of Japan, The Netherlands-World Bank Water Partnership, and the World Bank Institute to improve lake management and build capacity in sustainable watershed management.

The success of these programs suggests that a holistic view and participatory process are valuable in sustaining Africa's freshwater and marine resources. They also highlight the importance of managing aquatic resources at the appropriate scale, including the entire watershed and all stakeholders responsible for the sustainable use of the resources. As the human population in Africa increases, there will be even more demand for water resources and increased threats to aquatic biodiversity. To address this reality, USAID is continuing to reach out to partners and to expand resources available to meet the needs of current and future programs.

B.2 Policy

Policy forms the framework in which USAID must operate and guides the direction of programming efforts. While U.S. policy forms the guidelines under which USAID must operate, international policy forms a basis of mutual understanding through which USAID engages partner governments and organizations.

B.2.A U.S. POLICY

USAID funding for conservation has its origins in the early 1980s, in response to encouragement by The Nature Conservancy (TNC), WWF, and National Resources Defense Council (NRDC),⁴⁵ which successfully lobbied for conservation programming through congressional actions and the creation of funding earmarks. As a result of hearings in 1984 and 1985, Congress enacted key amendments to the Foreign Assistance Act in 1986. Section 118 and 119 of the Foreign Assistance Act (FAA) require that USAID missions analyze the actions necessary in their countries to conserve and sustainably manage tropical forests (section 118) and biodiversity (section 119), and the extent to which the actions proposed for support by the Agency meet the needs identified (both sections 118 and 119). In combination with legislative directives on biodiversity spending in appropriations bills, this legislation created a window of opportunity for the conservation message to be heard with some force throughout the continent, and the requirement in the Amendment that implementation be the responsibility of NGOs wherever possible created a significant opportunity for evolution of strategies to link conservation to development.

At that time USAID missions developed their programs through strategic planning documents (Country Development Strategy Statements) that formed the blueprints for their investment plans. The mandate from Congress coincided with the start of many missions' planning cycles, so a flurry of short-term technical assistance paved the way for many conservation investments

⁴⁵ Personal communication with Joy Hecht by Michael Wright, at the time of the MacArthur Foundation, formerly and currently with WWF. .

in East and Southern Africa. For an excellent treatment of FAA 118 and 119 legislation and its influence on the preparation of strategic plans refer to Russo (1994).⁴⁶

The timeline below presents an overview of some of the most significant policy milestones and subsequent shifts in conservation funding and emphasis. This delineation of epochs gives a sense of when these key paradigms have been important; however, learning was gradual, with significant overlaps among approaches.

Figure 3: Timeline of USAID Activities Supporting Biodiversity Conservation

THEMES	1970s		1980s		1990s	2000s
Policy Shifts	1972 NEPA 1973 CITES	1975 NEPA applied to USAID	1978 Reg 216 promulgated	1986 – FAA amendments – 118 and 119. Biodiversity earmarks	CBD, Government Performance Act Results frameworks	USG support for consumptive wildlife reduced Reduction of hard conservation earmarks
Planning Innovation			World Cons. Strategy, national conservation strategies	TFAPs	NEAPS	Transboundary wildlife and watershed approach
Conservation approaches	Single-species approaches to conservation		Ecosystem and wildlands conservation		Landscape approaches. Marketing resource-based products. Governance. Multi-sectoral approaches.	
		Buffer zone activities – agroforestry, tree crops	ICDPs			
			Participatory community-based forestry, watershed management, and wildlife management			
Pivotal projects		Parc du W	Burundi Forest Project	Uganda ICDP Madagascar Madagascar NEAP – 1987-2000	BSP Botswana NRM	BSP ends 2001
					CAMPFIRE, BNRMP, LIFE	LIFE, CARPE, GCP

Congressional earmarks for biodiversity, which first appeared in the FY 1986 Appropriations Act at a modest level of \$1 million, have grown steadily to a current level of about \$195 million in FY 2008, although this has been offset by a decrease in other USAID support for environment work. At present, the only USAID funding for environment comes from the biodiversity earmarks, and environment plays only a minor role in the priorities of the current administration. The lack of broader USAID funding for environmental activities has created pressure to spin environment projects so they qualify for funding under the biodiversity code, in order to tap into the only funds available. In Africa, where most of the rural population earns its living from natural resources and agriculture, these funding limitations constrain significantly USAID’s ability to work on improving rural livelihoods. At the same time, they may reduce the effectiveness of conservation efforts, since those funds are being stretched for use in areas only tangentially related to wildlife or wild-land protection.

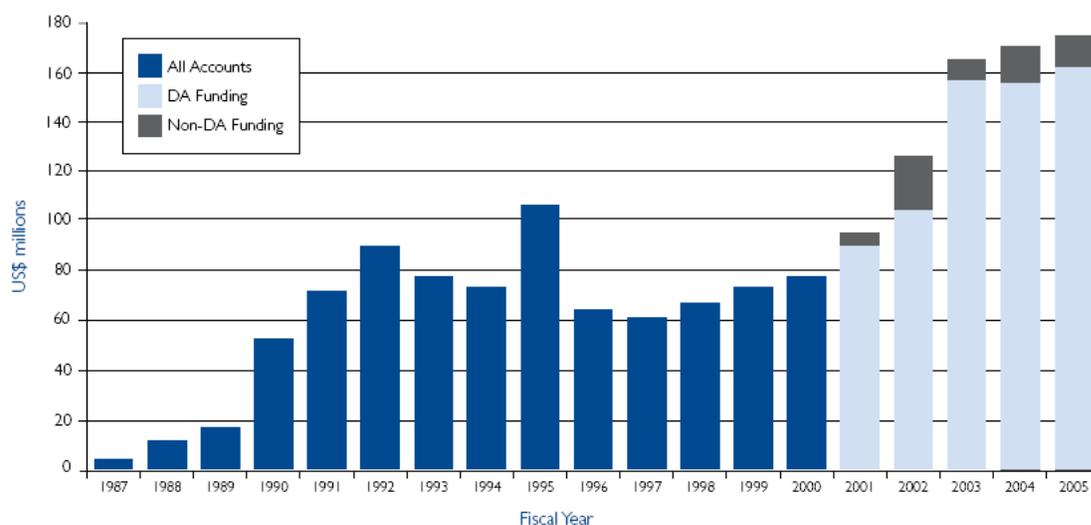
⁴⁶ Russo, S. 1994. *Consideration of Biological Diversity and Tropical Forestry in the Context of Country Program Strategy Planning in the Bureau for Africa: Review and Guidelines*. KBN Engineering and Applied Sciences University of Florida-Gainesville. http://pdf.usaid.gov/pdf_docs/PNABX169.pdf

USAID has developed the “biodiversity code” to identify activities that may be counted towards the biodiversity earmark. Four criteria make up the code:

- The program must have an explicit biodiversity objective; it isn’t enough to have biodiversity conservation result as a positive externality from another program
- Activities must be identified based on an analysis of threats to biodiversity
- The program must monitor associated indicators for biodiversity conservation
- Site-based programs must have the intent to positively impact biodiversity in biologically significant areas

Figure 4 below shows USAID funding of biodiversity conservation from 1987 through 2005. (The totals for 2006-2007 were \$165 and \$195 million, respectively). Details on programs and funding levels disaggregated by region are compiled by USAID in summary reports to congress,⁴⁷ and according to the most recent report available (FY2005), Africa accounted for approximately 33 percent of the biodiversity spending worldwide.

Figure 4: USAID Funding of Biodiversity Conservation



*Dis-aggregated figures for DA and non-DA funding are only available from FY 2001 onward.

In addition to the earmark strictly for biodiversity, the Office of Population and Reproductive Health has an earmark that mandates funding of family planning in areas of high biodiversity. In the last few years, funds from this earmark have been used for integrated population, health, and environment programs in Kenya and Madagascar, and have been used to promote the scaling-up of this approach in five East African countries.

Another important policy affecting the programming of USAID was the creation of the Millennium Challenge Corporation in 2004. The MCC is based on the principle that “aid is most

⁴⁷ These reports can be found on the USAID Environment website at http://www.usaid.gov/our_work/environment/biodiversity/usaid_pubs.html.

effective when it reinforces good governance, economic freedom, and investments in people.”⁴⁸ To this end, the MCC uses policy indicators, on which countries must attain specific levels to be eligible for assistance. Currently 17 indicators are used by the MCC. They are dominated by governance and economics, but also include indicators related to natural resource management and land rights and access.⁴⁹

Although the full extent is still unclear, USAID has seen a decrease in programming in countries supported by the MCC. Given the performance indicator approach used by the MCC, the decrease has had the effect of USAID shifting away from the “high performing” countries that have shown a good deal of governmental and economic progress and towards the least developed nations on the continent and those recently emerging from conflict. The challenges to conservation are greater and threats more imminent in these countries, where poverty is deeper, alternatives are fewer, and the impact of refugees and internally displaced people is often great (as discussed in the sidebar on p7).

B.2.B INTERNATIONAL POLICY

In addition to domestic policy, multilateral environment agreements have played an important role in the evolution of USAID conservation work. The 1973 signing of the Convention on International Trade in Endangered Species (CITES) was one of the earliest such agreements to have a significant impact on conservation in Africa. CITES works by limiting trade in listed species, thus eliminating or tightly controlling legal markets for their sale. The convention contributed to the focus on individual species that characterized conservation work in the 1970s. The classification of specific species under CITES, particularly the African elephant, has been a major issue in wildlife management and in U.S. support for conservation in Africa, as it brought to the forefront the controversy about whether sustainably managed hunting is an acceptable way to ensure species conservation.

The 1992 United Nations Conference on Environment and Development in Rio de Janeiro captured the world’s attention with promises to achieve sustainable development through combined efforts in economics, social development, and the environment (commonly referred to as the three “pillars” of sustainable development). Ten years later, during the World Summit on Sustainable Development in Johannesburg, the international community reaffirmed that sustainable development was an international priority. This was in a context wherein the eradication of extreme poverty was the primary goal, as indicated in the Millennium Development Goals.⁵⁰

The Convention on Biological Diversity (CBD), adopted by world leaders at the 1992 Earth Summit in Rio de Janeiro, is a commitment to maintain the world’s ecological assets in the context of economic development. The convention’s main goals are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. Countries committing to biodiversity goals and creating action plans that show priorities for conservation can serve as models for USAID.

⁴⁸ About MCC: <http://www.mcc.gov/about/index.php>

⁴⁹ MCC Indicators: <http://www.mcc.gov/selection/indicators/index.php>

⁵⁰ Fisher, 2005

The final text of the CBD was adopted in 1992, and the convention entered into force in 1993. Today, 190 nations are parties to the convention. The United States, however, is not a signatory and has only observer status to the convention. Parties to the convention generally have designated national focal points, prepared national biodiversity strategies and action plans, and periodic national reports⁵¹ on their progress with implementation of convention provisions and their effectiveness in meeting its objectives.

There are numerous other international conventions relating to the environment and management of natural resources which have been important to international conservation and which can serve as a strong basis for dialogue and points of intervention for USAID. Some of the more important include the UN Convention to Combat Desertification, which entered into force in December 1996, and the Ramsar Convention on Wetlands signed in 1971 dedicated to “the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world.”⁵²

B.3 Partners

While historically most dependent on NGOs and consulting firms for work in the conservation sector, USAID has increased its dependence on technical expertise from other U.S. government agencies, including the Forest Service, the Fish and Wildlife Service, and the Peace Corps. Additionally, through partnerships with African institutions and the use of online resources, USAID has increased knowledge sharing and the capacity of its partners to address conservation.

Early on, USAID and Peace Corps began addressing the possibility of combining agricultural projects with efforts to reduce pressure on protected areas. A joint venture between the Peace Corps and the Smithsonian Institution, with some technical support from the international division of the U.S. National Park Service, provided the first supported wildlife management program in Peace Corps history. Between 1975 and 1980, virtually every national park in the Ivory Coast was managed with support from Peace Corps volunteers, who were in turn assisted by the Frankfurt Zoological Society and IUCN (with no USAID involvement). These early initiatives focused largely on management planning, anti-poaching, and infrastructure development.

Niger’s W National Park was perhaps the first Peace Corps effort that acknowledged the importance of local communities outside of the park. Volunteers began working with a focus on increasing incomes in the adjacent communities, in the hopes that this would keep people from encroaching in the protected area. The first joint venture between Peace Corps and USAID occurred with the Burundi Forest Project, initially focused on a small forest area, working on biodiversity conservation and tree planting. This project combined many aspects of the West African emphasis on both agroforestry and natural forest management in the first high forest project of its kind with the objective of improving the conservation of the forest as well as the livelihoods of communities in adjacent areas.

⁵¹ National reports can be found on the CBD website at: <http://www.cbd.int/reports/>

⁵² Ramsar Convention on Wetlands website: <http://www.ramsar.org/>

This combination of activities apparently was effective in reducing encroachment into the forest, although it depended on the availability of project funds to cover the recurrent costs.⁵³ Towards the end of this project, different volunteers were stationed in other protected areas in Burundi and USAID and Peace Corps began to generate new agroforestry ventures in Uganda, Kenya, and Rwanda which eventually became the foundation for the ICDP generation of projects in the early to mid-1980s.

Additionally, USAID has had a close collaboration with the Fish and Wildlife Service and the USDA Forest Service (USFS). The collaboration with the USFS began in the early 1980s with the creation of the Forestry Support Program, funded by USAID's Bureau for Science and Technology, and evolved with the work of both institutions.

A new partnership began in the mid-1990s when USAID and USFS signed an interagency agreement allowing mission buy-in and an expansion of USFS field activity. The USFS has provided technical assistance in the identification, design, and implementation of forest conservation efforts to USAID bureaus and missions worldwide. Their assistance has included developing and managing natural resource projects on a wide range of topics, including fire management, land use planning, watershed management, and protected areas. The Forest Service now maintains permanent staff in several locations and is involved in program development and management in much more explicit ways. In west Africa — particularly Guinea and Liberia — the Forest Service has been directly involved in program development and organizational development, while providing short-term technical assistance support on request to many other countries as vital and complementary support to conservation portfolios.

While there have been long standing and productive record of interagency cooperation for conservation, USAID has historically depended on NGOs and consulting firms for program activities. Although initial lobbying by NGOs in the 1980's led USAID to support critically threatened species, USAID later directed resources to the conservation NGOs themselves. Two of the first NGO projects to receive USAID funding came from matching grants provided by USAID's Office of Private and Voluntary Cooperation supporting the WWF's Wildlands and Human Needs Project, which focused on improving WWF capacity to implement the development portions of ICDPs and the CARE Renewable Natural Resources Project, which brought CARE into the conservation arena.

The U.S. Forest Service in Action

- Countries receiving USFS support rose from 5 to 22 between FY04 and FY07.
- Short term detailers to Africa rose from 60 to 80 from FY06 to FY07.
- In the last 3 years, USFS has helped support 56 individuals from Africa attend international NRM training seminars.
- Over 350 FS and BLM employees are trained in relief procedures, and support response efforts worldwide.

For more information, visit www.fs.fed.us/global.

⁵³ Wells, Brandon and Hannah, 1990.

By the 1990s environment played a major role in the USAID mission strategies of a number of African countries. For example, in the case of Madagascar USAID supported the World Bank-initiated environmental planning process, the National Environmental Action Plans (NEAP). At that time, WWF was the only conservation group working there, and they recognized that they could not do the development activities under the NEAP on their own. This led to several pioneering experiments between development NGOs such as CARE, Catholic Relief Services, and Safafi (a Malagasy NGO), international conservation NGOs, and several universities. In time this led to the inclusion as well, of development consulting firms with environmental expertise, as it was found that they could provide support to the conservation groups in carrying out ICDPs. As a result of the consistent commitment to conservation in Madagascar, the country is frequently cited as an example of the success of the NEAPs, and as the leader in USAID work on conservation and development. Nevertheless, some of the same challenges have arisen there as in other parts of the continent in gaining community support for conservation in the face of poverty, rapid population growth and high demand for resources.⁵⁴

At the same time USAID was funding a wide range of environment activities through contracts with private consulting firms. These projects did not usually focus specifically on biodiversity, concentrating instead on CBNRM, transboundary NRM, water and soil management, watershed management, and agroforestry. Over the past ten years, the pattern on biodiversity projects has evolved. In part due to the Madagascar experience, where development and conservation NGOs collaborated on ICDPs, the road was paved to bring private consulting firms into conservation work as well. The earmarks are now used to fund consulting firms under contracts as well as to fund NGOs under cooperative agreements. Under the contracts, priorities and activities are defined by USAID, rather than by the recipients of the funds. In addition, consulting firms and NGOs are now bidding together on such contracts, the firms providing the development expertise and NGOs providing the conservation expertise.

This may be an effective way to resolve some of the tensions between conservation and development and strengthen the development side of conservation in projects like CARPE. It may also resolve some of the frustration of both firms and NGOs at the efforts of the conservation community to undertake development activities which are not their area of expertise. It is often difficult, however, for members of the conservation community to work as subcontractors to consulting firms since, as conservation specialists, they are used to cooperative agreements on which they are responsible for designing their own activities.

Whether working with contractors or NGOs in the achievement of USAID conservation objectives, the range of procurement opportunities available to missions has changed dramatically from traditional grants or contracts to more innovative and expeditious vehicles. These are typified by cooperative agreements, such as the Global Conservation Program and the indefinite quantity contracts⁵⁵ of EPIQ (Environmental Policy and Institutional Strengthening), PLACE (Prosperity, Livelihoods and Conserving Ecosystems), and Water IQCs. USAID has also

⁵⁴ See, for example, Gezon 1997 and Marcus 2001.

⁵⁵ Indefinite quantity contracts, or IQCs, are large umbrella contracts for technical assistance in a specific field, with targeted activities covered by individual contracts. Firms holding the IQC compete for these individual contracts, which are known as “task orders.” In general terms, IQCs are shortlists of pre-qualified firms in a given technical area. IQCs are flexible, providing a way for USAID to respond rapidly to particular needs.

added the Global Development Alliance⁵⁶ program to work with private sector interests to enhance development impact by mobilizing the ideas, efforts, and resources of these organizations.

This added flexibility in program mechanisms has allowed USAID to work with a wide range of partners, including host country government agencies, conservation and development NGOs, development consulting firms, private companies (building domestic and international markets for resource-based products), and extractive industries (modifying their processes to reduce their impact on habitats and species).

Innovative partnerships between conservation organizations such as World Wildlife Fund (WWF) and African Wildlife Foundation (AWF), and development organizations including Care International and Catholic Relief Services (CRS), led to interventions that had explicit developmental agendas to complement conservation interests. These partnerships also marked a shift away from direct bilateral support to national government agencies and toward strengthening local governments and devolution to local nongovernment authorities for conservation actions.

An important part of the work of USAID in biodiversity has been capacity building and partnerships

CAPACITY BUILDING AND KNOWLEDGE SHARING

Throughout its history of conservation programs, USAID has made knowledge sharing and Capacity Building an important goal. Through support to African institutions of learning and web-based knowledge sharing sites, numerous initiatives have been undertaken including the following:

Knowledge Exchange and Learning Partnerships (KELP) — The USAID KELP project aimed to catalyze major improvements in African institutions through the integration of instructional technologies into the research, teaching, and learning processes, and the increased flow of knowledge and experience between centers of learning in Africa and the United States. Target technical areas included economic growth, agriculture, natural resources management, development information, and the environment.

College of African Wildlife Management — Established in 1963 as a pioneer institution for the training of African wildlife managers, the College has been a leader in providing quality wildlife management training in Africa, and has trained over 4,000 wildlife managers from 23 African countries and 17 non-African countries. USAID and partners have supported and continue to have a close association with the institution which aims to provide high standards of professional and technical training to meet the needs of African Wildlife organizations for qualified and competent management staff.

FRAME — FRAME is an online portal for the natural resources management community, and provides USAID partners with space to create pages to share their latest publications, participate in online discussions, and share knowledge with the natural resource community <http://www.frameweb.org>

ENCAP — The Environmentally Sound Design and Management Capacity Building for Partners and Programs in Africa website provides a centralized location for information on training and USAID environmental regulations and reports for partners and organizations in Africa. <http://www.encapafrika.org>

NRIC — the Natural Resources Information Clearinghouse provides online resource libraries about USAID's natural resources projects that include documents produced by these projects, and links to related Web resources. <http://www.nric.net>

⁵⁶ USAID considers an "alliance" to be a formal agreement between two or more parties created to jointly define and address a development problem. Alliance partners combine resources, risks and rewards in pursuit of common objectives. See USAID website for more details on GDAs.

http://www.usaid.gov/our_work/global_partnerships/gda/businessmodel.htm

with African governments and institutions. In many of its conservation programs, USAID and its partners work closely with national governments with capacity building an explicit objective. Whether designed to identify capacity building needs and methods (e.g. BSP), build capacity and transfer responsibility to African Organizations (e.g. CARPE), or by simply including relevant government ministries as key institutional partners (as seen in the vast majority of programs), USAID programs have strengthened technical capacity for African and international partners. The sidebar on the previous page highlights some of the capacity building systems established by USAID in order to share conservation information, network international and African institutions and people, and as learning tools for those interested in conservation in Africa.

In addition to capacity building, USAID has also helped to facilitate coordination and knowledge transfer among organizations working for conservation in Africa. For example, the formation of the East African Afro-Montane Working Group in the early 1990s was an early landscape initiative in which lessons learned and technology transfers were shared. Indeed, the USAID programs in Uganda, Kenya, and Madagascar have been (respectively) the second, third, and fourth-longest running programs in Africa with considerable investments to long-term capacity building in the region. Many of the lessons learned during the Afro-Montane experience were captured early on by the Biodiversity Support program⁵⁷ and the PVO-NGO/NRMS project.⁵⁸

⁵⁷ Brown, M and B. Wyckoff-Baird. 1992. Designing integrated conservation and development projects. Biodiversity support project/USAID. Washington.

⁵⁸ Brown, M. 1996. Nongovernmental organizations and natural resources management: synthesis assessment of capacity building issues in Africa. World learning Inc., Care, and World Wildlife Fund.

SECTION III. CHALLENGES FOR THE FUTURE

From the agroforestry programs of 30 years ago to the current landscape and multi-sectoral programs, USAID has evolved its approach to address trends in conservation thinking, U.S. and international policies, and changing circumstances throughout the continent. While the general pattern has been to broaden approaches, partners, and zones of intervention, responses to future challenges may take USAID conservation efforts in another direction. To target future programs, in addition to understanding the experience of USAID conservation programming, it is therefore important to examine current and projected challenges. This section aims to provide an overview of some of the principal issues, and the factors affecting them.

A. GLOBALIZATION

Globalization is a source of income and economic opportunity in Africa as well as a potential threat to the African environment through growing demand for the continent's primary resources. The infrastructure investments necessary to extract timber, minerals, and agricultural products can open up remote areas to new sources of economic opportunity, but will also open the remaining wild areas to commercial exploitation. At the same time, the advent of global certification systems for sustainably harvested or produced goods can also create important trade opportunities that are consistent, rather than in competition, with biodiversity conservation.

Helping African countries benefit from new opportunities for international trade without allowing the remaining biodiversity to be destroyed will be a big challenge. African governments may be more focused on the opportunity to obtain capital and benefit from infrastructure investments than on either the risks such investments may pose or on the potential to develop lucrative new exports by conserving their biodiversity.

Trends in liberalization of global trade, decreasing transaction costs of global commerce, Western nation programs designed to encourage trade from Africa, and better integration of Africa into the global market will all contribute to an expansion of trade in agriculture, mining, forestry, and energy products. This increase in production will further strain the resource base and may likely have negative impacts on biodiversity and people.

It should be noted, however, that if economies intensify production systems in order to compete in global markets, extensive production systems may be abandoned to the benefit of biodiversity (depending on what, if anything, replaces them). It may take some work within USAID to help its officials make the connection between opening up opportunities for trade and engaging in activities that either mitigate the environmental harm trade can cause or create market incentives for eliminating that harm altogether. Those working to facilitate trade between Africa and the rest of the world must be brought to see the links between their work and the conservation of biodiversity.

Additionally, the recent acceleration of "South-South" commerce and the growth of trade and foreign investment between Africa and China present substantial potential for economic growth in Africa. From 2002 to 2007, exports from Africa to Asia tripled, making Asia Africa's third largest trading partner (27 percent) after the European Union (32 percent) and the United States (29 percent). China's foreign direct investment in Africa reached 1.18 billion by mid-2006. With

a rapidly modernizing economy and a growing middle class, China has growing demand for minerals and agricultural products, as well as for non-traditional African exports such as light manufactured products and consumer goods.⁵⁹ Chinese contractors have also been hired in recent years to build high-profile dams and large scale construction projects throughout the continent. However, ensuring that environmental and social concerns are addressed will require substantial policy reform from both partners to trade and construction projects. These increases in trade and investment, especially in extractive industries and construction, present large and growing concerns for both conservation and development organizations.

The lack of social and environmental standards in China and in Africa, and the lack of enforcement where standards do exist, creates significant concern regarding conservation of African biodiversity. Without the leverage offered by its funding and partnerships, the donor community has difficulty pressuring the African governments to pass or enforce environmental regulations. In the short term, monitoring and reporting on these activities has helped to raise awareness of unsustainable and environmentally damaging practices, but as the influence of China (and other non-Western countries) increases, it will be increasingly difficult to exert influence for conservation concerns.

B. CLIMATE CHANGE

Climate change poses new challenges to virtually all aspects of African biodiversity. Fragile coastal ecosystems will be threatened by the combined impact of rising sea levels and increased frequency of severe weather events. The impacts of these changes will be compounded by surging urbanization. While Africa makes a relatively small contribution to climate change, it is hugely vulnerable to it and has few resources with which to combat or adapt to the new conditions. Virtually all models indicate increased evapo-transpirational stress across most of Southern and West Africa from the combined effects of increasing temperature and reduced rainfall, with some predicting catastrophic losses of more than 50 percent of Africa's current coastline.⁶⁰ Analysis of the past 30 to 40 years of African climate data has shown clear warming trends, and climate models predict that Sub-Saharan Africa will be warmer and drier, with a rise in temperatures of 0.5°C to 2°C and a decrease in rainfall of 10 percent in the interior of the continent by 2050. Drying will be further exacerbated by water loss due to increased evaporation, and more extreme events such as drought and floods will undermine food production, water supplies, public health, and livelihoods throughout the continent.⁶¹

The impacts of climate change on biodiversity will occur at the biome, ecosystem, species and genetic levels. Based on the Hadley Center models and the predicted doubling of atmospheric carbon dioxide (now believed to be possibly underestimated), the following events are likely:

⁵⁹ Broadman, Harry G. *Africa's Silk Road: China and India's New Economic Frontier*. World Bank, 2007.

⁶⁰ Achim Steiner, UNEP, personal communication with Dave Gibson

⁶¹ Nyong, Anthony. "Impacts of climate change in the tropics: the African experience." *Avoiding Dangerous Climate Change*, 2006.

- 66 percent of animals lost from Kruger National Park in South Africa and four endangered species extinct⁶²
- 25 to 40 percent of the species in 141 national parks in Sub-Saharan Africa to fall within the IUCN Critically Endangered or Extinct categories by 2080, unless migration corridors are maintained or reestablished⁶³
- 51 to 65 percent loss of Fynbos area⁶⁴ and 10 percent of all Fynbos species extinct⁶⁵
- 22 percent of Africa's coastal wetlands lost⁶⁶

Despite such jarring predictions, most conservation and development efforts have placed their emphases on preventing climate change rather than building the capacity needed to adapt to it.⁶⁷

Beyond fledgling national focal points for general climate change discussion organized under one or more international conventions, networks for sharing biodiversity information or adaptation strategies are only beginning to develop. During the July 2007 United Nations Convention to Combat Desertification preparatory meeting held in Botswana, there was significant agreement that climate change presented a clear and present danger to sub-Saharan wildlife and wildlife-dependent communities. Also established was that the desertification, climate change, and biodiversity convention focal points needed to harmonize their actions to encourage a dramatic shift in attention to climate change adaptation. To this end, many conservation organizations are making plans to address the challenges of global climate change, including WWF, which is establishing a Climate Adaptation Epicenter and will partner with several organizations to test and communicate interventions and build capacity to scale up promising approaches.

The continent is well placed to benefit from northern countries' investments or payments for ecological services in carbon, water and biodiversity offsets; this is in some sense the very narrow silver lining to the looming cloud of climate change. The conservation community will have several goals in this area: to ensure that African carbon offsets are real, to ensure that African communities who change their practices in order to offset other countries' emissions reap the financial benefits of their activities and,

The biodiversity conservation advocacy groups had focused on the issue of *mitigating* climate change because of its potential impacts, but had not really grappled with the practical steps that conservation authorities might take if faced with the actuality of climate change.

However, the IPCC Third Assessment Report (2001) had made it clear that due to inertia in the climate system, further climate change was now inevitable, regardless of the mitigation strategy that was put in place. Therefore, adaptation is essential and non-negotiable.

— Graham von Maltitz, et al., 2006

⁶² HadCM2; Erasmus et al., 2002

⁶³ HadCM3 model, Midgley and Thuiller, 2005.

⁶⁴ Natural shrubland vegetation occurring in a small belt of the Western Cape of South Africa

⁶⁵ HadCM2 model; Midgley et al., 2002.

⁶⁶ HadCM2; Nicholls et al., 1999.

⁶⁷ *Impacts and adaptations to climate change by the biodiversity sector in southern Africa*. CSIR, Environmentek 2 South African Natural Biodiversity Institute (SANBI)

insofar as possible, to ensure that activities that sequester carbon also conserve biodiversity.

Meeting these goals will require scientific research into carbon sequestration, as well as coordinated activities with international agencies to help define the systems for carbon trading and ensure that they work as smoothly as possible. Recent trends in the value of carbon offsets suggest that they may prove to be a significant revenue source.⁶⁸ As with trade agreements, ensuring that those who bear the costs of carbon sequestration also receive the benefits will be essential. The mechanisms to insure the use of either public (Kyoto Protocol⁶⁹) or voluntary carbon mitigation finance to support conservation activities, however, do not currently exist and the institutional and policy constraints are considerable.

Land-use changes as a result of population and development pressures will continue to be the major driver of land-cover change in Africa, with climate change becoming an increasingly important contributing factor by mid-century. Resultant changes in ecosystems will affect the distribution and productivity of plant and animal species, water supply, fuelwood, and other services. Losses of biodiversity are likely to be accelerated by climate change, such as in the Afromontane and Cape centers of plant endemism. Projected climate change is expected to lead to altered frequency, intensity, and extent of vegetation fires, with potential feedback effects on climate change.

— *Intergovernmental Panel on Climate Change, 2001*

Carbon sequestration in Africa, however, will have a negligible effect on adapting to the impacts of climatic change on African life, both human and non-human. Shifts in weather patterns will require new agricultural practices and perhaps population movement onto different land at an unprecedented level.⁷⁰ Flooding will change fragile riparian areas, and sea level rise will wipe out key coastal habitat. On land, plant communities will evolve in response to new weather patterns, and animals will seek new habitat as their previous territory becomes unsuitable. Biodiversity will have much greater difficulty in adapting when subjected to high anthropogenic pressures, and for many species, simple movement to new territories, if indeed they exist, may not suffice to allow them to survive without sufficient evolution, and key populations may be wiped out. It is important to note that these pressures, already high in many areas, will likely increase as people also struggle to adapt to climate change.

These changes will require as well significant modifications in conservation and natural resource management activities. Where such impacts are anticipated — as is likely in the case of conservation, agriculture, forestry, and other natural-resource related activities — project designs must reflect these effects and plan for how they will be countered. USAID has begun to develop screening tools⁷¹ to help review development investments from this perspective. Other donors are also developing climate change risk assessment protocols that will help planners evaluate adaptations options.

⁶⁸ See, for example, Chomitz 2006.

⁶⁹ The Kyoto Protocol was adopted at the third Conference of the Parties to the UN Framework Convention on Climate Change in 1997, and commits parties from developed countries to reduce greenhouse gas emissions. http://unfccc.int/kyoto_protocol/items/2830.php

⁷⁰ The USAID funded 'People on the Move' report provides a good resource for details on population movements including those driven by global climate change. See <http://www.worldwildlife.org/phe/migration/peopleonthemove.cfm>.

⁷¹ *Climate change adaptation—decision support for USAID projects*. USAID, 2006.

None of the proposed systems identifies specific risks and adaptation actions specifically within the biodiversity conservation arena. The conservation community needs to immediately expand current climate change adaptation science and work with land-use planners and protected area managers to begin to incorporate adaptation options into decision making.

Deforestation accounts for approximately 20 percent of global greenhouse gas emissions, and reducing or avoiding deforestation has been recognized as potentially one of the most cost-effective means of mitigating climate change.⁷² Avoided deforestation, or as it is now known, reducing emissions from deforestation in developing countries (REDD), is a way to address environmental degradation by assigning a value to intact ecosystems that will discourage or even prevent their conversion into farmland or other uses. Deforestation has been estimated at as much as 13 million hectares per year (1990-2005)⁷³ globally and four million hectares a year in Africa.⁷⁴ In its Fourth Assessment Report in 2007, the Intergovernmental Panel on Climate Change emphasizes deforestation as an important driver of climate change, and notes that avoided deforestation provides significant co-benefits, such as conserving biodiversity, combating land degradation and desertification, and enhancing rural livelihoods.

At the United Nations climate conference in Bali in December 2007, the parties agreed to include forest conservation in discussions of a climate treaty to succeed the Kyoto Protocol, which will expire in 2012. But there is not yet a clear consensus on whether or how REDD could be included in a mandatory global carbon market. The Kyoto Protocol, which requires industrialized countries to reduce emissions during its 2008 to 2012 commitment period, did not recognize REDD as an emissions reduction strategy under its Clean Development Mechanism.

A number of key issues have kept REDD out of mandatory carbon markets. One is the question of permanence, whether a country can ensure that the carbon savings will last and what happens to the carbon credits earned if there is a forest fire or other disaster. Leakage is also a problem, where efforts to preserve one area of forest cause deforestation elsewhere. The development of baseline forest data is essential in order to measure the “avoided” emissions; however this can create a perverse incentive to cut down more trees to raise the baseline or exclude countries that have, thus far, done a good job at protecting their forests. Another risk is land grabs by wealthy industrial or agricultural companies so they can sell carbon sequestration, and concerns by developing country governments over whether REDD interferes with their right to develop their land.

With discussions of avoided deforestation left out of Kyoto, it is promising that this subject commanded center stage at the Bali climate talks last year. But several experts believe that initiatives will fail unless policymakers address the diverse underlying drivers of forest degradation and destruction. This means policies must create financial incentives to compensate landowners for protecting environmental services such as carbon storage and watershed protection, and must ensure that benefits reach rural populations and not just industrial interests.

⁷² Stern, Nicholas, Sir. *Stern Review*. United Kingdom: 2006.

⁷³ http://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_reducing_emissions_from_deforestation.pdf

⁷⁴ <http://news.mongabay.com/2007/1207-redd.html>

Otherwise, industrial interests could seize rights to income streams from REDD and other ecosystem payment schemes and intensify the severe poverty that now afflicts the majority of rural forest communities in Africa and other parts of the developing world.

Another concern is whether REDD incentives will be sufficient to flip political and economic decisions that drive deforestation. Because forest property rights are often unclear, payment for carbon services could create incentives for corrupt officials or local elites to appropriate this new forest value from local communities. For REDD to work, policies must address specific drivers and local situations and target activities in areas such as agriculture, transportation, and finance, all of which lie well beyond the boundaries of the forest sector.

If included in a post-2012 climate treaty, REDD has the potential to reverse prevailing market forces that favor deforestation and potentially generate billions of dollars for ecosystem services. But these and other issues outlined above must be overcome to ensure market integrity and positive environmental impacts.

C. LINKS BETWEEN HEALTH AND CONSERVATION

As the human population continues to increase across the globe, there are increasing interactions between communities and the natural environment. It is predicted that by 2050, 85 percent of the world population is likely to live in less developed regions such as Africa,⁷⁵ and these interactions will become more frequent and condensed, threatening biodiversity conservation in countries already vulnerable to various health issues. These countries are dealing not only with human diseases such as HIV/AIDS and malaria, but with diseases that affect their domestic and wildlife populations. Those diseases can directly affect human health and eventually the use of natural resources and biodiversity conservation.

In order to address some of these challenges, USAID supports population, health, and environment (PHE) projects that “improve access to health services while helping communities manage their natural resources in ways that improve their health and livelihood even as they protect the environment.”⁷⁶ By linking population with human, wildlife, and livestock health and environmental issues, there is less pressure and reduced dependency on natural resources for their livelihoods and improved support for conservation. USAID’s program in Madagascar is an example of linking health and family planning, sound natural resources management, and sustainable livelihood strategies in unique and biodiversity rich areas, by emphasizing that healthy people need a healthy environment for precious water, food, and income generation purposes, and comparing the need to space out the planting of rice seedlings for a better crop with the need to space births for the health of the mother and child to reduce pressure on the resource base.

Another health issue with significant implications for conservation in all areas of sub-Saharan Africa is the HIV/AIDS epidemic. The main impacts on conservation are the loss of human

⁷⁵ United Nations, Department of Economic and Social Affairs, Population Division (2007). World Population Prospects: The 2006 Revision, Highlights, Working Paper No. ESA/P/WP.202

⁷⁶ USAID Population and Environment
http://www.usaid.gov/our_work/global_health/pop/techareas/environment/index.html

capacity in natural resource management and changes in land use and natural resources. The loss of mid-career workers who have built skills in park management, wildlife management, community development, and other areas is already severely impacting the African conservation community. The widespread loss of skilled adults throughout the communities where conservation projects are working makes it difficult to sustain momentum, while conservation organizations need additional resources to train new employees.

At the same time, we're losing traditional knowledge of sustainable land use practices, leaving younger generations to likely turn to unsustainable practices for quick sources of income (poaching, logging, charcoal production, etc.). Natural resources are overused, as medicinal plants are used for treatment, timber is cut for coffins, and bushmeat is killed for food and income. Also, as agricultural labor is lost, farming practices become less intensive but more environmentally damaging, such as increased use of fire. It is becoming increasingly important to link HIV/AIDS education, prevention, and support for those living with HIV/AIDS into all development activities, including those related to conservation.

Diseases that affect animal populations are also a health concern for conservation efforts in Africa. Avian influenza (H5N1) causes illness and death in many species of wild birds. Most commonly, infection occurs in wildlife and poultry markets, where bird species from disparate places are brought together and exposed to numerous pathogenic and non-pathogenic viruses, transmitting the disease among the species.

However, avian influenza has not been as traumatic for wildlife species in Africa as the Ebola hemorrhagic fever virus. Ebola has infected humans and great apes in the Republic of Congo, Cameroon, Equatorial Guinea, Gabon, Uganda, and the Central African Republic. This lethal virus, which is transmitted by direct contact with infected bodily fluids/organs or by handling sick or dead individuals, is responsible for dramatically decreasing ape populations already threatened by hunting and habitat loss. Conservation efforts by several international and local NGOs have been challenged by severity of this disease and worry about the long-term effects on the ape populations due to their slow reproductive rate and simultaneous habitat loss. Outbreaks in humans have also been reported in several African countries, and USAID has recently been involved in providing humanitarian support to the Republic of Congo.

Whether it is human or animal health threats, conservation efforts in Africa have an important role in addressing the effects and links of health issues on its efforts to protect the continent's biodiversity.

D. CONFLICT AND SECURITY

In the past 10 years, the conservation community has learned a great deal about how to keep projects going through periods of conflict — before, during and after. Areas that have been depopulated due to war offer considerable conservation potential, because resources have been able to regain a toehold in the absence of human activity. On the other hand, conflict over resources can spark violence and terrorism in countries such as Sudan. Crisis countries in Africa have a range of developmental challenges, which include corruption, patrimonialism, factionalism, lack of management capacity, and public disengagement; all of these have implications for conservation.

Given the challenges and the importance of biodiversity in many regions in conflict (e.g. the Mano River of coastal West Africa and Great Lakes regions), conserving biodiversity is both difficult and crucial before, during, and after periods of crisis. During times of crisis, environmental concerns often, and justifiably, take on less significance than the immediate needs to save lives and ease suffering, but can also result in loss of rebuilding assets. However, given the high degree of dependence of African populations on natural resources, actions that degrade or fail to preserve, these resources are potentially more damaging in the long-term to the health and security of those threatened by conflict, and can fuel further conflict over control of a smaller resource base. This paradox is widely recognized by the conservation, relief, security, and development communities.

One of the seminal research pieces on the topic of conflict and environment is “The Trampled Grass: Mitigating the Impacts of Armed Conflict on the Environment,” produced by TNC, WRI, and WWF through the Biodiversity Support Program. It describes several main impacts of conflict on the environment:⁷⁷

- **Habitat destruction and loss of wildlife** — When large numbers of displaced people are temporarily resettled, they often clear away vegetation, to farm and to obtain firewood, practices that swiftly lead to deforestation and erosion. Since refugees and internally displaced people are often located in ecologically marginal and vulnerable areas, the ability of the environment to recover may be limited.
- **Over-exploitation and degradation of natural resources** — Over-exploitation of natural resources is often exacerbated by armed conflict, for both subsistence and commercial reasons. One immediate result of political instability during war is that local people cannot grow basic crops. For their survival, they are increasingly forced to depend on wild foods such as bushmeat and food plants.
- **Pollution** — Another serious environmental impact of armed conflict is pollution. This can result directly from actions by military or other armed groups, as well as indirectly from the human and economic crises created by conflict. In recent conflicts in sub-Saharan Africa, pollution has most often been a serious problem during humanitarian crises. Refugees and internally displaced people often find themselves living in conditions so overcrowded that they become a significant source of potential pollution. In their need to subsist, the displaced may pollute surface water; in their flight, they may bring infectious diseases.

Armed conflict is a very serious problem in parts of Africa today, where many countries are at risk of conflict, engaged in conflict, emerging from conflict, or in a long-term recovery phase. These conflicts are devastating. They cause untold suffering and enormous loss of human life; they fragment societies and shatter economies. They also wreak devastating harm on the environment, biodiversity, and the natural resources upon which people depend — impacts that are suffered long after hostilities end.

- *The Trampled Grass*

Approaching issues of conflict and security from a perspective of resource management may prove invaluable in helping to prevent regional tensions from escalating into new conflicts. To

⁷⁷ For the full text, see *The Trampled Grass*, BSP 2001
<http://www.worldwildlife.org/bsp/publications/africa/139/titlepage.htm>

that end, there are several approaches that USAID and the conservation and development communities can take to help mitigate impacts on biodiversity, including planning ahead for conflict scenarios, maintaining flexibility in programming and responses to conflict, supporting progressive post-war legislation and multi-sectoral collaboration, and maintaining a conservation presence during and immediately after conflict. USAID has been active in planning ahead and preparing tools for these scenarios. In addition to past efforts such as “The Trampled Grass,” USAID is supporting a component in the BATS program (under which this report is being written) to create a flexible tool to assist USAID missions in identifying major issues and available resources to help integrate conservation into conflict scenarios.

E. POPULATION GROWTH

Africa’s population has experienced unprecedented growth over the last 50 years and is projected to double again by 2050, placing increasing demands on the environment. The population of the continent was estimated at 965 million in 2007, up from 224 million in 1950 and 416 million in 1975.⁷⁸ The UN’s medium projection for 2050 is 1.998 billion, including adjustment for the impacts of HIV/AIDS (see Figure 5 below). Between 2005 and 2050, the populations of Burundi, the Democratic Republic of the Congo, Guinea-Bissau, Liberia, Niger, and Uganda, key biodiversity-rich countries, are projected to increase at least threefold.

Africa is experiencing a demographic transition — moving from high birth rates and high mortality to low death rates and low mortality. In the process of demographic transition, mortality declines before fertility does, and there is a period of rapid growth before numbers level off or even decline slightly. Africa’s population is very young, and because of the large proportion of young people who have yet to have families, population will grow because of this momentum. In addition, economic and social factors drive couples to have many children. Large families provide labor for livelihood activities and help to support parents when they reach old age. Poor access to basic health care results in high childhood mortality, for which families compensate by having more children. This in turn fuels the cycle of poverty and population growth.

With 46 percent of the population living below the poverty line, (less than \$1.08/day),⁷⁹ Sub-Saharan Africa is one of the world’s poorest regions, and with impoverished communities often living in areas of relatively high biodiversity, the threats posed to the environment increase.⁸⁰ Fertility (the average number of children per woman) is higher in Africa than any other region of the world; in 2007 it was estimated at 4.67, down from 6.72 in 1970-75 but still well above replacement level.⁸¹ So while populations of many developed countries are actually declining with fertility rates below 2, Africa’s population will continue to grow very significantly.

Fertility is heavily influenced by the level of women’s education. Better-educated women generally can exercise more control over their reproductive lives, including delaying marriage

⁷⁸ United Nations, 2007

⁷⁹ Environmental Guidelines for Small-Scale Activities in Africa: Environmentally Sound Design for Planning and Implementing Development Activities. Chapter 2 CBNRM, USAID. January, 2007.

⁸⁰ Ibid

⁸¹ United Nations, 2007

and childbearing. For example, an Ethiopian woman with no education has on average 6.1 children, but one with secondary or higher education has 2.0 children.⁸²

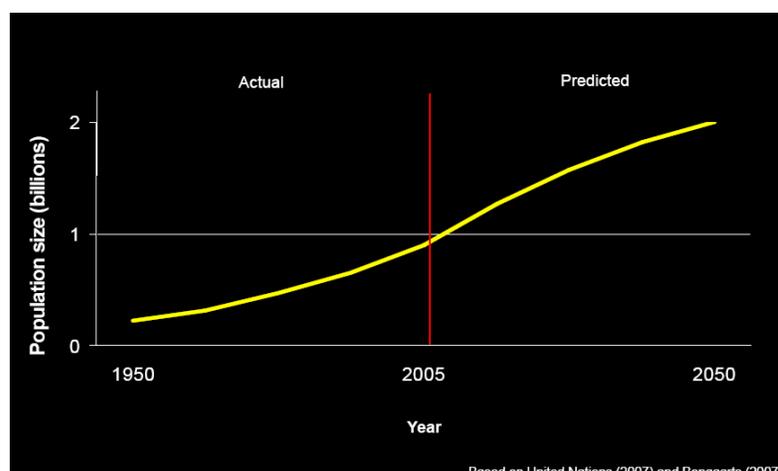
Another factor driving population growth is increased life expectancy. Despite the impacts of HIV/AIDS, life expectancy in sub-Saharan Africa has increased from 38 in 1950 to 49 in 2007.⁸³

Finally, natural population growth in Africa is influenced by access to family planning services. There is ample evidence that people in some areas want family planning services but lack good access. In Ethiopia and Rwanda, for

example, an estimated 36 percent of married women of reproductive age have an unmet need for family planning.⁸⁴ In Mali, that number is 29 percent; in Zambia, 27 percent; and in Gabon, 28 percent. Access tends to be worst in remote rural areas where health services do not reach — and these areas often are the areas of highest biodiversity. If each woman had on average half a child less than projected in the UN medium 2050 projection, Africa's population that year would be 1.718 billion instead of 1.998 billion. With half a child more, the population would be 2.302 billion.⁸⁵ It will be a huge challenge for Africa to feed, provide water, and shelter its growing population, when it is already the poorest continent in the world.

Not only are numbers growing due to natural growth, but people are moving — sometimes in large numbers. African countries have strong rural-urban migration, and cities and towns will grow rapidly over the next decades. In 2007, 37 percent of Africa's population was urban. This figure is expected to increase to 51 percent by 2030.⁸⁶ But despite rural-urban migration, in many areas rural populations are still expected to increase significantly, as indicated in Figure 6.

Figure 5: Population Growth in Africa



⁸² Population Reference Bureau, 2007

⁸³ Ibid.

⁸⁴ Abt Associates, 2005

⁸⁵ United Nations, 2007

⁸⁶ Population Reference Bureau, 2007

Figure 6: Africa’s Urban and Rural Population Trends (in millions)⁸⁷

GROUP	1975	2005	2030
Urban population	105	347	742
Rural population	310	559	721
TOTAL	416	906	1463

Growth of urban populations will have various impacts on biodiversity. For example, increased demand for water will have large impacts on Africa’s freshwater systems. Land will be used for settlement, resulting in biodiversity loss. There will be increased demand for agricultural land near urban centers for food production. Demand for fuel will also increase, and because many urban inhabitants will live in poverty, there will be high demand for fuelwood and charcoal, with corresponding expansion of “urban haloes” of degraded vegetation around cities and along transport routes. There will be increased runoff and flooding due to increase in impervious surface area and deforestation on slopes surrounding communities, and water and air pollution are likely to increase. However, the more rapid population growth in urban areas will probably have less impact on the environment overall than if rural-urban migration did not occur and instead rural population grew faster than currently predicted.

Nevertheless, continued population growth in rural areas for the next 20 years will place increasing pressure on land for settlement and agriculture as well as marine ecosystem resources. In many cases, people will be forced to move into more marginal and environmentally fragile areas, where sustainable livelihood opportunities are limited, resulting in environmental degradation that will further the downward spiral of deepening poverty. Moreover, migration is likely to occur at an unprecedented scale in the future, driven not only by natural population growth but also by globalization, trade, conflict, and climate change.⁸⁸

The population issues outlined above can be tackled in many different ways. For natural population growth, a key action is to improve food security, livelihoods, and health, helping to reduce child mortality and reduce desired family size. Many natural resource management and rural development programs in Africa work towards this objective. Promotion of girls’ education — particularly helping girls to complete secondary education— results in delayed marriage and child bearing, and smaller family size. Increasing access to voluntary family planning is key, and involves extending health services into remote rural areas where natural population growth is often very high. Conservation organizations working in these areas can facilitate this effort, integrating population and basic health into conservation and livelihood activities.⁸⁹ At the national level, policies on family planning and population can have a strong influence on the speed of a country’s demographic transition and slowing of population growth. Allocation of adequate national resources and donor funds to public health and education is essential to achieve these goals.

⁸⁷ United Nations, 2006

⁸⁸ Oglethorpe et al., 2007

⁸⁹ <http://www.ehproject.org/phe/phe.html> for example

Strategies to reduce adverse impacts of migration on the environment and local people are more complex and situation-specific, depending on the push and pull factors and the opportunities to prevent or influence migration, or reduce its effects. Actions may be taken in areas of origin to reduce the pressure to migrate, or in destination communities to reduce impacts. National policy changes may also be required to address this problem.⁹⁰ Special interventions may be needed for migration by refugees and internally displaced people induced by conflict and natural disasters. Building resilience, reducing vulnerability, and helping people to adapt to climate change will be critical when dealing with climate-induced migration in Africa.

⁹⁰ Oglethorpe et al., 2007

SECTION IV. CONCLUSIONS

USAID’s biodiversity conservation experiences in Africa for the past 30 years have been challenging and educational, and have enabled the conservation and development communities to understand how to collaborate in protecting wild resources and improving human living standards. From an initial focus on individual species and protected areas, the development and conservation communities have gradually and consistently broadened their perspectives to deal with diverse landscapes, extensive public participation, and include more activities, partners, and strategies.

Taking a specific example, the question of how to protect the mountain gorillas becomes how to make gorilla conservation relevant to African communities. Although wildlife conservation may in the end never be able to pay for itself, it is clear that where the success of conservation is linked to the welfare of a community, programs are much more likely to succeed. Conversely, where compensation for resources forgone for conservation is not commensurate to benefits lost, success in the long-run may be unattainable. In combination with such global drivers as climate change, population growth, and conflict there are considerable challenges to the future of biodiversity conservation in Africa, and it is essential to make continued headway to address them.

To meet these challenges, USAID support for biodiversity conservation has made a good deal of learning possible, particularly through the applied research and collaborative work of the Biodiversity Support Program. This work is being continued by the Africa Biodiversity Collaborative Group, whose member organizations,⁹¹ with USAID support, explore issues that are generally too large for them to tackle individually. With USAID support, the conservation community has also begun exploring some areas that are now U.S. government priorities: how to keep conservation activities going in periods of conflict, how to integrate them into post-conflict work, how to address climate change, and how to address HIV/AIDS issues in the context of conservation projects.

The overall objective of this report was to examine and synthesize the experience of USAID conservation programs in Africa to act as a basis for a discussion on the future of biodiversity conservation on the continent. While primarily a review document, the opportunities by the interviews and research that went into producing it has led to several key findings which can help to further inform future USAID programming decisions in the sector:

- The need to engage stakeholders in the design and implementation of projects has become increasingly clear, as has the need for conservation and development interests to continue to work together and recognize the importance of diverse partnerships.

⁹¹ African Wildlife Foundation , Conservation International , IUCN - The World Conservation Union , the Jane Goodall Institute , The Nature Conservancy , Wildlife Conservation Society , World Resources Institute , and World Wildlife Fund .

- Future challenges are interrelated and self-reinforcing. With climate change predicted to undermine food production capacity, and population growth increasing demand, conflict over resources is more likely, which may further undermine food production. These threats can come together quickly with potentially dramatic impacts on biodiversity across Africa. Challenges, however, may also provide potential opportunities, as with the case of population growth where more demand on resources can be also seen as more labor available for production.
- For conservation to succeed ensuring that the financial returns from conservation efforts are sufficient to compensate communities for the loss of resource use is critical. To the extent possible these returns should be inextricably linked to conservation activities, but it should be acknowledged that it may be necessary to provide funds to other stakeholders whose cooperation is needed.
- Opportunities to use the knowledge gained through USAID's experience must take place in the context of current U.S. foreign policy and available funding. It is, therefore, essential to demonstrate to USAID policymakers the connection between biodiversity and U.S. foreign policy issues such as governance, helping countries recover from conflict, and responding to the problems of the HIV/AIDS pandemic.
- The experience of the past 10 to 15 years has highlighted both the importance of good governance for community-based management of natural resources and the opportunity provided by community-based conservation to provide a context for improving governance. Because of this experience, the conservation community is well placed to integrate biodiversity into some of USAID's key priorities for the coming years.

Although there has been impressive progress in the past 30 years, effectively linking conservation and development remains a challenge. CARPE and projects in Madagascar, Namibia, Senegal, Kenya, and Uganda are key examples of the lingering tension in the balance between wildlife conservation and improvements in human livelihoods. The challenges posed by dependence of the majority of Africans on natural resources and agriculture for their livelihoods are exacerbated by new challenges facing African societies and conservationists. All of these issues will require new attention and approaches in the years to come, and to meet these challenges USAID will need to rely on the experience from the past 30 years, scale up results from effective programs, reinforce the African capacity that it has supported over the years, and continue ask the forward looking questions.

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ANNEX B. PEOPLE INTERVIEWED FOR REPORT

Patrick Bergin	African Wildlife Foundation
Charlotte Bingham	Millennium Challenge Corporation
Juan-Carlos Bonilla	Conservation International
Michael Brown	Innovative Resources Management
Shari Bush	PACT
Bruce Byers	Associates in Rural Development
Richard Carroll	World Wildlife Fund
Mike Chaveas	USDA Forest Service
Catherine Corson	U.C. Berkeley, formerly with USAID/Madagascar
Dan Deely	USAID
James Deutsch	Wildlife Conservation Society
Heather Eves	Bushmeat Crisis Task Force
Katie Frohardt	Flora and Fauna International
Adam Henson	African Wildlife Foundation
Kathryn Hoeflich	International Resources Group
Leonardo Hosh	PACT
Elizabeth Kennedy	Conservation International
Olivier Langrand	Conservation International
Judith Mashinya	World Wildlife Fund
Kate Newman	World Wildlife Fund
Judy Oglethorpe	World Wildlife Fund
Barbara Pitkin	Department of Interior
Tony Pryor	International Resources Group
Herb Raffaele	Fish and Wildlife Service
Tim Resch	USAID
Tim Rieser	Congressional Staff
Doreen Robinson	USAID
John Robinson	Wildlife Conservation Society
Mary Rowen	USAID
Richard Ruggiero	Fish and Wildlife Service
Nick Salafsky	Foundations of Success
Kaddu Sebunya	African Wildlife Foundation
Asif Shaikh	International Resources Group
Jamie Shambaugh	Peace Corps
Fred Swartzendruber	World Bank
Peter Veit	World Resources Institute
Ray Victorine	Wildlife Conservation Society
Andrew Watson	Development Alternatives, Inc.
David Wilkie	Wildlife Conservation Society
Bob Winterbottom	International Resources Group
Michael Wright	MacArthur Foundation (now Natural Capital Project)