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USAID'S BIODIVERSITY CONSERVATION AND FORESTRY PROGRAMS, FY 2007

OCTOBER 2008

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Cover Photo
FREEDOM: A prominent member of the Huambracocha community in Peru holds up river turtles before releasing them into a local lake. USAID engages with indigenous people to promote turtle conservation and community fisheries management in this remote part of the Pastaza River basin. Photo by Michael Tweddle.

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ABOUT THIS REPORT

This report describes the United States Agency for International Development's (USAID) biodiversity conservation and forestry programs for fiscal year (FY) 2007. It provides USAID's partners and the public with a summary of the Agency's approaches, activities, and results. Since the FY 2005 edition, USAID has reported on its biodiversity and forestry programs together because of the significant overlap between these two program areas.

Much of USAID's biodiversity work centers on better management and conservation of forest ecosystems, and much of USAID's forestry work is done with an objective of conserving biodiversity. However, because not all forestry activities conserve biodiversity, nor is all biodiversity conservation in forests, separate budget summaries for biodiversity and forestry are presented at the end of this report.

The scale of biodiversity programs and the nature of forestry programs managed by USAID have both been affected by an increase in dedicated funding for biodiversity. USAID carefully assesses which programs meet the requirements of this "biodiversity earmark" using four key criteria:

- The program must have an explicit biodiversity objective;
- Activities must be identified based on an analysis of threats to biodiversity;
- The program must monitor associated indicators for biodiversity conservation; and
- Site-based programs must have the intent to positively impact biodiversity in biologically significant areas.

All four criteria must be met for programs to be eligible for dedicated biodiversity funds. These criteria guide program design and budgeting, leading to robust and often interdisciplinary programs which recognize biodiversity conservation as a prerequisite to achieving development goals. For example, USAID forestry programs increasingly promote biodiversity objectives as well as economic growth and governance objectives. Investments in forests provide jobs, foreign investment and tax revenue from logging, secure resource rights and benefits for indigenous people and rural communities, and maintain biodiversity services and products such as climate regulation, flood control, food and fuel.

EXECUTIVE SUMMARY

USAID supports forestry and biodiversity conservation in about 50 countries around the world. In FY 2007, the Agency invested $183.7 million toward biodiversity, of which $176.2 million was Development Assistance (DA), exceeding the Congressional biodiversity earmark of $165.5 million in DA funds. USAID also supported almost $97 million in sustainable forestry and forest conservation activities, of which 84 percent overlaps with biodiversity. These investments brought approximately 110 million new hectares of biologically significant areas under improved management, an area the size of California and Texas combined.

The vast majority of funds were distributed by USAID's overseas Missions, as described in the chapters on Africa, Asia, and Latin America and the Caribbean. A small portion of these funds was managed centrally from USAID's Washington headquarters to provide overall leadership, identify and share best practices, address threats that cut across regions or disciplines, test and institutionalize innovative approaches, and provide a variety of mechanisms by which Missions may work towards biodiversity and forestry objectives. Selected results from FY 2007 activities are highlighted below.

WETLAND RESTORATION: In Hail Haor, Bangladesh, USAID support has helped establish 80 wetland sanctuaries, and local management of the inland fishery is now in the hands of communities. Several locally scarce or lost species of fish and water birds are now recovering, and the value of the fish catch in three wetlands has more than doubled since U.S. investment began in 1998.

PHOTO: USAID/BANGLADESH

PHOTO: DAVID WEINER, INCEF

A JUVENILE MOUNTAIN GORILLA plays in the bamboo under the watchful eyes of his family. USAID supports great ape conservation efforts in Africa and Asia, including protected area management, alternatives to deforestation and hunting, and ape research.

Africa

- U.S. partners in the Congo Basin Forest Partnership increased the area of land under improved managed by 14.25 million hectares, for a cumulative 46.6 million hectares since 2003.

- USAID supported the Kenya Wildlife Service in upgrading their SafariCard revenue collection system, which is expected to boost revenue for biodiversity conservation in and around parks and reserves by an additional $2 million per year.

- A Code of Harvesting Practices was drafted for logging contracts in Liberia, which assures low impact logging and adherence to best forest management practices in this country still recovering from war.

- With USAID support, the Senegal Ministry of the Environment adopted policies that require all charcoal to be made of wood from managed forests, benefiting local communities and diminishing the power of a charcoal cartel.

- Communities participating in USAID's community conservancies project (LIFE) saw incomes rise from $165,000 in 1998 to $5.5 million in 2007. The net national return to the Namibian economy from conservancies and affiliated tourism companies was almost $34 million in 2007.

- USAID supported the creation of 735,049 hectares of new protected areas in Madagascar, bringing the percentage of biodiversity rich habitats represented in protected areas to 95.6 percent.

- USAID-supported aerial surveys in Southern Sudan confirmed that a migration of white-eared kob, tiang and Mongalla gazelle is still intact after decades of civil conflict, with over 1.2 million animals.

Asia

- In Nepal, an alliance to supply plant-based personal care products has helped marginalized communities achieve total sales of $3.5 million as of July 2007. The program has generated over 1,000 direct processing and marketing jobs and benefited over 5,000 households, while conserving or restoring over 10,500 hectares of forest.

- USAID support to the ASEAN Wildlife Enforcement Network provided training and exchange visits for more than 650 law enforcement officials, and cooperation led to more than 30 wildlife law enforcement actions in Southeast Asia.

- In Indonesia, USAID helped revive a Javanese tradition of seedling cultivation and tree planting to rehabilitate severely degraded land in and around Raden Soerjo Grand Forest Park.

- USAID's Responsible Asia Forestry and Trade (RAFT) Alliance signed an MOU with 14 forest enterprises in 2007, with commitments to improve forest management in approximately 1.1 million hectares of tropical forest.

- In Bangladesh, tourism to one USAID pilot site increased nine-fold from 2005 to 2006, and four-fold again in 2007. A park that had some 300 visitors per month in 2005 is on track to attract 15,000 per month in 2008.

- In Cambodia, USAID-supported public awareness activities resulted in a 90 percent reduction of outlets selling wildlife meat in four cities from the baseline measured in 2005-2006, and 225 wildlife traffickers were apprehended.

- The newly-initiated Orangutan Conservation Services Project in Indonesia improved the management of 243,000 hectares of biologically significant forest within Kalimantan and Sumatra, and provided training to 194 individuals in natural resources management and/or biodiversity conservation.

- USAID support for community conservation in Nepal led to 15,830 hectares of forest being officially turned over to local communities for sustainable management, and helped restore forest use rights for disenfranchised rural people throughout the country.

Latin America and the Caribbean

- In the Maya Biosphere Reserve, Guatemala's largest protected area, USAID helped open important markets for sustainably harvested xate palm leaves used as ornamental greens. Beneficiaries sold over 14,000 xate bunches for $147,948 in FY 2007.

PHOTO: USAID/CAMBODIA

WILD TIGER IN CAMBODIA: Efforts to curtail trafficking in wildlife and wildlife parts benefit the endangered tiger throughout its range.

- In its last year, the Parks in Peril program assisted members of Fundación Páramo in the Condor Biosphere Reserve in Ecuador to reduce grazing and fire and help conserve approximately 30,000 hectares in the Cotopaxi National Park and 12,000 hectares in the Antisana Ecologic Reserve.

- In Bolivia, USAID improved 16 indigenous community forest operations and facilitated nearly $1 million in commercial contracts. Family income from forestry activities increased by 55 percent.

- Technical support and advocacy by USAID partners was instrumental in the creation of a 15 million hectare mosaic of conservation units in Pará State, Brazil, the largest in any tropical forest in the world. Located in a region infamous for violent land conflicts and illegal logging, the mosaic will form a vast preservation corridor the size of Alabama.

- USAID is assisting Afro-Colombians and indigenous groups in Colombia to develop and manage 150,000 hectares of natural forest, and create approximately 21,000 forestry sector jobs.

- In the 2.4 million hectare Podocarpus-El Condor Biosphere Reserve in Ecuador, USAID and its partners reduced the rate of habitat loss by 88 percent, and maintained 768,364 hectares of natural vegetation in five protected areas.

- USAID assisted Peru's two most important environmental agencies with the adoption of 16 new policies, agreements, and regulations to conserve biodiversity and sustainably manage natural resources.

Centrally Funded Programs

- With Global Conservation Program support, a team of scientists discovered the world's largest known population of grey-shanked douc, one of the 25 most endangered primates. Leaders in the Quang Nam province of Vietnam have agreed to create a protected area for this species.

- A USAID TransLinks site in Cambodia won the 2007 Wild Asia Responsible Tourism Award, for the work of a local NGO partner in helping village programs compete in the competitive world of tourism, and for putting a system in place which pays residents to protect the nests of critically endangered birds.

COLLECTING COCKLES: This coastal resident of Nicaragua gathers cockles in a permanent "no-take" zone as part of an effort to monitor the health of shellfish populations which her community depends on for food and income. USAID supported the establishment of these zones within important ecological reserves of the Aserradores, Padre Ramos, and Puerto Morazan estuaries of Nicaragua.

PHOTO: NELVIA DEL SOCORRO HERNÁNDEZ, CIDEA-UCA

- With support from Global Health Bureau, conservation partners provided health information and services in high biodiversity areas of Madagascar, Kenya, Cambodia and the Philippines, encouraging local communities to cooperate in the protection of forest and marine areas.

- USAID's Carbon Reporting Initiative developed a user-friendly web-based forest carbon calculator which provides a scientifically rigorous estimate of the amount of carbon dioxide emissions avoided or sequestered through development activities, helping the Agency track climate change impact while encouraging forest conservation.

- USAID's Water Team established a coastal zoning scheme to conserve marine resources in Fumba Bay, Zanzibar, and introduced half-pearl aquaculture as an eco-friendly source of food protein (oyster) and income (pearls).

CHANGING THE LANDSCAPE:

USAID'S APPROACH TO BIODIVERSITY CONSERVATION AND FORESTRY

Ecosystems are becoming impoverished and species are disappearing at an alarming rate worldwide. With few exceptions, the most severe of these trends are concentrated in developing countries where people's livelihoods and even daily nourishment are often directly dependent on healthy forests, fisheries and wildlife. As these natural resources decline, the number of people competing for them increases and the potential for conflict rises. In a shrinking world of instant communications and global environmental impacts, conserving and managing biodiversity and forests for both their intrinsic and utilitarian values is in everyone's interest. Sustainable forestry and biodiversity conservation programs help countries achieve peace and security, govern justly and democratically, realize economic and social growth, invest in education, and maintain public health and food security.

International development is a complex and often stepwise process, where lasting results depend on simultaneous advancement across a range of development issues. For example, to grow crops there must access to land and the right to use it, reliable water and fertile soil, and of course good seeds and knowledge of agriculture. Where do biodiversity and forestry activities fit into this complex development process? USAID experience shows that conserving biological resources advances all of the Agency's overarching goals listed above, and needs to be among the first priority investments in a country. Experience also shows there are barriers to and preconditions for success in resource conservation and management, which must be recognized and addressed.

In the past five years, USAID has implemented a greatly expanded biodiversity conservation portfolio, with annual funding now approaching $200 million. Investments in sustainable forest management, non-destructive forest products and enterprises, and forest conservation have remained consistently high at around $100 million per year. Many of these forestry activities are part of the Agency's biodiversity portfolio. With greater investment, USAID's programs

RED-EYED TREE FROG: This startling amphibian (*Agalychnis callidryas*) lives in rainforests, from southern Mexico to northern Colombia.

PHOTO: JERRY BAUER, USDA FOREST SERVICE

have been able to work at larger scales, invest in regional landscapes, and undertake multi-sectoral programs. As the Agency's experience in these issues has grown over the past three decades, it has applied its lessons learned

PHOTO: USAID/NEPAL

BUFFER ZONE USER GROUPS conduct a public hearing and audit in the Shey Phoksundo National Park buffer zones in Dolpa, Nepal. This process is used by local communities to hold their committee members and local government officials transparent, accountable and responsive.

through ever more sophisticated approaches to conservation and forest management, such as integrating economic concerns and property rights into project planning and implementation. The result is the Agency has been more effective in its conservation actions and effects change on an increasingly larger scale.

At the start of the new millennium, conservation organizations began to systematically design programs at the landscape and/or seascape level (hereafter referred to as landscape conservation). USAID has been heavily involved in developing and refining landscape scale conservation approaches, in which activities are planned and managed for an entire ecosystem, watershed or other natural unit based on biodiversity priorities and ecological, social and political factors. Landscape conservation emphasizes strategic planning, threat assessment and response, and planning across other development sectors such as health, agriculture, and energy. USAID has also become a world leader in integrated approaches to sustainable agriculture, community-based natural resource management and natural products enterprises. For example, the "Nature, Wealth and Power" approach developed by USAID and its partners enables planners to deal with natural resource issues in the context of livelihoods, governance, and markets.

Perhaps the most influential USAID activity promoting landscape-scale conservation is the Global Conservation Program (GCP), initiated in 1999 and still ongoing in the form of "GCP II." This program chooses high priority ecosystems where partner organizations work towards catalytic change, threat reduction, and building capacity in local groups. A recent evaluation of GCP found it has succeeded in incorporating threats-based conservation design and planning at landscape scales, and has helped partner organizations manage their projects adaptively, changing priorities, location, approach or level of effort if monitoring results recommend it. In addition, GCP partners have made significant progress in addressing two important barriers to successful conservation: lack of involvement by the people who live in and use the landscapes, and the limited capacity of local governments and organizations to manage these areas.

Lessons from GCP have improved landscape conservation efforts that cross political boundaries in several priority locations. For example, the new multilateral Coral Triangle Initiative draws on lessons learned from seascape conservation by a GCP

CEIBA TREE: Buttresses add stability for this giant tree living on the thin soil of the Ecuadorian rainforest. USAID works with the Government of Ecuador to grant land title and forest use rights to indigenous groups and small communities, and builds their skills to protect and manage the forests wisely.

PHOTO: USAID/ECUADOR

partner in Indonesia and Papua New Guinea. GCP experience advised another partner when they developed a landscape conservation plan in an area of the Democratic Republic of Congo for the multilateral Congo Basin Forest Partnership (CBFP) supported by USAID's Central African Regional Program on the Environment (CARPE). In turn, CBFP/CARPE experience has inspired other USAID regional conservation efforts, such as the Initiative for Conservation in the Andean Amazon, encompassing Bolivia, Colombia, Ecuador, and Peru. While these regional initiatives are structured differently, they recognize and build on the understanding that sharing lessons and skills across a region is an efficient way to create wider impact.

PHOTO: USAID/GUINEA

ELECTION DAY: A community in Guinea uses a show of hands to elect forest co-management committee members. Cooperative management among farmers, community groups, and government forestry officials, protects biodiversity, maintains the forest, and results in equitable sharing of responsibility and benefit among partners.

In addition to these regional approaches, other USAID biodiversity and forestry programs invest over the long term in individual countries, and produce equally dramatic and sustainable results. In Madagascar, nearly two decades of working with the government on protected areas culminated in 2007 with six national parks in the eastern rainforest – an area the size of the Grand Canyon National Park – being designated a World Heritage Site, and over 95 percent of biodiversity-rich habitat secured in parks and reserves. After 15 years of support by USAID's mission in Namibia, the Living in a Finite Environment (LIFE) project has resulted in a nationwide community-based natural resource management program implemented by local organizations and communities involving over 14 percent of the country's land and nearly 13 percent of the population. In both countries, success and sustainability are related to giving communities natural resource rights, as well as income from tourism to parks or, in the case of Namibia, photo and hunting safaris in community-managed conservancies. Biodiversity and economic benefits are intertwined: while wildlife populations have grown exponentially in Namibia, communities participating in natural resource management through LIFE have seen revenue rise from $165,000 in 1998 to $5.5 million (and a net national return of almost $34 million) in 2007.

Landscape conservation planners face multiple challenges as these programs expand. The GCP evaluation revealed that landscape actors have not been very successful in coping with the wider enforcement and economic issues which emerge at a landscape scale, compared to work at smaller sites. Landscapes are embedded within existing governance and economic systems that are not easy to change.

One critical area that receives greater attention within USAID is land tenure and property rights. Ownership and access to land, forests, wildlife, water and other natural resources is often unclear in developing countries. This can result in violent conflict over these rights, negatively impacting conservation efforts. Thoughtful conservation that addresses these issues can reduce or eliminate such conflict. USAID supports many efforts which transfer resource rights from the national government to local communities, or restore resource rights to disenfranchised indigenous people. In Senegal, the government recently adopted policies requiring charcoal to come from managed forests, taking control of this essential resource away from an unsustainable urban cartel and giving it to forest communities so that income supports local people and there is a strong incentive for communities to reinvest in sustainable forest management. Another example is in the Philippines,

where indigenous farmers in northern Luzon have been awarded ancestral rights to their land and now protect the forests with checkpoints along access roads. Along with LIFE in Namibia, these are typical examples of community-based natural resource management where a previously unmanaged resource – forests or wildlife – is now managed sustainably by local people organized around their shared interest in receiving higher value and longer-term benefits.

Another challenge of working at the landscape scale is making markets work for conservation in the context of widespread poverty. USAID has long promoted sustainably harvested, certified and natural products to provide economic incentives for conservation. For example, in Mexico the Agency supported certification of community-managed forests, improving the management of over 500,000 hectares of high biodiversity area and improving milling techniques to get more lumber from fewer trees in selected appropriate areas. Milling efficiency alone provided $1 million in additional revenues, and one community signed a contract worth more than $3 million to produce school furniture built from sustainably harvested lumber. In El Salvador, over 700 coffee producers on 200 farms and processing plants achieved shade-grown, fair-trade certification in 2007, bringing improved management to more than 7,000 hectares and a price premium to producers, who expect to harvest 915,000 pounds of coffee worth an estimated $3.8 million.

Market forces can also be effective in overcoming illegal and unsustainable activities, especially in tropical forests which harbor the most biodiversity and are also among the most threatened ecosystems. High global demand for wood and paper combined with weak monitoring and enforcement have led to illegal logging, which at the global level is undermining markets for legitimate companies who invest in sustainable management. At the local level, these conditions have led to violent conflict between traffickers, government officials and communities, and have increased corruption.

PHOTO: USAID/RWANDA

COLOBUS MONKEY: Nyungwe Forest National Park in Rwanda is home to nine primate species, including this one, *Colobus angolensis ruwenzori*. USAID supports ecotourism development in and around the park.

Since the Presidential Initiative Against Illegal Logging was launched in 2002, several public-private partnerships among governments, NGOs and private enterprises have emerged to address illegal and unsustainable logging and associated trade. Companies in the United States, Europe and other major consumer markets are increasingly interested in ensuring that their products are not derived from illegal or destructive logging. USAID has been at the forefront of catalyzing public-private alliances that address issues in global supply chains from forest to shelf, helping retailers find the sustainable wood products demanded by consumers. Examples of these include the Sustainable Forest Products Global Alliance (SFPGA) and the Responsible Asia Forest and Trade (RAFT) programs, which work with networks of corporations and financial institutions committed to environmental sustainability, as well as manufacturers, exporters, forest concession owners, governments and communities, to verify legality and certify practices.

As a complement to socioeconomic incentives, USAID uses state-of-the-art technology to support resource conservation efforts at landscape and regional scales. In Central Africa, satellites are increasingly relied upon to monitor change in forest cover, which aids in CBFP/CARPE long-term planning and evaluation of progress. In Central and South America, USAID supports the multi-donor Mesoamerican Regional Visualization and Monitoring System (SERVIR, in Spanish) which provides countries with climate information, forest fire alerts, and other ecological monitoring services. Worldwide, USAID's FRAMEweb.net portal supports communities of practice which share ideas, results and lessons-learned from experiences in natural resource management. USAID Missions will soon benefit from a web-based forest carbon calculator that will provide a scientifically rigorous estimate of the amount of carbon dioxide

PHOTO: DEVELOPMENT ASSOCIATES INC

CHECKPOINT: Indigenous Bugkalot upland farmers in Cadikitan, Northern Luzon, Philippines, have been awarded certificate of ancestral domain rights to their land and are helping protect the forests by maintaining checkpoints along access roads.

emissions avoided or sequestered through forest conservation, sustainable forest management, forest fire control, reforestation, and agroforestry activities.

USAID was one of the first to value and promote landscape level interventions, and is committed to overcoming the challenges of this approach in order to achieve far-reaching and sustainable results. In addition to promoting local governance and rights, and harnessing traditional and emerging markets to conserve biodiversity and forests, USAID applies specialized tools and skills, such as:

Institutional analyses: Conservation programs need to understand what institutions are capable and trusted by diverse populations and how these can be scaled up and networked to address landscape level threats and opportunities.

Expertise in rural development at regional scales: Conservation must apply an understanding of the dynamics of rural development, for example how people move out of small-scale agriculture and the informal economy into more profitable ventures.

Analysis of market systems that impact species and ecosystems: Besides (or before) promoting certification and PES, conservation practitioners need to better understand how traditional commodity and financial markets impact land use. A recent analysis concluded that much of the world's overall deforestation is concentrated in Indonesia and Brazil, where conversion of forests to produce commodities such as palm oil, soybeans and cattle has been a major driver.

Understanding the political economy of resource management: Shifts in land use can produce unintended consequences. There is need to assess the impacts on access to land and resources on the most vulnerable people. In addition, landscape scale trends should be tracked to assess if threats are actually abated or simply moved elsewhere.

Many of USAID's newest initiatives attempt to combine these tools and skills with landscape conservation approaches and attention to natural resource rights, governance and markets at the national, regional and global scales. In Liberia, USAID is working to promote local land and resource rights so communities benefit as the country restarts commercial forestry after years of a logging ban. In West Africa, the STEWARD (Sustainable and Thriving Environments for West African Regional Development) collaboration between USDA Forest Service and USAID promotes learning networks, best practices in conservation and natural resources management, and consistent environmental policies across borders. Around the world, USAID's TransLinks program, a research and development consortium, addresses issues such as land rights and conservation, payments for environmental services and effective conservation enterprises.

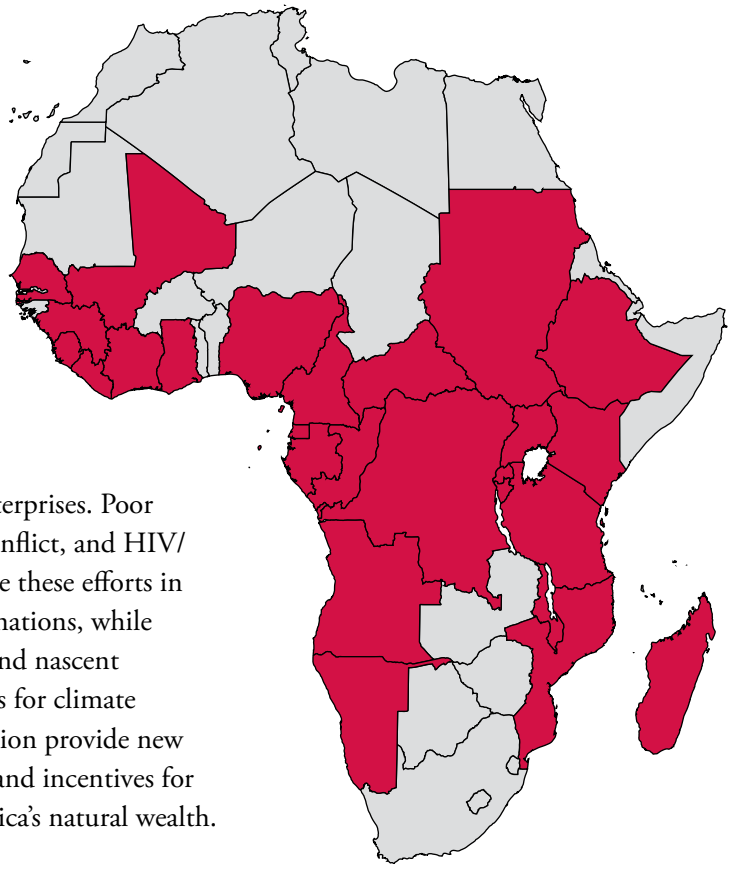
Biodiversity conservation and sustainable forestry are vital for the prosperity and security of all nations. Through trade, travel and the geochemistry of Earth, the products and services provided by healthy ecological communities benefit every person on the planet. Recognizing these relationships, the programs and projects described in this report have worked to apply the best methodologies, technology and people towards strengthening the natural resource base upon which USAID development objectives ultimately depend.

AFRICA

USAID country and regional programs funded significant biodiversity conservation and forestry activities in over 25 countries throughout Africa in FY 2007.

The African continent is home to the greatest concentrations of large mammals on Earth, the mighty Congo River surrounded by the world's second largest tropical rainforest, the evolutionary laboratory of Madagascar, and numerous important arid environments, wetlands, and coral reefs. An estimated 70 percent of Africans depend on natural resources for their livelihoods, and the richness and diversity of its ecosystems provide global benefits.

In FY 2007, USAID continued its role as a conservation leader in Africa with several programs working to promote sustainable use of natural resources, from responsible logging and community forestry to slowing the bushmeat trade and advancing ecotourism enterprises. Poor governance, conflict, and HIV/AIDS challenge these efforts in many African nations, while globalization and nascent carbon markets for climate change mitigation provide new opportunities and incentives for conserving Africa's natural wealth.



BABY BOOM: Several hundred thousand wildebeest calves are born over a period of three weeks during the annual migration of herbivores through Tanzania and Kenya. Calves learn to run within minutes of birth, but synchronized reproduction and sheer numbers are their main line of defense against lions and other predators.

PHOTO: MIKE COLBY, USAID

Africa Regional Program

Office of Sustainable Development

USAID Bureau for Africa's Office of Sustainable Development (AFR/SD) provides analytical and technical assistance to country programs, and coordinates with donors and partner organizations to promote social and economic development. Biodiversity activities include support for great ape conservation, knowledge sharing on natural resource management via the Internet, collaboration with U.S. conservation organizations, and timely and thoughtful biodiversity program assessment and planning for USAID's Africa Missions.

AFR/SD manages USAID support to the Great Apes Conservation Fund, implemented by the U.S. Fish and Wildlife Service (FWS). In 2007, $2.5 million of Congo Basin Forest Partnership funds were distributed in 29 grants to 11 institutions. Grantees included: World Wildlife Fund, for work to increase ecotourism in the Central African Republic by habituating two groups of western lowland gorillas to people; Rare, for a public awareness campaign to conserve bonobos in the Democratic Republic of Congo; and Wildlife Conservation Society, for their efforts to reduce the transport of illegal bushmeat on Cameroon's rail system through education and law enforcement.

FY 2007 was the first year of the Biodiversity Analysis and Technical Support (BATS) program, which helps USAID Headquarters and Missions conduct activities in Africa in a manner that conserves biodiversity and protects tropical forests and other critical habitats. The program seeks to conceptually and pragmatically link understanding of biodiversity situations with sound design and implementation of USAID programs, and to identify emerging best practices. Activities include biodiversity assessments, targeted analyses, and other program development support. By incorporating best practices into operational plans, Mission Strategic Plans and Country Assistance Strategies, this program raises awareness of USAID's biodiversity conservation goals.

Through BATS implementer Chemonics International, Africa Regional Program supported a review of 30 years of Africa Bureau experience in the biodiversity sector; has drafted extractive industry guidelines for conserving biodiversity in the areas of mining, oil and gas, forestry and fisheries; and has developed an information packet on conserving biodiversity before, during, and after conflict. BATS also implements or supports mandatory biodiversity and tropical forestry assessments in African countries. In FY 2007, Chemonics independently completed these assessments in four countries (Benin, Burkina Faso, Mauritania and Sierra Leone), assisted the USDA Forest Service International Programs (USFS-IP) with two assessments (Lesotho and Swaziland), designed and delivered a three-day training in Kalispell, Montana for USFS-IP personnel conducting assessments for Botswana, Chad, and Niger, and provided support to USAID to undertake two additional assessments (Nigeria and Senegal).

USAID Africa Bureau funded USFS-IP to provide technical assistance on natural resource management to Missions and their partners, including numerous assessments, trainings, and program design and implementation activities. For example, USFS-IP supported USAID/Mozambique's Forests, Finance, Food, Fuel and Future (5F) program, where an Environmental Impact Assessment has been completed, reforestation with endangered species is underway, and environmental protection guidelines have been established.

PHOTO: CRICKETTE SANZ, WCS

CONSERVING GREAT APES is hard work. Here, Wildlife Conservation Society researchers survey ape nests in a flooded part of the Nouabale-Ndoki National Park in northern Republic of Congo, part of a project supported by USAID via the Great Ape Conservation Fund, administered by the U.S. Fish and Wildlife Service.

Support to USFS-IP is also used to introduce expertise and services to countries and regions in Africa with new USAID programs or which have not previously received Forest Service assistance. Programs initiated in FY 2007 include: sustainable forest management planning in Ghana; ecotourism development in Cross River State, Nigeria; website and digital image training in Sierra Leone; training in tree identification,

vegetation assessment, and wildlife monitoring in Divundu, Namibia, and Mucusso, Angola; and, an Africa Leadership Seminar in South Africa and Botswana. USFS-IP support is now part of ongoing USAID assistance to the Sudan Transition Environment Program (STEP) in Southern Sudan, and training in wildlife detection and monitoring systems for the Department of Water Affairs and Forestry in South Africa.

The Africa Biodiversity Collaborative Group (ABCG), founded in 2000, is co-funded by USAID Africa Bureau, other donors, and NGO members. This consortium of U.S. conservation organizations active in Africa helps leverage the significant intellectual capital and other resources of its members to provide technical assistance in support of USAID's biodiversity conservation programs across Africa. In 2007, ABCG provided program planning, implementation and evaluation support to the BATS program, and began support for a new initiative with the FWS and Tanzania's Mweka Wildlife College to address the bushmeat trade in East Africa through targeted training of wildlife professionals.

Sustainable development of the smallholder tree crop sector in West and Central Africa is promoted by Africa Bureau through co-funding of the Sustainable Tree Crops Program (STCP), a public-private, research-for-development partnership. In FY 2007, the primary tree crops targeted by STCP in West Africa were cocoa and cashew nuts, with additional tree crops considered within the context of diversifying cocoa or cashew production systems. While STCP focuses on promoting the production and marketing of quality cocoa, and improving market access and income for small-scale producers, attention is also paid to creating systems that are environmentally friendly, socially responsible, and economically sustainable. In this vein, the STCP program included work and publications on "Biodiversity and Smallholder Cocoa Production Systems in West Africa" and "Enhancing the knowledge base on valuable trees in cocoa in West Africa."

Central African Regional Program for the Environment/Congo Basin Forest Partnership

Landscape-level Conservation and Forest Management in the Congo Basin and Virunga Mountains

USAID's Central African Regional Program for the Environment (CARPE) is a 20-year initiative started in 1994. CARPE moved from an information gathering phase to an implementation phase in January 2003, when management moved from Washington, DC to Kinshasa, Democratic Republic of Congo, following the launch of the Congo Basin Forest Partnership (CBFP), an international partnership of governments, NGOs and the private sector all working towards improved conservation and management of forests and wildlife in the region. CARPE is the principle U.S. program supporting CBFP.

The majority of CBFP funds allocated by CARPE support activities in 12 key biodiversity landscapes in seven countries, covering an area of 65 million hectares (680,300 km^2). From the Bight of Africa to the mountains of the Albertine Rift, these landscapes extend across political boundaries and ecosystems to conserve the most biologically important forests while promoting cooperation in environmental monitoring and law enforcement.

The primary objective of CARPE's current phase is to reduce the rate of forest degradation and loss of biodiversity through increased local, national, and regional natural resource management capacity, using a people-centered approach to forest conservation. In the past, conservation strategies were typically developed to support protected areas, community lands, or private sector holdings as separate entities within political boundaries. Over time there has been increasing recognition that wildlife movements, ecological processes, and human influences move in between macro-zones and across such borders. Addressing natural resources management at a larger scale allows for broader examination of conflicting policies and practices across jurisdictions and land-use regimes.

CARPE's approach involves the creation and execution of comprehensive landscape management plans which convey resource usage rights to rural populations, thereby providing environmental and political stability in areas prone to conflict over natural resources. Key activities include protected area management, improved logging policies, support for rational forest use by local inhabitants, and improved environmental governance. In 2007, the total area under improved management by CARPE partners

increased by 14.25 million hectares, to a total of 46.6 million hectares. This includes 14.6 million hectares in 64 separate Community Based Natural Resource Zones where CARPE partners have initiated or implemented a participatory land use planning process. In additions, there are 17.7 million hectares of protected areas and 14.3 million hectares of extractive resource zones – primarily forest concessions – under improved management.

In 2007, CBFP/ CARPE partners NASA and University of Maryland used archived satellite imagery to establish a baseline rate of forest cover change from 1990-2000, and generated forest cover change maps for the entire Congo Basin, for the 12 priority landscapes, and for each of six Central African countries. The information will help assess progress towards conservation objectives, identify areas of biodiversity degradation, and inform the appropriate conservation response to threats. In addition, partner World Resources Institute (WRI) developed an internet-based forest information system, which allows national governments and independent observers to verify whether forestry concession holders are practicing legal and environmentally sustainable logging practices. Two always-current "forest atlases" are operational for Cameroon and Republic of Congo, and by the end of 2008, five countries in the region will have web-based monitoring of logging concessions.

DZANGA BAI: Forest elephants, gorillas and other large mammals congregate in forest clearings known as bais like this one in Central African Republic, part of the Sangha Tri-National Landscape which also includes portions of Cameroon and Republic of Congo.

PHOTO: DAVID WEINER, INCEF

Within each of the 12 landscapes, partners have also created monitoring programs to survey and manage keystone species including great apes, elephants and okapi (forest giraffe). Data are being collated to create geographically referenced baseline information which will be published in 2008.

In addition to field conservation mechanisms, CARPE is working to improve biodiversity governance. Partner IUCN (World Conservation Union) plays a coordinating, catalyzing and supporting role through a small grant program to build the capacity of indigenous NGOs, and links their activities with international partners, national governments and regional institutions. A related objective is the coordination of civil society actors at local, national, and international levels in developing and advocating a biodiversity conservation policy agenda on a national scale. In 2007, 291 people benefited from training programs to build capacity for advocacy, monitor environmental compliance, and promote financial management for good governance in the forestry sector.

Fourteen new laws or policies were passed in the environment and forestry sector in FY 2007 with support from CARPE. For example: eight of nine countries in the region have ratified a treaty governing the sustainable use and management of natural resources in Central Africa; Gabon has passed a law creating a National Park Agency; the Central African Republic has adopted mining and water codes; the Democratic Republic of Congo has promulgated eight implementation decrees that operationalize the forestry code; and, Equatorial Guinea has issued a decree banning the export of raw logs from logging concessions.

Identifying best practices and transferring this knowledge to local stakeholders is critical to sustaining and building upon the achievements to date. With this in mind, the USDA Forest Service (USFS) is applying its wealth of practical experience managing large-scale forested landscapes to the production of management guidelines for the 12 landscapes. In 2007 they finalized two guides, one on protected areas and one on landscapes in general, and circulated a draft of a third guide on community-based natural resource management. In addition, USFS trained an estimated 100 national and local ministry of forestry and environment planners and implementing partners on landscape planning processes. These documents and training workshops are essential for building local capacity for conservation and sustainable forestry in Central Africa.

USAID/East Africa

Water for Biodiversity in the Mara River Basin

The survival of the Mara-Serengeti ecosystem is dependent on the flows of river Mara, which provide biodiversity in this ecosystem with riverine habitats and serves as refuge from annual and periodic droughts. Straddling the Kenya-Tanzania border with Masai Mara National Reserve in the north and Serengeti National Park in the south, the Mara River is threatened by growing water scarcity as upstream water abstraction has continued to grow. In addition, water pollution has been worsened by poor land-management practices upstream and discharge of untreated, raw waste into the river. In response to these threats, USAID/East Africa initiated "Transboundary Water for Biodiversity in the Masai Mara River Basin" (TWB-MRB) in 2006.

The overall goal of TWB-MRB is to improve water resource management in ways that reduce and mitigate threats to biodiversity in the Mara River Basin. To achieve this goal, the program supports activities that improve understanding of the water needs of biodiversity, harmonize river basin management plans and policies to provide a sufficient quantity of clean water to people and wildlife, and explicitly monitor indicators for biodiversity conservation in the basin. TWB-MRB promotes a transboundary agreement between Kenya and Tanzania, under the authority of the East African Community (EAC: the regional intergovernmental organization of the Republics of Kenya, Uganda and Tanzania), which will ensure water flows to sustain the biodiversity of the Mara-Serengeti region.

In FY 2007 the program started the process of developing a basin wide Biodiversity Action Plan by holding a workshop of stakeholders in June 2007, which attracted several key government and community stakeholder institutions from Kenya and Tanzania, as well as the EAC, International Livestock Research Institute, and World Wildlife Fund's East Africa Regional Program Office (WWF/EARPO). This consultative process has resulted in agreed approaches to conserving the Basin, including community-based conservation, protected area management, sustainable use of natural resources, economic incentives for conservation, environmental education and communication, and policy analysis, development and reform. WWF/EARPO compiled data from biodiversity threat surveys conducted by WWF, EAC and African Centre for Technical Studies. TWB-MRB supports the process of addressing threats and challenges identified in EAC's policy statement on "Ecosystems, Natural resources and Environment."

The program also launched an Environmental Flows Assessment (EFA) to gauge the water needs of wild animals and plants, and conducted two consultative workshops and EFA measurements on the Mara River to determine the baseline river flows necessary for the maintenance of biodiversity. The TWB-MRB has also held a regional stakeholder's dialogue on Integrated Water Resources Management to align the project goals with those of the World Bank funded Nile Equatorial Lakes Sustainable Action Plan (NELSAP) in the basin, and a joint proposal for funding by the NELSAP program has been prepared. TWB-MRB has facilitated the formation of interim transboundary water users committees critical to the formation of a Transboundary Water Users Forum, supported transboundary dialogue for Integrated water resources management and helped prepare proposals for the formation of national and regional Masai Mara basin management structures. The program trained nearly 100 people in both Kenya and Tanzania who have subsequently been involved in transboundary basin management.

PHOTO: WWF-EARPO

DINNER: Residents of the Iseresere village in Northern Tanzania display their catch of mudfish from the Mara wetlands. Nearby, Lake Victoria no longer contains this important food for people and wildlife. USAID supports a biodiversity action plan for the Mara Basin to conserve species impacted by reduced water flow and increased water pollution.

USAID/Southern Africa

Biodiversity Conservation through Improved River Basin Management

USAID regional activities in Southern Africa aim to improve biodiversity conservation in the Okavango River Basin by supporting key elements of the National Biodiversity Strategic Action Plan of Angola and integrating concerns of Botswana and Namibia, under the guidance of the Permanent Okavango River Basin Water Commission (OKACOM). Specifically, USAID/Southern Africa is working to strengthen OKACOM so it can better coordinate and oversee research on sustainable use of the natural resources, while conserving valuable biodiversity and ecological services in the basin. USAID is also working to increase the capacity of forestry and environmental technical specialists to conduct inventories of biologically important areas, activities critical for conservation planning. Perhaps the most important activity supported by the Mission is preparation of a management plan for the biologically significant Mucusso Reserve in Angola, which will advise the process of developing national guidelines on management plan preparation for protected areas in the country.

PHOTO: USAID/SOUTHERN AFRICA

COLLECTING WOODY SPECIES FOR IDENTIFICATION: With USAID support, a local team of technicians-in-training conducted mammal and vegetation inventories in accessible areas of the Mucusso Game Reserve, Angola.

Mucusso Reserve and transboundary areas contiguous to Angola are threatened by extensive fires in the late dry season, hunting of low-density mammal populations, unsustainable logging of key hardwood tree species, a high rate of post-war expansion of human settlements and agriculture along the Kubango River in Angola, future agricultural expansion along the Cuito River following proposed mine closures in Namibia, and possible loss of protected status for a section of the Caprivi Game Reserve that lines the Kavango River. Many basin-wide activities important to addressing these issues were supported with FY 2007 funds:

- Over 50 government environmental technicians and managers from the three Okavango River Basin countries were trained on tree species identification, mammal monitoring and vegetation assessment.
- A six-month study on the Okavango River system in Kavango and Caprivi regions of Namibia was conducted, which assessed bird diversity and community use of natural resources, including the transboundary acquisition of bushmeat.
- A geographic information system was established for the region.

In Kuando Kubango province, Angola, significant progress was made in filling information gaps and securing government cooperation. For example, an Action Plan to support biodiversity in the the provice was prepared in collaboration with the Angolan Ministry of Environment and Urban Affairs (MINUA) and the Provincial Government or Kuando Kubango (PGKK). The first ever agreement between USAID, MINUA and PGKK was signed, forming a partnership for preparing a management plan for Mucusso Reserve in the province. With USAID support, land use and land cover change along the Kubango River from 2003 to 2006 was mapped, and a threat analysis conducted of the Kumbilo wetlands in Mucusso and human-elephant conflicts in the region. Data collected from field work and research in Portugal, Angola and Namibia contributed to a new tree guide for Kuando Kubango, produced in English and Portuguese.

These achievements will influence the overall outcome of a management plan due in late 2008, featuring stakeholder participation and guidelines for management planning in Angola that can be disseminated and supported by OKACOM within the Basin.

PHOTO: USAID/GUINEA

REST STOP: A sleeping nest built of branches and leaves (center-top) is a sure sign of chimpanzees. Habitat like this along the Guinea-Sierra Leone border will be better conserved through transboundary cooperation and investments in community forests and protected areas.

USAID/West Africa

Natural Resource Management Without Borders

West Africa is rich in natural resources, but tapping into this wealth to foster development is a challenge due a lack of capacity in government and the private sector, as well as a legacy of recent and ongoing conflicts. Conservation and natural resource management (NRM) efforts can be very effective in building capacity and promoting peace, which is the goal of two trans-boundary initiatives supported by USAID/West Africa. The West Africa Regional Mission serves 19 countries in all, only six of which have USAID bilateral Missions.

The Ghana/Ivory Coast Transboundary Area project focuses on a zone which has received the highest rating for biodiversity conservation in West Africa. The defining landscape feature is the forested Tano River basin, including the river terminus, the Aby Lagoon. This zone is rich in biodiversity but is threatened by high deforestation rates; natural forest cover outside of protected areas has been especially impacted by conversion to agriculture. The project aims to improve the management and sustainable productivity of natural resources within the western region of Ghana and the Aboisso prefecture of Cote d'Ivoire while promoting a more equitable distribution of benefits and regional stability.

In FY 2007, project design was completed and implementation begun with the selection of CARE International as the partner. The project builds on CARE's work in the western region of Ghana in forest management and biodiversity conservation that has been funded by Dutch and French foreign assistance since 1999. Activities include efforts to better understand current NRM practices of the transboundary area, while bringing transparency and accountability into the governance of forest resources, especially in conflict situations. There are also plans to develop small farm-based industries to provide economic safety nets, while reducing pressure on the available forest resources.

The Guinea/Sierra Leone Transboundary Natural Resource Management project is designed to conserve the natural forest areas associated with Outamba Kilimi National Park (OKNP) in Sierra Leone, and the classified forests of southern Guinea, by working with communities and appropriate institutions. OKNP, Sierra Leone's only national park, contains a variety of habitats that are regionally important for biodiversity conservation. It is also part of a watershed that supplies many communities in northern Sierra Leone. The park's northern border is the international boundary with Guinea, where a considerable amount of wildlife and dry forest cover remains but is not well managed or protected. Some local Guinean officials would like this area to become a national park, or at least a classified forest.

In FY 2007, project design was completed and the World Agroforestry Centre (ICRAF) was selected to lead implementation. ICRAF has promoted community forest co-management in Guinea for 15 years, and is essentially expanding its Landscape Management for Improved Livelihoods (LAMIL) program, initiated in 2006, to the Sierra Leone border and beyond.

One objective specific to this transboundary project is to increase the collaboration and information exchange between key stakeholders in both countries on forest management and associated issues such as poaching and illegal logging. Field activities are starting in 2008.

These projects share many goals and activities: restoring degraded landscapes; improving NRM through strengthened protected area management agencies, community-based enterprise development initiatives and active community participation in management; building local government and civil society capacity in NRM, enterprise development (including ecotourism) and conflict management; and, establishing systems to effectively monitor the flow and value of natural resources.

Further support for the environment in West Africa is provided by the Sustainable and Thriving Environments for West African Regional Development (STEWARD) program, a collaboration among the USAID Africa Bureau, USAID Economic Growth and Trade Bureau and USDA Forest Service. See the Centrally Funded Programs chapter for more information.

Ethiopia

Food Security, Forestry and Ecotourism Programs

Food security continues to be a concern in Ethiopia, and is therefore a focus of USAID efforts in this country. One contributing factor is the fragility of the natural resource base: land degradation from soil erosion, over-harvesting, deforestation, invasive species, and cultivation of steep, fragile lands has resulted in the loss of biodiversity, productivity, stability, and resiliency. USAID is responding to these challenges through support for reforestation, community-based invasives species management, and ecotourism.

USAID/Ethiopia's Productive Safety Net Program (PSNP) works to decrease the number of persistently poor people requiring food or cash assistance to meet basic needs by strengthening the capacity of target beneficiaries to diversify their livelihoods options. Natural resources management, including forestry, offers income-generating opportunities for the poorest of the poor while restoring a healthy, productive landscape. In FY 2007, over 15 million tree seedlings were planted across the country, more than three million elephant grass (forage) seedlings were distributed, and 762 hectares of land were reclaimed as a result of gully treatment.

The Pastoralist Livelihoods Initiative (PLI), with USDA Forest Service technical assistance, influences policy on rangeland management by strengthening traditional pastoralist institutions and the Government of Ethiopia's pastoralist programs to better manage natural resources. One particular challenge is *Prosopis juliflora*, an invasive species affecting the Afar and Somali Regions of Ethiopia. In FY 2007, USAID developed an invasive species management strategy for *Prosopsis* with government and PLI partners, addressing infestation prevention, rapid detection and response, control and management, and rehabilitation and restoration. Development of community-based strategies for invasive species management is an ongoing effort supported by PLI and the Government of Ethiopia.

In 2008, USAID/Ethiopia is initiating a five-year Ethiopian Ecotourism Development Program (EEDP) with FY 2007 funds and assistance from USAID's Global Sustainable Tourism Alliance, which will capitalize on Ethiopia's extant and rich biodiversity. EEDP is a community-based activity that will lead to better management of protected areas and specific protection for unique and valuable assemblages of species. EEDP will be self-sustaining, creating economic opportunities from a myriad of tourism-related jobs.

Guinea

Landscape Management for Improved Livelihoods

Destructive farming practices, especially shifting ("slash and burn") cultivation, pose a significant threat to biodiversity and forests in Guinea, part of a high biodiversity zone that stretches from Sierra Leone to Cameroon. Guinea's National Directorate of Water and Forests (DNEF) does not have the resources to manage the more than 100 classified natural forests, and communities reliant on unclassified forests are likewise challenged.

In response, USAID works to improve the capacity of local communities to manage forests and increase sustainable agricultural production through the Landscape Management for Improved Livelihoods (LAMIL) activity, started in FY 2006 by the

PHOTO: USAID/GUINEA

SEEDS OF CHANGE: Children in Guinea learn about the importance of natural resources management by planting trees, part of the LAMIL project supported by USAID.

World Agroforestry Centre (ICRAF). This activity is complemented by large and small grants to encourage wildlife habitat conservation, promote development in the cashew sector, and support agricultural research. Within this framework, a major focus of USAID/Guinea's activities has been forest co-management: cooperative management among farmers, community groups, and local DNEF officials, resulting in protection of biodiversity in classified forests, the sustainable use of forest resources, and an equitable sharing of responsibility and benefit among partners.

Since inception, LAMIL has successfully supported community co-management in four classified forests for a total of 55,500 hectares. To create a policy environment for sustainable and productive forest management at the national level, the project also provides USDA Forest Service technical assistance to DNEF, and together they review or develop natural resource management (NRM) procedures, establish a means of disseminating tree and crop intensification models, and empower local communities to plan and implement sound NRM activities.

The project includes education opportunities and resources to increase the economic value of well-managed forests, including training on the use of market information systems, and sustainable harvest and processing of key agroforestry and non-timber forest products. In FY 2007, new processing equipment and storage technologies were introduced to the communities to add value to raw products, and a community savings account was opened from the proceeds of teak sales in Souti Yanfou, further increasing interest in community-based NRM. Agroforestry innovations such as community nurseries, live fencing, improved manure pits, fodder plots and multipurpose tree species for enhancing soil fertility were introduced and adopted by 580 households.

The primary goal of the biodiversity component of LAMIL is to enhance the survival of the highly threatened West African chimpanzee, an umbrella species for forest biodiversity in the region. Although an estimated 75 percent of the country's chimpanzee population has disappeared in the past 30 years, Guinea remains an important refuge for the species, with critical habitat located in and around co-managed forests. In FY 2007, LAMIL used participatory mapping, public awareness, and direct outreach to hunters to address immediate and long-range threats to biodiversity, especially chimpanzees.

In collaboration with communities, LAMIL has identified and delimited 23,004 hectares of chimpanzee critical habitat, including migration corridors, where communities have agreed to avoid production activities. 245 watersheds were also demarcated in this process, which has helped target reforestation activities. In FY 2007, a total of 120,000 high-value seedlings were produced and transplanted by communities, including 24,646 seedlings for live fencing and 95,724 seedlings for various other activities such as reforestation of degraded areas within classified forests, protection of watersheds and chimpanzee critical habitats, enrichment planting within community forests, and introduction of high-value trees in community farmlands.

Public awareness and training on the importance of biodiversity and the causes and consequences of biodiversity loss is a key part of

LAMIL. Monthly education programs using books, theater, songs and field excursions have reached 576 children in primary schools, and community meetings have reached 700 adults in forest communities, where participants learned about biodiversity and their role in protecting it. Six lessons on general biodiversity and chimpanzees have been produced for broadcasting on rural radio.

Guns and traps threaten chimpanzees across Africa, through illegal hunting of these great apes for food, and fatal injuries from snares set for legal game. The project has supported the creation of a hunters association at Balayan-Souroumban, which promotes local control of hunting activities and ensures that forestry and wildlife codes are respected. Hunters – expert trackers who value good wildlife management – now monitor wildlife and report illegal hunting and logging.

USAID biodiversity conservation activities may already be bearing fruit in Guinea. Informal analysis of monitoring data from FY 2007 suggests that the chimpanzee population in the four classified forests where LAMIL works will exceed the baseline of 410 individuals recorded at the start of the project.

Kenya

Community Conservation to Carbon Markets

Biodiversity conservation and natural resource management are the primary sectors through which USAID works to advance Kenya to a transforming state. In FY 2007, 82 percent of Mission funds were devoted to biodiversity conservation and sustainable use of natural resources with investments in policy, governance, field conservation and information technology.

USAID partnered with the Northern Rangelands Trust (NRT) to put 377,289 hectares of land under improved management and expand ecological connectivity among four protected areas in FY 2007. Support was centered on 12 community-managed conservancies selected for their diversity of habitats, range of wildlife species, tourism potential and community commitment to rangeland conservation. Three conservancies received rangeland rehabilitation assistance; six set up community-based systems for ecological data monitoring; three piloted vegetation monitoring to track changes in wildlife habitat as a result of management interventions (and inform planning of game scout security operations). Grazing committees elected in three conservancies are planning improved grazing practices in buffer zones outside core conservation areas. Aerial counts in some conservancies suggest these efforts are paying off, with populations of elephant, giraffe and Grant's gazelle doubling or better in recent years.

In the same region, USAID supported NRT in the initiation, negotiation and ratification of five community-private sector ecotourism deals, leveraging private sector investments that exceeded $1.5 million. Communities and landowners participating in the program realized $401,808 in financial returns as dividends, salaries and wages. About 6,000 additional individuals benefited through funding, training, technical support and through creation of conservation projects.

USAID helps monitor the health of wildlife populations through support to the Kenya Wildlife Service (KWS). In 2007, KWS undertook aerial biomass monitoring in Nairobi National Park (NNP), and maps were digitized to produce baselines for long-term monitoring. Wildlife censuses in Kajiado and Machakos ranches provided data on wildlife populations in the dispersal areas south of NNP. In Amboseli National Park, aerial and ground censuses were done to monitor biomass changes and standardize monitoring processes.

The Mission's Forestry/Range Rehabilitation and Environmental Management Strengthening (FORREMS) program works inside and outside protected areas to improve sustainable management of forest and woodland ecosystems, agroforestry systems and degraded rangelands. One result of FORREMS is the International Small Group Tree Planting program (TIST), a public-private partnership initiated in 2005 that involves the Clean Air Action Corporation, the Institute for Environmental Innovation, USAID and over 24,000 small farmers in central Kenya. In FY 2007, TIST signed climate change transaction agreements with 2,295 small groups, including 715 tree planting groups, on the strength of 3.86 million quantified trees eligible for carbon trading on the voluntary carbon market.

USAID also supported rangeland restoration through the Laikipia Wildlife Forum (LWF), which put 4,264 hectares of degraded land under improved management in FY

NAIROBI NATIONAL PARK: **Zebras are among the many large mammals that draw people to this relatively small park a short drive from the capital. USAID supported aerial surveys here in 2007.**

PHOTO: MIKE COLBY, USAID

WHEN TOURISM DISAPPEARS, JOBS AND WILDLIFE FOLLOW

Much of USAID's support for Kenya goes to ecotourism, which is critical for financing biodiversity activities and building public support for conservation. Tourism is the country's top hard currency earner, providing 500,000 jobs – one-tenth of Kenya's workforce – and adding $1 billion annually to the economy in recent years. 2007 was a record-breaking year for tourists, when over two million people visited the country.

When post-election violence started in early January 2008, the country was full of tourists. Over the next several weeks, ethnic conflict claimed 1,500 lives and caused 260,000 Kenyans to flee their homes. No tourists were harmed and the airport stayed open every day, but most visitors cancelled vacations or moved them to neighboring countries. Game lodges sat empty, and even coastal hotels and resorts dropped to 20 percent of capacity in the normally busy winter months. Tourist-dependent enterprises held a collective breath and many employees lost their jobs or continued working without pay. The loss of national and local revenue combined with rural unrest could have led to widespread poaching of wildlife, as it has elsewhere, but such fears never materialized.

As of June 2008, four months after a power-sharing agreement was negotiated and violence subsided, tourism was picking up once again. Most bookings for the second half of 2008 were never cancelled, and the famous wildebeest migration in July, August and September is expected to bring precious foreign currency back to the parks and communities that rely on it. Kenyans are optimistic that tourism and the economy will rebound to former levels in 2009.

SOURCE: "KENYA TOURISM STILL STRUGGLING," ONE NEWS, NEW ZEALAND, JUNE 23, 2008.

2007, with 40,000 aloes and 29,600 indigenous trees planted along riparian areas and community grazing lands. Some land was rehabilitated through the widespread use of thorny acacia as a ground cover to discourage grazing and encourage grass regeneration. Three new ecotourism facilities are currently under construction, all of which are community/private sector partnerships.

Nature Kenya received support to extend Participatory Forest Management (PFM) to all areas adjacent to the east boundary of the Arabuko Sokoke forest. This support will address threats from illegal logging and the bushmeat trade. In FY 2007, 97 villages were organized into three umbrella Community Forest Associations, and farmers in the program put 14,400 hectares under PFM and planted 300,000 trees in agroforestry initiatives. Revenue generated from forest-based resources amounted

to $52,357, mostly from export of forest butterfly chrysalises to the US and EU, supplemented by the sale of honey and forest mushrooms in local markets. Over 2,000 people obtained increased economic returns from forest product revenues. A biennial biodiversity monitoring assessment of the Forest found increases in some taxa, particularly birds and butterflies, indicating that harvesting of non-timber forest products (including butterfly chrysalises) had negligible impact. The assessment also noted a slight increase in numbers of the globally endangered Sokoke Owl and Akalat (both IUCN "red list" species), and an Ader's duiker was spotted by KWS for the first time in this forest.

PHOTO: USAID/KENYA

IT PAYS TO CONSERVE for these Kipepeo farmers selling butterfly chrysalises destined for museums and 'butterfly gardens' in North America and Europe. In 2007, butterflies and other sustainable harvested non-timber forest products earned over $50,000 for communities near the Arabuko Sokoke Forest.

At the national level, USAID supported the Government of Kenya to undertake a comprehensive review of the Wildlife Management and Conservation Act of 1977 and Policy Paper No. 3 of 1975. This Kenya Civil Society Strengthening Program mobilized communities and other stakeholder groups to engage the Ministry in a Wildlife Policy Review. The draft policy paper has important provisions that address human wildlife conflict, wildlife utilization, compensation, organizational arrangements for devolving wildlife management, and institutionalizing international biodiversity management conventions. USAID support also helped the KWS to upgrade the Smartcard revenue collection system (now called 'SafariCard'), which is expected to boost Wildlife Service revenue by an additional $2 million per year, to be reinvested in biodiversity conservation in and around parks and reserves.

Prior to the CITES 14th Conference of Parties in June 2007, USAID facilitated a KWS proposal to amend the rules for trading African elephant ivory in Botswana, Namibia, South Africa and Zimbabwe, and a working document on Illegal Ivory Trade and Control of Internal Markets. The KWS Rhino Program developed a working document on Black Rhinoceros Export Quotas for Namibia and South Africa.

To advance forest sector reform at a national level, USAID partnered with the Ministry of Environment and Natural Resources to establish and develop the Kenya Forest Service (KFS) - a state corporation that replaced the Forest Department in February 2007. The Agency funded a Forestry Transaction Advisor that assisted the KFS with formulating the Service's first annual budget, developing service manuals and guidelines for hiring and managing KFS staff, and finalizing reform documents including guidelines and authorizations for forest concessions and eco-tourism development.

Liberia

Commercial Forestry, Community Empowerment and Conservation

Liberia's natural resources have been a key source of conflict and corruption in the past, but now the Government of Liberia has the opportunity to ensure that natural resources contribute meaningfully to the nation's development and improved governance while conserving species and ecosystems.

FISHING ON LAKE PISO:
Many communities in Liberia depend on healthy fish populations for food and income.

PHOTO: DIANE RUSSELL, USAID

MAJOR ACHIEVEMENTS OF THE LIBERIA FOREST INITIATIVE IN 2007

- **Completion of the Ten Core Regulations that guide forest management planning, pre-qualification, contract management and forest products and fee payments;**
- **Drafting the Code of Harvesting Practices for logging contracts in Liberia. The Code assures low impact logging and adherence to best forest management practices;**
- **Support to the FDA to prepare, advertise and provisionally award six Timber Sale Contracts as a pilot test for the new legal framework for commercial logging. Each contract is a total of 5,000 hectares and for a duration of three years;**
- **Successful negotiation, award and start-up of the Chain of Custody Contract through a Public-Private Sector Partnership Agreement for monitoring movement and payment of all forest products fees related to commercial logging activities;**
- **153 people received USG supported training in sustainable forest management and implementation of the Code of Harvesting Practices;**
- **200 people trained in the new forestry law and regulations by implementing partner Environmental Law Institute; and**
- **50 FDA employees trained on commercial forest contract preparation, advertisement and award of contract.**

USAID initiated the Liberian Forestry Initiative (LFI) to reform the institutional and financial management of the Forest Development Authority (FDA); establish transparent forest management contract allocation, administration and fee payment mechanisms; develop an appropriate legal framework for contract management; and increase democratization in forest management. LFI assists in developing policies for the "3 C's": commercial forestry, community forestry and conservation. The USDA Forest Service (USFS), funded by USAID, spearheads the LFI by providing day-to-day program support, training and technical assistance to Liberia's FDA. This is a unique program that pools the strengths of both the State Department and USAID to ensure the success of the program.

To conserve biodiversity in post-conflict Liberia, USAID supports the Civilian Conservation Corps (CCC) Program implemented by Conservation International in association with Action Aid Liberia, in which rural Liberians are benefiting from conservation through community action in and around one of the highest priority protected areas in the Upper Guinean Forest Biodiversity Hotspot: Sapo National Park (SNP). The CCC Program is building on established community development efforts in and around SNP to improve and diversify livelihoods of over 15,000 Liberians. It provides positive incentives for conservation through participatory rural development, improved park management and infrastructure, and the Sapo Community Development Fund, which supports sustainable livelihoods around the park. In its first year, the CCC program identified development priorities in each community and provided training in project and natural resources management to 30 members of the Community Development Committees. Community Watch Teams of 15 to 25 members were also established in each community in order to monitor the movement of people in and out of the park and report issues to the FDA. It is hoped that lessons learned from this program can be replicated in other key biodiversity areas of Liberia.

The Land Rights and Community Forestry Program (LRCFP), initiated in December 2007 with FY 2007 funds, assists forest-dependent communities in high biodiversity zones of Sinoe and Nimba Districts. Given that Liberia's rich natural resources have historically only benefited a small number of Liberians, this program addresses fundamental inequities and helps foster better governance of forests and natural resources in Liberia. Specifically, the LRCFP will support the FDA and its partners in the development of a law governing community access rights to forests and the regulatory framework required to implement it, and provide technical assistance to the new national Land Commission to help develop key policies, regulations and processes to establish transparent, equitable and technically sound land tenure and property rights systems in Liberia, particularly as these affect community management of forests. The program also will build the capacity of communities and their governmental and non-governmental partners to develop, manage and support community forestry programs.

USAID activities in Liberia are transitioning from an "emergency response" phase to planned development activities. As such, the Mission has initiated an Environmental Threats and Opportunities Assessment to be completed in 2008. The assessment is first and foremost a tool to facilitate Mission planning and decision making. It will also be an educational tool, informing Mission staff, the Government of Liberia and others on present trends and recent data on Liberia's tropical forests, biodiversity and environmental issues.

The Sustainable and Thriving Environments for West African Regional Development (STEWARD) program, managed by USFS International Programs in collaboration with USAID, will play a supportive role in the implementation of the Liberia Mission's natural resource management and agricultural activities, and help inform a new activity designed to improve livelihoods within small scale farming and fishing communities. FY 2007 funds are also supporting a climate change assessment by the World Agroforestry Centre (ICRAF) and the Centre for International Forestry Research (CIFOR) within the Consultative Group for International Agricultural Research (CGIAR) to evaluate the potential for conservation financing through carbon markets, determine the issues and potential impacts related to a growing biofuels market, and identify adaptation measures that will help people and ecosystems adjust to global climate change. For more information on STEWARD and CGIAR, see the chapter on Centrally Managed Programs.

THE MILNE-EDWARDS SIFAKA is one of a dozen species of lemur found in Ranomafana National Park, Madagascar. The eastern forests of the country contain 72 species of endangered mammals, including at least 25 lemur varieties.

PHOTO: DAVID HARING

Madagascar

Biodiversity Conservation and Sustainable Management of Forests

Madagascar is one of the world's top three environmental conservation priorities, but the country's biodiversity and forests are at risk from threats such as slash and burn cultivation, illegal logging, and illegal mining. Since 1989, USAID has supported the development and implementation of the Madagascar National Environmental Action Plan, which prioritizes the reduction of poverty through sustainable natural resource management, environmentally sensitive development, and conservation of the country's unique biodiversity. USAID takes a holistic approach to this plan, balancing support for protected areas and forest stewardship with efforts that link community-based natural resources management to farming systems which reduce the pressures on biodiversity through improved agricultural production, livelihoods and food security.

The U.S. continues to be the primary donor in support of the President of Madagascar's commitment to triple the coverage of protected areas by 2011. In 2007 alone, USAID supported the creation of 735,049 hectares of new protected areas under temporary status, bringing the percentage of biodiversity rich habitats represented in protected areas to 95.6 percent. On June 26, 2007,

the UNESCO Committee on World Heritage Sites inscribed Madagascar's Atsinanana (eastern) rainforests as a natural World Heritage Site, a validation of USAID's investment in this region. USAID has helped finance the development of six protected areas within the Atsinanana belt of forest, involving delimitation of park boundaries and compensation negotiations with locals. Today, surrounding communities have limited user-rights within park boundaries, and 50 percent of visitor revenues pass directly to bordering communities.

USAID is currently active in a consultative process to give legal protection to the two largest biodiversity corridors, *Ankeniheny-Zahamena* and *Fandriana-Vondrozo*, totaling one million hectares. An Agency analysis conducted in 2007 clearly shows a decrease of annual deforestation rates of primary biodiversity-rich forests from 0.46 to 0.26 percent in the *Ankeniheny-Zahamena* corridor; and from 0.84 to 0.17 percent in the *Fandriana-Vondrozo* corridor. In addition to measuring deforestation rates, USAID/Madagascar also helped establish the first system of satellite fire alert and monitoring in the country, which has resulted in a much faster response time in government efforts to address fires in forested zones.

At a national level, USAID helped the Madagascar government develop a guide and software that aids management planning and social and environmental impact assessments for different categories of protected areas. The Agency is also playing a key role in the establishment of co-management structures for these parks and biodiversity corridors through the empowerment of local communities. Dialogue among extractive industry sectors (mining, petroleum, and forestry) was promoted to resolve land use conflicts in priority conservation areas.

USAID is working to ensure sustainable financing of Madagascar's environment program. One component involves building up the capacity of NGOs to attract and manage funds for conservation projects. The Agency also supports development of an ecotourism policy to connect private sector investors with local communities in and around protected areas. Other sustainable financing opportunities being considered include payments for environmental services (such as the voluntary carbon market), biodiversity offsets, and dedicated visitor /airline taxes.

In the forestry sector, USAID support is focused on restructuring and revitalizing government environmental and forest agencies that are critical to improving forest management in primary, secondary and plantation forests. Activities also promote the involvement of all interest groups to improve environmental governance and stewardship. The stabilization or increase of forest cover contributes to achieving biodiversity conservation, climate change, and economic growth objectives.

USAID/Madagascar provides support to the Malagasy Forest Service to transfer its forest management vision to the field through national, regional and communal forest zoning plans. Building on prior efforts, the Mission continues to ensure that the forest zoning process is decentralized, refined, and modified to reflect wider participation. In 2007, assistance was provided to the Service to generate and manage forest information, helping redefine its central role as a research and forestry extension service in an increasingly decentralized forestry sector.

FY 2007 funds provided USDA Forest Service technical assistance in the implementation of a new system for auctioning off logging permits, as well as efforts to better monitor and control illegal trade of endangered species while promoting the sustainable use of plants and wildlife. With support from USAID/Madagascar, Malagasy enforcement officers conducted several successful seizures of illicit ebony and rosewood destined for international markets.

Not all forests and biodiversity exist in the country's growing protected areas network. Recognizing this, the Agency supported the development of norms and technical guidance to private operators in order to improve the sustainability and oversight of harvesting permits issued by the Malagasy Forest Service in non-classified natural forests. It also provided support for sustainable household energy projects in the city of Fort Dauphin and surrounding areas in the southeastern part of Madagascar, reducing dependence on firewood and other natural resources.

A BULL ELEPHANT just prior to his capture and transfer to the Majete Wildlife Reserve in southern Malawi. USAID helped move a herd of 70 elephants to the reserve, and continues to help surrounding communities benefit from wildlife conservation.

PHOTO: CURT REINTSMA, USAID

Malawi

Natural Resources Management and Biodiversity Conservation

Despite its small size, Malawi has a remarkable range of biodiversity and ecosystems. This "warm heart of Africa" on the southern end of the Great Rift Valley has a varied landscape of mountain massifs, montane grasslands, evergreen forests, miombo woodlands, lakes, lagoons and extensive wetlands, important to migratory birds and endangered species. A large proportion of the population depends upon the direct use of natural resources for their livelihoods, threatening the nation's biodiversity. Widespread poverty combined with lack of information and alternatives have further fueled the rise in pressure exerted on the country's natural wealth.

USAID/Malawi is addressing these challenges through two programs. The smaller of the two works to restore, develop and manage the long-neglected Majete Wildlife Reserve, in partnership with the Stichting African Parks Foundation. The Foundation has worked since 2003 to restock the reserve with species that once lived there: black rhino, buffalo, waterbuck, bushbuck, eland, hartebeest, zebra, bush pig, impala, nyala, and sable. In 2006, USAID assisted with one of the most important and difficult restocking projects: relocating a herd of elephants to the park. At the end of 2007, the reserve had at least 1,900 large mammals, including 73 elephants. Animal populations are steadily increasing, and improved management and community collaboration has reduced incidences of bushfires and poaching.

The other, much larger program is 'Community Partnerships for Sustainable Resource Management' (COMPASS II). Tasked with a mandate to enhance household income through participation in community-based natural resource management (CBNRM) initiatives, COMPASS II activities focus on expanding livelihood options and enterprise opportunities. The program has resulted in better managed forests, healthier fisheries, cleaner water and wealthier people at sites around the country. Program successes from FY 2007 include:

- About 260 producer groups comprising 2,000 households now engage in small-scale commercialization of select natural resources-based products.

- NRM and biodiversity conservation training reached 1,246 people, and an additional 500 participants were trained in business development and management.

- Support for 350 hours of media time, primarily through *Choma Chobisika*, a popular nationally broadcast weekly radio program focusing on unveiling "hidden treasures," helped increase awareness of new opportunities and practices for increasing income from the country's natural resources.

COMPASS facilitation helped link honey, mushroom, dried fruits, and fish producers to eight commercial processors and buyers, which resulted in their signing 154 sales agreements to purchase natural resources-based products from smallholders. The total cumulative revenue received by households from participating in CBNRM activities was $809,573 in FY 2007. Such commercial approaches have persuaded rural communities to shift away from subsistence-level extraction of natural resources to profitable asset management of those same resources.

Around the 1000 km^2 Lake Chilwa, an internationally important wetland, COMPASS is working with the Department of Fisheries to transfer many fisheries management functions from government to local fishermen associations. Moving ownership of the fishery to the people directly benefiting from the industry is expected to result in healthier fish populations and protect biodiversity in the lake. By the end of 2007, some 61 community fisheries organizations comprising more than 4,600 fishermen had begun to take an active role in managing and regulating their fishery.

PHOTO: DIANE RUSSELL, USAID

INNOVATIVE PARTNERSHIP: This traditional healer in Dogon country, Mali, is also a non-traditional stakeholder in conservation efforts: several medicinal plants in the region are endangered. Tourists flock to this area to experience its unique culture, art and architecture. USAID is working to make traditional livelihoods more sustainable while expanding tourism to include important conservation areas.

In Nyika National Park, COMPASS, in partnership with the Department of Parks and Wildlife, worked with eight smallholder beekeeping enterprises comprised of 80 clubs and about 1,600 members to establish a total of 148,000 hectares of community-managed apiaries within and outside the park boundary. Central to the success of this marriage of natural resources-based enterprises and biodiversity conservation are resource use agreements, which provide a legally binding mechanism for local people to harvest resources from within protected areas while sharing responsibility for management and conservation of the area.

Mali

Community Management of Agroforestry Parklands and Sustainable Tourism

Mali is notable for its agroforestry parklands, which contain up to 40 or 50 woody species in mixed farmland, fallow and pastoral areas. It is also famous for "Dogon Country," a World Heritage Site due to its cultural and biological value. USAID/Mali supports an integrated program of natural resource conservation, sustainable agriculture and forestry, and rural livelihood development.

Parklands in Mali's savannah regions are dominated by the shea tree, whose nuts produce a high quality oil and butter used in cooking, cosmetics,

and medicinal ointments. Shea butter is a primary ingredient in many of the most expensive facial creams and has been an economic boon in other parts of West Africa. Unfortunately, shea nuts in Mali are mishandled at the time of gathering to the point where prices received are a fraction of what could be earned. This disconnect in the supply chain makes Mali less competitive in international markets for shea butter. Programs promoting shea cultivation have not targeted the gathering or storage of nuts, where women participate and stand to gain the most.

To address this issue, USAID/Mali supports Peace Corps volunteers located throughout the country's parklands, who work with rural populations to increase income generation from improved gathering and preservation of nuts, and promote improved parkland management practices. Peace Corps works in partnership with the *Institut d'Economie Rurale*, expanding their current parkland biodiversity management program. Adding value to shea and other parkland species should increase benefits to land owners and managers, while providing incentives for better management and conservation.

The Mission is launching a sustainable tourism program in the drier Mopti Region focusing on Dogon Country, already Mali's number one tourist destination. The program aims to alleviate poverty and minimize land use conflicts by improving the natural resource base upon which livelihoods and cultural traditions depend, increasing agricultural productivity and conserving biodiversity by giving recognition and economic value to biologically significant sites and species. Conserving Dogon Country's unique biodiversity is a key objective of this activity, to be achieved through a participatory and interdisciplinary approach resulting in sustainable agriculture and sustainable tourism enterprises. For example, the program will work with traditional healers' groups to conserve and sustainably manage key plant resources including *Acridocarpus monodi*, a threatened medicinal plant endemic to Dogon country. In addition, the program will work with the Dogon traditional leadership, the *Bara Hogon*, to regenerate and sustainably manage woodlands and other important habitats in common property areas.

An ecotourism route is being developed that highlights the unique ecosystems of the area including a large forest, an area that harbors the endemic and threatened ronier palm, a watering ground for migratory elephants, and an "oasis" in the semi-arid terrain where water flows year-round and sacred crocodiles are found. Guides will be trained to provide tourists with information on Dogon Country's biodiversity, and communities will be trained in biodiversity conservation both within natural areas and on farmland. The waterways of this zone support crocodile, bird, amphibian and fish populations under threat from two aggressive exotic plants, *Pistia stratiodies* and *Typha angustifoila*, and the project will help the communities to remove or control these species and conserve the threatened species. Ecotourism actions along this route will be supported by other conservation and management actions with communities and government agencies.

Mozambique

Conservation through Public-Private Partnerships

USAID/Mozambique's biodiversity activities are implemented as part of its program to increase exports, which has three components: trade, business environment, and tourism. A major thrust of the tourism effort is to identify, protect and restore Mozambique's natural resources and biodiversity, the foundation of a successful, sustainable and responsible tourism industry. In FY 2007, biodiversity funding was dedicated to conserving Lake Niassa (also known as Lake Malawi), restoring Gorongosa National Park, and establishing a public-private partnership to maintain water quality in Pemba Bay, the third largest in the world and now under considerable threat.

Through a Global Development Alliance (GDA) with the Worldwide Fund for Nature (WWF) and Coca Cola, USAID is establishing a national reserve on Lake Niassa. The reserve will protect the lake's unique ecosystem, including the world's only surviving freshwater corals, over 1,000 species of fish (700 of which are endemic), as well as rich bird life. The proposed area of the park would cover Lake Niassa and shoreline from Metangula to the Cobwe area, with wildlife areas totaling approximately 100,000 hectares in the remote northern and central areas of Lago District. Terrestrial areas will be gazetted as either reserve or buffer zone, depending on community and stakeholder negotiations. WWF has already starting defining the park and determining land ownership throughout the area. In addition to

the biodiversity benefits of clear use boundaries, establishing land tenure should encourage conservation-related investment in the area. Once the Lake Niassa Reserve is declared, USAID expects rapid development of sustainable tourism, community involvement in tourism, and community management of natural resources in the reserve, including monitoring and enforcement activities.

Gorongosa National Park is a valuable natural asset and former major tourist attraction, once boasting the highest concentration of wildlife in Africa. Sadly, park infrastructure was destroyed and most of the wildlife was poached during Mozambique's 30-year civil conflict. In addition, nearby Mount Gorongosa, a vital source of water for the park and critical to its ecosystems, is rapidly being destroyed by deforestation. The entire ecosystem will be affected if Mount Gorongosa loses its forests. To address this, USAID/Mozambique is implementing a GDA with the Carr Foundation to protect the forest and other unique ecosystems in and around the park, conserve the biodiversity, promote energy efficiency, provide education and training, and promote ecotourism and scientific research. Carr took over the long term management of the Gorongosa National Park in 2005, and in late 2007 signed a 20-year agreement with the Government of Mozambique, which gives it responsibility for bringing the park area back to its former condition. Restoration activities and ultimately tourism will boost the economy in one of the poorest regions of the country, while at the same time conserving one of the most unique ecosystems in the world.

PHOTO: PAUL AIROLDI

CICHLID DIVERSITY in Lake Niassa (a.k.a. Lake Malawi) is an evolutionary marvel and a conservation dilemma. Hundreds of species of cichlid fish are found there, each adapted to a particular food, substrate and depth. USAID supports efforts to establish a reserve that protects the biodiversity of Mozambique's portion of the lake and adjacent land.

The third area of focus for USAID/Mozambique is Pemba Bay, which is highly threatened by watershed degradation due to deforestation and the collapse of several feeder rivers, increasing silt and salinity which threatens marine life. At the same time, expanding agricultural activity has added nutrients to the bay, causing a proliferation of harmful algae. Further stresses linked to the growth of the city of Pemba place rare marine species at risk, including increased waste water pollution and destruction of critical habitat in mangrove and coral reef zones. Vital steps toward correcting these destructive trends are unlikely to be taken due to a regulatory void created by too many competing interests: management of the bay is currently the responsibility of Pemba Municipality, the administrations of two districts, and the Ministries of Environment, Fisheries, Tourism, Agriculture, and Defense.

USAID's Northern Arc Project, implemented by Nathan Associates, is working to overcome Pemba Bay's management challenge by establishing a public-private partnership responsible for keeping the bay clean. With executive power delegated under Mozambique law, core members will include the tourism industry, WWF (which assists with the administration of Quirimbas Park, along one side

of the bay), various fisheries, as well as the Ministry of the Environment and municipal governments. Under this new authority, by conducting baseline biological surveys, water quality assessments, mapping of key marine habitats and watersheds, and long term monitoring, public education and conservation efforts can be implemented to target the primary threats to the health of Pemba Bay and its plant and animal life.

PHOTO: USAID/NAMIBIA

GAME COUNT: A global positioning system (GPS) and local knowledge of the land are key tools for tracking wildlife and estimating wildlife populations. Over the past 14 years, USAID helped rural Namibians acquire the authority and training needed to sustainably manage and benefit from wildlife. In one area, springbok have increased from less than 1,000 in 1982 to 139,000 in 2006.

Namibia

Improved Rural Livelihoods through Natural Resources Management

Community-based natural resources management (CBNRM) is a part of many USAID programs, but USAID/Namibia's Living in a Finite Environment (LIFE) project is arguably the most far-reaching and successful application of this practice. LIFE, started in 1993, has built the technical and institutional capacities of Namibian organizations and local communities to implement a sustainable, national CBNRM program which has addressed land degradation and desertification, human-animal conflict, and overexploitation of wildlife and plants, improving the quality of land and lives for a significant proportion of the country.

The promise of CBNRM is this: by devolving responsibility for and ownership of natural resources from national governments to local communities, the resources will be managed at the lowest cost by the people most invested in having them managed well. To this end, USAID and partners provided assistance to Namibian communities in registering themselves as conservancies, thereby gaining conditional use rights over wildlife and other natural resources, including the right to retain the income from sustainable use of these resources.

Communities participating in CBNRM through LIFE have seen benefits increase exponentially, with income rising from $165,000 in 1998 to $5.5 million in 2007. These benefits are derived from a diverse set of enterprises including community managed campsites, craft sales, guiding services, tourism lodges, trophy-hunting concessions, live game sales, and in-kind benefits from game meat consumption. Revenues generated by affiliated tourism companies were approximately $12.4 million in 2006, and the net national return to the Namibian economy was almost $34 million in 2007. With a financial incentive to conserve biodiversity, wildlife conservancies in northwest Namibia have overseen dramatic increases in important game species. In one area, springbok have increased from less than 1,000 individuals in 1982 to 139,000 individuals in 2006.

After 14 years of the LIFE project, the Namibia National CBNRM Program grew from an embryonic idea for a sustainable future to a mature, nationwide conservation and development movement that involves one out of every eight Namibian citizens. As of March 2007, a total of 50 communal conservancies were registered with the Namibian government, comprising 118,704 km² and more than 230,620 Namibians: over 14 percent of the land surface and nearly 13 percent of the Namibian population. An estimated 20 to 30 more conservancies are still under development.

Nigeria

Conserving Forests by Improving Farming

USAID promotes sustainable agricultural practices in Nigeria through MARKETS (Maximizing Agricultural Revenue and Key Enterprises in Targeted Areas), a $25 million program which has introduced a number of eco-friendly innovations, including crop rotation with leguminous crops, the use of organic fertilizer, micro-dose fertilization and integrated pest management.

In FY 2007, a small component of the MARKETS project was focused on stimulating sustainable agriculture in buffer zones surrounding several national forest reserves in Nigeria's northern savannah zone, which are under pressure from unsustainable extraction of fuelwood and bushmeat, as well as tree clearing for the expansion of farms. Fuelwood extraction targets parkia, tamarind and mahogany trees, while hunting has reduced populations of Roan antelope, warthog, hyena, Tantalus and Patas monkeys, and several duiker species. By applying agricultural efficiencies and market links to farms in ecologically important areas, it is hoped that farmers will earn a higher, steadier, legal income and thereby reduce their illegal impacts on forests and wildlife.

Rwanda

Profitable Ecotourism through Improved Biodiversity Conservation

Rwanda is the most densely populated country in sub-Saharan Africa, yet rural areas are characterized by rolling hills of farms and villages which often end abruptly at the boundaries of national forests and parks. Support for biodiversity conservation by USAID/Rwanda is focused on the Nyungwe Forest National Park (NNP) and surrounding buffer zones, in the southwestern part of the country. Chosen because of a distinct and significant biodiversity, the forest also serves a critical watershed function within the Albertine Rift: rains in Nyungwe supply 70 percent of Rwanda's water, and feed the Nile and Congo River basins. This mountain rainforest is a biological treasure, with more than 75 mammal, 278 bird, 120 butterfly, 100 orchid, and 200 tree species, many of which are endemic.

USAID's efforts in Nyungwe support three components of an integrated program for biodiversity conservation, ecotourism development and public health. Local populations surrounding the park are targeted for conservation awareness, income generation and health activities to jointly accelerate rural economic growth and improve biodiversity conservation in and around the national park.

Under the conservation component, the project works to mitigate threats to biodiversity in key sites around the park. Activities include: strengthening management capacity of the Rwandan Office of Tourism and National Parks in NNP; developing sustainable financing mechanisms for NNP; monitoring key species, illegal activities and ecotourism impacts; implementing a community outreach program including biodiversity conservation awareness campaigns; mainstreaming environmental and sustainable use issues into District Development Plans; and, designing a pilot implementation plan for buffer zone management in two selected pilot zones. As a result of these efforts, especially public awareness campaigns and training of students, church leaders and conservation clubs, biodiversity threats such as fire, poaching, and mining were reduced by 28 percent. Biophysical condition was improved in about 725 hectares of biologically significant areas, exceeding projections by 124 percent. Monthly monitoring by park staff, geographic information system (GIS) analysis, and reporting of illegal situations by the public has helped park management receive and respond to information rapidly, controlling threats before they have major impacts.

To promote ecotourism, the project intends to transform NNP into a competitive tourism destination by increasing both the number of visits to the park and tourism receipts. Activities include: developing Nyungwe and community ecotourism products; upgrading ecotourism infrastructures and services; marketing Nyungwe ecotourism; developing and implementing water and small–scale energy pilot activities; and, identify markets and develop businesses for natural products,

PHOTO: USAID/RWANDA

HANDICRAFT DEVELOPMENT is one of the income generating activities which USAID will support through a small grants program. Here, a women's association in the Banda sector adjacent to Nyungwe National Park exhibits their handicraft products, including embroidery inspired by the biodiversity of the park.

arts and handicrafts. Solid progress is being made, as the number of tourists rose from 3,088 in 2006 to 3,981 in 2007. Associated revenue also increased in this period by 188 percent, from $92,166 to $173,273.

The healthcare component of this project is an important benefit to communities around NNP which are changing their activities to reduce negative impacts and support a growing tourism industry. The program strengthens clinical and community capacity to provide a continuum of care for maternal and child health, and promotes family planning and prevention of HIV/AIDS. These activities address long-term challenges of population growth while helping local people take advantage of direct and indirect employment opportunities which arise from ecotourism.

Although the first-year targets for biodiversity conservation and ecotourism were both exceeded, there is still a long way to go to transform Nyungwe into a competitive ecotourism destination and reach the end results of the project. Next steps include a study to assess the feasibility of a visitor interpretation center and other nature-based attractions such as canopy walkways, observation towers and marsh trails, with the goal of increasing the number of visitors and improving the visitor experience. These infrastructure investments, if effectively designed, built and operated, can provide social, economic and environmental benefits to Nyungwe and surrounding communities for generations to come.

Senegal

Community forestry, International Markets and Local Benefits

USAID/Senegal's biodiversity activities are implemented mainly through an agriculture and natural resources management (NRM) program known locally as *Wula Nafaa* ("Benefits from the Bush"). The program was conceived to draw maximum benefit from synergies among NRM, economic development, and good governance. This "Nature, Wealth and Power" approach supports activities that increase productivity of the resource base and conserve biodiversity, bring significant economic benefits to local communities and national accounts, and strengthen governance to ensure transparent decision-making and fair and equitable distribution of benefits.

Wula Nafaa works with local governments to end open access to resources and ensure locally controlled management of forested areas through the development of sustainable, legally recognized NRM plans. The program targets the most biodiverse terrestrial region in Senegal, dryland forests in the South of the country, of which only two percent is protected throughout Africa.

In FY 2007, the program was instrumental in helping establish community-managed NRM plans, authorized through local conventions, for a total of 114,094 hectares. USAID also supported the development of four forest management plans covering 117,921 hectares. As a complement to forest management planning, USAID provided NRM training to 5,517 people: forest guards learned patrol techniques, and community members and local government representatives were trained in how to enforce local laws and manage conflict.

In addition to improving sustainable management of natural forests, *Wula Nafaa* works to increase revenues from natural forest products and non-traditional agricultural products in communities living around forests. Marketing of natural products resulted in at least 14,565 people increasing their income from sustainable NRM. It also helped people all along the value chain networks of high-value agricultural commodities, benefitting 2,651 enterprises. Building the knowledge and capacity of the businesses and individuals involved in these value chains resulted in a 183 percent increase in 2007 exports over 2006, for a total value of $3 million. To assist with regeneration of marketable plant species that do not naturally regenerate at a rapid rate, USAID partnered with 60 community-based organizations to establish local tree nurseries and plantations for 7,000 karaya gum trees, 3,000 baobab, and 3,800 palm oil trees.

Wula Nafaa helped local producers export 265 tons of karaya gum to Europe for a value of $1 million, and 392 tons of raw cashew nuts to India for a value of $216,000. Support for market studies on products and processes such as *nere* (a local spice), charcoal transportation by train, and cashew processing techniques have led to an increase in market opportunities that facilitate new contracts and increase revenues. A

PHOTO: RICHARD NYBERG, USAID/SENEGAL

KOUSSANAR FOREST GUARDS: In 2007, USAID supported the development of forest management plans which maximize productivity, limit access to forests, reduce herder/farmer conflicts, and establish a guard system to ensure that forests are protected and vegetation is regenerated.

total of 971 natural or non-traditional agricultural enterprises, involving 2,289 women and 2,825 men, have increased their total revenues from $423,000 in 2006 to $760,000 in 2007, a 79 percent increase.

USAID support for broad policy dialogue among communities, government, and the private sector has contributed to seven new policy advances and reforms involving hunting concessions, forest surveillance, forestry taxation, and others barriers that threaten the long-term availability of natural resources. After years of USAID investments in community forestry and governance, 2007 marked a turning point in charcoal policy in Senegal. With USAID support, the Ministry of the Environment has adopted policies that require all charcoal to come out of managed forests in 2008. Forest communities with approved management plans will now be able to produce charcoal instead of only the powerful charcoal cartel, whose profits mostly went to people outside of the forested regions. Local charcoal workers are earning about three times what they did for every sack of charcoal, and significant revenue is now collected by local governments that will be reinvested into forest management.

PHOTO: PAUL ELKAN AND J. MICHAEL FAY, WCS

WHITE-EARED KOB leaping across the grasslands of Southern Sudan. USAID-supported aerial surveys confirmed that a migration of kob, tiang (a large antelope) and Mongalla gazelle is still intact after decades of civil conflict. Over 1.2 million animals move through the Boma-Jonglei landscape of Sudan each year.

Sudan

Capacity Building and Landscape-Level Conservation

The conflict between the Government of Sudan Armed Forces and the Sudanese Peoples' Liberation Army (SPLA) led to extensive displacement and devastation of human populations across much of southern Sudan over a period of 22 years. In January 2005, the civil war ended with the signing of a Comprehensive Peace Agreement which established a power-sharing government, created an interim sub-national Government of Southern Sudan (GOSS), and set forward a time table for much of southern Sudan to determine its future: to remain part of a unified Sudan, or to forge a new nation in East Africa.

In its first years, GOSS has made impressive strides in establishing the institutions, laws and policies required to govern effectively. USAID's Sudan Transitional Environment Program (STEP) supported these developments in the environment sector, funded the first inventories and analyses of forestry and wildlife resources since war broke out in 1983, and established Forestry and Wildlife Conservation Training Centers at Kegulu and Boma to advance the capacity of environmental managers in government, civil society and the private sector. In FY 2007, STEP focused on training GOSS staff

in environmental impact assessment, forest inventories, and management planning; training park managers and rangers; and developing programs to minimize oil extraction impacts on the environment. The Mission also supported groundbreaking aerial surveys, and started a new project to regulate logging in a rational manner and avoid conflict, starting with a teak plantation in the southwest.

The importance of sound natural resource management to GOSS is demonstrated by the establishment of the Ministry of Environment, Wildlife Conservation and Tourism (MEWCT), which receives a considerable portion of the sub-national budget. MEWCT directly manages over 13,000 game wardens and protected area managers, drawn from among the ranks of de-mobilized SPLA soldiers. Several of the higher-level officers have been trained through USAID support to the Boma Wildlife Training Center, but there is a tremendous need for more training at all levels. The Mission continues to support this important institution, with emphasis on training the vast number of mid-level officers and rangers in order for them to fulfill their mandate of protected area management in the field.

GOSS has prioritized wildlife conservation as a key component of its national development strategy. In April 2006, the President of Southern Sudan cited the urgent need for wildlife protection activities, development and rehabilitation of national park infrastructure, education and awareness campaigns, transboundary conservation and wildlife enforcement, and encouragement of the public and private sectors to invest in tourism. In March 2007, GOSS formally agreed for the Wildlife Conservation Society (WCS) to lead these conservation efforts in the Boma-Jonglei landscape, a large swath of Southern Sudan east and south of the Nile River to the border with Kenya and Ethiopia.

" Our wildlife (fauna and flora) is a national natural wealth and heritage that should be preserved, protected, propagated, managed and utilized sustainably for the present and future generations of Southern Sudan…"
PRESIDENT SALVA KIIR MAYARDIT, APRIL 10, 2006

Through an interagency agreement with USDA, USAID/Sudan provided FY 2006 funds to WCS to undertake an extensive aerial wildlife survey over much of Southern Sudan in January and February of 2007. The findings of the survey were beyond all expectations, demonstrating that substantial numbers of wildlife throughout these remote grasslands continue to thrive despite years of civil conflict, with the exception of buffalo and hartebeest, which declined significantly. The endemic Nile lechwe was found to persist, and lions and wild dogs survived in good numbers. Elephant populations were found to have increased in the Sudd wetlands, exceeding previous estimates by 50 percent with a population of about 6,000 animals. Most astounding, the annual migration of white-eared kob, tiang and Mongalla gazelle in Boma and Jonglei was found to be substantially intact, totaling more than 1.2 million animals. These numbers are comparable to those recorded in the 1980s, and vie with the annual circuit of wildebeest and zebra in the Mara-Serengeti ecosystem as the greatest migration of large mammals on earth.

While significant biodiversity survived years of war, there is growing concern as to whether it can survive the peace. Since 2005, oil concessions have been signed, significant investments in infrastructure have been made, and thousands of internally displaced persons have begun to return and settle across large tracts of the Boma-Jonglei landscape. Oil companies are becoming active in ecologically sensitive areas of Jonglei, with concessions opening across many of the migration corridors and within several protected areas. Roads being built for the development of the region are proceeding without adequate environmental planning and management; it is likely they will rapidly become conduits for the commercial bushmeat trade and threaten the long term viability of protected areas and wildlife populations. Through continued support for WCS, USAID is working to develop land use plans and sustainable economic activities in this magnificent yet fragile landscape.

PHOTO: USAID/TANZANIA

NO BUFFER ZONE exists between unsustainable farming practices and Gombe National Park, isolating the chimpanzees made famous by Jane Goodall's groundbreaking research in the 1960s. USAID supports the Jane Goodall Institute's work promoting community based forest management, including reforestation, in communities around the Park.

Tanzania

Targeted Landscape Conservation through a Livelihoods Approach

Tanzania has some of the richest and most diverse natural resources in the world, including mineral wealth, freshwater and marine resources, and an abundance of wildlife. The country still has extensive natural land cover, mostly savanna, miombo woodland and montane forest, in addition to scattered patches of lowland forests. Nevertheless, a number of serious threats to biodiversity and sustainable use of resources exist, from indiscriminate expansion of agriculture, forest encroachment, wildlife poaching and other unsustainable practices to destructive forest harvesting and fishing practices. USAID/Tanzania seeks to link biodiversity conservation with economic opportunities in targeted ecosystems by decentralizing decision-making related to natural resources and economic sustainability.

By the end of FY 2007 a cumulative area of 4.4 million hectares was placed under improved management as a result of USAID support. This significant area covers five critical ecosystems, including a newly supported landscape centered on Ruaha National Park in the transition zone between miombo woodlands and open savannah, along with threatened coastal areas, dry savannah steppe, diminishing wetlands and an ever-shrinking chimpanzee habitat. Throughout these landscapes, USAID has helped the Government of Tanzania make measurable improvements in sustainable livelihoods so that community based conservation becomes, and remains, the driving factor in protecting the country's unique ecosystems.

Targeted training was provided in FY 2007 to 18,500 people (48 percent women) to enhance their participation not only in conservation, but also in deriving tangible benefits from natural resource management (NRM) to support socio-economic development at the local level. As a result, 187,500 people (45 percent women) realized increased economic benefits. Activities are as diverse as ecotourism, seaweed farming, beekeeping, and specialty coffee cultivation and marketing. Six of 16 pilot Wildlife Management Associations attained user rights, enabling them to enter into contracts with the private sector for engaging in sustainable tourism enterprises. Policy interventions resulted in more than 140 key policy instruments, including the Environmental Management Act regulations, integrated coastal management action plans, and land use plans.

The Sustainable Coastal Communities and Ecosystems (SUCCESS) project and the Sustainable Environmental Management through Mariculture Activities (SEMMA) project continued to work jointly to apply an integrated coastal management policy framework and conserve biodiversity in Tanzania's endangered coastal ecosystems, including highly threatened mangrove forests. SUCCESS strengthened conditions for sustainable economic growth using a community

participatory approach involving technical assistance and training of 3,000 people, as well as equipment to promote mariculture activities.

Africare's Ugalla Community Landscape Conservation Project (UCLCP) worked with the Division of Wildlife to strengthen biodiversity conservation in the Ugalla Game Reserve and strengthen community-based organizations, as well as expand NRM micro-enterprise opportunities and improve the livelihoods of over 80,000 adult villagers. UCLCP supported community based agroforestry, as well as monitoring and patrolling activities to reduce illegal or destructive logging and poaching of wildlife. Over 600,000 hectares of miombo woodland is now under conservation management.

The African Wildlife Foundation continued to support conservation in the Tarangire/Lake Manyara ecosystem by addressing key environmental threats including agricultural encroachment, declining livestock productivity, and inequitable sharing of benefits with communities whose livelihoods depend on resource use.

The Jane Goodall Institute worked to promote biodiversity conservation in areas around Gombe National Park using a participatory, integrated conservation-enterprise-health approach to promoting community-based NRM. They strengthened Gombe's ranger patrol capacity through the provision and equipping of ranger posts, and promoted community based forest management including land use planning, reforestation and sustainable production and trade in forest products.

Targeted training in FY 2007 resulted in 187,500 people (45 percent women) realizing increased economic benefits from natural resource management activities as diverse as ecotourism, seaweed farming, beekeeping, and specialty coffee cultivation and marketing.

The Wildlife Conservation Society (WCS) strengthened biodiversity conservation in and around Ruaha National Park using community participatory approaches. In FY 2007, it provided training, technical assistance and other capacity building measures. WCS worked to broaden community opportunities in NRM (including agroforestry), improve agricultural production systems, and support the establishment of sustainable microenterprises.

Uganda

Reduced Environmental Degradation and Critical Ecosystems Conserved

The Albertine Rift landscape in western Uganda and several smaller isolated landscapes in northern Uganda comprise one of the last great repositories of biodiversity in East Africa. Their mixture of forests, rivers, and wildlife mark them as an area of exceptional biological value. Yet the area is being threatened by rapid population growth, armed conflict, wildlife trade, illegal logging, petroleum development and habitat encroachment. Endangered species, such as the mountain gorilla, lion, elephant, and chimpanzee are under intense pressure from these threats. In response, USAID/Uganda works with partners in the Ugandan government, international conservation organizations and local communities to better conserve and manage natural resources, and better understand the connections among economic development, traditional livelihoods and biodiversity across these important landscapes.

One of the major results achieved in 2007 was a collaboration between the Government of Uganda and the Government of Southern Sudan to create conservation landscapes for peace along the shared border. The program also increased habitat under improved management in the endangered Albertine Rift ecoregion, and improved economic benefits for communities, such as the production of 600 tons of Arabica coffee in the Rwenzori buffer zone. In FY 2007, the program maintained 107,238 hectares of selected biologically important habitats and 98 producer organizations were strengthened, for a cumulative total of 260 organizations representing 11,250 individuals since the program began.

THE HIPPOPOTAMUS IS A KEYSTONE SPECIES, whose digestive system transforms grass into food for fish. Healthy inland fisheries often depend on healthy hippo populations. Despite a recent anthrax outbreak that killed over 200 hippos in Queen Elizabeth National Park, and a reputation for having tasty meat, Uganda is a stronghold for these giants, with an estimated population of 10,000 animals.

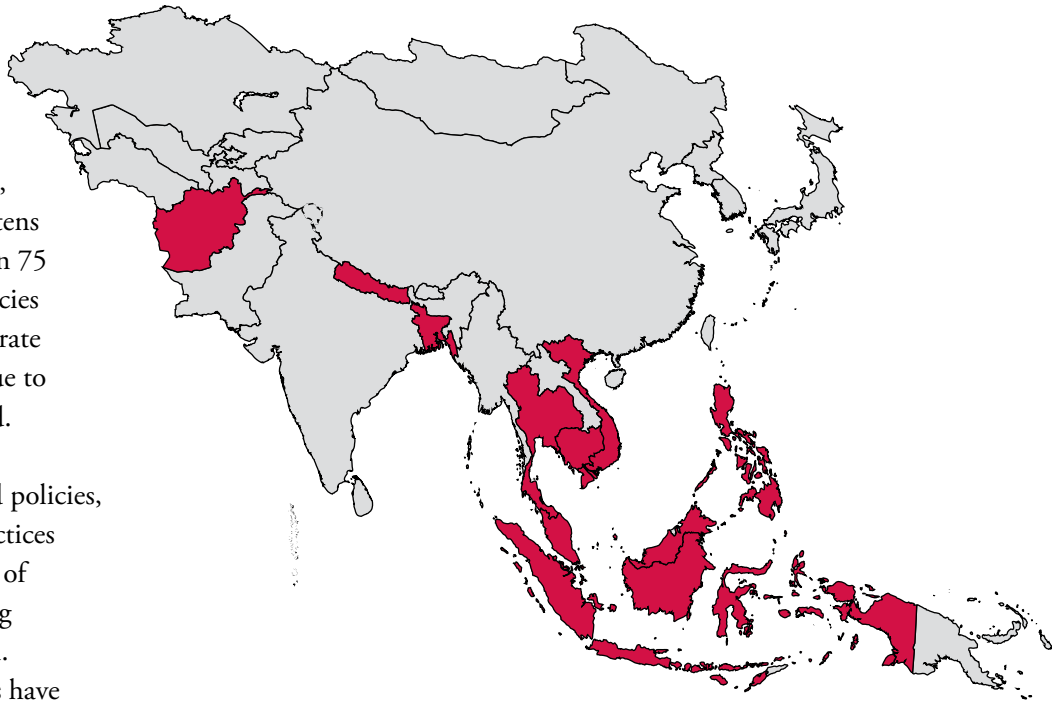
PHOTO: MIKE COLBY, USAID

Wildlife in Ugandan parks continued to thrive in FY 2007. A USAID-supported census of the mountain gorilla population in 2007 registered a 10 percent increase over the last census conducted in 2001. Elephant populations in Queen Elizabeth National Park and Kidepo National Park number approximately 4,000 individuals, consistent with historic population numbers from the 1960s.

Tourism is an indication of biodiversity program impact, and in recent years visitation has increased along with growing (or stable) wildlife populations. From 2006 to 2007, tourist visits in protected areas in the Albertine Rift increased significantly: Murchison Falls National Park visitation increased 37 percent, Budongo Forest chimp-trekking rose 130 percent, and Bwindi National Park visits grew by 20 percent. Healthy, protected wildlife populations and diverse landscapes make Uganda a competitive tourist destination, which will stimulate the local and national economy for years to come.

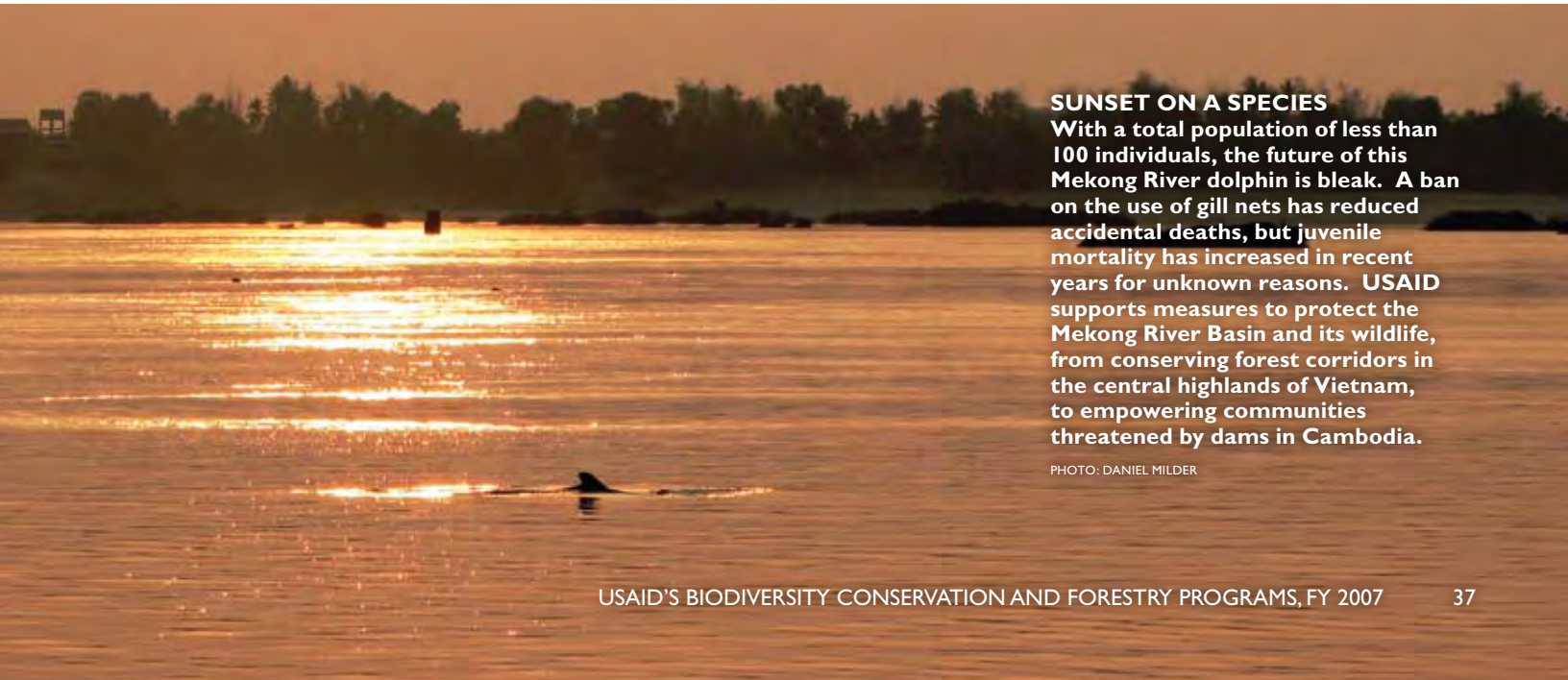
ASIA

USAID country and regional programs funded significant biodiversity conservation and forestry programs in nine countries throughout Asia in FY 2007.



Asia's varied landscapes support an incredible diversity of life. From the roof of the world to the bottom of the Mariana trench, this continent and associated tens of thousands of islands contain 75 percent of all known coral species and untold numbers of vertebrate and plant species, many unique to only one river, forest, or island.

Population growth, misguided policies, corruption, unsustainable practices and natural disasters are some of the major threats to conserving natural resources in the region. Marine and terrestrial habitats have been destroyed or degraded due to illegal logging, destructive fishing practices and pollution, and wildlife are being driven to extinction by overconsumption and trafficking for food, medicine, pets and pelts. This section describes how USAID addressed these issues through its regional and bilateral programs in FY 2007.



SUNSET ON A SPECIES
With a total population of less than 100 individuals, the future of this Mekong River dolphin is bleak. A ban on the use of gill nets has reduced accidental deaths, but juvenile mortality has increased in recent years for unknown reasons. USAID supports measures to protect the Mekong River Basin and its wildlife, from conserving forest corridors in the central highlands of Vietnam, to empowering communities threatened by dams in Cambodia.

PHOTO: DANIEL MILDER

ANE Regional Program

Support for Emerging Conservation Needs

The Asia and Near East (ANE) Regional Program responds to emerging conservation needs through support for innovative programs in the field and graduate-level training opportunities in the United States. An environmental advisor and other experts also provide ongoing technical assistance to bilateral and regional programs in Asia and the Middle East, from Morocco to Indonesia.

Almost 80 percent of the program's biodiversity resources were transferred to overseas Missions in FY 2007. The Regional Development Mission for Asia located in Bangkok received $400,000 to support the Responsible Asia Forestry and Trade (RAFT) Alliance implemented by The Nature Conservancy. USAID/Cambodia accepted $325,000 in support of the Biodiversity and Grassroots Advocacy Program implemented by East-West Management Institute. USAID/Philippines received $450,000 to support design and implementation of the multilateral Coral Triangle Initiative. For more information on these activities, see the relevant Mission reports in this chapter.

The remainder of non-staff biodiversity funds went to Training Future Leaders (TFL), a new cross-sectoral program that builds upon previous long-term training efforts. Reinvigorating long-term training is a USAID priority for Asia, as former participants tend to be the best development partners and often lead reform efforts in their countries. TFL supports long-term, graduate-level academic training in the United States for host-country participants. The program includes: pre-departure activities, placement assistance, mentoring, and follow up support for participants once home. In FY 2007, TFL funded biodiversity conservation studies by a graduate student from the Philippines. The participant will gain technical and leadership skills in conservation, as well as a deeper understanding of American values and culture.

Regional Development Mission for Asia

Wildlife Law Enforcement and Improved Forest Management

Southeast Asia includes many of the world's most diverse and endangered ecosystems. Asia's deforestation rate is three times the world average, and the rate of biodiversity loss in the Mekong River Basin is faster than anywhere else in the world. Countries in the Basin are actively constructing roads, dams, irrigation systems, and navigation waterways that have significant transboundary impacts on the environment and river livelihoods, and that contribute to regional conflict. The region is also a global hotspot for illegal timber trade and the poaching, trafficking and consumption of illegal wildlife parts and products. In response to these biodiversity threats, USAID's Regional Development Mission for Asia (RDM/A) has launched initiatives to support biodiversity corridors in the Mekong River Basin, and strengthen wildlife law enforcement and sustainable, legal logging throughout Southeast Asia.

In the Greater Mekong Region, USAID's Asia Regional Biodiversity Conservation Program (ARBCP) aims to restore and maintain ecosystem connectivity and function in biodiversity corridors and landscapes; promote sustainable financing for biodiversity and natural resource conservation; improve the livelihoods of the rural poor; and strengthen environmental governance and institution building. The program is implementing a site-specific pilot biodiversity corridor in the Dong Nai Watershed and surrounding areas in Vietnam, and sharing lessons learned with other countries in the region.

Since receiving approval to implement activities in Vietnam's central highlands in FY 2007, ARBCP has improved management of 172,000 hectares of the Dong Nai River Basin conservation landscape through the development of 13 Community Conservation and Development Plans and Community Conservation Units in the buffer zones around Cat Tien National Park. To finance conservation and improve livelihoods, ARBCP helped amend the national Taxes and Fees Law to include Payment for Environmental Service (PES) mechanisms in support of Vietnam's Biodiversity Law, and established two pilot sites to achieve PES, ecosystem connectivity and livelihoods improvement goals. PES market feasibility studies were conducted to identify potential environmental service buyers, including the Ho Chi Minh City Water Supply Company, the Province of Lam Dong, and Mekong Travel.

USAID assists members of the Association of South East Asian

ILLEGAL LOGGING: This barge in Indonesia is piled high with logs from illicit forestry operations. USAID's Responsible Asia Forestry and Trade (RAFT) Alliance works to promote legal timber trade in Southeast Asia through economic incentives, standards for legal forest products, and promotion of reduced impact logging.

PHOTO: CHARLES BARBER, USAID

Nations with a Support Program for maintaining National Task Forces and a regional Wildlife Enforcement Network (ASEAN-WEN) to counter the $10 billion black market in wildlife trade that threatens global biodiversity, endangers public health, and undermines economic well-being. Through the establishment and training of inter-agency Task Forces, ASEAN-WEN provides the means for government agencies to respond effectively to illegal wildlife trade occurring between countries via intelligence exchange and joint cross-border operations.

In FY 2007, the ASEAN-WEN Support Program provided training in nature crime investigation, species identification and wildlife law to more than 650 personnel from member countries, including law enforcement and customs officers, cargo-handling personnel, prosecutors and judges from Cambodia, Vietnam, Lao PDR, the Philippines, Thailand and Indonesia. During this period, more than 30 wildlife law enforcement actions occurred across ASEAN countries. Other major activities included establishment of the Program Coordinating Unit (PCU) in Thailand for an initial two years, and the launch of the "SOLD-OUT" public awareness campaign against illegal wildlife trade in Thailand, which generated over 200 media stories on wildlife crime and ASEAN-WEN. The success of ASEAN-WEN has made it a model for the South Asian Cooperative Environment Program (SACEP) to combat wildlife trafficking in the South Asia Region.

ASEAN-WEN coordinated more than 30 major wildlife law enforcement actions across Southeast Asia in FY 2007, confiscating hundreds of live animals and countless animal products.

USAID's Responsible Asia Forestry and Trade (RAFT) Alliance contributes directly to the ASEAN–US Enhanced Partnership, which calls for sustainable forest management, including activities which combat illegal logging and the destruction of forest resources. RAFT is a public-private sector alliance that aims to transform the market for tropical timber by improving the sustainable management of forest resources and biodiversity, promoting legal timber trade through market-based incentives and credible standards for legal and conflict-free products, strengthening environmental governance and institutions, and promoting regional cooperation on forest management and trade.

RAFT signed an MOU with 14 forest enterprises in 2007, with commitments to improve forest management in approximately 1.1 million hectares of tropical forest, and initial improvement achieved in 600,000 hectares. The Program concluded a stakeholder agreement for the finalization of the Indonesian Legality Standard, and applied the Standard's principles and criteria in Vietnam and Malaysia. RAFT also mobilized community participation in a number of NGO-led initiatives, including the multi-stakeholder revision of the High Conservation Value Forest Toolkit for Indonesia, and the development of a Reduced Impact Logging (RIL) Training Manual for Sabah in Malaysia. The Program also trained 54 people in participatory planning and conflict management, RIL and forest policy. RAFT continued to engage with stakeholders in the region, such as the Indonesian Forest Concessionaires Association, to leverage policy changes which promote improved forest management.

Afghanistan

Woodlands Restoration and Conservation of Key Areas

Afghanistan is at the convergence of Mediterranean, Tibetan and Himalayan vegetation types, and towards the Pakistan border is influenced by the monsoon. This geography and the country's great altitudinal range support a high diversity of plants and wildlife. About 75 percent of the total land area is rangeland, supporting wild ungulates and about 22 million head of livestock. High mountain zones are home to the endangered snow leopard and Marco Polo sheep. Much of the rest of the land was historically forested with native pine, oak, poplar, willow, pistachio and olive trees, but in many areas is now degraded due to decades of civil conflict, poor management, and drought. Restoring native forests and conserving remaining areas of high biological value are critical to sustainably developing Afghanistan.

In 2005 and 2006, USAID initiated a program to strengthen the capacity of government and other stakeholders to improve biodiversity conservation and natural resource management (NRM) in three areas of biological significance. The Wakhan Corridor is a thin finger of mountainous terrain bordering Tajikistan, Pakistan and China, containing some of the last relatively pristine wildlife populations and habitats left in Afghanistan. The Hazarajat Plateau has some of the most important existing and potential protected areas in Afghanistan, such as the Ajar Valley Wildlife Sanctuary and the lakes of Band-e Amir. The Eastern Forests complex has the last remaining arid conifer woodlands in the country, important for both biodiversity conservation and economic development. USAID partner Wildlife Conservation Society (WCS) is conducting extensive surveys of fauna and flora in the three regions, working with the Afghan government and others to draft effective conservation laws and implement regulations, and promoting community-based natural resource management (CBNRM) by establishing well-governed and technically capable community organizations.

Results in one area in FY 2007 are illustrative of the program overall. The community-based Band-e Amir Protected Area Committee was formed to protect the six lakes considered to be Afghanistan's greatest natural wonders. With committee collaboration, the Band-e Amir Management Plan was completed and prepared for submission to the National Environmental Protection Agency (NEPA), whose approval is a prerequisite for declaration as a national park. This management plan influenced a draft of rules and regulations for protected areas around the country, which has been approved by the Ministry of Agriculture, Irrigation and Livestock and is now being reviewed by the Ministry of Justice. WCS is also assisting the Afghan government

" Due to involvement of powerful people… and harvesting pistachio nuts before ripening, the quality and quantity of pistachio was very low. Sometimes people could not even sell their pistachio nuts at the bazaar… In the last two years, many merchants come to the villages asking for pistachio nuts. Most families bring their pistachio nuts to sell during bazaar day in Eibak city."
HAJI ABDUL SAMAD, HEAD OF MADRASSA FOREST MANAGEMENT COMMITTEE

to nominate Band-e Amir as a UNESCO World Heritage Site.

USAID supports a program to promote CBNRM for improved livelihoods in mountain communities which complements WCS's work in the biologically significant Wakhan Corridor. There, Afghans are being introduced to regional innovations and linked to peer networks, with the goal of building their capacity for policy research, analysis and monitoring. Demonstration sites will be established in three communities representing two agro-ecological zones to showcase social, technical and institutional best practices in CBNRM and conserving sensitive biodiversity in this area.

Capacity building for NEPA is a priority to ensure implementation of its responsibilities under the Environment Law signed in March 2007. Support includes environmental impact assessment training, enhancing compliance with international treaties, public education and outreach, environmental regulation and financing, and a $1 million small grants program for biodiversity-focused CBNRM.

PHOTO: WILDLIFE CONSERVATION SOCIETY

HIGH LIFE IN BAND-E AMIR: The Marco Polo sheep, an endangered species found in the mountainous Wakhan Corridor of Afghanistan and adjoining regions of China, Pakistan and Tajikistan, is under serious threat from poaching and uncontrolled trophy hunting. USAID supports designation of Band-e Amir as a National Park and UNESCO World Heritage Site to protect the wild sheep, snow leopards, and six mountain lakes.

As the government works to establish security and public services, returning refugees with no livelihoods or homes are overexploiting forest resources to build houses, cook food and heat their homes. To make matters worse, flooding in 2007 in the mountains north of Kabul destroyed an estimated 70,000 trees. Woodlots are part of the solution, as they are economically viable agroforestry enterprises which can reduce pressure on natural forests for fuelwood and construction materials. USAID supports a project in the provinces surrounding Kabul which uses a community-based approach to establish agroforestry enterprises and promote forest and watershed management. By establishing woodlots and nurseries of indigenous tree species, and introducing new methods to manage and market trees, the project aims to increase tree cover and introduce a sustainable source of revenue for impoverished farmers.

In addition to reducing pressure on natural forests with woodlots, reforestation of wild pistachio woodlands is a priority of the Afghan government because of their significant economic and biological value. These unique woodland ecosystems have suffered for decades from overgrazing, unmanaged and damaging pistachio harvests, and cutting of pistachio trees. Healthy woodlands can reduce erosion and desertification, and conserve watersheds in water-scarce Afghanistan.

USAID supports the Provincial Reforestation and Integrated Environmental Protection Project, a major component of the UN World Food Program's Green Afghanistan Initiative, which develops community and private nurseries, provides agroforestry training, and funds pistachio tree planting. In terrain that is mountainous and rugged, with security problems

in many areas, the project targets the most accessible 50 hectare patches of pistachio woodlands. Communities have volunteered and are committed to maintaining and guarding the reforested areas through an MOU signed by Village Environmental Committees, the local Ministry of Agriculture, and USAID's implementing partner.

The Afghan Conservation Corps (ACC), a national employment program funded by USAID, has established Forest Management Committees (FMCs) to conserve and manage pistachio woodlands in Samangan province in north-central Afghanistan. Community conservation of pistachios in this region has resulted in improved pistachio forest management and increased economic return to local people, and could be a model for all pistachio areas in Afghanistan. Following FMC protection, pistachio harvest management and replanting, 40 to 50 percent increases in harvest and revenue have been realized in the past two years. Seeing these positive results, other communities have approached the ACC about helping them in the same way. Community management of forest lands is now a tenet of the Forest and Range Department of the Ministry of Agriculture, Irrigation and Livestock.

Bangladesh

Co-management of Wetlands and Tropical Forests

In Bangladesh, ecosystems have been degraded and biodiversity lost due to shortsighted practices, policies that deter community participation, and poorly considered mandates. The open water fishery has declined steadily over the last 20 years, and per capita fish consumption among the poorest people has declined 38 percent since 1995. After decades of commercial and illegal forest exploitation, Bangladesh also has the smallest per capita protected forest area in the world. USAID is currently working to reverse these trends with two field activities: Management of Aquatic Ecosystems through Community Husbandry (MACH), which focuses on freshwater wetland conservation, and Co-management of Tropical Forest Resources in Bangladesh (Nishorgo Support Project), which conserves tropical forest areas.

PHOTO: PATRICK SMITH, USAID

DOMESTIC TOURISM: This member of a Resource Management Organization watches birds in one of the many sanctuaries established by the MACH program. USAID and private sector investments in Bangladesh's wetlands and national parks have helped boost nature tourism by both international visitors and urban residents.

Initiated in 1998, MACH is notable for its three-pronged approach to improving fisheries management: good governance measures via communities and local government co-managing local fisheries; an ecosystems-based approach with strict wetland conservation measures and sustainable fishing practices; and equitable commercialization of fisheries. MACH continues to work in three large freshwater wetlands covering 25,000 hectares. Within this area, 20,921 hectares are covered by approved management plans and interventions undertaken by 16 Resource Management Organizations (RMOs) composed of fishers and farmers, landless and elites, men and women: anyone with an interest in the sustainable use of these wetland resources.

MACH has helped establish 80 wetland sanctuaries, restore habitats, and ban destructive resource extraction practices. The greatest impact of the wetland program has been on fish, with several locally scarce or lost species recovering, and total fish populations increasing. The value of the fish catch in the three wetlands more than doubled between 1999 and 2005, to about $7.7 million. Other aquatic resources account for an additional $2 million annually. Restoration of swamp forest and riparian plantations of native trees provide wildlife habitat, environmental services, and an income for local communities.

In one major wetland, a 100 hectare area was set aside as a sanctuary managed by an RMO for the benefit of the whole wetland system. In addition to fish diversity increasing, the winter water bird population increased from about 300 birds of 16 species in early 2004 to almost 7,000 birds of 33 species in early 2006. USAID interventions also successfully reintroduced 28 species of native fish and 47 species of native plants back into their natural habitat.

These fishermen catch more fish with less work thanks to sustainable fishing practices and co-management plans introduced under the MACH program.

PHOTO: PATRICK SMITH, USAID

FISHING EFFICIENTLY

In the mid 1990s, Chenguria, a small fishing village in northern Bangladesh, saw a precipitous decline of not only its chief source of food, but also its livelihood base. Fisherman Wahab Ali recalls how he spent 15 hours a day with his net, with little reward. "I couldn't collect even one kilogram," he says. Today, following investment by USAID's MACH program, village catch levels are restored and local fishermen are profiting from the return of rare species that had disappeared due to overexploitation, shrinking habitats, and pollution. Chenguria is not an isolated success story: its return to modest prosperity is replicated in 110 villages across three Bangladeshi wetlands, directly benefiting 184,000 people. Wahab's experience echoes what is heard today in these wetland villages: "Now I fish only eight hours a day," he says, "and my catch is larger than before."

For more information on the MACH program, see Chapter 3 of World Resources Report 2008, available at www.wri.org.

In response to dwindling forests and protected areas, USAID initiated the Nishorgo Support Program in close partnership with the Bangladesh Forest Department (FD). Nishorgo started in 2003 with five pilot landscapes around five protected areas with a combined total land area of over 135,000 hectares. Official management plans are being implemented that give eight Councils in the five landscapes, and the 235,000 people they represent, "co-management" rights and responsibilities: a permanent voice in both conserving and benefiting from the protected forest areas. The quality of protected areas has improved in tangible ways: trails, information kiosks and interpretive information are present at all pilot sites; forests that were slowly disappearing are now returning to health; and key indicator species are thriving. Conservation enterprises have expanded, including eco-cottages, eco-guides, and export quality handicrafts. Critically, the Government recently approved the sharing of pilot park entry fees with the Councils that are co-managing them. In 2007 a sixth site, the Modhupur National Park, for decades a place of violent conflict among the FD, local settlers, and indigenous communities, was added in response to a request from the highest level of the government.

Domestic tourism in Bangladesh is growing exponentially, and Nishorgo

helps poor residents benefit from tourists' desire to experience nature inside their own country. Visitors to one USAID pilot site increased nine-fold from 2005 to 2006, and four-fold again in 2007. A park that had some 300 visitors per month in 2005 is on track to attract 15,000 per month in 2008. "Nishorgo Conservation Partnerships" was recently developed to attract investment in protected areas by the private sector, which has already contributed to publishing a brochure about Bangladesh's parks, and funded a nationwide architectural competition to design visitor centers.

As a direct result of USAID support, the FD has brought more areas into its protected area system, and over 1,700 FD and community members have been trained on various aspects of protected area co-management. More than 40,000 community members are now receiving direct economic benefits. Fifty eco-tour guides have been trained, and there has been a ten-fold increase in the number of visitors to protected areas.

USAID/Bangladesh's forest conservation program strikes a balance between nature tourism and the productive household activities and enterprises that complement conservation. Social forestry plantations and mixed species plantations intended to benefit rural households also contribute to storing carbon. The program recently developed and is beginning to market a package of carbon offset credits to the "voluntary" carbon market. These credits are an additional potential source of revenue that USAID is working to harness and channel to local poor stakeholders.

Cambodia

Grassroots Advocacy and Controlling Wildlife Trade

The ability to make quick profits from natural resources, combined with poor governance and land-grabbing, severe poverty, and weak infrastructure is translating into uncontrolled extraction and destruction of Cambodia's forests and wildlife. USAID supports a multifaceted initiative to protect and manage Cambodia's natural resources.

In partnership with WildAid, USAID helps communities develop livelihood alternatives to slash-and-burn agriculture. Consumers are encouraged to stop buying wildlife products through public education activities, such as an environmental awareness bus (*The Kouprey Express*) that travels the country, and education events in collaboration with the Association of Buddhists for the Environment. Government law enforcement capacity to counter the illegal wildlife trade is strengthened through forest ranger training, a telephone hotline for reporting wildlife traffickers, a media campaign, and monitoring of restaurants against serving illegal game meat. USAID also supports remote sensing to monitor forest cover and help demarcate land use boundaries.

The results of this program are impressive. In FY 2007, public awareness activities resulted in a 90 percent reduction of outlets selling wildlife meat in four cities from the baseline measured in 2005-2006. Support for rangers resulted in the apprehension of 225 wildlife traffickers and the rescue of endangered animals, many of which were rehabilitated at a USAID-supported animal rescue center. 193 families received assistance to establish alternative livelihoods, with 87 families earning more than $40 per month, 612 hectares of forest preserved, and over 30 hectares of forest replanted. Law enforcement support, remote sensing and demarcation activities helped conserve 764,669 hectares of forest and demarcate 70 kilometers of protected forest boundary.

USAID/Cambodia continued its Program on Rights and Justice (PRAJ), implemented by partner East-West Management Institute since 2004. PRAJ has four main components: (1) help communities develop their own tools for surveying and monitoring biodiversity and threats; (2) build alliances across geographical areas related to biodiversity and natural resource rights; (3) assist communities and networks to produce and distribute their own videos and other media materials with conservation and biodiversity themes; (4) enhance the emerging network's ability to respond to biodiversity-related threats and conflicts. Together these components are designed to address major threats to biodiversity, such as mining, illegal wildlife trade, natural resource concessions (including logging), hydropower dams, and loss of community land.

PRAJ continued its support for capacity-building workshops and a Community Peacebuilding Network (CBN). In FY 2007, one workshop led CBN to launch a national petition calling for the end of illegal land concessions; CBN also assigned a working group to plan coordinated

PHOTO: MARTIN VON KASCHKE, WWF

NO FISHERMAN'S TALE: This large catfish caught in northeast Cambodia is no match for the Mekong Giant Catfish found in the same waterways. The Mekong River basin is home to at least 1,300 species of fish, a level of diversity rivaled only by the Amazon basin, which encompasses an area six times larger. Aquatic resources account for up to 80 percent of the animal protein consumed in the region, and the fisheries of the Mekong are valued at over $1.5 billion annually.

complaints against illegal concessions. Many CBN affiliated groups signed a letter to the Mekong River Commission to halt plans for dams on the Mekong, including one in lower Laos and another between Kratie and Stung Treng in Cambodia, which are expected to have a devastating effect on fragile Cambodian ecosystems and endangered species like the Mekong River dolphin.

PRAJ also initiated a new Biodiversity and Grassroots Advocacy Project in FY 2007, designed to strengthen the community voice in advocacy for environmental protection and protection of natural resource rights. The project was founded on the belief that biodiversity requires popular support for its preservation and that forest communities themselves are often the best defenders of the resources upon which they depend. Helping communities preserve their land and natural resource rights in border areas gains their commitment to be good stewards while creating buffer zones for biologically important areas. Since the project was launched, it has provided funding to six Cambodian NGOs to support advocacy and protection efforts. One of the NGOs, Youth Peace Council Network (KYSD), trained and placed four youth volunteers in rural communities to provide support to community networks. In its first year, PRAJ aims to support at least five advocacy campaigns and protect at least one million hectares.

Indonesia

Natural Resource Management and Orangutan Conservation

Indonesia is a highly diverse island country with a large number of species found nowhere else on earth. Rapid urbanization, encroachment on protected areas, and conversion of forests to agriculture are destroying habitats and threatening ecosystem function and species survival.

USAID/Indonesia's Environmental Services Program (ESP) works with national park managers, community groups and other government and civil

Healthy forests along the Tanjung Puting river in Indonesia.

PHOTO: DON BASON, OCSP

PALM OIL IN PARADISE?

Tanjung Puting National Park in Central Kalimantan is home to many endangered species, including proboscis monkeys, gibbons and orangutans, clouded leopards, and over 200 species of birds. USAID partners World Education and Orangutan Foundation International (OFI) are working to protect these animals and their habitat from illegal logging, illegal mining and conversion to palm oil plantations as part of the Orangutan Conservation Services Project.

The encroachment of palm oil plantations is the most serious threat to the park. Forest clearing on all sides could turn the park into an island in a sea of oil palm monoculture, or worse: some Indonesian palm oil companies have requested and received government permits to create palm oil plantations inside the park boundaries.

Palm oil is an ingredient in thousands of processed foods and personal care products, and can be used to make biodiesel. Well-managed palm oil plantations are important to the livelihoods of millions, but rising prices for this commodity have led to unsustainable growth. Many new palm oil plantations are developed without the consent of the national government or local people, and are the primary driver of forest clearance in Indonesia.

Forest area which was converted to oil palm plantation at the boundary of the Tanjung Puting National Park.

PHOTO: DR. JAMARTIN SIHITE, OCSP

society organizations in watersheds across Java and northern Sumatra to develop and implement collaborative management agreements that lead to habitat restoration through reforestation with native species. Such agreements include agroforestry systems with native fruit trees, as well as food crop production in replanted forests until canopy cover is closed. This approach leads to habitat and ecosystem restoration in and directly adjacent to national parks and other protected areas, providing food and cover for many species as well as biodiversity corridors that link fragmented habitats. These community partnerships stimulate sustainable alternative livelihoods based on biodiversity conservation objectives.

ESP also supports community-based land rehabilitation field schools in and around high biodiversity areas, an approach that has now been adopted by the Ministry of Forestry. In FY 2007, a cadre of 36 field assistants facilitated 152 such field schools in as many communities. In addition, ESP worked with the Ministry to strengthen policy and build human resources for local, community-based collaborative conservation management for 44 National Parks across Indonesia. Over the past year, ESP facilitated the rehabilitation of 13,092 hectares of degraded land, improved management of 31,517 hectares of high conservation value forest, and developed 26 policies recognizing community tenure and access rights for improved conservation and forest management. In Aceh province, ESP continued land rehabilitation activities in coastal areas and coastal watersheds impacted by the 2004 tsunami, working with over 20,000 local people.

USAID's work has resulted in strong community networks supporting agroforestry, reforestation, and biodiversity conservation activities. In the province of East Java, support for the Bumiaji Land Rehabilitation Movement integrated biodiversity conservation work into watershed management activities. In and around Raden Soerjo Grand Forest Park (RSGFP), the program brought together stakeholders and revived a Javanese tradition of seedling cultivation and tree planting to rehabilitate severely degraded land. ESP also supported a Pride in Conservation campaign for six villages surrounding RSGFP, improving management of the buffer zone around the park. Across Java, ESP facilitated 22 agreements between community groups and state forest company Perhutani, resulting in the rehabilitation of more than 5,500 hectares of degraded forest in the island's upper watersheds.

In FY 2007, using FY 2006 funds, USAID initiated the Orangutan Conservation Services Project (OCSP) with the objective of safeguarding endangered orangutans and their tropical forest habitat. OCSP is a crisis response program that aims to reduce or eliminate threats to orangutans, such as conversion of forests to oil palm plantations and other agriculture, unsustainable logging, and wildlife trafficking. OCSP works to strengthen conservation practices, enforcement and spatial planning at selected sites in Sumatra and Kalimantan (Borneo). While engaging local communities in conservation activities, the program also operates at a broader scale to improve enforcement of existing laws that protect habitat and orangutans, create a mechanism for long term conservation financing, strengthen partnerships and coordination of stakeholders, and raise awareness about orangutan conservation issues. In FY 2007, OCSP improved the management of 243,000 hectares of biologically significant forest within Kalimantan and Sumatra, and provided training to 194 individuals in natural resources management and/or biodiversity conservation.

In northern Sumatra, OCSP began developing a conservation blueprint with wide stakeholder support to conserve the forests of West Batang Toru Forest Block. This plan will help three districts to manage approximately 76,000 hectares of protected and commercial forests containing an estimated 380 orangutans, along with Sumatran tigers and a variety of other endangered animals. Two of the four large companies working in the area, the Agincourt Gold mine and the Teluk Nauli logging company, are participating in the process and have indicated that they will respect the results.

In Central Kalimantan, OCSP is implementing an integrated conservation and development project to protect orangutan habitat, working to improve the management of 401,600 hectares of critically important orangutan habitat in Tanjung Puting National Park. OCSP supports park patrols, prevention of illegal extraction of natural resources, capacity building with the Park authorities, fire suppression and prevention, and the application of geographic information systems to help in monitoring and management.

In northern East Kalimantan, OCSP is supporting improved management of forest habitat within 50,000 hectares of production forests. This has led to effective forest management and reduced habitat loss, illegal logging and hunting. Further south in the province, OCSP is working to assist the Kutai National Park Authority and two timber plantations surrounding the park, Sinar Mas and Sumalindo, to devise a plan to protect both the Park's forest habitat and the orangutan found inside both the Park and the plantations.

Through OCSP, USAID participated in a multi-stakeholder process which resulted in a national plan to ensure long-term survival of the orangutan. This Indonesia Orangutan Conservation Strategy and Action Plan, signed into policy by the Minister of Forestry on December 3, 2007, aims to stabilize orangutan populations and habitat by 2017. The President of Indonesia demonstrated the country's highest level of support for the plan by launching it at a high-profile media event at the UN Climate Conference in Bali.

" The fate of the orangutan is a subject that goes to the heart of sustainable forests... to save the orangutan we have to save the forest."
SUSILO BAMBANG YUDHOYONO, PRESIDENT OF THE REPUBLIC OF INDONESIA

ANTI-POACHERS: Women Community Forest User's Group members remove an animal trap placed by a wildlife poacher in Bardia District, Nepal.

PHOTO: USAID/NEPAL

Nepal

Strengthened Community Natural Resources Governance

The forests of Nepal provide food, fuel and lumber critical to local livelihoods, as well as tremendous biological diversity. Overexploitation of forest resources, illegal trade in wild plant and animal products, overgrazing, and fire are among the major threats to Nepal's forests. Political and social conflicts related to access and control over forest resources, high levels of poverty and illiteracy, and a lack of awareness of environmental issues exacerbate the situation. In response, USAID/Nepal's natural resource governance program works with approximately 2,000 civil society groups in six community forestry program districts; three buffer zones of biologically significant sites (Shey Phoksundo National Park, Langtang National Park and Kangchenjunga Conservation Area); and four urban centers strategically important for policy advocacy campaigns (Nepalgunj, Pokhara, Itahari and Kathmandu).

Known as "SAGUN" – Strengthened Actions of Governance in Utilization of Natural Resources – USAID's program employs accountable, transparent and participatory management approaches for sustainable community forest management. It promotes practical ways to educate forest user groups and have them actually exercise sustainable resource management and good governance practices that give them ownership over common property resources. These actions, while contributing to sustainable forest management, also translate into greater awareness by grass roots organizations of their rights within the democratic process, leading to a stronger civil society as a whole.

Through SAGUN in FY 2007, USAID supported mobilization of anti-poaching units, participatory biodiversity monitoring, community-based insurance for livestock predation, herder education and awareness programs, development and updating of snow leopard habitat maps, construction of watch towers, support for eco-tourism, and

construction of bio-fencing at the buffer zones of biologically significant areas. 15,830 hectares of forest area were officially turned over to local communities for management in a sustainable manner. SAGUN raised awareness of good governance among buffer zone user groups, eco-clubs, students and mothers groups. It increased the technical, organizational, managerial and advocacy capacity of 869 community user groups and has led to greater citizen participation in buffer zone development. These groups brought 376 hectares of buffer zone forest under improved management with the active involvement of 4,145 households, and forest products were harvested in a sustainable manner for subsistence and sales. In addition, buffer zone groups prepared and implemented management plans and anti-poaching activities which have resulted in reduced human and livestock pressure in the parks and conservation areas.

Participatory biodiversity monitoring in the community forest plots and buffer zone sites has shown positive changes. Despite the fragile security situation, conservation areas as well as community forests plots are becoming an attraction for local and international visitors because of the unique flora and fauna regenerated in the area.

SAGUN also has a forestry component. In FY 2007, USAID assistance helped 815 community forest user groups to build their internal organizational capacity for good governance, livelihoods improvement, and policy advocacy campaigning in six community forestry program districts and four urban centers. It reached 193,549 people with training opportunities, workshops, advocacy campaigns, observation trips, and education classes focusing on sustainable forest management. Over 10,000 hectares of community forests were brought under improved management, with silvicultural operations resulting in 25,556 metric tons of forest products harvested in a sustainable manner for subsistence and sales. Hundreds of forest user groups demonstrated high capacity and accountability with annually audited accounts, preparation or revision of forest operational plans and constitutions, and provisions ensuring equitable distribution of benefits derived from forest resources. SAGUN helped to prepare and implement 146 livelihoods improvement plans targeting poor community members for economic empowerment. The program also involved 65,807 *Janajatis* (ethnic minority group members) and reached 17,419 *Dalits* (disadvantaged low caste members) through various training programs, workshops, and advocacy campaigns encompassing messages of social inclusion and sustainable forest management. These groups provided funds to support livelihoods improvement, children's education, and other community development needs in 305 poor households.

With USAID support, the 'Federation of Community Forestry Users Nepal' (FECOFUN) continued its leadership to promote the rights and aspirations of over 14,300 member groups in the country. It organized 222 advocacy campaigns and mass rallies in different parts of the country to re-establish democratic rights of forest users curtailed by various authorities including the Army, forest mafias, and local political leaders. FECOFUN partnered with key political parties and civil society leaders in Nepal, and mobilized hundreds of users in favor of the restoration of democracy and peace. Government authorities now recognize the need to hand over more community forests to local user groups in the *Terai* plains, have abolished Value Added Tax imposed on the sale of forest products, and have invited FECOFUN representatives to join in several monitoring visits related to illegal logging, wildlife poaching, and representation of *Dalits* and ethnic minorities at the state's decision-making bodies. FECOFUN was invited to review and provide input to Nepal's Three-Year Interim Plan and participated in a dozen meetings of Government of Nepal's Parliamentary Committee for Natural Resources Management.

USAID support for community conservation in Nepal led to 15,830 hectares of forest being officially turned over to local communities for sustainable management, and helped restore forest use rights for disenfranchised rural people throughout the country.

PHOTO: B. CABRERA, USAID

SEA PATROL: When officially declared a Marine Protected Area (MPA) in 2002, Bilangbilangan East Marine Sanctuary at Danajon Bank, Philippines had an extremely high percentage of dead coral and almost no high-value fish species. USAID helped strengthen MPA enforcement and management, including the use of strict "no take" zones. Illegal fishing is now under control, coral is recovering, and fish abundance and diversity have increased.

Philippines

Local Conservation Succeeds with Improved Governance, Land Tenure

Considered among the world's centers of species diversity and endemism, the Philippines' forest and coastal-marine resources are critical to both economic growth and human health. However, forest cover has declined from about 70% (21 million hectares) in the early 1900s to just 17% (5.3 million hectares) in the late 1990s, and deforestation continues today primarily due to illegal logging and conversion to agriculture. Likewise, 70% of coral reefs have been destroyed, and destructive fishing practices threaten food security. Pollution from inadequate solid waste management and untreated wastewater from a growing human population is a priority threat to both biodiversity and human health. USAID supports a broad range of activities to conserve biodiversity, with assistance centered on improving national and local governance and capacity to sustainably manage key natural resources.

In FY 2007, USAID achieved continued progress in addressing degradation of the Philippines' valuable terrestrial and marine biodiversity assets. An overall cumulative total of 401,889 hectares of forestlands and municipal waters

have been placed under improved management. USAID trained 3,182 people (including 969 women) to improve resource management skills and raise environmental awareness. This training helped lead to the adoption of 123 ordinances, which in turn legitimized conservation areas and further encouraged community support for biodiversity conservation in 130 local government units (LGUs). Benefits are accruing to LGUs, including tenured property rights, reduced illegal logging and destructive fishing practices, increased citizen involvement, and improved local government capabilities to deliver environmental services.

With USAID investment, 15 LGUs were able to divert 25 percent or more waste to recycling and composting facilities, rather than polluting biodiversity rich rivers and coastal ecosystems. Thirty-nine hotels and resorts in the high biodiversity coastal areas of Panglao, Palawan, Puerto Galera and Batangas are working with LGUs to reduce pollution of their coastal ecosystems by establishing wastewater treatment facilities and reducing generation of solid wastes and impacts on target biodiversity. Environmental user fees paid by tourists fund some of this work.

USAID also supported the pilot testing of wastewater treatment facilities in local government enterprises such as public markets and slaughterhouses, which annually discharge thousands of tons of untreated effluent directly into marine and freshwater bodies. As a result of USAID's efforts, the public market in Muntinlupa now discharges acceptably clean water into Laguna de Bay, the country's largest freshwater lake, and city markets and a slaughterhouse in Dumaguete, Calbayog, and Iloilo, now discharge cleaner water into their coastal ecosystems.

In the predominantly Muslim South, Mindanao island LGUs adopted culturally appropriate environmental governance using *Al Khalifa*, a guidebook on environmental protection and development based on Islamic principles. Islamic legal authorities helped develop and review this USAID-funded guidebook, and endorsed it for wider application. On the island province of Tawi-Tawi, LGUs adopted a *fatwa* (religious edict) for marine environmental conservation. A survey of LGUs in 2007 found improvements in an environmental governance index over the 2006 baseline, suggesting better functionality, transparency, accountability and level of participation in environmental programs.

Small-scale illegal logging and conversion of natural forests to farmland due to migration and poverty continue to threaten biodiversity and the livelihoods of over 20 million upland Filipinos dependent on forest resources, as well as coastal people and marine life downstream. USAID supports efforts to place open-access forest areas under clear tenure and to improve management of areas already under private or government ownership. Part of this strategy includes decentralizing forest management authorities and responsibilities to local resource managers. In FY 2007, numerous partnerships came together under 20 co-management agreements between communities, LGUs and the Philippines Environment Department, which together placed 92,756 hectares of forest under more effective, collective management.

Through co-management, LGUs are able to demonstrate to constituents the benefits of having secured property rights, reduced illegal logging, increased citizen involvement, and improved delivery of services, such as agricultural extension, construction of farm-to-market roads, and provision of seedlings for agroforestry. USAID remains actively engaged in discussions on a new, national, ten-year community-based forest management plan, which would keep communities, local governments and NGOs at the forefront of forest management by instituting regional and provincial mechanisms for multi-stakeholder planning, implementation and monitoring.

An overall cumulative total of 401,889 hectares of forestlands and municipal waters have been placed under improved management. USAID trained 3,182 people (including 969 women) to improve resource management skills and raise environmental awareness.

Effective enforcement of forestry laws in the Philippines is critical for conserving forests. USAID made further progress in galvanizing once-fragmented government environmental law enforcement units into a more

PHOTO: DEVELOPMENT ALTERNATIVES, INC.

CORAL REEF CO-MANAGEMENT: Marine scientists are training local community managers in the Philippines to evaluate the health of their marine protected areas (MPAs) and make management adjustments accordingly. Participatory monitoring of MPAs, with the results analyzed by local people, is one of the good governance practices encouraged by USAID.

harmonized and coordinated interagency network. As part of these efforts, the Agency helped standardize enforcement training modules and operations protocols in wildlife, forestry, fisheries, and pollution, which helped to control environmental crimes across the country.

Through the Philippine Tropical Forest Conservation Foundation (PTFCF), established under the U.S. Tropical Forest Conservation Act, USAID supports innovative forest conservation initiatives of local NGOs by providing technical assistance and leadership on the PTFCF Board of Trustees. In 2007, the PTFCF made 20 grants valued at over $740,000, for activities such as forestry law enforcement, mangrove forest rehabilitation, protected area development, and tree nursery development. USAID assistance to PTFCF also resulted in the confiscation of 50,000 board feet of illegal timber from poachers.

The Philippines is a nation of islands enveloped by the "Coral Triangle," the epicenter of marine life and biodiversity on the planet, which also includes all or parts of Indonesia, East Timor, Malaysia, Papua New Guinea, and the Solomon Islands. Covering some 5.7 million square kilometers, the Coral Triangle harbors over 600 coral species, more than half of the world's coral reefs, 3,000 species of fish, and the greatest extent of mangrove forests in the world. A new multilateral Coral Triangle Initiative (CTI) seeks to address threats to the region's extraordinary marine biodiversity. USAID supported design of the Philippines component of CTI in 2007, with implementation of conservation activities expected in 2008.

LATIN AMERICA AND THE CARIBBEAN

USAID country and regional programs funded biodiversity conservation and forestry activities in over 15 countries throughout Latin America and the Caribbean in FY 2007.

The countries of Latin America and the Caribbean (LAC) collectively contain nearly half of the world's birds and amphibians and one third of all plants, including about half of all tropical forests. The eastern slope of the Andes Mountains is the single most biologically diverse area in the world, while the Amazon River drains the largest rainforest on the planet.

Overfishing, illegal logging and conversion of forests to agriculture are among the major threats to natural resources in the LAC region; Brazil has the highest biodiversity of any country but also the highest rate of deforestation. Certain countries are particularly affected by narcotics growers and traffickers, invasive species, or seasonal natural disasters such as forest fires and hurricanes. USAID partnered with governments, conservation organizations, indigenous communities and the private sector to address these issues in FY 2007.

ON THE ROAD TO IROKRAMA: The enthusiasm and tenaciousness of "birders" make them well-suited to paving the way for ecotourism in Guyana, an ecological gem at the crossroads of the Amazon and the Caribbean. This group of journalists and tour operators made an impromptu stop on route to Iwokrama Forest during a familiarization tour organized by USAID.

PHOTO: MARTINA MILLER

LAC Regional Sustainable Development Program

The Latin America and Caribbean (LAC) Bureau's regional biological conservation strategy works to secure the region's natural wealth as a basis for sustainable development. Seven environmental specialists support this strategy by providing technical assistance to Missions and by assisting the Bureau in meeting its environmental compliance obligations. FY 2007 was the final year of the long-running Parks in Peril program (PiP), and the first year of field activities for the Initiative for Conservation in the Andean Amazon (ICAA). In collaboration with the USDA Forest Service (USFS) and Department of State, the LAC Regional Sustainable Development (RSD) program helped build capacity in Central America for trade in sustainable wood products, implementation of the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), and other environmental aspects of the Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR).

Parks in Peril

In its last year, the PiP program assisted members of Fundación Páramo in the Condor Biosphere Reserve in Ecuador to sign an agreement to cooperate with the landowners of El Tambo, Santa Rita and El Porvenir ranches, in which landowners agreed to not burn the *páramo* vegetation in areas surrounding high montane forests and other natural plant formations. They also agreed to maintain a livestock density of less than one head of cattle per six hectares, which significantly reduces their impact on vegetation. Together, these agreements will help conserve approximately 30,000 hectares in the Cotopaxi National Park and 12,000 hectares in the Antisana Ecologic Reserve.

PiP supported the completion of the report "Priorities for Marine Conservation in South America," which for the first time identifies coastal and marine conservation priorities through science-based and highly participatory processes that have followed consistent methodology across six countries in South America. The resulting information establishes a baseline on which to build future marine conservation, adaptation, and management efforts.

In the forestry sector, PiP facilitated the formation and initiation of Local Forest Management Committees (LFMCs) in Cockpit Country, Jamaica. A launch ceremony attended by members of the 88 communities in Cockpit Country and the Minister of Agriculture marked the start of co-management of a forest reserve and its resources among LFMCs, the Forestry Department, and partner The Nature Conservancy. LFMC committees have been involved in the review of the Martha Brae Forest Management Plan, which includes forest management and biodiversity conservation, as well as sustainable livelihood strategies and proposed projects for funding.

Initiative for Conservation in the Andean Amazon

Through ICAA, a collaboration with more than 20 local and international partners, USAID is supporting biodiversity conservation in the Amazonian portions of Colombia, Ecuador, Peru, and Bolivia. ICAA's goal is to build capacity and commitment across the Andean-Amazon Basin for effective stewardship of the basin's nationally and globally important biological diversity and environmental services. In FY 2007, an extended design phase was completed and field implementation began.

ICAA has already generated a number of results:

- In Bolivia, a base-line deforestation analysis in four protected areas confirmed that forest cover loss is statistically lower in protected areas and a titled area within Tacana indigenous lands than in adjacent, non-protected areas;

- In Peru, ICAA brought together indigenous communities, neighboring community associations, and high-level government authorities to establish exclusion zones to protect forests from ongoing production operations and to grant concessions that will resolve a long-standing title request for native lands.

- In Ecuador, local partners have formed a public-private alliance with the Ministry of Tourism and National Tourism Chamber to promote sustainable tourism, improving livelihoods while conserving natural resources. Detailed profiles of ICAA's sustainable tourism pilot operations were highlighted on the government's official tourism web site (www.purecuador.com),

CAPACITY BUILDING: **A Honduran enforcement officer participates in a Tri-National CITES workshop in El Salvador in February 2007.**

PHOTO: HUMANE SOCIETY INTERNATIONAL

as well as a promotional booklet that was translated into six languages and distributed to tourism wholesalers and outfitters around the world.

CAFTA-DR support for CITES

As the United States expands trade and investment ties under Free Trade Agreements (FTAs), it also seeks to protect the environment and promote sustainable development. One priority area of concern is the potential for increased illicit and unsustainable international trade in endangered flora and fauna. In FY 2007, LAC/RSD programmed several activities in support of CAFTA-DR environmental objectives, including training sessions on trade in sustainably produced wood products and correct implementation of CITES; initiatives promoting trade, diversification and biological diversity in cacao landscapes; and workshops on sustainable tourism.

In collaboration with the Department of State, USAID provided CAFTA-DR environmental cooperation funds to four U.S. NGOs to work in Central America on regulatory compliance with CITES, environmental enforcement, and endangered species habitat management. Progress was made towards several objectives, such as improving rescue center capacity to receive and rehabilitate wildlife, and planning a regional workshop on best practices for management of wildlife confiscated under CITES.

The Department of State used additional CAFTA-DR funds to support a series of workshops designed to improve the implementation of CITES and the coordination of enforcement across Central American borders. Over 100 people from Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua participated in five workshops in 2007.

NIGHT WATCH: This large female leatherback turtle now has nothing to fear when she lays eggs on Rosalie Beach in southern Dominica. Poaching of sea turtles and their eggs has been dramatically reduced by a USAID-supported, non-invasive research and monitoring program in which communities and tourists are invited to watch conservation in action.

PHOTO: CAROL GUY

Caribbean Regional Program

National Investments and Natural Assets Protection

USAID's Caribbean Regional Program works to protect the biodiversity and natural environment of countries in the Organization of Eastern Caribbean States (OECS) – the countries of Antigua and Barbuda, Commonwealth of Dominica, Grenada, St Kitts and Nevis, St Vincent and the Grenadines, and St. Lucia, plus UK territory Montserrat – with support for appropriate policy and governance systems, conservation measures, and information tools. The Program provides support to OECS countries under the Caribbean Open Trade Support (COTS) program, and through a recent initiative launched with the Secretariat of OECS.

The objective of the COTS program is to help OECS countries to succeed in an open trade environment in which their economic futures are ultimately linked to the ability of the region to protect its rich biodiversity endowment and fragile ecosystems. One target for COTS activities is the Codrington Lagoon on the island of Barbuda, which was recently declared a National Park. The largest sanctuary in the world for the Frigate Bird

(*Fregata magnificens*), it is home to an estimated 170 species of birds. Codrington Lagoon also serves as a breeding ground for several types of fish and lobsters, making it an important socioeconomic resource for the people of Barbuda. USAID is helping respond to the breaching of the dune that closes the lagoon on one side, which threatens the integrity of the lagoon's ecology. The Agency is also helping prepare a Development and Management Plan for the Park so it can transition from a merely legal entity to a fully-fledged protected area.

In Dominica, USAID supported the development of a five-year management plan for Morne Diablotin National Park, to cover the period 2008 to 2013. While the Park is a spectacular wilderness area with many rivers and mountains and impressive primary forest rich in wildlife, its management plan expired three years ago. A revised plan is critical given the role of Morne Diablotin in protecting the Red-necked and Imperial parrots and their habitats. Consultations were conducted with communities near the park to ensure the continuing support of local citrus producers for the conservation of the parrots.

One of the key threats to sea turtles in Dominica is poaching on beaches during nesting season. USAID supported a pilot activity in 2006, spearheaded by the Wider Caribbean Sea Turtle Conservation Network (WIDECAST) in collaboration with the Dominica Forestry Division, which showed that local communities could be mobilized for conservation. USAID built on this success in FY 2007 by developing a national sea turtle research and monitoring program that can be implemented in collaboration with coastal communities and 'voluntourism' groups.

In the last twenty years, demand for organic medicinal plants and herbal teas has grown on the island and throughout the world, providing a viable economic opportunity to the poorest of Dominicans, the *Kalinagos*, or Carib people. Kalinagos also see this as a way to retain their knowledge of traditional medicine. COTS is supporting the Kalinago Heritage Society to curtail unsustainable wild plant harvests and develop a sustainable economic activity that can ensure the quality and quantity of plants the market requires. Work is being done according to U.S. standards, in case the Kalinago people decide to ramp up production and exports in the future.

One of the biggest threats to critical marine habitats in Dominica is quarrying for sand and stones. COTS continued support for a program started in 2006 to institute both environmental management systems for the quarry industry and changes in environmental policy. USAID helped develop regulations for quarry operators, increase political support by showing the impact of quarries on marine and freshwater biodiversity, build the capacity required to enforce the regulation, and develop a monitoring program for freshwater streams and marine habitats impacted by quarry operations.

In addition to COTS activities in Barbuda and Dominica, USAID began a biodiversity program for the entire region in FY 2007, working through the OECS Secretariat. The program focuses on strengthening the legal framework for the six independent countries of the OECS, site management, improvement of the private sector understanding of their role in protecting a biodiversity, and a public education program on biodiversity conservation.

Central America and Mexico Regional Program

Watershed Conservation, Sustainable Fisheries and CITES Compliance

The USAID Central America and Mexico (E-CAM) Regional Program was initiated in El Salvador in 2005 and 2006, replacing the Central America Regional Program managed for many years by USAID/Guatemala. E-CAM supports many activities which help prepare Central American countries for the challenges related to Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR) implementation, such as improved environmental compliance and practices. In the areas of biodiversity and forestry, E-CAM contracted Chemonics International in June 2007 to improve management and conservation of two critical watersheds in the Central American Region.

CAFTA-DR activities build the capacity of environmental authorities to enforce Multilateral Environmental Agreements, especially the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For example, USAID supported the design and publication of operational handbooks for CITES

enforcement by customs officials in CAFTA-DR countries, with particular emphasis on a wildlife trade permit system. A total of 74 customs officers, police officers and other key officials were trained at bi- and tri-national borders on CITES implementation procedures using the published operational handbooks. USAID also reviewed the operation of rescue centers in the region, whose role confiscating wildlife is key to strengthening the enforcement and compliance processes of CITES. This diagnostic established challenges and lessons learned on the management of animals, and provided recommendations for improving endangered species conservation.

Overfishing has been identified as a major threat to the health and biodiversity of the Meso-American Reef. In support of the Environmental Cooperation Agreement under CAFTA-DR, USAID supported work by World Wildlife Fund (WWF) to transition the lobster fisheries in Honduras and Nicaragua away from unsustainable practices and an overcapitalized fleet that have decimated lobster stocks over the past 20 years. WWF's ecosystem-based approach used zoning to provide protection for nursery areas, and applied a complementary scheme to ensure that fishing methods and gear types are compatible with the habitat in which they are used. Together, these will allow lobster stocks to recover while maintaining fishing livelihoods. To reduce sea turtle bycatch, USAID funded the National Oceanic and Atmospheric Association (NOAA) to promote the use of turtle excluder devices on shrimp trawlers and the use of circle hooks in long-line fisheries. NOAA built the capacity of governments in fisheries enforcement and compliance, trained fishing and port authorities to understand the threat of marine invasive species, and taught them to recognize the pathways by which species are transported (such as ballast water).

USAID/E-CAM has also engaged the technical expertise of the USDA Forest Service (USFS) to achieve CAFTA-DR natural resource management goals.

PHOTO CREDIT: PETER KELLER, USAID

WELCOME TO SANSANPOND SAK WETLAND: USAID supports management planning for protected areas like this one in Panama, in the Cahuita-La Amistad-Rio Cañas-Bocas del Toro watershed which straddles Panama and Costa Rica.

USFS works with local government, civil society and the private sector to address illegal logging, support trade in forest products that are produced sustainably, develop sound forest policy, practices and institutions, and improve the economic and environmental viability of natural resource-based livelihoods. In FY 2007, USFS completed training of 90 border officials in wood (especially mahogany) identification in Nicaragua and Honduras, and supported sustainable community use of secondary forest products in Honduras. USFS trained Honduran, Nicaraguan, and Guatemalan agencies on improving environmental assessment procedures in the forest sector, and updated forest policy and planning in Honduras and Guatemala, while building institutional capacity to address sustainable forest management and combat illegal logging. These actions will help support implementation of international obligations under CITES, as well as national laws.

In the new program to improve two critical watersheds, a total of seven land use plans and four protected area plans are being implemented in two biodiverse transboundary watersheds: Cahuita-La Amistad-Rio Cañas-Bocas del Toro watershed on the Costa Rica-Panama border, and the Gulf of Honduras watershed, which includes Belize, Guatemala and Honduras. USAID is establishing public-private alliances to increase revenues for sustainable management of these protected areas, and with local stakeholders is considering methods of raising park management funds by collecting local fees or taxes.

The watersheds activity includes a small grants program to engage local people in conservation. In FY 2007, USAID approved a grants manual and applications were accepted and evaluated according to an approved work plan. The first grant was awarded to a civil society participation program to clean the beaches of Puerto Barrios, Guatemala. This activity raised environmental awareness among communities in the area, and resulted in the development of a beach monitoring program.

Bolivia

Landscape Conservation Program and Sustainable Forestry

Bolivia is extraordinarily rich in globally important biodiversity, but these resources are under extreme pressure from unsustainable management which directly threatens the country's economic development. USAID/Bolivia's Landscape Conservation Program (LCP) is working to conserve the biologically significant Amboro-Madidi corridor on the eastern slopes of the Andes Mountains by engaging with municipalities and communities and generating incentives for sustainable natural resource management. Improving the capacity of civil society, strengthening the government's institutional capabilities and focusing on the inclusion of indigenous and rural populations are critical to achieving these goals.

Within LCP, a partnership with local and international NGOs led by Conservation International, there has been renewed effort to work at the municipal level to help local governments meet their increasing responsibilities related to local planning, territorial management and economic development. As a result of this work, Bolivia's largest municipal protected area (over 600,000 hectares), Pampas del Yacuma, was created in 2007. USAID also worked with a number of key biodiverse municipalities to develop land use zoning plans that promote conservation. It is hoped that best practices in "green" planning identified as part of this activity can be replicated throughout the country.

LCP succeeded in establishing an agreement between key stakeholders on the official delimitation of the Carrasco National Park, and gains were also maintained in strengthening participatory management in the Pilón Lajas indigenous territory and biosphere reserve. LCP also helped to develop one of the country's first Indigenous Education Programs, which attempts to promote educational goals of numeracy, literacy and critical thinking skills integrated with the T'simane-Mosetene's own indigenous knowledge, culture, language and conservation values.

BIRD'S EYE VIEW: A pair of scarlet macaws flies over the forest canopy in Madidi National Park. USAID supports conservation of the forest corridor between Madidi and Amboro protected areas, which in 2007 resulted in a new 616,643 hectare municipal protected area.

In collaboration with the World Tourism Organization, LCP helped to develop and implement a program called "Destino Verde" which networks ecotourism-related businesses in key municipalities of northern La Paz. The program helps small and medium-sized businesses to have better operational and planning practices, helps to monitor tourism to the region, promotes tourism of the destination to various national and international markets, and encourages best practices that improve the quality of the tourism experience while at the same time ensuring economic, social and environmental sustainability of the initiatives.

In the forestry sector, USAID supports the work of many partners to increase benefits received by communities from forest resources. The Nature Conservancy implements the Bolivia Forestry Program, which works to establish regulatory oversight and technical and business norms in forest management throughout the production chain, creating exports and jobs associated with a sustainable forestry sector. An Interagency Agreement between the USDA Forest Service (USFS) and USAID enlists USFS technical assistance focused on developing wood processing protocols, wood analysis, training in integrated fire management, and sustainable forestry road rehabilitation and construction. A Global Development Alliance with the Tahuamanu Group, a Bolivian company, is constructing a log collection and wood processing center in Cobija to fill a gap in the production chain for wood products.

Efforts in FY 2007 strengthened indigenous communities' ability to participate in local, regional, and national chains of production, and to receive fair compensation for their products and services. USAID improved 16 indigenous community forest operations and facilitated contracts of over $900,000 this year. Overall, there was a 55% increase in family income generated from forestry activities in monitored sites in 2007.

Effective use of an illegal logging information system, developed in 2006 with USAID support, reduced the overall deforestation rate from .75 to .50 percent in 2007. In order to further prevent illegal logging, USAID/Bolivia is undertaking a pilot project that will test a cost-effective bar-code method for certifying the legal origins of wood right through the supply chain, from forest to customer. Preliminary results of biodiversity monitoring in 2007 indicate little impact on the diversity of species and the number of individuals within managed forests. Furthermore, the rate of deforestation in managed forests is significantly less than in non-managed forest areas. As a complement to certification, USAID helped gazette 400,000 hectares of land into municipal forest reserves, preserving a working forest and the associated biodiversity, carbon sequestration and economic benefits.

A number of new public-private partnerships were initiated in 2007, including: creation of a wood processing center with the Carpenters' Union of El Alto; organization of community-based harvesting and related enterprises; and a national inventory of Brazil nut trees. An annual Wood Business Roundtable supported by USAID generated $18 million of business intentions of which community forestry groups made up $3 million. Training was provided to 947 people in topics such as best forestry management practices and business administration. Wood processing companies that implemented various best practices this year achieved productivity increases ranging from 70 percent to 225 percent.

Brazil

Sustainable Forest Management and Protected Areas Development

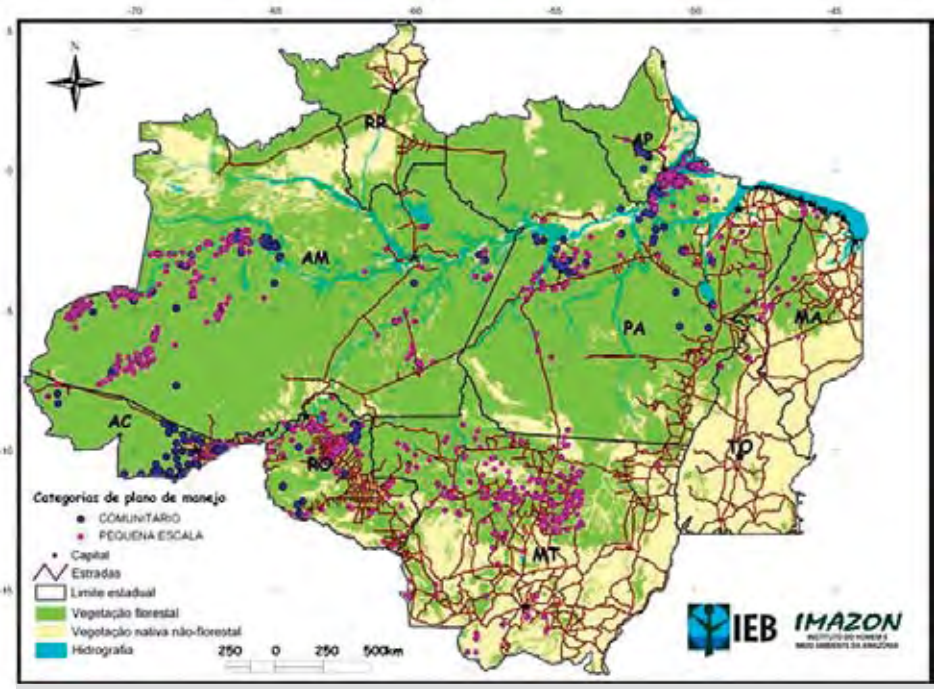
Brazil contains most of the Amazon rainforest within its borders, and is without equal in overall biological diversity. Deforestation for logging and agriculture are a persistent threat to plants and wildlife, even in protected areas. The overall goal of USAID/Brazil's Environment Program is to significantly increase the area of the Brazilian Amazon under sustainable forest management, through support for national parks and well-managed forests. Some 6,848,500 hectares of Amazon forest has been put under improved management with USAID support.

USAID's pioneering efforts to mitigate climate change, preserve biodiversity and advance the interest of indigenous peoples in the Amazon are bearing fruit. Achievements in forest monitoring, landscape management and planning, and community empowerment – coupled with increased law enforcement by the Brazilian government – have caused deforestation rates to drop for four consecutive years (25 percent in 2006 and 20 percent in 2007). The Government of Brazil recently reported that while the pace of overall deforestation continues to decrease, deforestation in protected areas increased 6.4 percent in 2007, with one out of five harvested trees coming out of areas where logging is illegal or strictly regulated. Armed with this information, USAID continues to prioritize protected area development and management in Brazil.

Technical support and advocacy by USAID partners was instrumental in the creation of a 15 million hectare mosaic of conservation units in Pará State, the largest in any tropical forest in the world. Located in a region infamous for violent land conflicts and illegal logging, the mosaic will link existing reserves to form a vast preservation corridor the size of Alabama. Furthermore, partners have secured protection of nearly 2,800,000 hectares of the Xingu Indigenous Park in Mato Grosso state.

Partner Imazon has developed state-of-the-art technology for mapping deforestation and forest degradation, enabling complete and full satellite monitoring of the entire Brazilian Amazon and monthly, near-real time estimates of deforestation. This system ensures social control and increases government accountability by enabling open and transparent access by the general public.

USAID has also taken bold steps to tackle changes in the Brazilian Amazon as export-based agribusiness gains a foothold and expands on land until recently covered with tropical forests. In Mato Grosso state, USAID supports conservation of Amazon forest biodiversity by helping agricultural producers and commodity traders comply with Brazil's strict conservation set-aside laws. The model for this activity is Lucas do Rio Verde, where the whole municipality has pledged to comply with conservation set-asides and USAID funds help map out farm-level compliance options. USAID/Brazil also supports efforts to replicate this success in the ranching sector.



INFORMATION MANAGEMENT: Community and small scale forest management plans (blue and purple dots, respectively) are clustered where roads and rivers make the Brazilian Amazon accessible. USAID partners have modeled the impact of timber harvest and fire risk in the Amazon, which help to define management plans for new areas of sustainable forest use. High-quality scientific information like this map is useful to the regulation and practice of forest management by the new Brazilian Forest Service.

In FY 2007, USAID provided training in biodiversity conservation and forest resources management to 2,168 people, primarily farmers, loggers, local government officials, and NGO technicians. An additional 744 small farmers, rural workers and other inhabitants of the Amazon's forests and waterways received direct economic benefits from USAID assistance.

Communities and businesses are demonstrating what can be achieved with USAID support. Sustainably harvested, community-managed timber generated over $180,000 in revenue in 2007, and local producers have gained access to emerging markets for sustainable forest goods and services. Region wide, over 250 small businesses from six Amazonian countries participated in the 1st Pan Amazonia Products Fair.

Intensive long-term monitoring and experimental studies at six sites in Pará and Acre states were continued in 2007, while a new silvicultural experiment was developed to study sustainable production of non-timber forest products. The ecological information being collected is important for improving understanding of Amazonian forests and commercial species' response to logging. This data has been critical for proposing improvements to forest management systems based on reduced-impact logging, and in influencing public policy focused on stimulating adoption of sound forest management practices.

Colombia

Stronger National Parks and Sustainable Development

Colombia is one of the ten most biodiverse countries in the world, but a growing population and expanding agriculture – including illegal crops like coca – threaten this natural heritage, with roughly 30 percent of Colombia's biological diversity lost in recent decades. USAID's environment program in Colombia works to strengthen national parks, promote sustainable use of natural resources among indigenous groups in national park buffer zones, and develop the commercial forestry sector.

In December 2007, USAID completed two years of support to CORPACOT, a Colombian NGO helping the Colombian National Parks Unit strengthen its management presence in select national parks, provide staff training in improved management methodologies, and conduct environmental landscape planning with local communities in and around parks. The Mission also supplied the National Parks Unit with resources critical to monitoring and enforcement activities, including new trucks, boats, motorcycles, out-board motors, and computers, and a limited amount of reconstruction of degraded infrastructure. These activities have allowed Colombia's Parks Unit to provide better field presence and management at many national parks, improving both biodiversity conservation and the quality of tourist experiences.

USAID continued support for a project working with indigenous

PHOTO: JERRY BAUER, USDA FOREST SERVICE

KEEL-BILLED TOUCAN: This raucous bird adds color to lowland rainforests from Mexico south to Colombia and Venezuela. USAID support to the Colombia National Parks Unit and communities surrounding protected areas is securing a home for toucans as well as endangered species such as the giant armadillo and mountain tapir.

groups and small farmers in National Park buffer zones. The main goals of the program are to build the resource management capacity of these stakeholders and offer economic alternatives to unsustainable exploitation of natural resources. Activities include support for micro-enterprise, handicraft production, and ecotourism, as well as socioeconomic dimensions of conservation in buffer zones such as land tenure and titling, and actions to address population migration and gender issues.

This program has allowed indigenous and *campesino* communities in the buffer zones of Alto Fragua/Indi Wasi National Park, Nevado de Huila National Park, and Sierra Nevada de Santa Marta National Park to develop more sustainable livelihoods, thereby taking pressure off of the neighboring protected areas. Local infrastructure initiatives such as potable water, a health clinic, and communal houses have also encouraged indigenous groups to reestablish their ancestral presence in some buffer zone areas. This is a positive conservation outcome, since these communities tend to have a lower impact on natural resources than migrant farming families.

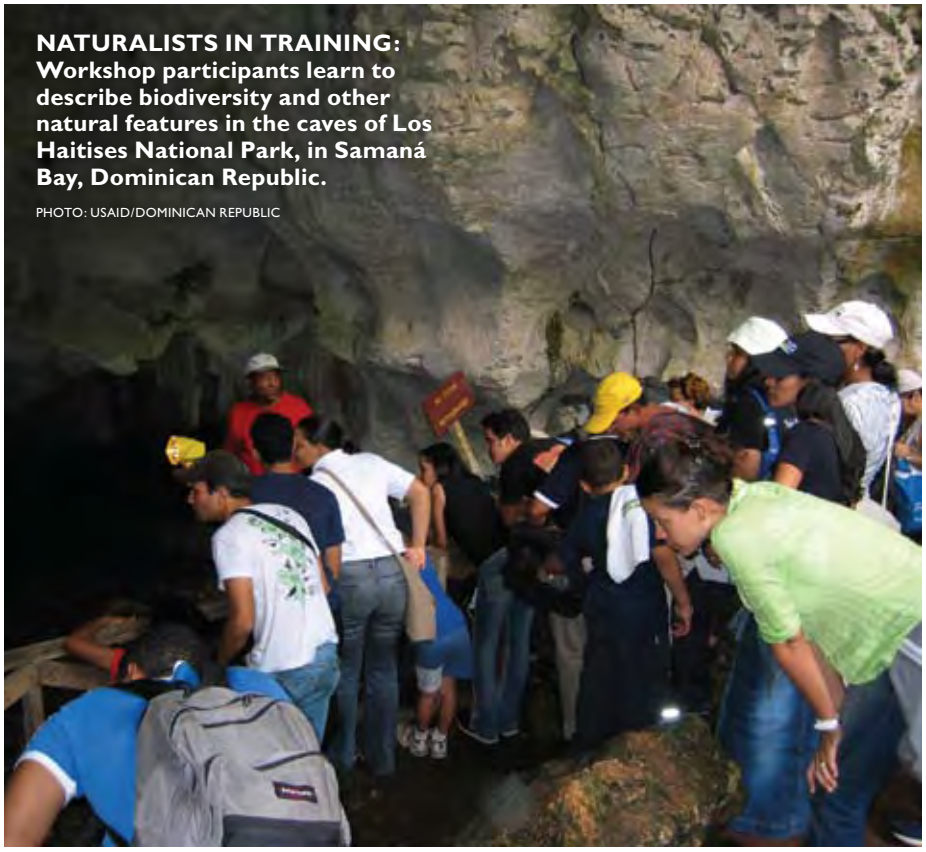
Forests are largely an untapped economic resource for Colombia, with forestry contributing less than 0.5 percent of GDP even though more than half the country is covered in natural forest. USAID's Increased Investments for Sustainable Alternative Development program (MIDAS, in Spanish) works to develop the forestry sector through better management of natural forests, increased establishment of plantations, and wider implementation of agroforestry practices. Efforts to improve management of natural forests focus on the biodiversity-rich Chocó region of western Colombia, where USAID is assisting Afro-Colombians and indigenous groups to develop and manage 150,000 hectares of natural forest. The forestry component of the MIDAS project is expected to create approximately 21,000 forestry sector jobs and develop 67,500 hectares of new forest plantations.

Another Mission program, *Areas de Desarrollo Alternativo Municipal* (ADAM), works with an indigenous group engaged in managing 1,200 hectares of pine plantation in the highlands of south-central Colombia. Both MIDAS and ADAM put professional forest management practices in place where none existed previously, preserving biodiversity while building the economy through carefully managed natural and plantation forests.

Dominican Republic

Increased Institutional Capacity for Environmental Protection

The Dominican Secretariat of the Environment and Natural Resources (SEMARN), a cabinet level ministry, requested USAID policy assistance to enable effective management of biodiversity resources. The Mission responded by working with SEMARN to prepare environmental sub-sector laws and implement regulations; to prepare and implement environmental standards and norms; to improve protected area management; to promote clean production technologies; to strengthen municipal



NATURALISTS IN TRAINING: Workshop participants learn to describe biodiversity and other natural features in the caves of Los Haitises National Park, in Samaná Bay, Dominican Republic.

PHOTO: USAID/DOMINICAN REPUBLIC

environmental units; to provide training to national, regional and municipal staff; and to enhance civil society participation in protecting the environment and protected areas.

Considerable progress was made with respect to environmental regulation at municipal levels. USAID participated in the review of the Vision for Coastal and Marine Resources Regulation, and worked closely with public and private sector counterparts in preparing this important document for publication. A sectoral law for coastal and marine resources was drafted and submitted to the SEMARN Secretary for approval in January 2007, and a resolution to approve the Strategic Plan for the Dominican Biosphere Reserve was signed on April 11, 2007. From 2006 until the end of 2007, USAID also supported every stage of preparation through approval of new regulations for the enforcement of environmental norms, including protecting species under CITES, with accompanying instruments for assessing damage and assigning fines for infractions.

USAID supported an environmental enforcement training session with 48 participants in March 2007, and an eight-day workshop on naturalist interpretation for park guides in September 2007. The latter session provided additional training and practical experience to the team of local technicians that has been trained periodically to provide advanced tourist education focused on biodiversity in protected areas. This technical group is especially important to the sustainable development of ecotourism, and effective management and co-management of protected areas and reserves.

Ecuador

Conservation of Indigenous Land and Rights

Ecuador's rainforests have the highest known density of biodiversity of any country in South America, with up to 300 tree species per hectare at sites in Yasuni National Park. The country also has the highest human population density on the continent. USAID/Ecuador is working with communities, local and national governments, and NGOs to develop strong institutions and conservation incentives to protect biodiversity and improve livelihoods. Activities cover three geographic areas: lowland indigenous territories, the Galapagos Marine Reserve, and the Tropical Andes.

USAID programs in Ecuador have significantly reduced the rate of habitat loss (primarily deforestation), which in tropical countries is the leading source of greenhouse gas emissions. At the end of 2007, 1,260,375 (terrestrial) and 13,000,000 (marine) hectares were under improved management as a result of USAID activities. The program's major accomplishments came as a result of its diverse alliances. In the 2.4 million hectare Condor Podocarpus-El Condor Biosphere Reserve, a complex of private lands and federal protected areas, USAID and its partners reduced the rate of habitat loss by 88%, and maintained 768,364 hectares of natural vegetation in five protected areas. Ecuador's national government gave legal title of 35,000 hectares to indigenous Cofan partners. With subregional and local governments, USAID helped regulate burning of grasslands and natural woodlands in the 1,459 km^2

WILD SPECTACLED BEAR from Maquipucuna reserve, in the western Andean slopes of Ecuador.

PHOTO: KATIE SCHILL

PEACEFUL COEXISTENCE: In the town of Cangahua, in the buffer zone of the Cayambe Coca Reserve, many residents are newly transplanted from other areas in order to take jobs in the area's flower industry. This area is also home to the threatened Andean (Spectacled) bear, a livestock predator. To reduce conflict with the bear, Cangahua residents old and new were asked to remove their livestock from unproductive and fragile high-elevation grasslands; in return, a local community organization provided them with economic alternatives such as guinea pig raising enclosures and park guard employment opportunities. With these livelihood adjustments, the families of Cangahua improved their food security and revitalized the indigenous culture. Community park guards reduced the number of wild fires by 80 percent, and virtually eliminated poaching of spectacled bears.

municipality of Mejía. The Mission also partnered with private landowners to conserve 65,000 hectares located between national protected areas, in which the landowners committed personnel to a new control and monitoring program that has reduced illegal hunting and fishing, as well as burning of Andean grasslands.

In addition to stemming habitat loss, USAID addresses less visible threats to wildlife. Human-animal conflict is a factor in conserving many large mammals, especially predators, and the globally endangered Andean (Spectacled) bear is no exception. Thanks to a USAID-supported conflict management plan, there have been no bear attacks on cattle, nor have any bears been killed, in the project area since 2006.

A key USAID strategy for improving forestry and conservation outcomes is to help indigenous groups acquire management rights for their territories. The Mission's Conservation of Indigenous Areas Program (CAIMAN) achieved several impressive results before closing out in 2007. Overall, USAID and its partners demarcated 552 km of territorial boundaries, strengthened indigenous rights to ancestral lands by helping secure legal title, and physically protected natural resources in a total of 1,008,465 hectares. In January 2007, after investments by USAID, definitive boundaries were established for a 780,000 hectare protected area for the uncontacted Tagaeri-Taromenane people, safeguarding this vulnerable indigenous group and the natural resources on which they depend.

Deep in the forest, legal rights must sometimes be proactively defended. CAIMAN teamed with a local NGO to create the Cofán Forest Guard Program, in which well-trained and equipped indigenous guards are effectively deterring illegal activities within Cofán territory and mitigating external pressures. The guard program is so effective that it inspired a similar program in Chachi territory. Between the two groundbreaking sustainable forest guard programs, 380,000 hectares of some of the world's most biodiverse ecosystems are protected on a daily basis.

In FY 2007, USAID supported USDA Forest Service (USFS) assistance to several indigenous and community forestry groups in Ecuador, including EcoMadera Verde Project, Fundación Jatun Sacha, Servicio Forestal Amazonico, and federations of Awá, Chachi, and Shuar people. Activities included a training workshop on the business of forestry (including saw mill operations), and a meeting to promote sustainable forest management and networking among

PHOTO: PETER KELLER, USAID

BIODIVERSITY MONITORING: USAID promotes environmental best practices in coffee farms in the El Imposible/Barra de Santiago and Rio Grande de Sonsonate watersheds of El Salvador, such as growing coffee under the shade of native trees. Bird diversity is a reliable proxy for overall biodiversity in these agro-ecosystems, and annual bird inventories indicate that these efforts are working.

community foresters. USFS also provided an on-the-ground assessment of production and marketing capabilities, refined marketing goals, and identified new marketing opportunities for EcoMadera Verde.

The Galapagos Islands are one of Ecuador's biological gems, but on June 28, 2007, UNESCO's World Heritage Committee declared the Galapagos National Park and Marine Reserve as "threatened." In order to conserve this ecosystem of global ecological and historical importance, USAID helped the Galapagos National Institute develop software to manage the Park and growing threats linked to immigration. The Islands are particularly prone to alien invasive species, and the Agency played a pivotal role in eradicating Tilapia (Nile Perch) discovered in a small lake before the fish could cause irreversible damage.

For USAID's achievements to be sustainable, local organizations must have the capacity and financing to thrive long after programs end. With this in mind, program partners raised $3.5 million for the continuation of work in the Condor Biosphere Reserve during the next two years. The endowment of Quito's Water Protection Fund reached $5 million, financing annual watershed conservation investments for at least 80 years. In FY 2007, the fund supported the planting of 700,000 native trees, and paid for an environmental education program that reached 6,000 children, 120 teachers and over 100 elementary schools.

El Salvador

Improved Management and Conservation of Critical Watersheds

USAID/El Salvador supports the effective management of selected areas of high biodiversity importance while promoting responsible economic growth, through interventions in the conservation and managed use of wildlife, water, forests and other natural resources. The Mission's biodiversity program focuses efforts on 43 protected areas, buffer zones, and biological corridors which are contained within the general boundaries of the two principal watersheds: El Imposible/Barra de Santiago and the Rio Grande de Sonsonate.

A biological inventory of the watersheds has found large cats, alligators, unexpected coral colonies, bird species and flora new to science, and, in general, much wider biodiversity than had been expected given the high population density of El Salvador. Cross sectional data has been gathered from a sample of coffee farms (with varying degrees of sustainable practices) located in the watershed, in order to monitor the impact of agricultural activities on biodiversity. The effect of best farm practices can be statistically correlated to the presence of birds, a reliable biodiversity indicator, so bird inventories are carried out on a yearly basis. In addition to biological monitoring, a survey of 650 households in buffer zones has set the baseline for assessing the impact of public awareness on biodiversity and conservation.

For all Government of El Salvador properties to be incorporated into the Protected Natural Areas System, work was started documenting boundaries. This work is at an advanced stage in the two largest protected areas in the project watersheds. El Salvador's first coastal and marine protected area, 21,312 hectares of open ocean, coral reefs and mangrove forests known as Los Cobanos, has now been formally declared. In Los Volcanes National Park, project topographic teams are surveying and marking the protected area of Izalco Volcano, covering 1,600 hectares. In advance of this cadastral work, USAID applied Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR) funds to environmental education in buffer zone communities around the protected areas.

In these same areas, USAID provided assistance to 718 coffee producers (including 201 women) on 200 farms and coffee processing plants to achieve specialty coffee certification or "Starbucks verification," bringing improved management of coffee farms to more than 7,000 hectares. Project-assisted producers anticipate a harvest of 915,000 pounds of certified specialty coffee, worth an estimated $3.8 million. Besides coffee producers, over 4,000 residents in the targeted watershed areas received training in natural resources management and biodiversity conservation in FY 2007.

Many coffee growers and small scale-scale farmers are located in buffer zones of biologically significant protected areas. In FY 2007, USAID helped 390 small producers of vegetables, fruits, organic fertilizer and timber to implement conservation measures and use clean technology while expanding production, mostly for the domestic market. Sales generated almost $790,000 for program participants, while environmental benefits include reduced soil erosion, less fertilizer use, and elimination of pesticides. These buffer zone producers are having a positive impact on biodiversity by creating conditions for wildlife to use agricultural lands as biological corridors.

Guatemala

Certification of Forestry and Tourism Enterprises

Part of the Mesoamerican region, Guatemala contains high levels of biodiversity and endemism. While it is widely recognized that economic growth and poverty reduction in Guatemala depend on conserving and sustainably managing these natural resources, there is inadequate political attention and a weak policy framework to address growing environmental degradation. USAID is working with rural enterprises in the forestry and tourism sectors to ensure that investments are made in an environmentally sustainable manner and with the objective of accessing markets for certified and environmentally friendly products. At the policy level, USAID is strengthening the capacity of the Ministry of Environment to implement and ensure Guatemala's compliance with environmental conditions of the Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR).

The Maya Biosphere Reserve (MBR), the largest intact forest in Central America and a biodiversity priority for the region, is under threat from land invasions, drug smuggling,

Xate palm fronds being splayed open, sorted, and packaged for shipment around the world.

PHOTOS: RAINFOREST ALLIANCE

MONEY GROWING UNDER TREES

For the Uaxactún community inside the Maya Biosphere Reserve, livelihoods and the health of the forest are intertwined. USAID has partnered with Rainforest Alliance to create incentives for local people to conserve the forest, such as certifying Uaxactún for sustainable timber harvesting. Rainforest Alliance also worked with the community to establish guidelines for the harvest of the *xate* (SHA-tay) palm, a fast-growing understory plant used in floral arrangements. Thirty million *xate* fronds are delivered every year to the United States and Canada for Palm Sunday services alone.

***Xate* collectors are encouraged to aim for quality rather than quantity, cutting only the best leaves and leaving more fronds on the palm. They now sell their leaves for twice as much as they did previously, palms are regenerating faster, and fewer palms are discarded because of defects. *Xate* exports contribute over $1 million annually to the Guatemalan economy, and sustainably harvesting wild *xate* generates about 10,000 jobs, mostly for women.**

Xate palm covers the ground in many parts of the Guatemalan rainforest.

trafficking in persons, and other illicit activities. USAID supports development of a long-term system for monitoring and evaluating the area's ecological integrity, prevention and control of forest fires, and deterrence of illegal activities. In 2007, approximately 200,000 hectares of land were placed under improved natural resources management, via sustainable forestry practices, certification of forestry activities, and improved protection from invading communities. The Public Minister and Guatemala military are now engaged with implementing forestry and land rights laws, as are private sector forest concessionaires.

Guatemala's diverse geography, variety of rich archeological sites and colorful indigenous products, coupled with its proximity to the United States and Europe, makes tourism the country's largest foreign exchange earner. Sustainable tourism helps maintain stable populations of critical wildlife species and can preserve Guatemalan cultural patrimony. One of USAID's activities, Green Deal (*Alianza Verde*), supports a program of environmental certification of tourist services, including hotels, guide companies and restaurants. Green Deal also complies with CAFTA-DR's standards for appropriate labor practices.

In FY 2007, USAID promoted the certification of 30 new small and medium enterprises and community-based operations under the Green Deal seal, and supported the marketing of certified venues, improving various web portals and designing fact sheets for 13 tourism destinations. Over 1,100 people received increased economic benefits from sustainable tourism, and four women were granted scholarships to participate in a formal community tourism education program. The handicrafts component of this program has helped women's groups to legalize their organizations and take advantage of new market trends. The Agency also supported the Geotourism Initiative: a charter signed by the National Geographic Society, the Government of Guatemala, and private sector groups to sustain and enhance the environmental, cultural, historic and scenic assets of the nation.

Sustainable forestry is crucial for the MBR, the pine forests in the Verapaces, and portions of the Western Highlands. The MBR utilizes the globally-recognized community forestry concessions model, and boasts nearly half a million hectares of area under certified management. USAID supports the consolidation of business links between certified timber producers and buyers, and helps develop incentives for certified forest management and chain of custody tracking. In FY 2007, 2.6 million board feet of certified and "in process of certification" forest products were sold for $5.1 million.

USAID helps open important markets for non-timber forest products from the MBR. The *xate* palm can be sustainably harvested from the forest understory, and is sold in North America and Europe as a component of floral arrangements. A total of 14,463 *xate* bunches from MBR were sold for $147,948 in 2007. Working towards long-term sustainability, Agency technical assistance is facilitating offers to support certified, well-managed MBR rainforest in the voluntary carbon credit market.

Guyana

Sustainable Tourism and Forest Products Marketing

Guyana is a small country with abundant biodiversity in its vast forests. Eclipsed by sun-and-sand destinations in the Caribbean and better known eco-destinations in Central and South America, Guyana has been challenged to distinguish itself in the international tourist market and capitalize on its natural beauty. USAID supported a market analysis which identified "birding" as a competitive ecotourism niche for Guyana: bird enthusiasts are often willing to travel to remote places at great expense to see species on a 'life list' of birds. As a result, the Mission launched the Guyana Sustainable Tourism Initiative (GSTI) in January 2006, to develop sustainable birding, nature and culture tourism in Guyana through a three-year comprehensive Birding Tourism Marketing Action plan.

Following extensive consultation with tour operators who specialize in birding trips and already have a database of loyal customers, GSTI developed a birding website (www.guyanabirding.com), marketing materials, trade show banners, and media and travel trade kits. USAID funded the Smithsonian Institution to assist with the publication of the second edition of the *Field Guide of the Birds of Guyana*. Equipped with these core-marketing tools, GSTI began supporting tourism experts and local beneficiaries to attend trade shows where they met and established relationships with birding-related tour operators, media,

THE HOATZIN, or Canje Pheasant, is Guyana's national bird. Seeing this animal in the wild is a rare prize for birding enthusiasts, as it shares features with the *Archaeopteryx*, an extinct bird from the time of dinosaurs. Besides the prehistoric appearance of the adults, chicks are born with two claws protruding from each wing, an adaptation to life in flooded forests. Young Hoatzin drop into the water to escape predators, then climb back to the safety of the nest.

PHOTO: KEITH WILSON-DAVIES

conservation organizations and other partners. Through networking at the British Bird Fair, GSTI's media consultant was contracted by Bradt publications to develop Guyana's first destination guide, released in February 2008. Guyana will present a special Caribbean theme night at the 2008 British Bird Fair, a first for this annual event.

USAID has sponsored familiarization ("fam") tours, in which carefully selected North American and European tour operators and media representatives visit market-ready sites across Guyana. Five tours involving a total of 38 operators and journalists have taken place since November 2006. As a result, almost 40 international tour operators are now designing, selling, and leading bird watching and natural history trips to Guyana, and the country has been featured in numerous international magazines and newspapers. As of May 2008, the value of new trips generated for 2008 had already reached $210,000, and discussions are underway for Guyana to host the International Conference of the American Birding Association in 2011.

> **" Birding Guyana was like birding Eden. The jungle rainforest was pristine. The birds were varied and abundant. The guides were expert and focused. The accommodations were very comfortable. It was all a bonanza of riches. Who could have asked for more?"**
> **SUSAN RONEY DRENNAN,**
> **NATIONAL AUDUBON SOCIETY, USA**

A wide variety of international investors and donors have now joined USAID in developing birding and nature tourism in Guyana. Financial and in-kind support is being provided to Guyana in several areas that complement the GSTI, including birding guide training, indigenous tourism development, ecotourism best practices workshops, and bird watching equipment.

GSTI is now expanding its focus from birding to include nature and wildlife viewing, eco-indigenous tourism, and volunteer conservation tourism. To support this new and exciting phase, GSTI is encouraging premier birding sites, including Iwokrama Rainforest (a one-million acre preserve managed by Irokrama International Centre featuring a "canopy walkway"), Kaieteur National Park (containing the world's highest single drop waterfall), Karanambu Ranch (home of world-renowned giant river otter conservationist Diane McTurk) and the Amerindian-owned Surama Eco-lodge. These destinations almost guarantee an iconic wildlife and cultural experience and are drawing tourists from around the world for the opportunity to see jaguar and other jungle cats, monkeys, macaws, the giant river otter, the giant anteater, the giant armadillo, Guianan cock-of-the-rock and the harpy eagle.

Although tourism is on the rise, the wood products industry historically

has been a steady contributor to Guyana's GDP. However, exports have been destined to the same buyers, and market expansion is unknown to local processors. USAID's Guyana Trade and Investment Support program (GTIS, not to be confused with GSTI) has launched a market-led approach to increasing exports and improving value-added wood production in Guyana.

USAID supports trade show participation and joint efforts with the Forest Products Marketing Council (FPMC), an association of forward-thinking wood processors, resulting in multi-million dollar export deals and investments. In FY 2007, GTIS facilitated a visit by inspectors from the Ministry of Agriculture of the Dominican Republic, whose market will open up to Guyanese wood exports once approval is received from Dominican authorities.

GTIS successfully leveraged over $370,000 in funding from the Canadian Cooperation Fund and the World Wildlife Fund (WWF) for environmental management and marketing. WWF, FPMC and the Guyana Forestry Commission are working to establish a national legal verification system to promote sustainable forest management and forest certification initiatives. In addition to improving sustainability, GTIS is helping enterprises make more efficient use of their concessions by introducing markets for lesser-used tree species, and introducing innovations that increase recovery rates. Nationally, Guyana is shifting away from exporting whole logs and moving to processing higher value products for export, like lumber.

PHOTO: USAID/HONDURAS

RAMBUTAN FRUIT is picked when ripe and sold fresh for use in jams and jellies. Along with plantain, pineapple, coconut, cedar and mahogany, USAID promotes the use of this fruit tree in buffer zones around protected areas in the North Coast of Honduras. Such agroforestry systems have less impact on parks than other land uses and often extend the amount of usable habitat required by creatures large and small.

Honduras

Integrated Watershed Resources Management

Forests and wetlands hold enormous economic and natural wealth in Honduras, but they suffer from drought, fire and illegal activities. USAID's Integrated Watershed Resources Management (IWRM) project promotes conservation of high-priority, biologically-significant protected areas and their buffer zones, maps and characterizes wetlands critical to both biodiversity and commercial interests, and supports forest communities with alternatives to illicit activities and public awareness about conservation and the law.

In FY 2007, efforts continued to put over 160,000 hectares in four protected areas along the north coast of Honduras under sustainable management. On-going activities include protection of the core zones against further human incursions through the promotion of environmentally-sound economic development activities, and monitoring of key species by government and civil society organizations. Following up on the previous year's guide training, IWRM provided training and technical assistance for ecotourism through the publication and distribution of specialized entrance tickets for the parks, and prepared theme-oriented visitor's plans and environmental interpretation. Technical assistance was also provided to conserve a keystone endemic species, the emerald hummingbird, and its critical habitat on the southern tip of Pico Bonito National Park.

USAID supports the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Honduras. In coordination with the Ministry of Environment (SERNA), State Forest Authority/ Honduran Commission for Forest Development (COHDEFOR), and the Ministry of Agriculture, USAID has helped prepare a national strategy and action plan for implementing CITES. The Agency funded the design and printing of 5,000 information brochures and 16 illustrated banners regarding CITES in Honduras, which will be distributed to customs officials at the country's borders, universities, government officials, and NGOs. FY 2007 funds also supported a workshop in March 2008 to train local authorities on the Bay Islands about wildlife issues related to CITES and raise local awareness about future activities in the zone.

Using Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR) funds, the IWRM project is supporting SERNA with preparation of a National Wetlands Inventory, a high priority because wetlands are nurseries for several commercial marine species, including shrimp, a major Honduran export. In FY 2007, ecological consultants collected field data and created a national wetlands map of nine priority wetlands. Once the final report is complete, an interactive wetlands map will be created. USAID and SERNA are currently exploring the possibility of establishing a National Wetlands Committee to create a permanent technical and scientific authority on wetlands.

CAFTA-DR funds are also being used to provide technical assistance for the establishment of improved agricultural and agro-forestry management over an area of 100 hectares. USAID is training selected producers in improved agricultural practices and methodologies which will increase production and protect biodiversity. The project has established the first 50 parcels of agro-forestry systems which are located in buffer zones of North Coast protected areas. Parcels are planted with combinations of such crops as rambutan-plantain-cedar, pineapple-plantain-mahogany, and coconut-plantain-mahogany. Specific manuals on biodiversity management in the parcels are also being developed. Under IWRM direction, 100 farmers have been trained and are now implementing agroforestry systems in buffer zones of protected areas.

IWRM continues to work toward sustainable management of forests in Honduras through an interagency agreement with the USDA Forest Service (USFS), which prepared and began implementing 25 micro-watershed management plans in FY 2007. Municipal and community partners have been trained by USFS to sustainably manage the natural resources on which they depend, with a goal of improving land-use practices on more than 66,000 hectares of fragile, steep-sloped land. The project is also training technicians from local community organization Pico Bonito National Park Foundation to facilitate the sale of carbon emissions reductions to the World Bank's Bio Carbon Fund. Total sales are expected to reach $3 million, and proceeds will be re-invested in park management actions at the community level.

Through IWRM, USFS provides hands-on technical assistance and training to the state forestry agency, COHDEFOR, to enhance sustainable forest management. Training topics include forest inventories, environmental impact mitigation in forest management plans, environmental considerations in rural road construction and maintenance, timber value systems, and forest fire fighting. IWRM is also promoting sustainable forestry by working with local communities to harvest less-known tropical hardwood species and produce hand-made furniture and guitar parts, as well as in the utilization of non-timber products. Distribution and artisan income from the sale of alternative wood and non-timber forest products increased 20 percent in FY 2007. In addition, by the end of the reporting period, nearly 2,500 members of municipal and community emergency committees were trained in disaster mitigation, particularly forest fire and flooding related to deforestation.

Jamaica

Natural Assets Managed for Rural Development and Sustainable Growth

Approximately 30 percent of Jamaica (300,000 hectares) is forested, of which ten percent is set aside in reserves. Many forest reserves are not well protected, with a recent analysis finding that over 20 percent of reserve land is negatively impacted by human activities, and critical species such as the giant swallowtail butterfly, endemic bats, and parrots are in decline as breeding adults are removed

HOT TOPIC: Fire is commonly used by farmers to prepare land for planting, but fires get out of control on Jamaica's steep slopes. USAID engaged USDA Forest Service technical assistance to create posters for the "Think before you burn" campaign, including "Don't smoke me out," showing the endemic Jamaican hummingbird.

PHOTO: DIANE RUSSELL, USAID
POSTER: USAID/JAMAICA

and forest habitats are converted to agriculture. USAID/Jamaica is responding to these and other threats through an interagency agreement with the USDA Forest Service (USFS) to implement a Protected Areas and Rural Enterprise (PARE) project and Rural Enterprise Agriculture and Sustainable Tourism (REACT) project, both focused on addressing priority threats to Jamaica's biodiversity.

Strengthening local institutions is a key part of USAID's strategy in Jamaica. For example, representatives from Jamaica's Forestry Department participated in a two week tour of forest operations in the U.S., to help identify staff needs and chart a course for the next five years. Technical assistance to the Forestry Department helped develop a local forest management plan for the Cockpit Country Forest Reserve, and since Local Forest Management Committees (LFMCs) are mandated to co-manage forest reserves, USAID partnered with The Nature Conservancy (TNC) to train LFMC members in areas such as fire prevention and public awareness. The Agency also improved the enforcement capacity of the non-governmental Jamaica Conservation Development Trust (JCDT), reducing forest conversion and encroachment in Blue and John Crow Mountain National Park (BJMNP) with increased patrols and greater cooperation from the buffer zone communities around the conservation site.

Forest reserves are threatened from the inside by man-made clearings and invasive species. With USAID support, approximately 20 hectares of BJMNP are being replanted with native plant species in an effort to

seal boundaries that were opened up by encroachers. Implementation has started for Biodiversity Conservation Management Plans prepared for BJMNP and the Hollywell Recreation Area, which include strategies for controlling non-native species such as wild ginger, bracken fern and red bush.

Given the extensive use of fire in protected area buffer zone communities, a public awareness campaign dubbed, "Think before you burn," was launched by USAID in collaboration with key Jamaica government agencies. Enforcement and community outreach officers working in the areas received a series of six posters, bumpers stickers and education material for schools as a toolkit for implementing public awareness sessions in communities. To ensure effective planning and delivery of the messages, guidance was provided to over 65 people in developing bush fire awareness plans and strategies for the effective delivery of fire prevention material.

Harvesting of medicinal plant material from forested areas is a major threat in Cockpit Country. Key ingredients found in over 80 percent of medicinal "roots" drinks are becoming difficult to source, with a corresponding increase in encroachment into undisturbed forest cores. USAID funded the University of the West Indies to propagate the top ten ingredients used in these drinks. The new plants are hardened in the field and planted by local community groups in agro-forestry plots to provide a more accessible source of roots drink ingredients. Farmers involved in the project now have an additional or alternate income source, with a more consistent supply.

At the Hope Botanic Gardens and Zoo, a head-start program for the endemic Jamaican Iguana collects hatchlings from the wild, rears them to maturity in captivity, and then returns them to the wild. This reptile is critically endangered, with a wild population estimated at less than 100 individuals due to centuries of habitat loss and predation of eggs, juveniles and adults by introduced predators such as cats, mongoose and pigs. USAID support is allowing this priority conservation program to expand its capacity beyond the 20 hatchlings released per year, with better enclosures and improved diets.

Sustainable tourism provides important livelihood alternatives for people who might otherwise exploit natural resources. In Jamaica's South Coast, sustainable tourism destinations were developed through a multi-stakeholder process, resulting in conceptual and business plans for ecotourism attractions, and assistance to community organization to improve the production and marketing of sustainable crafts. Visitors will be able to buy drums made of goat skins and sustainably-harvested wood, as well as baskets and hats made from alternatives to the endemic and endangered bull thatch.

In the Canoe Valley area of southern Jamaica, USAID supported JCDT and the Bowden Pen Farmers Association to upgrade cabins and nature trails, and prepare conservation plans to manage visitor impacts while also raising revenues. In the buffer zone of BJMNP, the 200 hectare Bachelor Hall Estate received assistance to rehabilitate cocoa plantations and develop an overall land management plan. In Cockpit Country, two local forest management committees will launch a river park and a heritage tour and trail at the end of 2008. These FY 2007 initiatives brought at least 100 hectares of land under improved management, and will provide economic benefits to more than 50 families.

Mexico

Sustainable Development and Capacity Building for Conservation

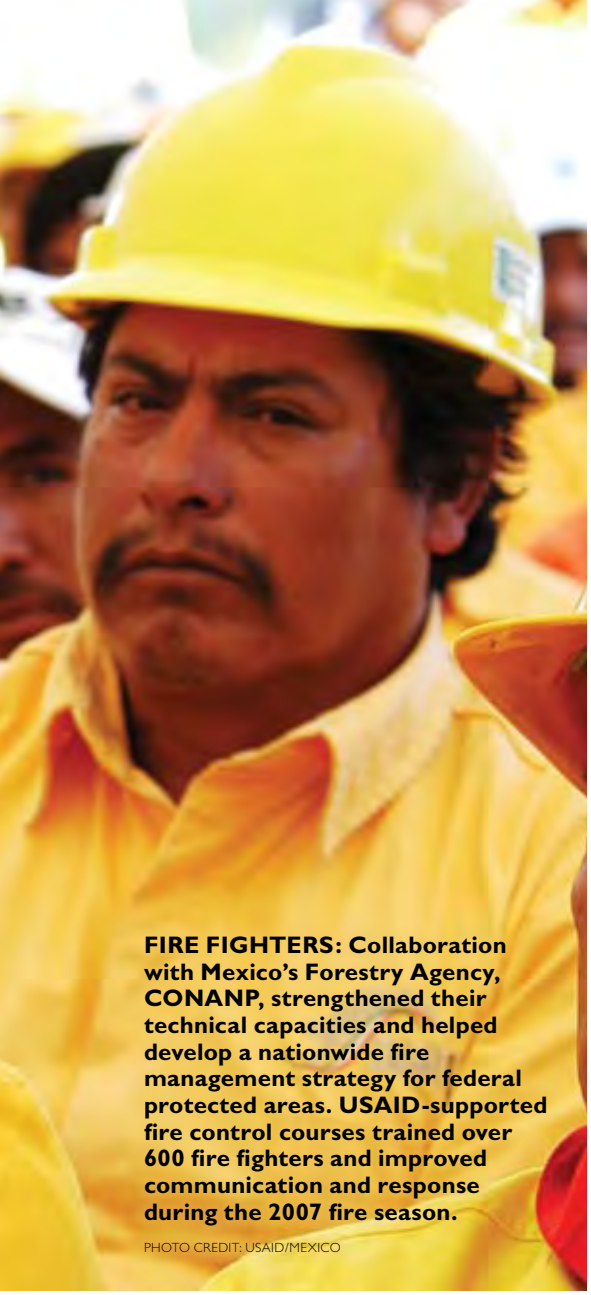
Mexico has the highest diversity of reptiles in the world, the highest diversity of mammals in the Americas, and very high endemism: 30 percent of its species are found nowhere else. In 2007, USAID/Mexico supported a variety of international and Mexican partners to conserve biodiversity and maintain rural livelihoods through support for local conservation initiatives, economically viable and environmentally sound livelihood alternatives, and increased local participation in decision-making.

With USAID support, The Nature Conservancy (TNC) worked in and around the Biosphere Reserves of El Triunfo and La Encrucijada on the Chiapas coast, where they introduced sustainable cattle management practices and have implemented community-driven, integrated fire management plans. Municipalities finalized and adopted sustainable management plans and a watershed scorecard for monitoring key indicators. In addition, TNC secured three conservation easements with private land owners pledging to conserve biodiversity and maintain forest cover.

Through Conservation International (CI), USAID advanced the design of a biodiversity conservation strategy for the Mexican portion of the Usumacinta watershed with federal and state government support. They worked to increase capacity among indigenous communities involved in nature tourism as an alternative to slash and burn agriculture within the Lacandon rainforest and its protected areas. CI also continued implementing a fire prevention program through workshops for local community fire-fighting brigades and reserve staff in the Lacandon and Chimalapas rainforests.

World Wildlife Fund (WWF) continued activities in Chihuahua and Oaxaca with USAID support, in which communities participated in the development of land use plans and municipal/indigenous councils, and fire prevention plans were implemented. WWF also helped establish a new community protected area, and a community-based Regional Development Master Plan was officially adopted by State of Oaxaca government authorities.

USAID also supported community conservation projects in key sites within priority watersheds through in-country partner Mexican Nature Conservation Fund. Eight small conservation and micro-enterprise projects resulted in alternative tourism projects, increased female participation in natural resource management in the Lacandon rainforest, and support to community-based coffee producers in natural protected areas.



FIRE FIGHTERS: Collaboration with Mexico's Forestry Agency, CONANP, strengthened their technical capacities and helped develop a nationwide fire management strategy for federal protected areas. USAID-supported fire control courses trained over 600 fire fighters and improved communication and response during the 2007 fire season.

PHOTO CREDIT: USAID/MEXICO

Water pollution, particularly from untreated sewage, is the primary threat to the Mexican portion of the Meso-American reef. Under a contract with PA Government Services, USAID/Mexico and the State Water Utility for Quintana Roo (CAPA) collaborated to increase the efficiency of 10 of the 24 wastewater treatment plants throughout that coastal state, which includes Cancun and the 'Mayan Riviera.' PA identified operational, technological and staffing improvements needed to optimize wastewater treatment, which CAPA will implement in 2008.

Through its Rural Prosperity Initiative (RPI), USAID helped local coffee producing communities in high biodiversity areas increase their production of sustainable, high quality coffee and market their product to Mexico's largest coffee exporter. RPI found markets for organic cacao and introduced new processing techniques which have resulted in Mexico's first exports of organic cocoa. USAID also supported the development of the first national policy for tourism in Mexico's protected areas, and strengthened a tourism association in which four tour operators were able to work directly with indigenous communities living in the Lacandon rainforest to promote tourism as a sustainable alternative to forest exploitation.

In the forestry sector, USAID focused on three areas: 1) strengthening fire prevention and integrated management by communities and government authorities, 2) improving forest management and wood processing by communities, and 3) introducing forest management as a sustainable and profitable land use within targeted watersheds. Through RPI, USAID produced business plans and business training to five communities that depend on communal forestry. The Mission also introduced more efficient milling and extraction processes to increase profits and reduce harvest impacts, supported the identification of new markets, purchased specialized equipment to help communities add value to their timber products, and supported the development of a forest management plan in the Chimalapas rainforest of Oaxaca.

USAID continued working in wildfire prevention in key biodiversity areas in collaboration with the National Forestry Commission (CONAFOR) and the National Protected Area Commission (CONANP), through an inter-agency agreement with the USDA Forest Service. Fire threat was diagnosed in areas affected by hurricanes in the Yucatan Peninsula, and a round of fire control courses was conducted, resulting in better communication and response during the 2007 fire season. Collaboration with CONANP strengthened their technical capacities and helped develop a nationwide fire management strategy for federal protected areas, along with two reserve-specific fire management plans.

Nearly 80 percent of Mexico's forest lands are owned by communities, but few of these are implementing sustainable management practices. Through a regional agreement with the Rainforest Alliance, USAID/Mexico provided technical assistance to community-managed forests, improving the management of over 500,000 hectares of high biodiversity forests in some of Mexico's most important watersheds. Improved milling techniques increased the overall quantity of wood cut from logs by 36 percent while improving the quality of boards, resulting in over $1,000,000 in additional revenues and significantly less waste. One community signed a contract worth more than $3,000,000 to provide the Oaxaca state government with school furniture built from sustainably harvested lumber, making it the single largest certified wood contract in Mexico.

SUSTAINING TOURISM: U.S. Ambassador Paul Trivelli celebrates Earth Day at one of Nicaragua's private reserves, a former coffee estate which now provides critical habitat for migratory and endemic birds. Though an interagency agreement with the U.S. Forest Service, USAID is training local students to be naturalist guides, publishing species lists, and creating sustainable tourism promotion materials.

PHOTO: STEVEN FONDRIEST, USAID/NICARAGUA

Nicaragua

Biodiversity Conservation and Sustainable Forest Certification

Nicaragua is a heavily forested country working to balance conservation of biodiversity and protected areas with a valuable agroforestry sector. USAID supports national priorities to improve ecosystem management and market sustainable products through an interagency agreement with the USDA Forest Service (USFS) and a partnership with the Rainforest Alliance.

In FY 2007, USFS promoted natural areas protection through sustainable tourism development in Nicaragua's national parks. Activities included sustainable tourism assessments and market promotion, the development of technical guides, and training on biological monitoring and data collection. As a result of this work, a freshwater fish checklist and guide were published, a new ecotourism route was established, technical capacity for monitoring human pathogens in wildlife was increased, and an assessment and technical report on visitors to protected areas was completed.

USFS also prepared for five activities which will assist Nicaragua's environmental compliance with the Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR). The activities are: develop a management strategy for captive reproduction of Nicaragua's crocodiles; draft a Nicaraguan orchids manual, with particular attention paid to CITES species; create a wildlife management training program; publish a national list and manual of threatened and endangered plants and animals, with specific reference to those species impacted by trade; and develop a sustainable tourism plan for communities in and around the Datanli-El Diablo Nature Reserve.

From 2004 to April 2007, USAID supported Rainforest Alliance through a regional program to significantly promote and increase the sale of sustainably produced and certified timber, bananas and coffee from Central America and Mexico. In Nicaragua, the project focused on strengthening the competitiveness and sustainability of agriculture and timber operations, fostering new investment and trade while supporting practices that benefit the environment, and protect the rights and resources of workers and local communities. Over the life of the activity, 77 farms (4 banana and 73 coffee) totaling over 11,850 hectares received Rainforest Alliance certification. The farmers participating in the program sold over 1.8 million boxes of bananas and 4,549 metric tons of coffee, with gross sales of over $17.3 million. Employment on these certified farms reached 1,357 permanent workers and 4,396 temporary workers. In forestry, five forest operations received information on best management practices, and 8,034 hectares received certification, with $15,000 in gross sales of value-added products, namely certified furniture.

A new Rainforest Alliance program was initiated by USAID/Nicaragua in August 2006, in order to find viable economic alternatives and create market linkages for sustainably produced and certified timber, coffee and cocoa. The project will increase the sales volume and revenue of certified products, build capacity for local Nicaraguan communities and organizations, integrate sustainability into the supply chain, and certify biodiversity-rich land. The economic development goal is to bring new investments, income, and employment to rural communities. In FY 2007, five coffee farms received Rainforest Alliance certification, totaling 937.35 hectares of land, with sales of $1.7 million. Over 650 coffee and cacao producers received agricultural training, 190 small and medium enterprises (SMEs) received assistance to improve their management practices, and 140 SMEs participated in activities to strengthen productivity and competitiveness.

Panama

Conservation of Biodiversity in the Canal Zone

USAID/Panama's environment program works to improve the management of the Panama Canal Watershed (PCW) and buffer areas with high biodiversity and socio-economic importance. The program entered a new phase in 2007, with a focus on the two most important protected areas in the PCW: Chagres and Soberania National Parks. These highly biodiverse areas are also critical to capturing water, regulating its flow year round (which is especially important to the functioning of the Canal), recharging underground sources of water, and regulating the biological interconnections between groundwater, rivers, and lakes in the region. USAID investments strategically target unsustainable and illegal resource uses both within

and outside protected areas, and across a wide range of economic and social sectors, including forest clearing, illegal hunting, livestock production, and gold mining.

USAID and the Panama Canal Authority established a $2.4 million grant fund to protect and restore

PHOTO CREDIT: USAID

GROWING TOGETHER: Members of several communities participate in horticulture training with the objective of establishing a nurseries network around Chagres National Park, Panama.

the PCW. Different organizations submitted proposals to implement activities to reduce illegal hunting, improve the information and monitoring systems of protected areas, promote best agricultural practices to preserve biodiversity, improve the management of remaining patches of dry forest, improve environmental governance by establishing watershed management councils, and start eco-friendly businesses.

Small grants from the fund financed the design of three activities to control and/or eradicate an invasive grass species, *Saccharum spontaneum*, from productive areas of the Chagres National Park. These activities will complement a sustainable cattle ranching and agroforestry activity developed by USAID in 2007. Unlike many protected areas, Chagres allows some livestock grazing in order to maintain a rare deciduous forest type found through the Park.

USAID reached an agreement with Panama's National Environmental Authority to develop a visitor services program in order to develop effective systems for managing visitors and improving revenue at protected areas like Chagres and Soberania National Parks. The Agency also reached an agreement with the Inter-institutional Commission for the Panama Canal Watershed to formulate sub-watershed management plans for natural resources in the PCW.

Tropical plants are popular in homes in the United States and elsewhere, and Panama is a major supplier to this market. In FY 2007, USAID evaluated the condition and status of six community nurseries and made recommendations to improve their operations. Two conferences on plant production and best practices in the horticulture market were conducted for 25 producers of ornamental and forest plants to improve their skills, and a nurseries network was established to better respond to the needs and opportunities of a larger market. The Mission also supported the design, approval, and initiation of a group of nurseries that employs eco-friendly management practices, which will generate 20 permanent employment positions in plant production.

In September 2007, USAID partner The Peregrine Fund (TPF) concluded an activity which established best practices for the propagation, release, and monitoring of harpy eagles. During its four years, the program bred and raised 34 harpy eagle chicks, of which 29 have reached independence. Overall, TPF released 36 harpy eagles in Panama, trained four staff members in raptor husbandry, and trained 49 volunteers in Panama (as well as 19 in Belize) in harpy eagle release and monitoring techniques. TPF bolstered environmental education to conserve biodiversity at the community and national level by promoting new attitudes toward harpy eagles and other raptors. It also helped reduce human-caused mortality of eagles in target areas. The Ministry of Education uses a publication prepared as part of this activity to teach primary school students about raptors, conservation, and recycling.

Paraguay

Environmental Policy Development and Law Enforcement Support

Biodiversity and other natural resources in Paraguay are depleted by unsustainable activities including illegal logging and charcoal production, wildlife poaching and timber extraction from national parks, illicit land conversion, and failure by farmers and ranchers to comply with environmental legislation establishing minimum amounts of conservation reserve on agricultural land. USAID/Paraguay supports several activities to counter threats to natural resources, such as private conservation measures, appropriate environmental regulations and policies at all levels, technical assistance to government authorities, and replication of successful projects.

CONTROLLED BURN: **Government and communities in Paraguay use fire as tool for conservation management. Controlled burns reduce the likelihood and severity of wildfires, remove invasive species and encourage new plant growth.**

PHOTO: USAID/PARAGUAY

Many of the most important environmental achievements supported by USAID in FY 2007 were in the legal and policy arenas, such as the extension of the Zero Deforestation Law. Originally passed in 2005, the law is now linked to the Environmental Services Law and remains in force through December 2008. The goal of the law is stop any forest conversion in the last remaining seven percent of the highly biodiverse and threatened Atlantic forest, until appropriate mechanisms are developed to enforce the law and compensate landowners in this area who forgo transforming forests to agricultural land. The Environmental Services Law creates a system where private land owners that keep more than 25 percent of their property as a reserve will receive compensation.

The Mission also strengthened and promoted protection of National Parks and Private Reserves. For example, USAID funded World Wildlife Fund (WWF) to demarcate and protect the Caazapa and Ybycui National Parks. WWF provided technical assistance to complete the titling process for the parks, and developed a GIS deforestation monitoring system to track illegal logging and prepare monthly deforestation maps for authorities. In turn, the Ministry of the Environment (SEAM) increased enforcement measures in these areas, catching illegal loggers and confiscating equipment and logs in sawmills. USAID also continued a third year of support for the Tapyta Reserve, resulting in a sustainably managed and financially secure 5,000 hectare protected area that serves as a corridor for species moving between two large National Parks, Caazapa and San Rafael.

Through local partner IDEA, USAID provided legal assistance to SEAM in monitoring the current activities of nine sawmills caught processing illegal timber just outside of several

National Parks at the northern end of the Atlantic Forest. A similar monitoring activity was performed for the construction of a national highway in the Chaco Region, which was not in compliance with environmental regulations. USAID supported the development of new internal by-laws which increases the speed in which such cases are brought to trial, and provided guidelines for adjudicating similar environmental crimes.

USAID supported local partner Desdelchaco Foundation to assist private owners with the preparation of management plans for two new private reserves, bringing ecologically sensitive areas under legal protection. Desdelchaco is also assisting with the formal delimitation of the Cabrera Timane National Park, on target for completion in early 2008.

A Global Development Alliance signed between Evensen Dodge International, local partner Foundacion Moises Bertoni and USAID has yielded its first results. Three pilot programs were initiated, including one which establishes a Green Fund in Paraguay. The Ministry of Finance is supporting the program, which will make long-term financing available at below-market rates for investment in environmental projects.

Peru

Forestry Sector Reform and Incentives for Conservation

USAID/Peru's environment program is linked closely with its trade capacity building program, and seeks to conserve biodiversity while reducing poverty through trade-led growth. A key component of the program is establishing market-based incentives for biological conservation and sustainable management of natural resources, coupled with disincentives for illegal activities that negatively impact biodiversity and the environment.

PHOTO: JULIE KUNEN, USAID

LUMBER MILL IN MADRE DE DIOS, PERU: Improved milling techniques help reduce waste and increase profits. USAID supports certification of forests and forestry operations, which reward sustainable forest management with premium prices for forest products.

The Peruvian Amazon contains some of the most biologically diverse habitats in the world. To protect this biodiversity, USAID provides incentives for trade in forest products from internationally certified, sustainably managed forests. Technical assistance to certified forestry concessions managed by private companies and indigenous communities netted 194,685 new certified hectares of forest in FY 2007, bringing the two-year total to 604,367 hectares. USAID supported a forest certification activity implemented by World Wildlife Fund, and helped develop markets for environmentally friendly products from the Amazon basin. In a country where illegal logging is a serious issue, USAID's program demonstrates that forest certification is a strong incentive to manage forests for biodiversity, while increasing legal trade and providing income and jobs for poor and indigenous peoples.

USAID worked to build the capacity of the Government of Peru's two most important environmental agencies, INRENA (National Institute of Natural Resources) and CONAM (National Environmental Council). By the end of FY 2007, USAID had assisted CONAM and INRENA in the adoption of 16 new policies, agreements, and regulations to conserve biodiversity and sustainably manage natural resources.

INRENA also received USAID assistance to strengthen its oversight and monitoring of parks and forest concessions in the Peruvian portion of the Amazon basin. USAID trained 94 administrators and technicians on management of forestry use rights and monitoring of biological indicators. In FY 2007, INRENA issued 12 forest concessions for certified sustainable timber production, and nine forest concessions for use by indigenous communities.

After two years of USAID support, INRENA successfully completed its "management scorecard" in 2007, a tool for enhancing management of the National System of Protected Areas. Seventy-four officials from INRENA's National Protected Area unit received training on how to use the scorecard, which tracks biodiversity and other indicators of conservation progress.

CENTRALLY FUNDED PROGRAMS

EGAT/NRM/ Biodiversity Team

Global Biodiversity Conservation

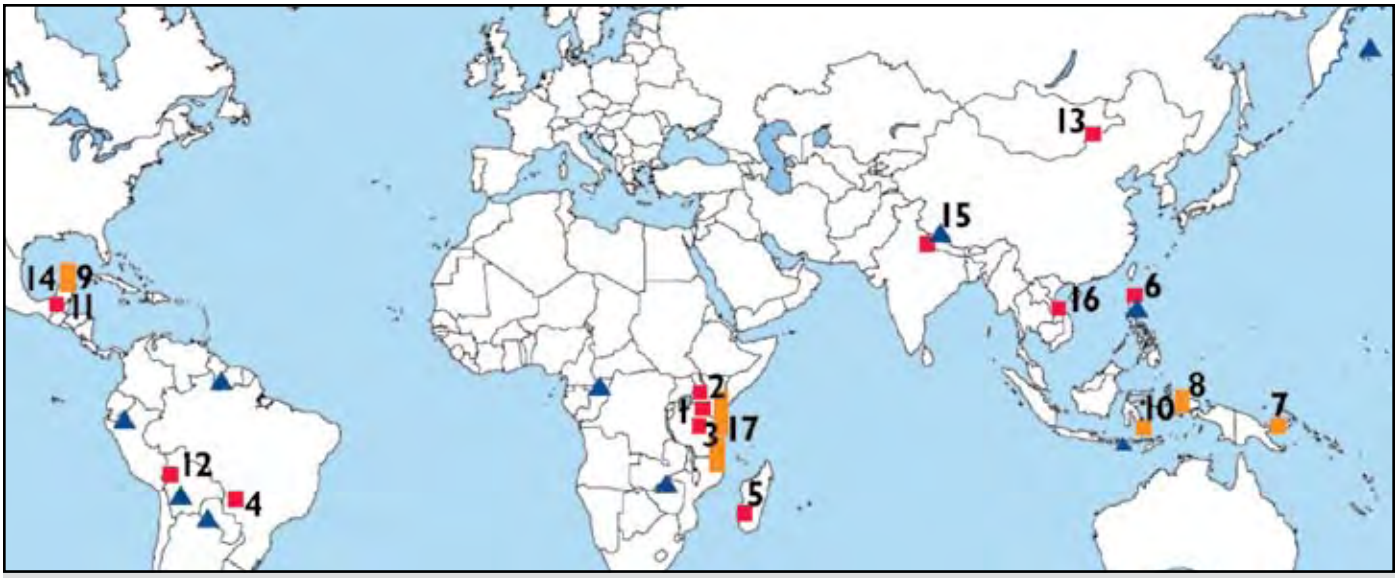
USAID's Biodiversity Team, in the Office of Natural Resources Management (NRM) of the Bureau for Economic Growth, Agriculture and Trade (EGAT), supports Agency biodiversity conservation objectives at many levels. Their primary responsibility is to assist Missions in programming activities which advance the biodiversity goals for a country or region, while adhering to the requirements of the Congressional biodiversity earmark. The Biodiversity Team also manages a partnership with six conservation organizations which spurs innovation and best practices in landscape-scale conservation at sites around the world. Other efforts work across sectors to improve conservation in areas affected by extractive use, conflict and natural disaster. Team members collaborate with peers within the NRM office in support of shared conservation goals, and promote information exchange opportunities for donors and practitioners.

From program planning to design and evaluation, the Team's biodiversity specialists act as a bridge between Washington and the field, and between EGAT and regional bureaus. In FY 2007, staff provided direct assistance to operating units in Bolivia, Kenya, Liberia, Madagascar, Nepal, Panama, Rwanda and Uganda, and 'virtual' support to many more Missions. Team members provided coordination or technical expertise for complex regional programs such as the Congo Basin Forest Partnership supported by USAID's Central African Regional Program for the Environment, the Initiative for Conservation in the Andean Amazon, and the ASEAN Wildlife Enforcement Network support program in Southeast Asia.

The Biodiversity Team's Global Conservation Program (GCP) was initiated in 1999 and is USAID's flagship biodiversity program. Now in its second phase, GCP supports site-based conservation by six conservation organizations in 22 countries, as well as a number of learning activities. GCP focuses on

SPOTTED: In January 2007, World Wildlife Fund (WWF) camera traps in Mondulkiri Protected Forest captured the first known photographs of an Asian leopard with young in Cambodia, corroborating evidence that leopards thrive in the forest. WWF's landscape conservation program in the Lower Mekong forests is one of 17 programs spanning 22 countries currently supported by USAID's Global Conservation Program.

PHOTO: WWF-CAMBODIA



GLOBAL CONSERVATION PROGRAM: PHASE II SITES (2003 – 2009)*

A GCP brochure listing landscape names and partner NGOs is available at: www.usaid.gov/our_work/environment/biodiversity/gcp.html

*** GCP began support to an 18th Phase II site in Southern Sudan in FY 2008**

KEY:

- **Terrestrial Areas**
- **Marine Areas**
- **GCP Phase I Sites (1999-2004)**

achieving landscape-level conservation results in a representative selection of the world's most biodiverse areas. The program applies a threats-based approach, identifying priority threats to biodiversity and linking them to specific conservation actions in a logical and direct way. Site-specific conservation activities are modified as needed according to the principles of adaptive management. GCP also emphasizes sharing of conservation approaches and lessons learned between sites and among partners.

GCP program activities include community-based natural resources management; improved protected area management; integrated landscape and seascape planning; enterprise-based conservation; strengthened environmental policy and legal frameworks; and community training and capacity-building. Across all active GCP sites, nearly 14 million hectares of biologically significant terrestrial and marine areas came under improved management in FY 2007. Highlights from this period are described below.

- In Chitwan National Park and adjacent areas in Nepal, World Wildlife Fund (WWF) worked to increase ranger patrols, raise awareness, and engage communities in response to the poaching of 20 rhinoceros – 5 percent of the local population – in 2006. This campaign resulted in the Chitwan Declaration for Rhino Conservation and the apprehension of seven notorious poachers and rhino horn traders. Only one rhino was killed in all of 2007.

- Twenty-one active community-based conservation groups from the Eastern Steppe of Mongolia participated in a ranger training program conducted by Wildlife Conservation Society (WCS) and a local partner. Active ranger monitoring will expand the network of *de facto* protected areas on the Eastern Steppe by 200,000 hectares.

- A team of scientists from WWF and Conservation International discovered the world's largest known population of grey-shanked douc, one of the 25 most endangered primates, in a Vietnamese portion of the Lower Mekong River basin. The Quang Nam province has agreed to gazette this region as a new protected area.

- Building on efforts by The Nature Conservancy in the Raja Ampat islands of Indonesia, six new Marine Protected Areas (MPAs)

were declared by Indonesia's Minister of Fisheries and Marine Affairs in May 2007, forming an MPA network comprising almost 1 million hectares.

- In WCS' Madidi Landscape of Bolivia, municipal and local government officials collaborated to design a 37,000 hectare Municipal Tourism Reserve in an area with healthy jaguar populations.

- After years of capacity building by EnvironmentWorks/Vita, community-based forest management groups in the Philippines are asserting their opposition to mining and using their success with forestry to demonstrate that mining is neither the only nor the best income generating option in many areas.

- The African Wildlife Foundation improved transboundary conservation between Kenya and Tanzania through joint wildlife patrols, and empowerment of communities on either side of the border to manage and benefit from natural resources.

In 2007, the Biodiversity Team commissioned an evaluation of GCP's impact on the practice of large-scale conservation, completed in May 2008. The evaluation found that GCP has been effective in addressing several factors limiting conservation at program sites worldwide. GCP also influenced the design of conservation programs at these sites, especially the application of threats-based conservation design and planning at the landscape and seascape scales. The full evaluation report is available on the USAID website's biodiversity publications page.

GCP illustrates not only the impact USAID can have on achieving biodiversity objectives around the world, but also the role of the U.S. government in catalyzing and institutionalizing best practices among conservation organizations. Internally, GCP provides a valuable service to USAID Missions and Bureaus, which can develop their own stand-alone agreements (consistent with the overall program) with any of the six GCP partner organizations. To date, over 50 awards totaling more than $150 million have been granted to GCP partners. These programs are funded and managed primarily by USAID Missions.

In addition to GCP, the Biodiversity Team supports cross-sectoral initiatives such as the Business and Biodiversity Offsets Program (BBOP), which helps industries and nations plan for "no net loss" of biodiversity from extractive activities through improved industry practices and policy change. In 2007, BBOP worked at three USAID-funded sites in Africa, designing tools to measure the impact of development on biodiversity conservation activities to offset the impact. BBOP tools, guidelines, discussion documents, and reference materials are being expanded, refined and widely disseminated through its Web site which responds to the growing interest in biodiversity offsets. BBOP's learning network doubled in size this year to 600 individuals representing over 200 organizations.

USAID provided a second year of support to the "Life on the Edge" program of Fauna and Flora International (FFI), which develops rapid response mechanisms in the wake of unforeseen threats, natural disasters and conflicts through its multi-partner Rapid Response Facility (RRF) for UNESCO World Heritage Sites in danger. In FY 2007, significant progress was made in site-level livelihoods initiatives, particularly at Mount Nimba in Guinea and the Cardamom Mountains of Cambodia. FFI also supported work around Sapo National Park, Liberia which is recovering from conflict; in the Golden Stream Watershed Preserve, Belize which was damaged by a hurricane; and the Aceh Province of Sumatra in Indonesia, one of the areas hardest hit by the Indian Ocean Tsunami of 2004. The program developed guidelines which will help first responders to better address the short- and long-term needs of people and the biological resources on which they depend.

USAID's Capitalizing Knowledge Connecting Communities (CK2C) program builds on lessons learned and impacts generated by USAID initiatives, disseminated via the FRAME natural resources management portal. The Biodiversity Team funded CK2C to develop a competency-based training curriculum for the environment and natural resource management sector. With this curriculum, a five-day course for Mission environmental officers in the Latin America and Caribbean region was conducted in Panama in July 2008. For more information on CK2C and FRAME, see the Land Resources Management Team section of this report.

PHOTO: DON BASON, USAID ORANGUTAN CONSERVATION SERVICES PROJECT

INTACT TROPICAL RAINFOREST like this orangutan habitat in Sumatra is increasingly rare due to logging and conversion to agriculture.

The Biodiversity Team also participated in many forums for sharing conservation information, including meetings of the UN Convention on Biological Diversity and the UN Convention to Combat Desertification. As a member of the Consultative Group on Biological Diversity, the Team represented USAID among other conservation donors resulting in better coordination, best practices exchange, and technical leadership in biodiversity conservation. The Team also supported "New Horizons at the Nexus of Conflict, Natural Resources, and Health," a speaker series funded jointly by USAID's Offices of NRM, Population and Reproductive Health, and Conflict Management and Mitigation. See the DCHA/Conflict Management and Mitigation portion of this report for more information.

EGAT/NRM/ Forestry Team

Sustainable Forest Management

Forest protection and biodiversity conservation are inextricably linked because of the role forests play as the primary habitat for many species. USAID's Forestry Team manages a portfolio of programs which reflect this relationship, promoting better forest management in areas with high biodiversity value. Sustainable forestry, agro-forestry, and forest conservation are the foundation for economic growth and poverty reduction in many rural areas, where more than one billion of the world's poorest populations derive food, medicine, fuel, and construction materials from forests.

In FY 2007, the Forestry Team continued its support of the Sustainable Forest Products Global Alliance (SFPGA), a public-private partnership in which partners work to advance a new model for forest conservation and community development where sustainable forest management is rewarded in the global marketplace. For example, SFPGA partner World Wildlife Fund managed a Global Forest Trade Network (GFTN) which includes 317 sustainable forest products companies responsible for nearly $58 billion in sales each year. Of these, 78 companies own or manage a combined 27 million hectares of forest, with 50 percent of this area under effective management. To date, 174 trade relationships have been formed between sustainable forest managers and sustainable forest product buyers in the GFTN.

The Forestry Team provided direct and virtual field support to USAID Missions and Bureaus in 2007, as well as technical leadership within USAID, interagency activities, and the development and conservation community. In addition to facilitating and implementing international forest programs, USAID has played a major role in advising on U.S. government policy actions, particularly as they relate to complex conditions in the field. Members of the Forestry Team also represented USAID at meetings of the International Tropical Timber Organization.

Forest destruction accounts for between 20 and 30 percent of global carbon emissions. In 2007, the UN Framework Convention on Climate Change began to discuss the potential to use forests as a method of mitigating global climate change, heralding a fundamental change in how donor agencies such as USAID (and its cooperating partners) plan and design forestry programs. This initiative, Reducing Emissions from Deforestation and Degradation (REDD), consists of a series of international policy negotiations designed to reduce the carbon emissions associated with deforestation. In order to prepare the Agency for working in this new policy environment, the Forestry Team funded the Center for International Forestry Research to create a set of training modules that will build capacity within Missions and partners to understand the complex and varied technical topics related to forests and climate change. The training modules provide both an overview and in-depth analysis of the technical and policy issues related to REDD negotiations and policy proposals, forest carbon

measurement and accounting techniques, and volunteer and mandatory carbon exchange markets.

The Forestry Team renewed an interagency agreement with the USDA Forest Service (USFS) to improve forest management around the world. For example, USFS worked with host-country agencies, non-governmental organizations (NGOs) and the U.S. Environmental Protection Agency in several Central American countries to implement environmental safeguards in the Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR). This work involved conducting training to control the export of illegally harvested timber, as well as building capacity in environmental impact assessment. Elsewhere in Latin America, USFS worked closely with Brazilian government agencies and NGOs to promote reduced-impact tree harvesting techniques, enabling participating companies and communities to seek independent certification of sustainable forest management. In Bolivia, USFS provided technical assistance and training for community-based forest management programs.

In Africa, the USFS continued its work in Liberia under the framework of the Liberian Forestry Initiative (LFI), resulting in a contract to establish and manage a log tracking system to be implemented in conjunction with new commercial forestry concessions. USFS also helped design and manage a new community forestry project which will help Liberia define and protect land tenure and community rights. USAID's Central Africa Regional Program for the Environment and the Madagascar Mission received USFS technical assistance and training in landscape planning and management.

USFS helped improve the disaster assistance capacity of Southeast Asian nations, as well as coordination among these countries on disaster management and control of wildlife trafficking. Particular attention was given to improving Indonesian capacity to reduce and respond to seasonal wildfires. In Jordan, the Forest Service provided support for USAID projects focused on improving protected area management and restoring critical watersheds. In Russia and Eastern Europe, USFS provided assistance and training on a variety of issues, including forest planning and management, protected area management, wildfire response, and control of illegal logging.

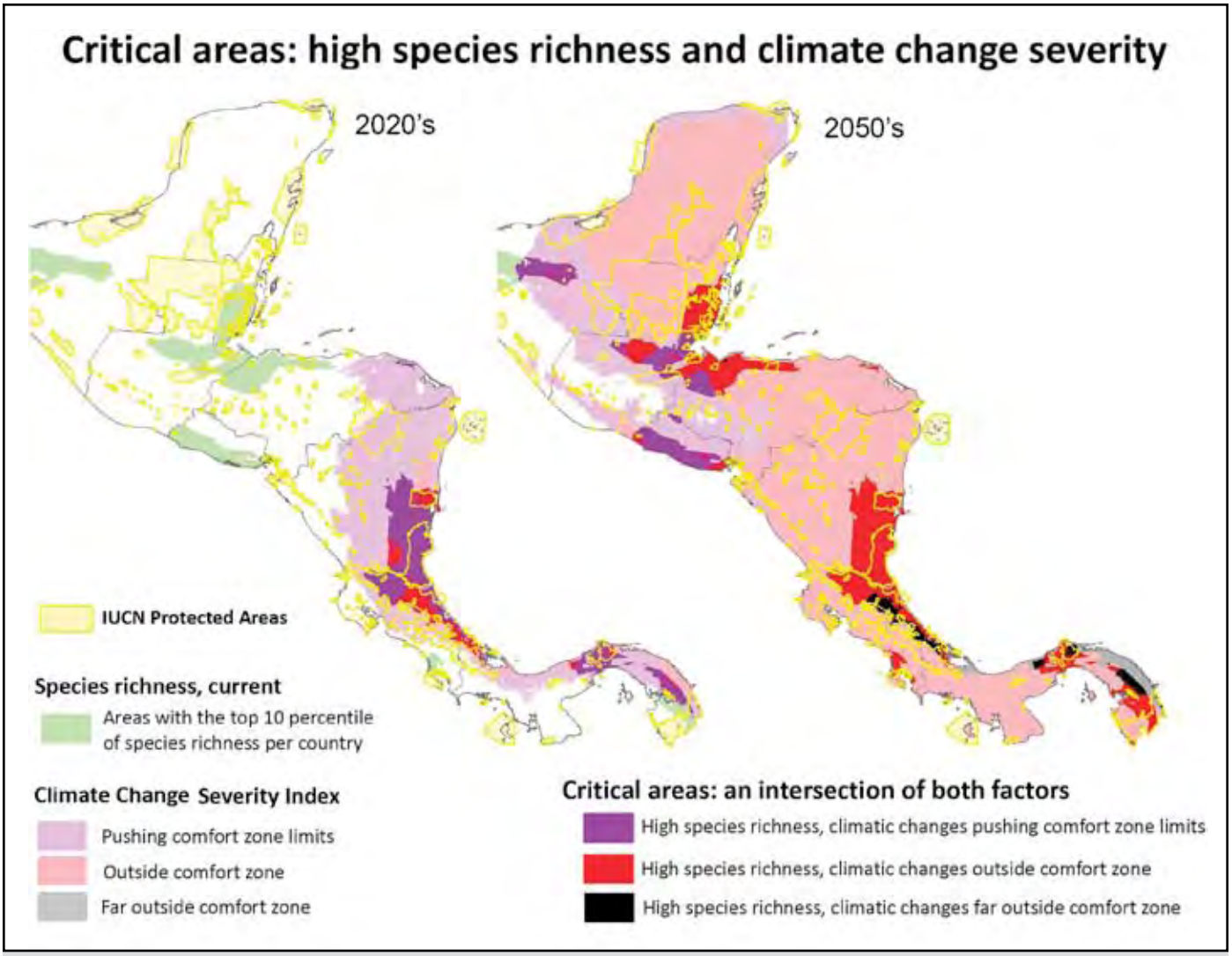
EGAT/NRM/ Land Resources Management Team

Improving Land Management Policy and Practice

Rural people around the world have a unique relationship to the land, built on respect and close observation that comes with daily experience. USAID's Land Resources Management (LRM) Team works to ensure this relationship continues to be mutually beneficial for people and biodiversity through education and training in sustainable natural resources management (NRM); empowerment of local people with rights to use and benefit from forests, fish, water and wildlife; and conservation enterprises which provide incentives for good stewardship. Many LRM efforts apply the "Nature, Wealth and Power" framework, an approach developed by USAID and partners which addresses resource management issues in the context of conservation, economic growth, and improved governance.

When people who rely on land, forests and other natural resources for their income do not have secure property rights, they often engage in activities that degrade resources and are not economically viable in the long run. Lack of secure tenure can also create conflicts when different groups compete for control over resources. USAID is working to address this root cause of overexploitation through LRM's Property Rights and Resource Governance (PRRG) program, a five-year initiative started in 2007. PRRG provides practical tools, training and technical assistance to US Government staff and decision makers in developing countries to address land tenure and property rights issues. Specific attention is focused on forest and rangeland areas, and conflicts emerging between agricultural and rangeland users that degrade biodiversity assets.

The LRM Team's Global Sustainable Tourism Alliance (GSTA) gives Missions access to expertise for designing sustainable tourism projects which achieve biodiversity conservation objectives. In 2007, GSTA partner The Nature Conservancy developed economic options compatible with conservation and tourism for communities near protected areas in Ecuador, while strengthening park management and operations. In Dominican Republic, USAID promoted environmental sustainability standards among local hotels to demonstrate "greener" operations, for which tourists are willing to pay higher



MAPPING CLIMATE CHANGE IMPACT: The USAID-supported SERVIR earth observation system was used to project the impacts of climate change – specifically, changes in temperature and rainfall – on vertebrate biodiversity in Mexico, Central America and Dominican Republic. The two maps of Central America (with a portion of Mexico) show worst case scenario projections for the decades following the years 2020 and 2050, respectively. Areas shaded purple, red and black indicate where species-rich areas intersect with severe climate change. These and other projections generated using SERVIR will help prioritize efforts to mitigate or adapt to climate change. For example, new protected areas or corridors between areas may be needed to allow vertebrates to move as their habitat relocates or disappears.

MAPS CREATED BY CATHALAC. FIGURE ADAPTED FROM MAPS IN THE REPORT *POTENTIAL IMPACTS OF CLIMATE CHANGE ON BIODIVERSITY IN CENTRAL AMERICA, MEXICO AND THE DOMINICAN REPUBLIC* (2007).

rates. GSTA started developing projects in Mali and Ethiopia, with implementation planned for 2008.

The FRAME program managed by the LRM Team identifies and promotes best practices in natural resource management. FY 2007 activities included: a collaboration with IUCN to study and reveal success in community-based NRM projects in Botswana, Namibia, Malawi, South Africa and Zimbabwe; an international workshop to assess tools for monitoring and responding to biodiversity threats; a workshop to exchange knowledge and discuss strategies for marketing natural products which contribute to biodiversity conservation, poverty alleviation and good governance; and an online forum in which natural resource managers discussed linkages between HIV/AIDS and conservation, and options for mitigating impacts on conservation and communities.

Capitalizing Knowledge and Connecting Communities (CK2C) is an initiative that: (1) identifies and promotes best practices in management of land, water, forest and biological resources; (2) provides web-based tools that improve networking and communication between local communities and

resource managers; and (3) develops and delivers competency training for USAID staff managing environment programs. In 2007, CK2C's activities continued to take stock of NRM impacts in the forest sector, and supported NRM champions in challenging barriers to scaling up those impacts. Lessons from this body of knowledge were transformed into NRM competency-based training for USAID environmental officers, in collaboration with the Biodiversity Team.

Although local knowledge is critical to managing natural resources in the field, satellite imagery and geographic information systems (GIS) are increasingly important tools for planning conservation activities, developing environmental policies, and evaluating the scope of biodiversity. The LRM Team provided a rapid response mechanism for USAID Mission and Bureau map-making needs, and funded a GIS-based conservation assessment of African terrestrial ecosystems. They also continued support to the Mesoamerican Regional Visualization and Monitoring System (SERVIR, in Spanish), an earth observation system which provides timely information and analysis on climate and weather trends, fire threats, and other variables for natural resource managers around the world. FY 2007 funds were used to develop a methodology to assess the vulnerability of biodiversity to climate change in Central America, Mexico and Dominican Republic using SERVIR, an approach which will later be applied to Africa and improve policy decision-making in both regions. SERVIR-Viz, a three-dimensional Earth visualization application, is being developed into a coral reef monitoring tool to highlight changes in reef ecosystem condition over time, affected by various threats and different management regimes, at sites around the world.

One of the LRM Team's newest initiatives is TransLinks, a cooperative agreement with the Wildlife Conservation Society, Forest Trends and Enterprise Works/Vita, developed to promote an integrated approach to good governance, poverty alleviation, conservation, and sustainable resource use. TransLinks conducts research on best practices, capacity building, and technical assistance related to the linkages between livestock productivity and bushmeat consumption, pastoralist/ indigenous people's natural resources property rights, and market-based payments for ecosystem services. These activities complement current USAID-funded biodiversity projects. In FY 2007, TransLinks completed 13 "special studies" and began research activities and case studies at select sites.

A TransLinks site in Cambodia won the 2007 Wild Asia Responsible Tourism Award and 2008 Equator Prize, for the work of a local NGO partner in helping village programs compete in the highly competitive tourism industry, and for putting a system in place which pays residents to protect the nests of critically endangered birds including the Giant Ibis (Cambodia's national bird) and the even rarer White-shouldered Ibis. Tourism revenue is contingent upon adherence to a village land-use plan and a no hunting policy. In one village, 33 families increased their income by 67 percent due to the project.

EGAT/NRM/ Water Team

Conservation of Coastal and Freshwater Resources

USAID's Water Team provides expertise on issues as diverse as drinking water and irrigation, coral reef conservation, and sanitation systems. Two ongoing programs support biodiversity objectives through sustainable management of marine and freshwater resources.

The Sustainable Coastal Communities and Ecosystems (SUCCESS) program promotes healthy coastal ecosystems and sustainable resource management through good governance. SUCCESS develops community-based natural resources governance efforts and uses these to improve policies at the provincial, national, and regional scales. Overall, 97,000 hectares in areas of biological significance were placed under improved management as a result of the SUCCESS Program in FY 2007.

In Tanzania, the SUCCESS Program and its partners – including local bivalve collectors (mostly women) – are addressing the accelerating threat of a depleted bivalve population due to over-harvesting on the Fumba Peninsula, Zanzibar. The waters around Fumba village are rich with fish, coral reefs, and mollusks, but poverty, gender inequality and and local market forces have led to overexploitation and biodiversity decline, threatening a valuable food and income source for future generations. SUCCESS established a zoning scheme adopted by the community, with "no-take" zones

FREEDOM: An indigenous leader of the Huambracocha community in Peru prepares to release river turtles into the Huambracocha lake, part of the Pastaza River basin. USAID engages with indigenous people to promote community fisheries management and conserve turtles in this remote area.

PHOTO: MICHAEL TWEDDLE

designated during certain periods, and also introduced half-pearl aquaculture as a more eco-friendly alternative source of food protein (oyster) and income (pearls).

In Ecuador, SUCCESS is tackling threats to biodiversity of the Cojimies estuary, a nesting site for several species of marine turtles. The upper watershed is a designated protected area, with significant primary coastal forests. However, due to overfishing, excessive logging and resulting sedimentation, and conversion of mangrove forests to shrimp ponds, the estuary's fishery resource is in decline and residents face even greater poverty. The SUCCESS program is working to reverse this cycle of overexploitation leading to environmental degradation by introducing eco-friendly livelihoods such as a revived culture of the native fish *chame*, home gardening, and beekeeping for honey.

In Nicaragua, SUCCESS focuses on the biodiversity-rich Padre Ramos and Estero Real estuaries, which together form the most intact coastal ecosystem in the entire Gulf of Fonseca. Biodiversity in the estuary is threatened by poor water circulation due to sedimentation from Hurricane Mitch and poorly constructed shrimp ponds, sewage and agrochemical water pollution, and rapid deforestation of mangrove forests. The program team works with local and national partners to implement solutions including various forms of aquaculture, as well as national and international niche marketing of local natural products such as fruits and "organic" shrimp. Partners are linking issues of biodiversity protection, health, and environmental quality with good management and business practices in a way never previously attempted in this area, which will help protect biodiversity for generations to come.

In the freshwater sector, USAID's Global Water for Sustainability (GLOWS) program works to increase social, economic, and environmental benefits from healthy aquatic ecosystems and sustainable water resources management. For the life of the project, GLOWS expects to achieve improved management in approximately 2.23 million hectares. In FY 2007, work on improved governance, field research, information management, and capacity building continued in three biologically important field sites.

The Pastaza River basin is important for both terrestrial and aquatic biodiversity in the upper Amazon. GLOWS supported the creation of a database on aquatic biota in the basin and strengthened collaboration with Ecuador's National Council of Water Resources. Skilled U.S. volunteers under the Volunteers for Prosperity Initiative partnered with the Ecuadorian Museum of Natural Sciences for a first biodiversity survey in the middle reaches of the Pastaza River. On the Peruvian side of the basin, community fisheries management and turtle conservation activities were promoted among indigenous communities.

The Mara River is the key permanent water source for the open savannah grassland and wildlife protected by the Masai Mara National Reserve in Kenya and the Serengeti National Park of Tanzania. In collaboration with GLOWS, hotels around Masai Mara began construction of wastewater wetlands as a strategy to reduce Mara River contamination. The Kenyan Ministry of Water published a draft Catchment Management Strategy including the Mara, with a strong emphasis on protecting the environmental services of the river system.

Terrestrial biodiversity is high in several parts of India's Wakal River basin, including the Phulwari Moll Reserve, which harbors hundreds of species of plants and was recently declared one of India's *Important Bird Areas* by BirdLife International. GLOWS worked to diffuse Integrated Water Resource Management (IWRM) concepts among community-based organizations, NGOs, universities, local governing bodies, and the general public, laying the groundwork for more transformative interventions.

In addition to work at field sites, GLOWS supported students from Kenya and Colombia to begin advanced studies in water resources management at Florida International University. The program co-sponsored a short course on IWRM for Ecuadorian water managers, and sponsored participants and provided instructors for a wetlands management training course in Central America. Together, GLOWS and SUCCESS co-edited a special biodiversity issue of *Basins and Coasts* newsletter, published in August 2007.

EGAT/Agriculture

Collaborative Research Support Programs (CRSPs)

EGAT's Office of Agriculture supports and co-manages two biodiversity-attributable Collaborative Research Support Programs (CRSPs) with the EGAT/NRM/ Land Resources Management team: the Integrated Pest Management (IPM) CRSP and the Sustainable Agriculture and Natural Resources Management (SANREM) CRSP.

IPM is the study and application of pest management methods which minimize the use of pesticides through a better understanding and manipulation of pest ecology, for example by encouraging beneficial insects, introducing natural predators, or growing different plants together or in succession to keep pest populations manageable. USAID support to the IPM CRSP in FY 2007 addressed biodiversity in two programs of work.

In Ecuador, the IPM CRSP conducted biodiversity monitoring, beginning with an assessment of the impacts of the cacao, plantain and *naranjilla* cropping system on biodiversity. This cropping system reduces soil erosion and should enhance biodiversity in avian migratory corridors and buffer zones near rainforest habitats. Improving the management of this cropping system can result in increased income and reduced pesticide use, both of which can be monitored for impact on biodiversity. Currently the crops in the system are severely affected by pests and diseases threatening livelihoods and the viability of this eco-friendly approach to agriculture. Researchers made progress identifying disease-resistant cacao germplasm, grafted *naranjilla* to *Solanum hirtum* to impart resistance to vascular wilt and a nematode pest, and identified and used pheromone lures to control insect pests of the *naranjilla* and plantain. This IPM package has stabilized the cropping system and reduced the need for frequent use of pesticides.

IPM CRSP researchers also worked to develop an approach to manage Parthenium (*Parthenium hysterophorus*), a highly invasive species accidentally introduced to eastern and southern Africa from the Neotropics. Parthenium reduces the yield of all major crops, competes with preferred pasture species, and when consumed by domestic animals, taints their milk and meat, reducing their value. It causes respiratory and dermatitis problems in humans, and outcompetes native plants, reducing biodiversity. The CRSP used a model to predict the potential distribution of Parthenium in eastern and southern Africa, followed by road surveys in Ethiopia, Uganda, Botswana, Swaziland and South Africa to map the actual distribution. A quarantine facility for screening natural enemies of Parthenium was established at Ambo, Ethiopia, and two natural enemies are being tested at a quarantine facility in South Africa. In pasture management studies, two plant species proved to suppress Parthenium. Combined, these components of invasive species management will be an effective and sustainable solution to curbing the biological, health and financial impacts of Parthenium.

The SANREM CRSP conducts research, institutional development, and training in sustainable agriculture and natural resources management (NRM). Active research in FY 2007 included on-going work to identify best practices in sustainable agriculture, and five long-term research awards addressing comparative research with activities in ten countries. Biodiversity activities include a food security initiative in Zambia focused on market-led conservation for Southern Africa, and a sustainable natural and biological resources training and research program with sites around the world.

SANREM partners Cornell University and Wildlife Conservation Society continued work developing a participatory socioeconomic model for food security and biodiversity conservation in Southern Africa via "Community Markets for Conservation" (COMACO), a market-driven approach to conservation in Zambia. COMACO improves returns on agricultural investment by helping farmers receive competitive prices for their products, by marketing products as 'wildlife friendly' and by selling when demand is highest. In FY 2007, 296 women and 463 men were trained in conservation farming practices to improve production while reducing impacts on wildlife. In addition, 25 village hunting representatives and former poachers were trained to become safari hunting monitoring scouts. Preliminary data show that COMACO market incentives are sufficient both to foster sustainable agricultural practices and to reduce bushmeat hunting, making game-based economic opportunities possible. Researchers are studying how to scale-up COMACO within Zambia and across Southern Africa.

Indiana University, International Food Policy Research Institute, Center for International Forestry Research, and

CACAO BEANS IN ECUADOR are ripe and ready for processing into chocolate. In FY 2007, USAID supported work by the Integrated Pest Management CRSP to assess the impacts of the cacao-plantain-*naranjilla* cropping system on biodiversity in this country, and to develop disease- and insect-resistant strains requiring less pesticide.

PHOTO: SATRE COMUNICACIONES

Kenya Forestry Research Institute are implementing a SANREM project to determine how well decentralization and property rights reform policies achieve sustainable NRM to conserve biodiversity and improve local livelihoods. This research collects and analyzes data from Uganda, Kenya, Mexico, and Bolivia to identify the institutional conditions and interactions that will deliver benefits equitably to local people while sustaining biological resources. In FY 2007, a National Advisory Committee was established in each country, and almost 90 community members and researchers were trained in tree and soil management, as well as research methods.

EGAT/Environment and Science Policy

Natural Resources Research and Climate Change

CGIAR

The Office of Environment and Science Policy (ESP) funds applied research in forest management and biodiversity conservation through the Consultative Group on International Agricultural and Natural Resources Research (CGIAR). In FY 2007, 10 of the 15 CGIAR centers contributed to biodiversity objectives, at least three of which advanced knowledge in forestry and agroforestry.

The International Institute of Tropical Agriculture (IITA) applied the results of over 14 years of arthropod biodiversity assessment in West Africa to help produce the first World Conservation Union (IUCN) Red List for Benin. IITA identified 25 butterflies, one endemic dragonfly and two beetle species potentially under threat according to IUCN listing criteria.

The Center for International Forestry Research (CIFOR) program on non-timber forest products in Brazil organized a multi-stakeholder workshop on forests and biodiversity in the country. High level policy makers from both the state and national governments attended to discuss the links between forests and health and how to build bridges in policy and practice between these two sectors. The same CIFOR program also produced an illustrated booklet on medicinal plants of Amazonia that makes recipes for common ailments accessible to even non-literate populations.

The World Agroforestry Centre (ICRAF) together with Chinese government and research institutions worked to identify species for restoring forest ecosystems in the buffer zones of protected areas, such as the densely populated agricultural landscape surrounding the Gaoligongshan National Nature Reserve in western Yunnan Province. ICRAF selected 20 to 30 tree species indigenous to each protected area which have high conservation potential and economic value. These trees will create a framework for restoring the structure and functions of the forest, including habitat for birds, bats and small mammals that introduce additional plant species through seed dispersal.

The International Center for Agricultural Research in the Dry Areas (ICARDA) continued to monitor wild forage legumes of the genus *Triticum*, threatened by overgrazing and urbanization throughout Syria, Lebanon and Jordan. To conserve *Triticum* and other wild relatives of forage species, fruit trees, field crops, and other valuable species, the government of Syria designated an initial 2,500 hectares of core habitat in 2007. ICARDA is helping develop a management plan for this protected area.

The International Center for Tropical Agriculture (CIAT) studied the distribution of wild *Phaseolus* beans in Central America, identifying 24 populations of wild beans and documenting their conservation status in the field. Two populations of a new species of bean (*P. hygrophilus*) were discovered in the forests southwest of San José, Costa Rica, resulting in a strong recommendation to conserve this area.

The Desert Margins Program led by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is working to arrest land degradation in Africa's desert margins through demonstration and capacity building activities. For example, tree planting intended to improve habitat for giraffe populations in the Western region of Niger is providing improved livelihood opportunities for local communities.

In collaboration with the World Resources Institute and relevant Kenyan authorities, the International Livestock Research Institute (ILRI) published an atlas that overlays statistical information on population and poverty with spatial data on ecosystems and water availability, wood supply, biodiversity, and crops,

to yield a picture of how land, people and prosperity are related in Kenya.

Bioversity International (formerly IPGRI) completed a study on the impact of climate change on wild relatives of peanut, potato and cowpea, which showed that an estimated 16 to 22 percent of wild species of these crops are likely to go extinct and most species will loose 50 percent of their range size as climates shift.

The WorldFish Center (formerly ICLARM) partnered with Japan to develop the first regional database on coral reef marine protected areas in Southeast Asia. With Conservation International, WorldFish investigated how ecological, socioeconomic and governance factors interact during planning, design and implementation of marine managed areas.

GIRAFFE: The tallest animal on earth is among the many species benefitting from CGIAR programs supported by USAID. For example, ICRISAT's Desert Margins Program planted trees to provide food for giraffe and wood for people in western Niger.

PHOTO: MIKE COLBY, USAID

Global Climate Change

EGAT/ESP's Carbon Reporting Initiative builds on the earlier Carbon and Co-Benefits Initiative, which developed methodologies to geographically model deforestation risk and thus threats to biodiversity habitat and sources of greenhouse gas emissions from deforestation. Beginning in FY 2006 and continuing into FY 2007, the Carbon Reporting Initiative worked to incorporate these methodologies into a user-friendly web-based forest carbon calculator. Users will be able to enter the location, geographic size and type of forest sector activity and the calculator will provide a scientifically rigorous estimate of the amount of carbon dioxide emissions avoided or sequestered through that activity during the year. Having accurate carbon dioxide numbers will further support forest biodiversity activities by providing a climate change rationale for forest conservation.

During FY 2007, implementing partner Winrock International reached out to regional experts in Latin America and the Caribbean, Africa, and Asia to collect information on deforestation rates, forest carbon biomass, tree growth rates, and other data needed for calculating carbon change. The project also clarified the conceptual and technical approaches to be taken in development of the reforestation, agroforestry and fire management components of the tool, and made progress in further refining underlying equations. A first version of the user interface was developed and a way to integrate GIS data layers was identified. Further development of the interface and functionality as well as important testing and quality control are planned for FY 2008.

DCHA/Conflict Management and Mitigation

Conflict and Environment

Scarce or contested natural resources are often at the root of civil conflict, and funds from valuable minerals and forests have played a role in financing wars. Poor management of natural resources increases poverty and limits opportunities for economic growth, a situation where any political solution can take hold no matter how short-sighted or authoritarian. Conflict can be destructive, benign or beneficial to wildlife and habitats: 22 years of conflict in Sudan displaced people and allowed wildlife to flourish, but as refugees return there are concerns for overhunting and deforestation. In contrast, good management of natural resources can prevent or minimize divisiveness and violence; progressive forest management practices in particular are creating wealth and bringing stability to previously war-torn regions. USAID's Office of Conflict Management and Mitigation (CMM) recognizes these relationships and in FY 2007 supported peace-through-conservation programs in eastern Democratic Republic of Congo (DRC) and lowland Bolivia, as well as a speaker series on the links among conflict, natural resources and human health.

CMM supported peace-building in and around protected areas in the Albertine Rift in the DRC, using a conflict analysis and resolution approach previously tested in the Virunga National Park. Implementing partner Wildlife Conservation Society worked to build the capacity of DRC's Nature Conservation Service (ICCN) to manage and resolve conflicts over natural resources before they escalate. ICCN now maps and analyzes the root causes and consequences of conflict in protected areas and then assembles protected area authorities and local communities to devise solutions.

In Bolivia, USAID promoted conflict mitigation and reconciliation through dialogue between indigenous groups and local, regional and national actors, as well as among indigenous organizations. Progress was made towards developing an effective governance system to help mitigate both existing and potential conflicts, by promoting democratic and transparent decision-making over land and resource use, cost-effective implementation of decisions, and effective land use management based on principles of biodiversity conservation and sustainable use of renewable resources.

USAID's Office of Natural Resources Management, the Office of Population and Reproductive Health, and CMM jointly supported "New Horizons at the Nexus of Conflict, Natural Resources, and Health," a speaker series which presented a multi-faceted picture of the links among conflict, natural resources and human health. This series aims to engage key stakeholders through creative dialogue and promotes partnerships and innovation in dealing with this cross-sectoral area. Seminars encourage the application of conflict-sensitive interventions in the natural resources and health fields as well as the explicit use of those interventions to further peace-building and stabilization goals and, conversely, to promote, environmental sensitivity during conflict interventions. FY 2007 meetings in this series addressed fisheries and conflict, land tenure and property rights in East Africa, local natural resource governance, and the role of extractive industries in preventing and mitigating conflict.

Global Health

Population, Health and Environment Program

USAID's Global Health Bureau recognizes the links between healthy people and healthy environments. Forests are often critical providers of clean and abundant drinking water; in turn, disease prevention and good nutrition contribute to economic growth and reduce overexploitation of wildlife and trees. The Bureau's Office of Population and Reproductive Health (PRH) funds field programs and support programs which make biodiversity conservation and forest management activities more effective.

With support from PRH, World Wildlife Fund (WWF) and Conservation International (CI) have been able to provide needed family planning and reproductive health information and services in and around areas of high biodiversity in Madagascar, Kenya, Cambodia and the Philippines. In FY 2007, 591 new health service providers were trained to deliver these services in remote and often inaccessible areas. As a result of having their needs met in these critical health

PHOTO: DAREN TRUDEAU/INSTITUTE FOR REPRODUCTIVE HEALTH, COURTESY OF PHOTOSHARE

CYCLE BEADS: An instructor in the Democratic Republic of Congo explains the standard days method (SDM) for tracking daily fertility using traditional cycle beads. USAID's Global Health Bureau supports the provision of family planning and other health services by biodiversity conservation groups, which promotes community cooperation with conservation interventions while helping achieve long-term sustainability goals.

areas, local communities are willing to cooperate with WWF and CI as partners in the protection of forest in the Philippines and Cambodia, and six "no-take" marine zones in Kenya, totaling 25,952 hectares.

Global Health Bureau supports the Population, Health, and Environment (PHE) program, which strives to address the impacts of human populations on biodiversity by recognizing that individuals cannot exercise adequate stewardship over local natural resources on which their livelihoods depend unless their basic needs for health, nutrition, and income are met. PHE seeks to simultaneously improve access to family planning and related health services while helping communities conserve wildlife and other biological resources, enhancing lives through better health and access to natural resources.

In the eastern Democratic Republic of the Congo (DRC), USAID supported the Jane Goodall Institute's (JGI) innovative approach to community-centered conservation in the Graueri Landscape. The Community-Centered Conservation Program links sustainable development activities prioritized by the community to natural resource conservation. Communities have already contributed land to a network of community forest reserves linking the national parks of Maiko and Kahuzi-Biega, a UNESCO World Heritage Site and habitat for important species such as eastern lowland gorillas, chimpanzees, forest elephants, and okapi. In FY 2007, JGI supported 69 war-torn health centers and clinics which serve a population of 568,352, and partnered with EngenderHealth to train 168 health center staff in improved counseling and service provision skills.

In Uganda, USAID supported Conservation Through Public Health (CTPH) to add family planning and reproductive health services to their ongoing gorilla conservation activities in two isolated parishes in western Uganda. As a result, 31 health providers received training in family planning and reproductive health, and 26 new community peer educators were recruited.

Tropical Forest Conservation Act

Debt-for-Nature Agreements

The Tropical Forest Conservation Act (TFCA) was enacted in 1998 to offer eligible developing countries options to relieve certain official debt owed the U.S. Government and generate funds in local currency to support tropical forest conservation activities. The TFCA is an interagency collaboration within the U.S. government jointly managed by USAID and the Departments of State and Treasury. In addition to forest conservation and debt relief, TFCA is intended to strengthen civil society by creating local foundations which support small grants to NGOs and local communities. The program also offers a unique opportunity for public-private partnerships: the majority of TFCA agreements to date have included funds raised by U.S.-based conservation organizations.

PHOTO: SCOTT LAMPMAN, USAID

TARSIER: This wide-eyed primitive primate on the island of Bohol, Philippines normally sleeps in the daytime, camouflaged among the brown leaves. Tarsier habitat is better protected thanks to a debt-for-nature agreement between the United States and the Philippines.

As of December 2007, approximately $95.4 million in congressionally appropriated funds have been used to conclude 13 TFCA debt-for-nature agreements with 12 countries: Bangladesh, Belize, Botswana, Colombia, Costa Rica, El Salvador, Guatemala, Jamaica, Panama (two agreements), Paraguay, Peru, and the Philippines. The Nature Conservancy, Conservation International and the World Wildlife Fund have contributed an additional $12.1 million to eight of these agreements, enabling more debt to be treated and in turn generating more funds for conservation. By 2017, the TFCA programs will together have generated more than $163 million for grants and projects to help protect and sustainably manage tropical forests in beneficiary countries. To date, the local "TFCA Funds" have awarded 189 grants and otherwise invested in protected area activities totaling nearly $18 million, including over $5.9 million in 2007 alone. The collective balance accumulated in these local accounts exceeds $38 million. Over the life of the debt swap agreements, they will contribute to conservation and improved management of nearly 50 million acres of high-value tropical forests in Latin America, including several national parks and other protected areas.

The four newest TFCA programs, initiated with Guatemala and Paraguay in FY 2006 and Botswana and Costa Rica in FY 2007, are expected to be fully operational in 2008. As of the publication of this report, USAID, State Department and Treasury Department are in various stages of negotiation for TFCA agreements with Peru and Indonesia.

USAID BIODIVERSITY AND FORESTRY FUNDING OVERVIEW

Forestry Budget

Analysis of FY 2007

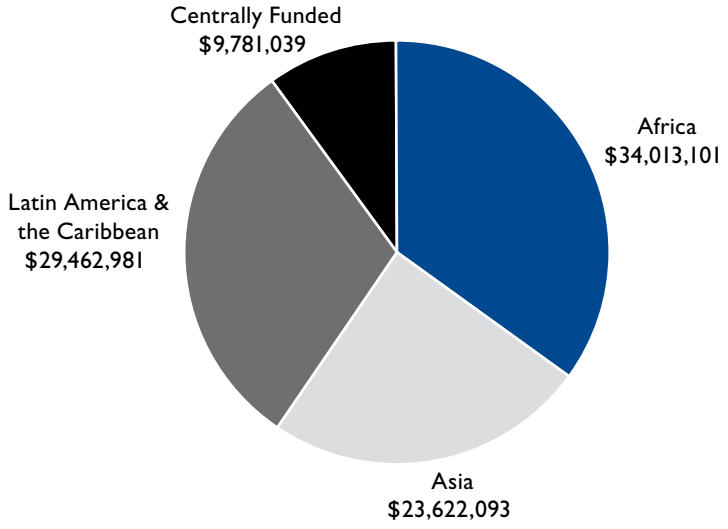
USAID supported almost $97 million in forestry activities in FY 2007, of which the vast majority ($89.9 million) occurred in tropical countries or had a focus on tropical forests. Forestry includes a range of economic growth and biodiversity conservation efforts, including protection of natural forests, sustainable management of forests for timber and non-timber forest products, reforestation of degraded lands, the use of woodlots and agroforestry to reduce pressure on natural forests, and research and capacity building activities which help communities and governments benefit from markets for ecosystem services and certified forest products.

USAID centrally funded programs supported $9.8 million in forestry work around the world. The Natural Resources Management (NRM) Office managed the bulk of these activities, and applied expert technical assistance to Missions and international leadership through its Forestry Team, in collaboration with the USDA Forest Service and other partners whom it funded. The Forestry Team continued its support for the Sustainable Forest Products Global Alliance, and about half of the NRM Biodiversity Team's Global Conservation Program supported forest management, conservation or sustainability certification. The Environment and Science Policy Office and Agriculture Office collaborated with the NRM Office to fund over $3 million in applied forestry research by universities and international research institutes, including a study on forests and climate change co-financed by the NRM Forestry Team.

The largest share of forestry support was provided through Africa regional and country programs, which managed $34 million (36 percent) of total USAID forestry expenditures. Of this funding, almost half went to the Central African Regional Program for the Environment (CARPE) and its work supporting objectives of the Congo Basin Forest Partnership. Africa Bureau's Office of Sustainable Development and Missions in Liberia, Madagascar and Senegal each managed $2 million or more in forestry activities.

Asia received $23.6 million of overall forestry spending, with large programs in most countries in this region. Indonesia and Afghanistan account for at least half of the total, for programs to conserve orangutan habitat, and to restore degraded woodlots and pistachio forests, respectively.

Figure 1. USAID Funding for Forestry by Region in FY 2007*



* Amounts shown here are from all accounts (DA, ACI, CSH, ESF, and Title II)

Table 1. USAID Funding for Forestry Programs and Activities, FY 2007

Program Name	Program Description	FY 2007 Forestry Funding in US$	Forestry Overlap with Biodiversity	Type of Funds*
CENTRALLY FUNDED BIODIVERSITY PROGRAMS				
EGAT Bureau				
NRM Office	Technical Staff	831,046	831,046	DA
NRM - Biodiversity	Global Conservation Program - Forest Conservation Activities	1,477,916	1,477,916	DA
	Business and Biodiversity Offsets; Disaster, Conflict and Biodiversity	175,000	175,000	DA
NRM - Forestry	Sustainable Forest Products Global Alliance Interagency Agreement with USDA Forest Service	1,100,000	1,100,000	DA
	Sustainable Forest Products Global Alliance Leader with Associates Award	300,000	300,000	DA
	USAID - USDA Forest Service Interagency Agreement	865,000	865,000	DA
	Forest and Climate Project with Center for International Forestry Research	200,000	200,000	DA
Agriculture Office	Collaborative Research Support Programs	869,300	869,300	DA
Environment and Science Policy Office	Center for International Forestry Research and World Agroforestry Center	1,849,000	1,600,000	DA
	Carbon Calculator and Forest & Climate Project	294,000	150,000	DA
Other Central Bureaus				
Democracy, Conflict, and Humanitarian Assistance Bureau	Conflict and Environment activities of the Conflict Management and Mitigation Office	799,777	799,777	ESF
Global Health Bureau	Population, Health and Environment Program	1,020,000	1,020,000	CSH
	Centrally Funded Programs Total	**$9,781,039**	**$9,388,039**	
AFRICA				
Africa Regional	Office of Sustainable Development support for an interagency agreement with the USDA Forest Service, and the Sustainable Tree Crops program	5,893,000	4,158,000	DA
Congo Basin Forest Partnership / Central African Regional Program for the Env't	Landscape-level Conservation and Forest Management in Central Africa	16,000,000	16,000,000	DA
Ethiopia	Food Security, Forestry and Ecotourism Programs	267,000	0	Title II
Guinea	Landscape Management for Improved Livelihoods	406,675	169,270	DA
Kenya	Community Conservation to Carbon Markets	144,000	430,000	DA
	Community Conservation to Carbon Markets	508,000		ESF
Liberia	Commercial Forestry, Community Empowerment and Conservation	1,320,780	1,320,780	DA
	Commercial Forestry, Community Empowerment and Conservation	1,500,000	0	ESF
Madagascar	Biodiversity Conservation and Sustainable Management of Forests	3,505,646	3,505,646	DA
Malawi	Natural Resources Management and Biodiversity Conservation	300,000	0	DA
Mali	Community Mgmt of Agroforestry Parklands and Sustainable Tourism	100,000	0	DA
Mozambique	Conservation through Public-Private Partnerships	300,000	300,000	DA
Senegal	Community forestry, International Markets and Local Benefits	2,000,000	1,000,000	DA
Sudan	Capacity Building and Landscape-Level Conservation	768,000	0	DA
Tanzania	Targeted Landscape Conservation through a Livelihoods Approach	1,000,000	1,000,000	DA
	Africa Total	**$34,013,101**	**$27,883,696**	

Table 1. USAID Funding for Forestry Programs and Activities, FY 2007 continued

Program Name	Program Description	FY 2007 Forestry Funding in US$	Forestry Overlap with Biodiversity	Type of Funds*
ASIA				
ANE Regional	Responsible Asia Forestry and Trade Initiative (RAFT) support	400,000	400,000	DA
Regional Development Mission for Asia	Wildlife Law Enforcement and Improved Forest Management	2,070,000	2,070,000	DA
	Wildlife Law Enforcement and Improved Forest Management	100,000	100,000	ESF
Afghanistan	Woodlands Restoration and Conservation of Key Areas	4,449,390	3,800,000	DA
Bangladesh	Co-management of Wetlands and Tropical Forests	1,000,000	1,000,000	DA
Cambodia	Grassroots Advocacy and Controlling Wildlife Trade	2,267,703	2,267,703	DA
Indonesia	Natural Resource Management and Orangutan Conservation	8,813,000	8,813,000	DA
Nepal	Strengthened Community Natural Resources Governance	2,500,000	2,500,000	DA
Philippines	Local Conservation Succeeds with Improved Governance, Land Tenure	2,022,000	2,022,000	DA
	Asia Total	**$23,622,093**	**$22,972,703**	
LATIN AMERICA AND THE CARIBBEAN				
LAC Regional	Parks in Peril; Initiative for Conservation in the Andean Amazon; Forest products trade assistance to Dominican Republic – Central America – United States Free Trade Agreement (CAFTA-DR) signatories	5,248,000	5,248,000	DA
Caribbean Regional	National Investments and Natural Assets Protection	640,000	640,000	DA
Central America & Mexico Regional	Forest products trade assistance to CAFTA-DR signatories	400,000	400,000	DA
Bolivia	Landscape Conservation Program and Sustainable Forestry	3,482,206	3,482,206	DA
Brazil	Sustainable Forest Management and Protected Areas Development	249,000	249,000	DA
Colombia	Stronger National Parks and Sustainable Development	7,969,775	2,000,000	ACI
Ecuador	Conservation of Indigenous Land and Rights	1,520,000	1,520,000	DA
El Salvador	Improved Management and Conservation of Critical Watersheds	450,000	450,000	DA
Guatemala	Certification of Forestry and Tourism Enterprises	1,910,000	402,000	DA
Guyana	Sustainable Tourism and Forest Products Marketing	250,000	0	DA
Honduras	Integrated Watershed Resources Management	700,000	350,000	DA
Jamaica	Natural Assets managed for rural development and sustainable growth	380,000	80,000	DA
Mexico	Sustainable Development and Capacity Building for Conservation	2,439,000	2,439,000	DA
Panama	Conservation of biodiversity in the Canal Zone	60,000	60,000	DA
Peru	Forestry Sector Reform and Incentives for Conservation	3,765,000	3,765,000	DA
	Latin America and the Caribbean Total	**$29,462,981**	**$21,085,206**	
TOTALS				
	TOTAL FORESTRY FUNDING IN FY 2007	**$96,879,214**	**$81,329,644**	
	TOTAL TROPICAL FORESTRY FUNDING IN FY 2007	**$89,929,824**	**$75,029,644**	

* Development Assistance (DA), Economic Support Fund (ESF), Andean Counterdrug Initiative (ACI), Child Survival and Health (CSH), Emergency Development and Food Assistance (Title II)

Latin America and the Caribbean (LAC) programs supported $29.5 million in forestry activities in FY 2007, about 30 percent of all forestry funding. From policy and awareness initiatives which restored indigenous land and forest use rights, to training and equipment for more efficient milling, USAID provided DA funds to a wide range of activities involving stakeholders of every variety. Over one-quarter of LAC forestry support was to Colombia, where Andean Counterdrug Initiative (ACI) funds were used to develop the forest products industry and provide economically viable alternatives to coca.

Because of its leadership in international forestry, USAID hosts the Secretariat of the Tropical Forest Conservation Act (TFCA), which finances debt-for-nature agreements as described at the end of the Centrally Funded Programs section of this report. TFCA funds are appropriated directly to and managed by the Department of Treasury, with the exception of FY 2003, when TFCA funds were appropriated to USAID and then transferred to Treasury (note the spike in funding for this year in Table 2). TFCA is not listed in either the forestry or biodiversity budget tables for FY 2007.

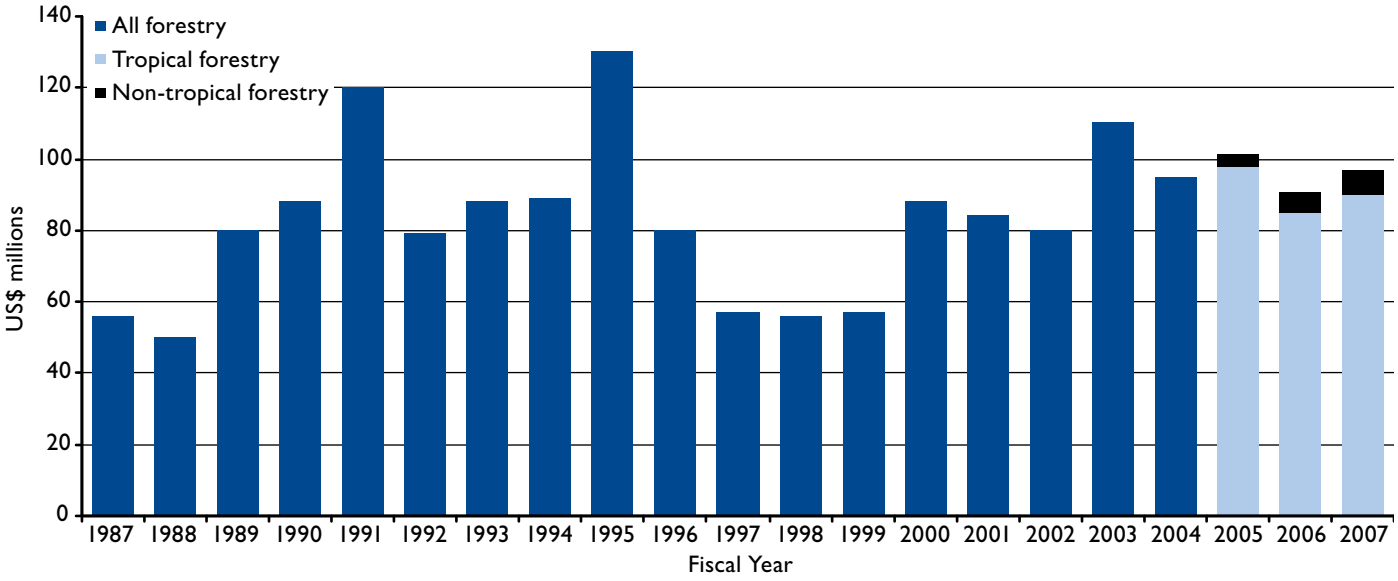
Budget Trends

Forest management and conservation has been an important part of USAID's mandate since 1986, when Section 118 of the Foreign Assistance Act was enacted and the importance of tropical forests to development was formally recognized. In the late 1980s and early 1990s, USAID investments in forestry activities increased substantially, reflecting increased awareness of the environmental, economic and social importance of tropical forests.

In the late 1990s, forestry expenditures declined from an all-time high of $130 million in 1995 to less than half that, on par with the level of investment a decade earlier (or less, adjusting for inflation). This was primarily due to USAID budget cuts, but also in part because Agency priorities shifted. From 2000 to 2003, forestry funding averaged about $85 million per year (adjusting for a one-time Congressional decision in 2003 to appropriate $20 million in TFCA funds directly to USAID). Since 2004, forestry funding has hovered around $100 million.

USAID investments in forestry prioritize areas that are biologically significant, and activities which conserve biodiversity. In FY 2007, $81.3 million of Agency-supported

Figure 2. USAID Funding of Forestry Activities, 1987 to 2007*



* Figures for tropical and non-tropical forestry funding were disaggregated beginning in 2005

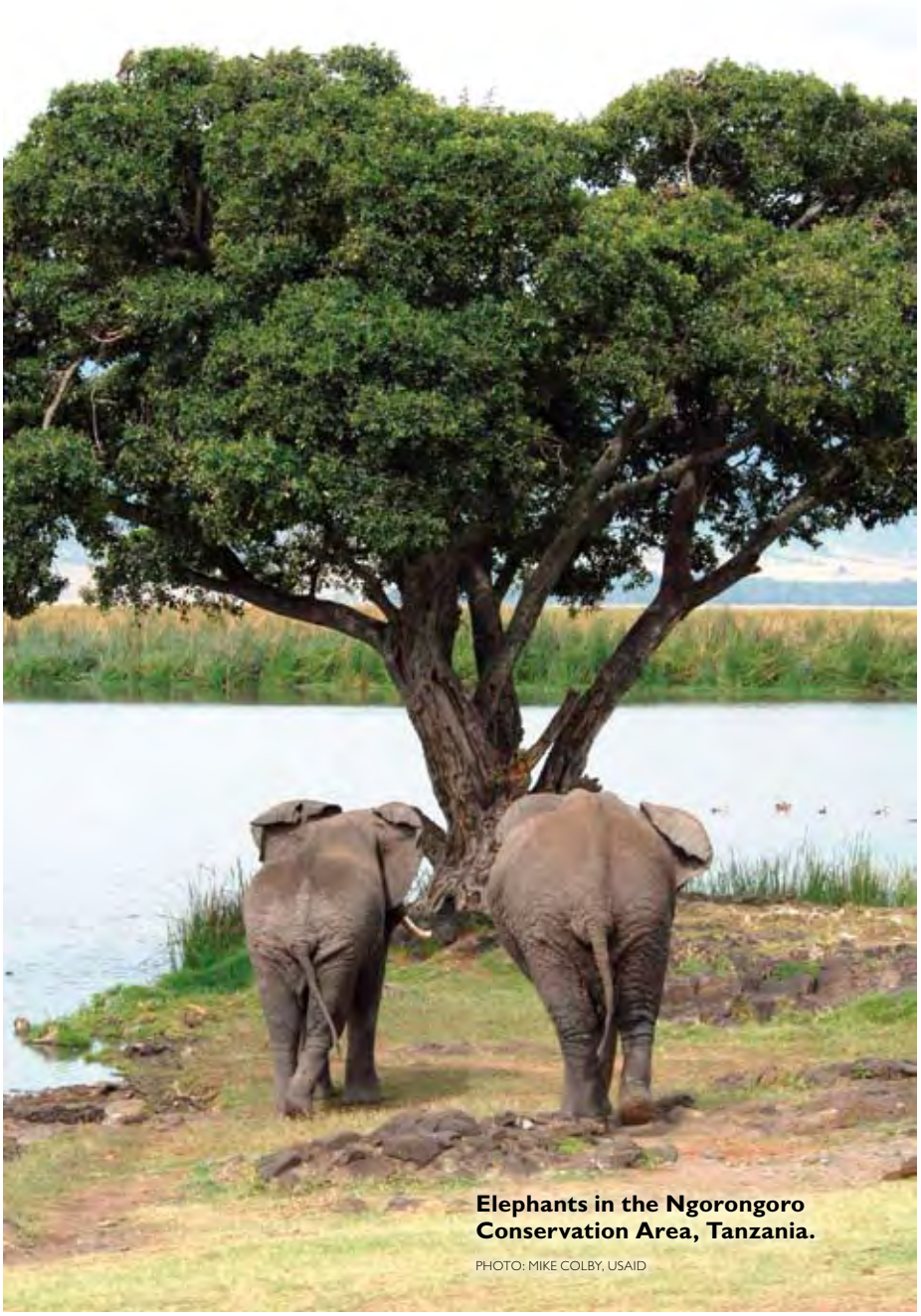
Table 2. U.S. Government International Forestry Funding, FY 2007*

Program or Funding Type	USG Department or Agency	FY 2007 Funding for Forestry and Forest Conservation (US$ millions)
Forestry Activities	U.S. Agency for International Development	96.9
Tropical Forest Conservation Act	U.S. Department of Treasury	20
Office of International Programs	U.S. Forest Service	6.88
	TOTAL	**123.78**

* This list is not necessarily comprehensive

forestry work – 84 percent – met the requirements of the Congressional biodiversity earmark. The relatively high levels of funding observed in recent years are largely due to an increase in USAID support for biodiversity activities in forests, including community and indigenous forest management in the Amazon basin, combating illegal logging in Southeast Asia, landscape planning and protected areas in the Congo Basin and Madagascar, sustainable forestry certification in Central America, and reforestation and agroforestry in West Africa and Central Asia.

The need for forestry investments will remain high into the future, as forests once valued only for firewood or lumber are increasingly recognized for their full suite of ecosystem services, important to economic and social development. From storing and cleaning water for communities downstream, to conserving globally important biodiversity including locally important medicinal plants and game, to their potential to sequester carbon and adapt to climate change, forests are an essential aspect of USAID's portfolio in many countries.



Elephants in the Ngorongoro Conservation Area, Tanzania.

PHOTO: MIKE COLBY, USAID

Biodiversity Budget

Analysis of FY 2007

USAID provided more financial support to biodiversity conservation activities in FY 2007 than in any previous year. Central, regional and bilateral programs provided $183.7 million for work in Latin America and the Caribbean, Africa, and Asia, of which $176.2 million were Development Assistance (DA) funds.

Centrally funded programs supported more than $23 million in biodiversity activities, about 13 percent of USAID expenditures overall. Central programs test innovative approaches, and collect and disseminate best practices in conservation. They also support activities which address a certain theme (reducing conflict, enhancing conservation-health linkages), promote a certain approach (such as landscape-level conservation, or payments for ecosystem services), and/or operate on a global level, even in USAID non-presence countries (such as the Global Conservation Program) due to the regional or transboundary nature of biodiversity.

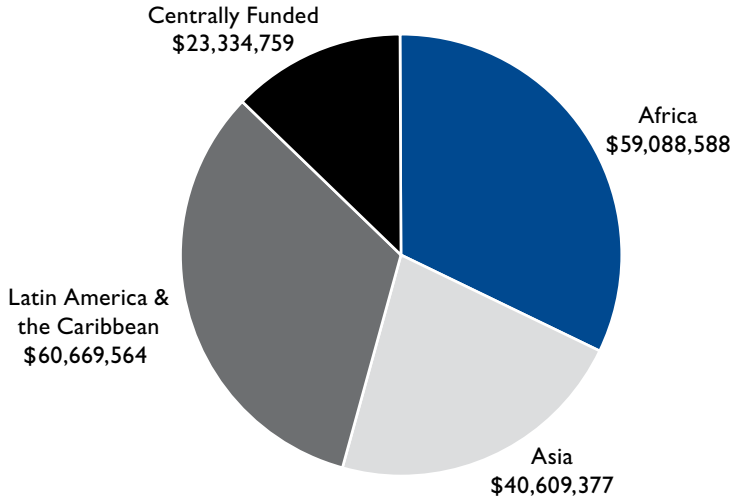
The Africa Bureau provided $59 million for biodiversity conservation through four regional programs, 14 country programs and support from headquarters. Representing 32 percent of the Agency budget, these funds financed a number of initiatives including community conservation, ecotourism, and sustainable forestry. Almost one-third of these funds supported biodiversity conservation and forest management in the Congo Basin, including grants from the Great Ape Conservation Fund administered under a USAID agreement with the U.S. Fish and Wildlife Service.

Over $40 million (22 percent) of biodiversity conservation funding was programmed for Asia by country and regional programs. This is over $14 million more than in FY 2006, accounting for most of the increase in overall biodiversity funds. USAID supported priority activities to address wildlife trafficking, illegal logging, coral reef protection and recovery, and conservation of endangered species like the snow leopard and orangutan. Indonesia and the Philippines, both global hotspots for conservation, account for over one-third of DA expenditures for biodiversity conservation in Asia, and Afghanistan accounted for over a quarter of expenditures.

The largest proportion of Agency biodiversity funds went to Latin America and the Caribbean (LAC), with over $60 million distributed in FY 2007. About half of these funds supported regional and bilateral programs in the Amazon nations of Bolivia, Brazil, Colombia, Ecuador and Peru. The LAC Bureau also made large investments in terrestrial and marine Caribbean conservation initiatives.

There has been a decline in USAID biodiversity activities in Europe and the Middle East over the past few years, with no funding obligated in FY 2006 or FY 2007 in these regions. Reduced investment is consistent with rising incomes in countries such as Egypt and Jordan, which had biodiversity programs through FY 2005.

Figure 3. USAID Funding for Biodiversity by Region in FY 2007*



* Amounts shown here are from all accounts (DA, ACI, CSH, and ESF)

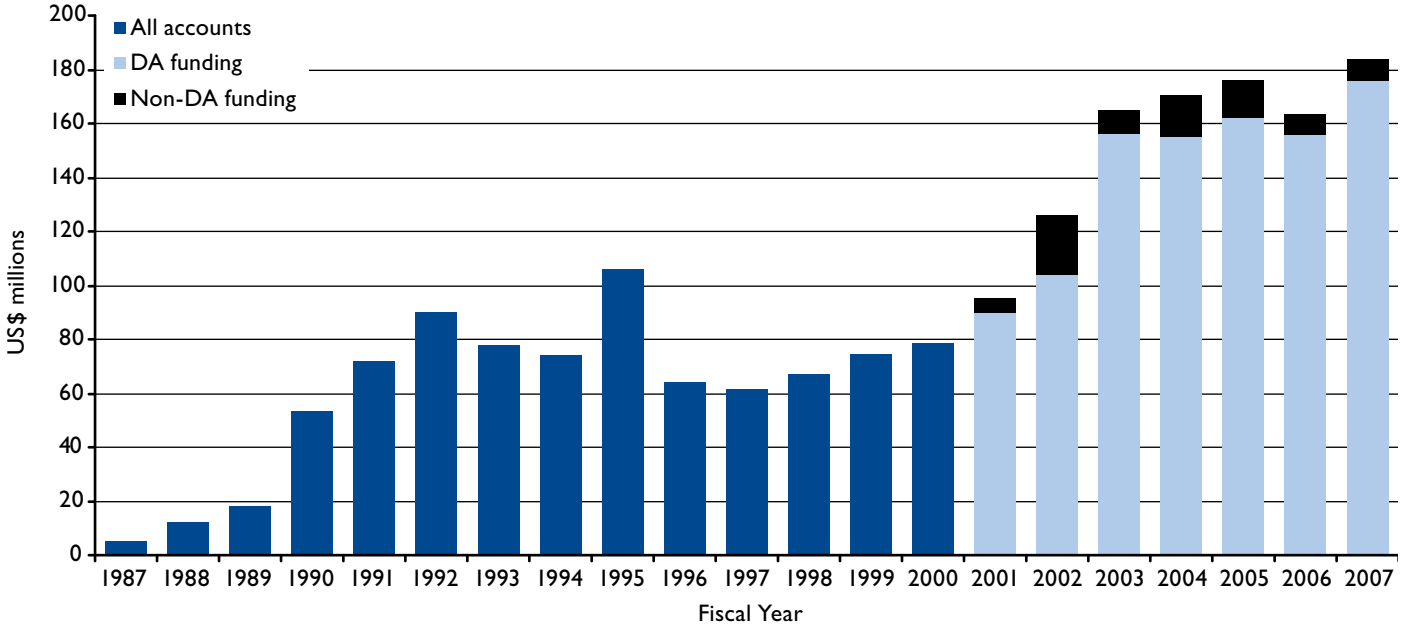
Budget Trends

USAID has supported biodiversity conservation activities for more than three decades, even before the term 'biodiversity' was coined. During the early 1970s there was a focus on conserving natural forests, primarily through Mission funds. In 1986, Sections 118 and 119 were amended to the Foreign Assistance Act, which placed a greater emphasis on endangered species conservation and tropical forests in U.S. foreign assistance. The FY 1986 Appropriations Act also incorporated a $1 million directive for biodiversity conservation. This broadened the scope of the Agency's biodiversity work, and began a long-term trend of increased USAID investment in conservation activities. By the 1990s, USAID investments in biodiversity conservation expanded to more than $60 million annually, at times exceeding $90 million. Since 1997, USAID support for biodiversity programs has steadily increased with new Congressional directives.

In FY 2004, Congress created a biodiversity earmark of $155 million in DA funds. That earmark increased to $165.5 million for FY 2005 through FY 2007, or $163.8 million after a rescission for other USG priorities. The earmark is increasing by almost $30 million in FY 2008 to $195 million ($193.4 million after rescission). Since FY 2005, the Agency has engaged in an annual strategic budgeting process intended to align biodiversity funding with global priorities for biodiversity conservation. The allocation of the biodiversity earmark is based on a participatory process that ranks countries on a scale from one (highest) to four (lowest) using various biodiversity criteria, including species richness, threat level, and habitat intactness. This strategy and a strict biodiversity definition ensure that all biodiversity-earmarked funds support well-designed activities in high-priority locations. In FY 2005 and FY 2006, the Agency did not reach the earmark of $165.5 million, but in FY 2007 the earmark amount was exceeded by over $10 million, with $176.2 million in DA funds and $183.7 million from all accounts.

In FY 2007, almost 20 percent of the biodiversity earmark was invested in five 'megadiverse' countries: Brazil, Ecuador, Indonesia, Madagascar and the Philippines. Three large regional programs – Congo Basin Forest Partnership / Central African Regional Program for the Environment (CBFP/ CARPE), Regional Development Mission for Asia (RDMA), and

Figure 4. USAID Funding of Biodiversity Activities, 1987 to 2007*



* All funding accounts displayed. Disaggregated figures for DA and non-DA funding are only available from FY 2001 onward

Table 3. USAID Funding for Biodiversity Programs and Activities, FY 2007

Program Name	Program Description	FY 2007 Biodiversity Funding in US$	Type of Funds*
CENTRALLY FUNDED BIODIVERSITY PROGRAMS			
EGAT Bureau			
NRM - Biodiversity Team	Global Biodiversity Conservation	5,033,213	DA
NRM - Forestry Team	Sustainable Forest Management	4,177,214	DA
NRM - Water Team	Conservation of Coastal and Freshwater Resources	2,461,380	DA
NRM - Land Resources Mgmt Team	Improving Land Management Policy and Practice	3,396,572	DA
Agriculture Office	Collaborative Research Support Programs	879,603	DA
Environment and Science Policy Office	Support for Consultative Group on International Agricultural Research (CGIAR) and Global Climate Change activities	4,650,000	DA
Other Central Bureaus			
Democracy, Conflict, and Humanitarian Assistance Bureau	Conflict and Environment activities of the Conflict Management and Mitigation Office	20,000	DA
	Conflict and Environment activities of the Conflict Management and Mitigation Office	799,777	ESF
Global Health Bureau	Population, Health and Environment Program	1,917,000	CSH
	Centrally Funded Biodiversity Programs Total	**$23,334,759**	
	Centrally Funded Biodiversity Programs Total DA	**$20,617,982**	
AFRICA			
Africa Regional	Office of Sustainable Development support for biodiversity assessments, technical support to Missions by the USDA Forest Service, and funding for the Great Ape Conservation Fund administered by the U.S. Fish and Wildlife Service	4,158,000	DA
Congo Basin Forest Partnership / Central African Regional Program for the Environment	Landscape-level Conservation and Forest Management in Central Africa	16,000,000	DA
East Africa Regional	Water for Biodiversity in the Mara River Basin	700,000	DA
Southern Africa Regional	Biodiversity Conservation through Improved River Basin Management	1,728,000	DA
West Africa Regional	Natural Resource Management Without Borders	900,000	DA
Ethiopia	Food Security, Forestry and Ecotourism Programs	1,000,000	DA
Guinea	Landscape Management for Improved Livelihoods	1,000,000	DA
Kenya	Community Conservation to Carbon Markets	3,490,000	DA
	Community Conservation to Carbon Markets	141,000	ESF
Liberia	Commercial Forestry, Community Empowerment and Conservation	4,327,500	DA
Madagascar	Biodiversity Conservation and Sustainable Management of Forests	6,926,088	DA
Malawi	Natural Resources Management and Biodiversity Conservation	1,320,000	DA
Mozambique	Conservation through Public-Private Partnerships	2,400,000	DA
Namibia	Improved Rural Livelihoods through Natural Resources Management	1,622,000	DA
Nigeria	Conserving Forests by Improving Farming	100,000	DA
Rwanda	Profitable Ecotourism through Improved Biodiversity Conservation	1,795,000	DA
Senegal	Community forestry, International Markets and Local Benefits	1,000,000	DA
Sudan	Capacity Building and Landscape-Level Conservation	899,000	DA
Tanzania	Targeted Landscape Conservation through a Livelihoods Approach	4,082,000	DA
Uganda	Reduced Env'tal Degradation and Critical Ecosystems Conserved	5,500,000	DA
	Africa Total	**$59,088,588**	
	Africa Total DA	**$58,947,588**	

Table 3. USAID Funding for Biodiversity Programs and Activities, FY 2007 continued

Program Name	Program Description	FY 2007 Biodiversity Funding in US$	Type of Funds*
ASIA			
ANE Regional	Support for Emerging Conservation Needs	1,500,000	DA
Regional Development Mission for Asia	Wildlife Law Enforcement and Improved Forest Management	3,548,000	DA
	Wildlife Law Enforcement and Improved Forest Management	185,000	ESF
Afghanistan	Woodlands Restoration and Conservation of Key Areas	11,000,000	DA
Bangladesh	Co-management of Wetlands and Tropical Forests	2,557,174	DA
Cambodia	Grassroots Advocacy and Controlling Wildlife Trade	2,665,203	DA
Indonesia	Natural Resource Management and Orangutan Conservation	8,813,000	DA
Nepal	Strengthened Community Natural Resources Governance	2,600,000	DA
Philippines	Local Conservation Succeeds with Improved Governance, Land Tenure	7,329,000	DA
	Local Conservation Succeeds with Improved Governance, Land Tenure	412,000	ESF
	Asia and the Near East Total	**$40,609,377**	
	Asia and the Near East Total DA	**$40,012,377**	
LATIN AMERICA AND THE CARIBBEAN			
LAC Regional	Parks in Peril; Initiative for Conservation in the Andean Amazon; environmental compliance assistance to Dominican Republic – Central America – United States Free Trade Agreement (CAFTA-DR) signatories	10,030,000	DA
	CAFTA-DR compliance funds distributed by Department of State	1,500,000	DA
Caribbean Regional	National Investments and Natural Assets Protection	3,270,000	DA
Central America & Mexico Regional	Watershed Conservation, Sustainable Fisheries and Compliance with the Convention on International Trade in Endangered Species of Flora and Fauna (CITES)	2,220,000	DA
	Environmental compliance assistance to CAFTA-DR signatories	550,000	DA
Bolivia	Landscape Conservation Program and Sustainable Forestry	5,695,206	DA
Brazil	Sustainable Forest Management and Protected Areas Development	5,355,000	DA
Colombia	Stronger National Parks and Sustainable Development	2,000,000	ACI
Dominican Republic	Increased Institutional Capacity for Environmental Protection	904,000	DA
Ecuador	Conservation of Indigenous Land and Rights	6,144,000	DA
El Salvador	Improved Management and Conservation of Critical Watersheds	1,419,000	DA
Guatemala	Certification of Forestry and Tourism Enterprises	1,682,000	DA
	CAFTA-DR funds for environmental compliance assistance	150,000	DA
Guyana	Sustainable Tourism and Forest Products Marketing	200,000	DA
Honduras	Integrated Watershed Resources Management	2,514,000	DA
	CAFTA-DR funds for environmental compliance assistance	275,000	DA
Jamaica	Natural Assets managed for rural development and sustainable growth	1,684,826	DA
Mexico	Sustainable Development and Capacity Building for Conservation	3,424,532	DA
Nicaragua	Biodiversity Conservation and Sustainable Forest Certification	1,030,000	DA
Panama	Conservation of biodiversity in the Canal Zone	3,180,000	DA
Paraguay	Environmental Policy Development and Law Enforcement Support	630,000	DA
Peru	Forestry Sector Reform and Incentives for Conservation	4,762,000	DA
	Forestry Sector Reform and Incentives for Conservation	2,000,000	ACI
	Latin America and the Caribbean Total	**$60,619,564**	
	Latin America and the Caribbean Total DA	**$56,619,564**	
TOTALS			
	TOTAL BIODIVERSITY FUNDING IN FY 2007	**$183,652,288**	
	TOTAL BIODIVERSITY FUNDING IN FY 2007 (DA funds only)	**$176,197,511**	

* Development Assistance (DA), Economic Support Fund (ESF), Andean Counterdrug Initiative (ACI), Child Survival and Health (CSH)

Table 4. U.S. Government International Biodiversity Funding, FY 2007*

Program or Funding Type	USG Department or Agency	FY 2007 Funding for Biodiversity Conservation (US$ millions)
Biodiversity Conservation Activities	U.S. Agency for International Development	183.7
Global Environment Facility	U.S. Department of Treasury	80
Tropical Forest Conservation Act	U.S. Department of Treasury	20
International Affairs Division	U.S. Fish and Wildlife Service	10
Office of International Programs	U.S. Forest Service	6.88
Multinational Species Conservation Funds	U.S. Fish and Wildlife Service	6.4
International Conservation Programs	U.S. Department of State	6.35
Neotropical Migratory Bird Conservation Act	U.S. Fish and Wildlife Service	3.94
International Program	U.S. National Park Service	0.85
	TOTAL	**318.12**

* This list is not necessarily comprehensive

Latin America and the Caribbean Regional Sustainable Development (LAC/RSD) program – managed activities accounting for another 17 percent, investing much of their funds into the highest priority countries, from terrestrial areas in the Democratic Republic of Congo and Peru to the undersea biodiversity of Indonesia and the Philippines.

An analysis of the distribution of biodiversity earmark DA funds to country programs in FY 2007 (excluding regional and central programs, development assistance appropriated to address Dominican Republic – Central America – United States Free Trade Agreement (CAFTA-DR) environmental issues, and non-DA funds), reveals that countries which rank high for biodiversity importance were more likely to receive funding and to have relatively more funds allocated than lower-ranked countries.

Eight of the world's ten highest ranked countries and seven of the ten second-highest ranked countries were allocated biodiversity funding in FY 2007. These first- and second-ranked countries account for two-thirds of biodiversity funding allocated to bilateral missions. Of the two "megadiverse" countries which were not funded, Russia does not receive DA funds, and the Democratic Republic of Congo hosts CARPE, USAID's largest regional environmental initiative.

Twenty countries are ranked as having tertiary importance, and 60 percent of these received support for biodiversity activities, comprising 29 percent of bilateral biodiversity funds. Of the remaining 113 countries ranked lowest priority for biodiversity, many have endangered species and places, and important opportunities to improve habitats and management practices to the benefit of wildlife and people. Five percent of biodiversity funding supported activities in these lower priority countries.

ANNEX I. DEFINITIONS

Key Issues

The most important definitions related to this report are those which determine if a program or activity meets the USAID definitions for Biodiversity or Tropical Forests, according to Agency Operational Plan and Performance Reporting Guidance:

Biodiversity Key Issue
This Key Issue cuts across Functional Objectives and meets a Congressional Earmark. Activities have biodiversity conservation as an explicit objective in natural and managed terrestrial and aquatic ecosystems. In addition, activities are identified through an analysis of the threats to biodiversity and have associated indicators for biodiversity conservation. Activities may be site-based or not site specific, such as policy level initiatives. Any site-based work is implemented in biologically significant areas. *Ex situ* conservation of wild species, and their germplasm, may also be included when explicitly linked to biodiversity conservation.

Tropical Forests Key Issue*
This Key Issue provides input to an annual reporting requirement to Congress. Activities aimed at the conservation and sustainable management of forests growing in tropical regions as well as the use of trees in tropical production systems which increase forest cover and improve soil and water functions or other ecosystem services, while contributing to economic growth. Activities include research, analysis, and capacity building to improve planning, protection, and management of natural forests and related benefits including timber, non-timber forest products, wildlife and ecosystems services such as carbon sequestration; rehabilitation of degraded or deforested lands through reforestation or aforestation; establishment of woodlots and agroforestry systems which reduce pressure on forests though alternative livelihoods; and interventions related to processing, trade and markets that have a positive impact on forests. Targeted sites may range from small scale management units to larger scale trans-boundary watersheds and landscapes.

* Non-tropical forestry is described in this report for the countries of Afghanistan and Nepal. Activities meet the Tropical Forests definition except for taking place in tropical regions.

Glossary of Terms

Agro-ecosystem
A mix of cultivated and uncultivated land (including natural habitat) that functions together as an ecosystem.

Agroforestry
Forestry that combines agriculture and forestry technologies to create more integrated, diverse, productive, profitable, healthy, and sustainable land use systems.

Aquaculture
The cultivation of aquatic plants or marine or freshwater food fish or shellfish, such as oysters, clams, salmon, and trout, under controlled conditions.

Biodiversity
Short for "biological diversity," it is the variety and variability of life, including the diversity of genes within species, the diversity of species, the diversity of communities and ecosystems, and the diversity of ecological processes.

Buffer zone
An area adjacent to a protected area on which land use is partially restricted. This gives an added layer of protection to the protected area while providing benefits to neighboring rural communities.

Carbon sink
An area that absorbs more carbon than it releases. Carbon sinks can be found in forests, soils, and the oceans. Carbon sinks help regulate climate by reducing the release of CO_2, a potent greenhouse gas, into the atmosphere. The process or service of absorbing carbon is known as *carbon sequestration*.

Certification
An independent, third-party assurance that a forest or forestry/agroforestry operation meets the responsibility standards set by a certification program. Companies apply voluntarily, and the government plays no direct role in the certification process. Timber from forests and forestry operations certified as 'sustainable' can command a higher price in the marketplace. Coffee or chocolate from a certified agroforestry operation can be sold for more money because it meets social (eg. "fair trade" chocolate) and/or environmental (eg. "organic" or "shade grown" coffee) responsibility standards important to consumers.

Community-based natural resource management
A management and governance structure in which the communities that use or benefit from a resource are directly involved in its management. CBNRM activities may include sustainable resource exploitation, support for small enterprises which rely on the resource (eg. tourism or crafts), enforcement, and benefits sharing.

Conflict timber
Timber resources that finance or sustain conflict; alternatively, timber resources that lead to conflict between competing groups or communities.

Ecosystem
A dynamic system of interactions among all of the species inhabiting an area and the non-living, physical environment. Ecosystems vary spatially and change with time, and no ecosystem is closed with respect to exchanges of organisms, matter, and energy. Priority areas or sites for conservation exist within ecosystems.

Ecotourism
Responsible travel to natural areas that conserves the environment and improves the well-being of local people.

Endemic species
A species that is native to only one geographic area of the world.

Environmental service
An ecological process from which humans benefit, also known as an *ecosystem service*. For instance, forests provide several key environmental services such as providing clean water and regulating climate. Financial incentives to conserve the natural resource base required by ecological processes are collectively known as Payments for Ecosystem (Environmental) Services or PES.

Forest concession
The award of forest harvesting rights to individuals, private companies and/or communities. In practice, the geographic area in which forest exploitation rights are granted to a concessionaire for a certain period of time.

Land tenure and property rights
Land tenure is historically the right to hold and use land on behalf of the State (or the Crown), but today effectively means ownership and is frequently preceded by the word secure. Secure land tenure is ownership with formal title, and protection from taking by the State or other entity without due process and just compensation. Property rights in the natural resources context are assurances that an owner can use or transfer use of trees, fish, wildlife, water or other resources as they see fit, within the bounds of the law and without causing undue hardship on others.

Landscape scale conservation
A conservation approach in which activities are planned and managed for an entire ecosystem, watershed or other natural unit based on biodiversity priorities and ecological, social and political factors. Landscape scale conservation emphasizes threat assessment and planning across many development sectors.

Mariculture
The cultivation of marine organisms in their natural habitats, usually for commercial purposes.

Microenterprise
A small-scale business, often owner-operated with few employees.

Nature, Wealth and Power
An approach or framework for achieving successful natural resource management, developed over many years by USAID and partners and formally articulated in a report in 2002. The "Nature, Wealth and Power" approach involves an explicit consideration of the environment, economic flows and governance structures when planning or assessing a natural resource management program.

Non-timber forest product
Any organic material other than timber that is extracted from forests for human use.

Protected area
An area of land and/or sea dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and that is managed through legal or other effective means (IUCN World Commission on Protected Areas).

Reduced Impact Logging (RIL)
A method of harvesting trees with minimal residual damage and degradation of a forest site, which is achieved through the careful planning and design of the pre-harvest, harvest, and post-harvest stages of timber production.

Smallholder
A person owning or renting a piece of land under 50 acres that is used for cultivation.

Sustainable development
Development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development). Sustainable development activities are carried out such that natural resources are not depleted and therefore are available for future use.

Sustainable forest management
Management regimes applied to forestland that maintain the productive and renewal capacities as well as the genetic, species, and ecological diversity of forest ecosystems (USDA Forest Service).

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