



USAID
FROM THE AMERICAN PEOPLE

BIODIVERSITY CONSERVATION AND FORESTRY PROGRAMS

Annual Report



OCTOBER 2009



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Front Cover: Photo by Eric Stoner, USAID

FIRE WARRIORS: Twenty-seven indigenous young people from four ethnic groups received training in fire preparedness techniques and fire safety measures in the Capota-Jarina Kayapo Indigenous Reserve in Mato Grosso, Brazil.

Back Cover: Photo by Vincent Lumbab, DAI

SETTING THE LIMITS: Members of the Pilar Municipal Marine Park in Cebu, Philippines, regularly check and replace marker buoys damaged by wind and waves. Marine sanctuaries in the park have increased the catch of local fishermen.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....v

**CONSERVATION AND CRISIS: A RESILIENT RESPONSE
TO FOOD INSECURITY AND CLIMATE CHANGE..... i**

AFRICA.....7

Africa Regional Program	8
Central African Regional Program for the Environment	9
USAID/East Africa	12
USAID/Southern Africa.....	13
USAID/West Africa.....	14
Democratic Republic of Congo.....	16
Ethiopia.....	17
Ghana.....	17
Guinea.....	19
Kenya.....	20
Liberia.....	22
Madagascar.....	23
Malawi.....	26
Mali.....	28
Mozambique.....	29
Namibia.....	31
Rwanda.....	33
Senegal.....	34
Sierra Leone.....	36
Sudan.....	37
Tanzania.....	39
Uganda.....	41

ASIA AND THE MIDDLE EAST43

Asia Regional Program.....	44
Regional Development Mission for Asia.....	44
Afghanistan.....	46
Bangladesh.....	48
Cambodia.....	49
Indonesia.....	50
Lebanon.....	52
Nepal.....	53
Philippines.....	54

EUROPE AND EURASIA	57
Georgia	58
Russia	59
LATIN AMERICA AND THE CARIBBEAN.....	61
LAC Regional Sustainable Development Program.....	62
Caribbean Regional Program	63
Central America and Mexico Regional Program.....	65
Bolivia.....	67
Brazil.....	68
Colombia.....	70
Dominican Republic.....	71
Ecuador	73
El Salvador.....	74
Guatemala.....	76
Haiti.....	78
Honduras.....	79
Jamaica	80
Mexico	82
Nicaragua.....	83
Panama.....	84
Paraguay.....	86
Peru.....	87
CENTRALLY FUNDED PROGRAMS	89
EGAT/NRM/Biodiversity Team	89
EGAT/NRM/Forestry Team	92
EGAT/NRM/Land Resources Management Team.....	93
EGAT/NRM/Water Team.....	96
EGAT/Agriculture.....	97
EGAT/Environment and Science Policy.....	98
DCHA/Conflict Management and Mitigation	100
Global Health/Population and Reproductive Health	101
Tropical Forest Conservation Act.....	103
USAID BIODIVERSITY AND FORESTRY FUNDING OVERVIEW ..	105
Biodiversity Budget.....	105
Forestry Budget	110

ANNEX I. DEFINITIONS..... 113

MAPS

Africa7
Forest Cover Change in the Congo Basin 10
Asia and the Middle East.....43
Europe and Eurasia.....57
Latin America and the Caribbean61

FIGURES

Figure 1. USAID Funding for Biodiversity by Region in FY 2008105
Figure 2. USAID Funding of Biodiversity Activities, 1987 to 2008.....106
Figure 3. USAID Funding for Forestry by Region in FY 2008..... 110
Figure 4. USAID Funding of Forestry Activities, 1987 to 2008..... 111

TABLES

Table 1. U.S. Government International Biodiversity Funding FY 2008107
Table 2. USAID Funding for Biodiversity and Forestry Programs, FY 2008..... 108
Table 3. U.S. Government International Forestry Funding, FY 2008..... 112

ABOUT THIS REPORT

This report describes the United States Agency for International Development's (USAID) biodiversity conservation and forestry programs for fiscal year (FY) 2008. 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 importance of forests to people, plants and wildlife. The two program areas are highly interrelated: much of USAID's forestry work includes a biodiversity conservation objective alongside economic growth goals, and USAID's biodiversity efforts are often focused on improved management and conservation of forest ecosystems.

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 Congressional 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. In the case of forestry, sustainable forest management provides local jobs in logging and wood processing, brings in tax revenue and foreign investment, and can help secure resource rights for rural and indigenous communities. Economic growth and clear land tenure in turn provide incentives for maintaining standing forests which can continue to provide ecological services and products such as climate change mitigation, freshwater, fuel wood and food.



EXECUTIVE SUMMARY

USAID country, regional and global programs directly support forestry and biodiversity conservation in 60 countries around the world. In FY 2008, the Agency invested \$202 million toward biodiversity, of which \$193.5 million was Development Assistance (DA), exceeding the Congressional biodiversity earmark of \$191.5 million.¹ USAID also supported almost \$114 million in sustainable forestry and forest conservation activities, of which 89 percent included biodiversity objectives. These investments improved management across approximately 117 million hectares of biologically significant area, a six percent increase over FY 2007.

The vast majority of funds were distributed by USAID's overseas missions, as described in the chapters on Africa, Asia and the Middle East,

USAID programs improved management across 117 million hectares, an area the size of Texas, California, Massachusetts and Vermont combined.

Europe and Eurasia, and Latin America and the Caribbean. Remaining funds were managed centrally from USAID's Washington headquarters to provide overall leadership, identify and share best practices and lessons learned, 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 2008 activities are highlighted on the following pages.

¹ The biodiversity earmark was \$195 million in DA funds in FY 2008, but after a U.S. Government-wide rescission for other priorities it was lowered to \$193.5 million. Three missions reprogrammed (with Congressional notification) \$2 million in biodiversity funds to address the food crisis, effectively reducing the earmark to \$191.5 million.

PLAINS ZEBRA grazing on the Nyika Plateau, Malawi.

PHOTO: ANDREW WATSON





REEDBUCK IN MALAWI: Communities around Nyika National Park recently received co-management rights and are now engaged in bee-keeping activities that contribute to their eligibility for carbon credit payments based on their forest conservation achievements. Community-based conservation efforts have resulted in reduced poaching and recovering wildlife populations.

PHOTO: ANDREW WATSON

Africa

- Investments in infrastructure, game restocking, community mobilization, and law enforcement are helping revitalize Majete Wildlife Reserve in Malawi, where 19 community-based organizations co-manage the reserve with the government.
- Over 70,000 indigenous shade trees were planted in Côte d'Ivoire to partially reestablish natural forest cover and improve management of more than 13,000 hectares of cacao agroforestry systems, a prerequisite to eco-friendly chocolate certification and higher prices.
- The principle biodiversity threats of fire, poaching, and illegal mining in Rwanda's Nyungwe Forest National Park have been reduced by 46 percent since USAID support began in 2006, including almost 20 percent in the past year alone.
- Nature-based enterprises in Kenya earned \$1.27 million for rural households and four ecotourism agreements worth more than \$2.5 million were signed between community groups and the private sector.
- Senegal issued a decree that requires charcoal to come from forests with established management plans, such as community forests where local charcoal workers have tripled their earnings.
- Tourism to three protected areas in Uganda's biodiverse Albertine Rift increased about 20 percent in FY 2008, providing a sustainable source of revenue for improved park management and increased income for local communities.
- Ten wildlife management associations in Tanzania attained user rights over wildlife management areas and registered \$3 million in private sector contracts for conservation-friendly enterprises, such as ecotourism.

Asia and the Middle East

- USAID assistance helped place 2.4 million hectares of biologically significant forests under improved management by 20 timber enterprises committed to sustainable forestry in Indonesia, Malaysia, and Vietnam.
- In southern Lebanon, local partners are learning how to rehabilitate selected cedar reserves and other forested areas damaged by cluster munitions and related remnants of conflict.
- Local governments and private sector groups in the Philippines set up a tourist fees system which collected over \$200,000 in 10 months for conservation and management activities.
- Over 1,000 hectares of natural pistachio forests in Afghanistan now receive community protection from encroachers, animals, illegal cutting and early harvesting of nuts, resulting in a 50 percent increase in productivity.
- Partnerships with 25 international and local NGOs are directly conserving 950,000 hectares of Indonesian forest, contributing to conservation of 40 percent of all orangutans found in the country.
- Support to counter illegal logging and wildlife trade in Cambodia helped forest rangers arrest 746 suspects and bring 22 cases to court, sending a clear message to criminals that environmental laws are being enforced.



PHOTO: PEUN PA FOUNDATION

OVER 200 BIRDS were confiscated during a raid at one of the biggest illegal wildlife markets in Thailand - Chatuchak Market in Bangkok. The USAID-supported ASEAN Wildlife Enforcement Network in Southeast Asia is improving law enforcement throughout the region.

Europe and Eurasia

- Support to the USDA Forest Service facilitated transboundary dialogue and cooperation on the Russia-China border to promote sustainable forest management and reduce illegal logging.
- USAID assisted with the designation of the new 25,000-hectare Tbilisi National Park in Georgia, which was ratified by Parliament in FY 2008.

Latin America and the Caribbean

- El Salvador declared its first marine protected area, Los Cobanos, a 21,000-hectare park on the west coast of the country.
- Municipal water companies in Quito, Zamora, Tungurahua, Paute, and Loja will finance endowments that preserve Ecuador's forests and the clean and plentiful water they provide.

- Community foresters in Guatemala's Maya Biosphere Reserve pilot-tested a satellite-based "early warning system" to identify areas susceptible to forest fires and prioritize patrols by local fire brigades.
- In Bolivia, USAID helped build more than 50 strategic alliances between indigenous or community forest operators and the private sector, and supported the allocation of 350 land titles to 4 million hectares of forest.
- A collaboration between conservation organizations and micro-finance institutions helped Mexican fishermen pursue alternative employment and thereby reduce unintended by-catch of the vaquita, a critically endangered porpoise endemic to the Gulf of California.
- An agreement with local developers is promoting sea turtle-friendly development near a national wildlife refuge on Nicaragua's Pacific Coast.
- In Brazil, 25 NGOs improved natural resource management and monitoring across more than 2.5 million hectares, mostly within indigenous lands.

Central Programs

- Wal-Mart, Williams-Sonoma and Procter & Gamble joined the Global Forest and Trade Network, which connects producers of sustainably-sourced wood products with conservation-minded retailers and their customers.



PHOTO: NICK HOBGOOD

UNDERWATER BOUQUET: The Mesoamerican Reef provides critical protection for the mainland against hurricanes, and in Belize alone supports about \$200 million in annual revenue from tourism and fishing. USAID programs have improved fishing policies which protect fish which eat algae and maintain healthy coral.

- Protection of land rights and better governance by the Awa and Cofan indigenous groups are mitigating conflicts and maintaining cultural and territorial integrity despite threats from illegal logging, coca cultivation and drug trafficking in Colombia and Ecuador.
- USAID and Johnson & Johnson launched a three-year, \$3 million initiative to promote joint health and biodiversity conservation activities, such as family planning to reduce population pressure on natural resources in Kenya, Nepal, and the Democratic Republic of Congo.
- New and ongoing activities of the Global Conservation Program resulted in better management of over 20 million hectares of biologically significant land and sea, and almost 20,000 people trained in natural resources management worldwide.
- Madagascar's first combined forest carbon and biodiversity project was brought to the international voluntary carbon market in 2008, including a precedent-setting agreement that secures most revenue from carbon sales for the communities that live in and manage the Makira watershed.

Just as most FY 2008 highlights are the result of years of prior investment, activities during that fiscal year are generating results in FY 2009. For example, USAID support for community management and World Heritage Site status in the Band-e Amir region of Afghanistan culminated in an announcement on Earth Day of 2009 (April 22) declaring Band-e Amir National Park, the country's first. Prominent results like this are included where available throughout these pages, helping make this report the most current overview available as of October 2009.

CONSERVATION AND CRISIS

A RESILIENT RESPONSE TO FOOD INSECURITY AND CLIMATE CHANGE

The global economy depends heavily on the global ecology: forests and other ecosystems provide us with food, water, shelter, and many other services that underpin livelihood and well being. Growing demand for these ecosystem services in the last 50 years has put a strain on the natural resource base. From 1960 to 2000, world population doubled from three to six billion people and the global economy grew three times as fast. In the same period, food production increased five fold, water use doubled, wood harvests for paper tripled, and timber production increased by half. Today, 25 percent of the surface of the earth is cultivated, and an estimated 25 percent of commercially exploited

marine fish stocks are overharvested. In part, these trends have accelerated biodiversity loss to 1000 times the historic rate, causing scientists to characterize the modern period as the sixth great extinction event. Ten to 30 percent of mammals, birds and amphibians are currently threatened by people's use of resources.

Even as the global economy shows signs of recovering from the financial crisis that started in 2008, two other crises threaten the resources on which wealth and prosperity depend: food security and global climate change. By the year 2050, food production will need to double to keep pace with population and economic growth. Recent riots

over food shortages and rising prices put a spotlight on insecurity and the notion that economies and agricultural systems must become more sustainable, using resources in a way that provides for future generations. Global climate change and its known and predicted impacts underscore this point: warming temperatures and increasingly unpredictable weather patterns threaten to erode the resource base by affecting what we grow, where we fish, and where wildlife live.

USAID recognizes that conservation and sustainable use of biological diversity and forests is a pathway to economic and social development, reducing conflict (including cross-

ISLAND IN A SEA OF... TEA? Rwanda's Nyungwe Forest National Park is the largest remaining tract of Afromontane forest in the world and supplies 70 percent of Rwanda's water, making it critical for national and regional food security and climate change mitigation.

PHOTO: ANDREW TOBIASON



border disputes) over limited resources, and building resilience and recovery from climate change and food security. For example, forests are particularly important for their role in removing carbon dioxide from the atmosphere and storing carbon for long periods. Forests also provide a critical service of regulating the quality and quantity of freshwater available to people, wildlife, industry, livestock, crop irrigation, and hydropower. Upland forests and coastal mangroves are tied to the health of marine ecosystems that provide a major source of protein and livelihoods for 2.6 billion people in developing countries.

USAID's leadership and experience with biodiversity conservation and forestry provide models for reversing, preventing or minimizing

food insecurity and climate change impacts. Successful programs around the world are helping to maintain the ecological services and products upon which we all depend. The Agency is expanding its capacity to develop, manage and scale up such programs through the Development Leadership Initiative, which is currently planning to add 73 new environment officers to USAID's Foreign Service. Many of these officers will have expertise in priority program areas like global climate change, water and biodiversity,

Food security depends on forests and biodiversity

The food security crisis spotlights the importance of keeping growth sustainable through appropriate land

and resource use choices. About one billion people now suffer from chronic hunger, with the proportion of undernourished people worldwide rising from 16 percent in 2005 to 17 percent today. USAID recognizes that conservation and natural resource management are critical approaches to improving food security.

Historically, intense competition for land and resources has often come at the expense of biodiversity and forest conservation. USAID's landscape and seascape scale approaches allow planners and stakeholders to assess trade-offs and determine appropriate and sustainable uses of natural resources and ecosystems. For instance, conserving wetlands and riparian vegetation maintains water supplies essential to agriculture, wild plants and animals. Through biodiversity conservation, USAID preserves wild relatives of crops that are needed for the regular genetic reinvigoration of these cultivars. Biodiversity conservation mitigates the impact of invasive species that undermine agricultural production, and it nurtures the wild pollinators that are essential to crop reproduction.

USAID is helping mitigate pressures on the natural resource base while also improving agricultural production. For example, USAID has promoted the cultivation of organic mangos in Mexico to reduce runoff harmful to coastal mangroves while increasing incomes of rural producers who receive higher international prices for organic fruit. Other USAID solutions include creating and supporting marine protected areas and no-take zones along coasts in Nicaragua to protect young fish and invertebrates



PHOTO: NICK HOBGOOD

SOFT CORAL like this species is commonly found attached to rocky outcroppings in Haiti. Marine ecosystems provide much of the protein and income for 2.6 billion people in the developing world.



SRALAO TREES in Mundul Kiri, Cambodia provide good habitat for numerous species and are valuable timber. This community forest is threatened by rubber plantation owners who are now slowly encroaching.

PHOTO: BORETH SUN

(as well as helping preserve non-target species such as turtles, whales and sea birds), and improving fishing methods and policies in countries such as the Philippines to prevent reef destruction, reduce catch of non-target species, and remove regulations that encourage fishermen to overharvest.

In the short term, food insecurity puts pressure on wild foods, from fish and bushmeat to wild fruits and plants, along with additional pressure to clear new land for fields and harvest fuelwood for cooking. USAID develops and supports approaches for sustainable harvest and improved

marketing of natural products to improve management and contribute to household food supply and revenues. For instance, USAID/ Mali works with the Peace Corps to help rural households manage the shea tree (*Vitellaria paradoxa*). Its valuable nuts are used for food as well as trade to bring in much needed income, especially to women

Resilient responses to climate change

Climate change affects all countries and development sectors. Changes in the frequency and force of

floods, droughts and storms as well as rising temperatures can reduce agricultural yields, expand deserts, alter the ranges of disease vectors, and shift the migrations of species. Development choices and options can moderate or intensify the impacts of these changes.

Forests are critically important to alleviating climate change impacts by serving as carbon sinks and reducing stress on ecosystems. It is estimated that approximately 20 percent of annual global carbon emissions result from land-use changes to forested ecosystems. USAID seeks to conserve



PHOTO: DAI

FARMER FIELD SCHOOL in East Nimba Nature reserve, Liberia. USAID's sustainable tree crops program promotes alternative incomes through bird and antelope friendly shade grown cocoa in the buffer areas of the reserve.

ecosystems, especially forests, which remove carbon dioxide from the atmosphere and thereby mitigate climate change. USAID applies many approaches to conserving ecosystems, including improving protected area management, sustainable forest management, and reduced impact logging. In Guatemala, Indonesia, Jamaica, Russia, Rwanda and other countries, fire control is a key strategy: fire alerts, fire management plans, alternatives to slash-and-burn agriculture, and honey collection without smoke have all reduced the number and extent of accidental forest fires.

USAID emphasizes capacity building to support community-based forest and natural resource management and conservation as approaches to conserving carbon-sequestering ecosystems. For instance, in Makira, Madagascar, USAID supports an innovative approach to carbon marketing that sets aside the majority of benefits from the sequestered forest carbon for local communities. Other models for valuing and monetizing carbon are being developed in Malawi, Uganda and Guatemala. In Brazil and Bolivia, USAID assists indigenous peoples to strengthen their rights to

land and resources, empowering communities to better manage biodiversity and forests in the face of climate impacts, and positioning them to benefit from payments from carbon markets.

Knowledge for resilience

As the world's leading development and humanitarian agency, USAID is adept at handling crisis and displacement and is bringing that expertise to bear on biodiversity and natural resource management, as well as on the food security

and climate change crises. USAID partners, from national governments to local communities, are increasing their understanding of the connections among climate change and biodiversity conservation, food security, natural resource management and governance. This understanding is yielding an emphasis on cross-cutting, integrated programming that addresses underlying drivers of resource degradation.

Knowledge of the links between healthy and resilient ecosystems and healthy institutions is expanding. USAID has found that investments in improved governance of natural resources pay off not only for

biodiversity but for people and institutions. After the protracted rebellion in Nepal, it was discovered that community forestry user groups, in which USAID invested heavily over the years, were a nucleus of stability even in Maoist controlled zones. During the recent political crisis in Kenya, which had much to do with land rights, USAID carried out an analysis of how land reforms could impact important areas for biodiversity and is taking steps to help local people strengthen their rights and build systems for co-management of forests, wildlife and marine areas. As Liberia is emerging from decades of war and unrest, USAID

is helping assure that development rests on a foundation of sound management of forests and biodiversity, including strengthening government institutions such as the Forest Development Authority and helping local communities to manage forests.

Evaluation and learning are central to USAID's approach: rigorous monitoring, adaptive management, and timely assessment are all promoted, while lessons learned are captured to inform future efforts. As a global institution, USAID works to achieve results at wide scales – moving up from pilot projects to the national level, from the national to the regional



FOOD FOR THOUGHT: Maintaining what little forest remains in Haiti involves increasing the productivity of farms so people produce more food on less land, such as this aquaculture and vegetable farm in the northern town of Marmelade.

PHOTO: NICK HOBGOOD

and global levels, and from one set of innovative partners to the entire conservation and development community. An evaluation of USAID's Global Conservation Program (GCP) in 2008 found that programs like GCP can assist the learning process by supporting long-term strategies, facilitating inter-institutional learning and sharing of state-of-

the-art approaches, models, and practices and supporting NGO partners in the institutionalization of these new approaches.

Sharing lessons promotes cross-fertilization. Best practices in developing marine protected areas were distilled from the experiences of four GCP partners and are now

guiding aspects of U.S. engagement in the Coral Triangle Initiative. The successes and lessons from regional biodiversity programs such as the Central African Regional Program for the Environment (CARPE) and the Initiative for Conservation in the Andean Amazon (ICAA) informed the design of a new regional program for the Upper Guinea Region of West Africa, Sustainable and Thriving Environments for West African Regional Development (STEWART), now being implemented by the USDA Forest Service and other USAID partners.

From one perspective, sustainably managing forests and conserving biodiversity are about saving nature, from the tiniest of insects to the most magnificent of trees, often in far-off places. These are also approaches to saving people, preserving the essential systems that provide income, nourishment, and health. Improvements in economic growth, governance, and dignity benefit not only the millions of people who participate in programs but everyone who values a safe and secure world with robust and fair trade. The most important thing saved may be time: time to adjust to climate change, time to rethink how food is produced, time to prevent any more extinctions of species still undiscovered. USAID will continue to develop creative, integrated biodiversity and forestry programs which respond to even the largest and most challenging crises of the 21st century.



PHOTO: RAINFOREST ALLIANCE

A FIRE LADDER in a forest concession in Petén, Guatemala helps managers spot and react to fires faster.

AFRICA

USAID country and regional programs funded significant biodiversity conservation and forestry activities in over 25 countries throughout Africa in FY 2008.

Africa is a continent of mighty rivers and stunning wildlife. In the south, countries along the Zambezi support over half the elephants on Earth, while the swollen Congo River drains the second largest rainforest on earth, home to four kinds of great ape. The Mara River dividing Kenya and Tanzania is crossed by one million wildebeest every year, and Tano River on the boundary of Ghana and Côte d'Ivoire hosts some of the last, best primate habitat in West Africa.

An estimated 70 percent of Africans depend on natural resources for their livelihoods, and the richness and diversity of the continent's ecosystems provide global benefits. In FY 2008, USAID supported

several programs working to promote sustainable use of these resources, from the mountain forests of Madagascar and Rwanda to the coasts of Mozambique and Ghana. Responsible logging, community forestry, law enforcement, improved agricultural methods, payments for ecosystem services and ecotourism are just a few of the approaches put in place to address biodiversity threats driven by poor governance, conflict, and food insecurity.



ELEPHANTS along the Chobe and Zambezi rivers, Botswana.

PHOTO: MICHIEL TERELLEN



Africa Regional Program

Office of Sustainable Development

The Office of Sustainable Development (AFR/SD) in USAID's Bureau for Africa 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, collaboration with U.S. conservation organizations, and timely and thoughtful biodiversity program assessment and planning for USAID's missions in sub-Saharan Africa.

AFR/SD manages support to the Great Apes Conservation Fund, implemented by the U.S. Fish and Wildlife Service. In 2008, this program distributed \$2.4 million of USAID funds through 25 grants, leveraging an additional \$2.7 million of matching and in-kind funds to directly support great ape conservation. Activities in FY 2008 resulted in a dramatic decline in illegal wildlife trafficking in Cameroon, dawn-to-dusk protection of mountain gorillas in Rwanda's Volcanoes National Park, and reduced risk of catching and spreading the deadly Ebola virus to improve both human and wildlife health in Central Africa.

The Biodiversity Analysis and Technical Support (BATS) 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. In FY 2008, BATS completed two major assessments of USAID's thirty year investment in conservation on the continent. *Protecting Hard Won Ground: USAID Experience and Prospects for Biodiversity Conservation in Africa* describes the history, lessons learned, and future challenges of USAID involvement with biodiversity conservation in Africa. *USAID Support to the Community-Based Natural Resource*

BATS also implements or supports mandatory biodiversity and tropical forestry assessments in African countries. Chemonics and partner USDA Forest Service International Programs (USFS-IP) completed ten such assessments and two environmental threats and opportunities analyses (ETOAs) in 2008, which guide development of USAID activities according to a country's natural assets, challenges to sustainable and productive use, and national priorities.

The Bureau for Africa funded USFS-IP to provide technical assistance on natural resource management to

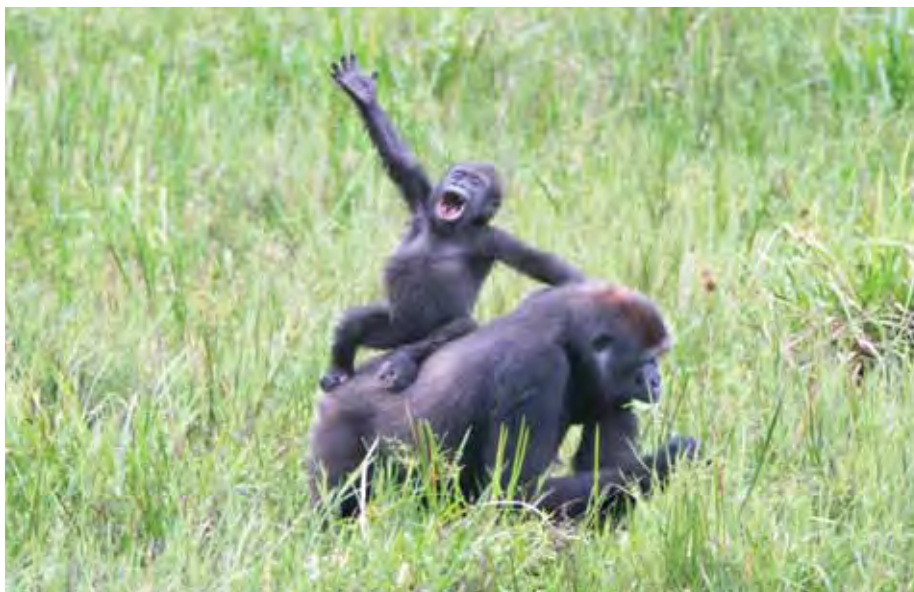


PHOTO: JULIE LARSEN MAHER, WCS

GREATER APES: Years of conservation and monitoring support to the Wildlife Conservation Society by USAID's CARPE program, the U.S. Fish and Wildlife Service (facilitated by USAID's Africa Regional Program), and other donors led to an announcement in August 2008 that the population of western lowland gorillas in northern Republic of Congo may be as large as 125,000, nearly double the previous estimate.

Management Program in Namibia: LIFE Program Review examines in detail the results from 15 years of investment in one of the Agency's most widely cited biodiversity and economic growth success stories.

missions and their partners, including numerous assessments, trainings, and program design and implementation activities. For example, USFS-IP supported a workshop on alternative concession procedures and forest revenue systems in Southern Sudan,

and funded local organization participation in the 16th African Forestry and Wildlife Commission. USFS-IP also advised on: ecotourism development in Nyungwe Forest, Rwanda; water service provision to local communities in Ugandan Watersheds; regional wildfire management training for Angola and Namibia; and protected area management development in Namibia and Zambia.

The Africa Biodiversity Collaborative Group (ABCG) was co-funded by the Bureau for Africa, 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 the continent. In 2008, ABCG conducted analyses and delivered workshops on emerging infectious diseases and their impact on conservation, bushmeat trade in East Africa, and HIV/AIDS and natural resource management linkages. Two workshops focused on planning for the future of biodiversity conservation. *Scenario Planning for Biodiversity Conservation in Africa: Mapping Future Trends and Interventions in the Next Ten Years* was held in Washington, DC to identify drivers of change and to map trends. *Scanning the Horizon: The Future of Biodiversity in Africa in the Face of Change*, was held in Dar es Salaam, Tanzania, and focused on elaborating an African perspective on biodiversity conservation and identifying specific recommendations for USAID, ABCG partners and other groups.

Through the Environmental Assessment Capacity Building (ENCAP) project, USAID supported environmental reviews and country-specific training for staff and development partners on Agency environmental procedures. A portion of this work supports the substantial biodiversity and forestry portfolio of missions in Africa. For example, ENCAP's *Environmental Guidelines for Small-Scale Activities in Africa* includes chapters on community-based natural resources management, ecotourism, fisheries, and forestry in addition to guidance on potential environmental impact and mitigation measures from other development sectors.

Central African Regional Program for the Environment

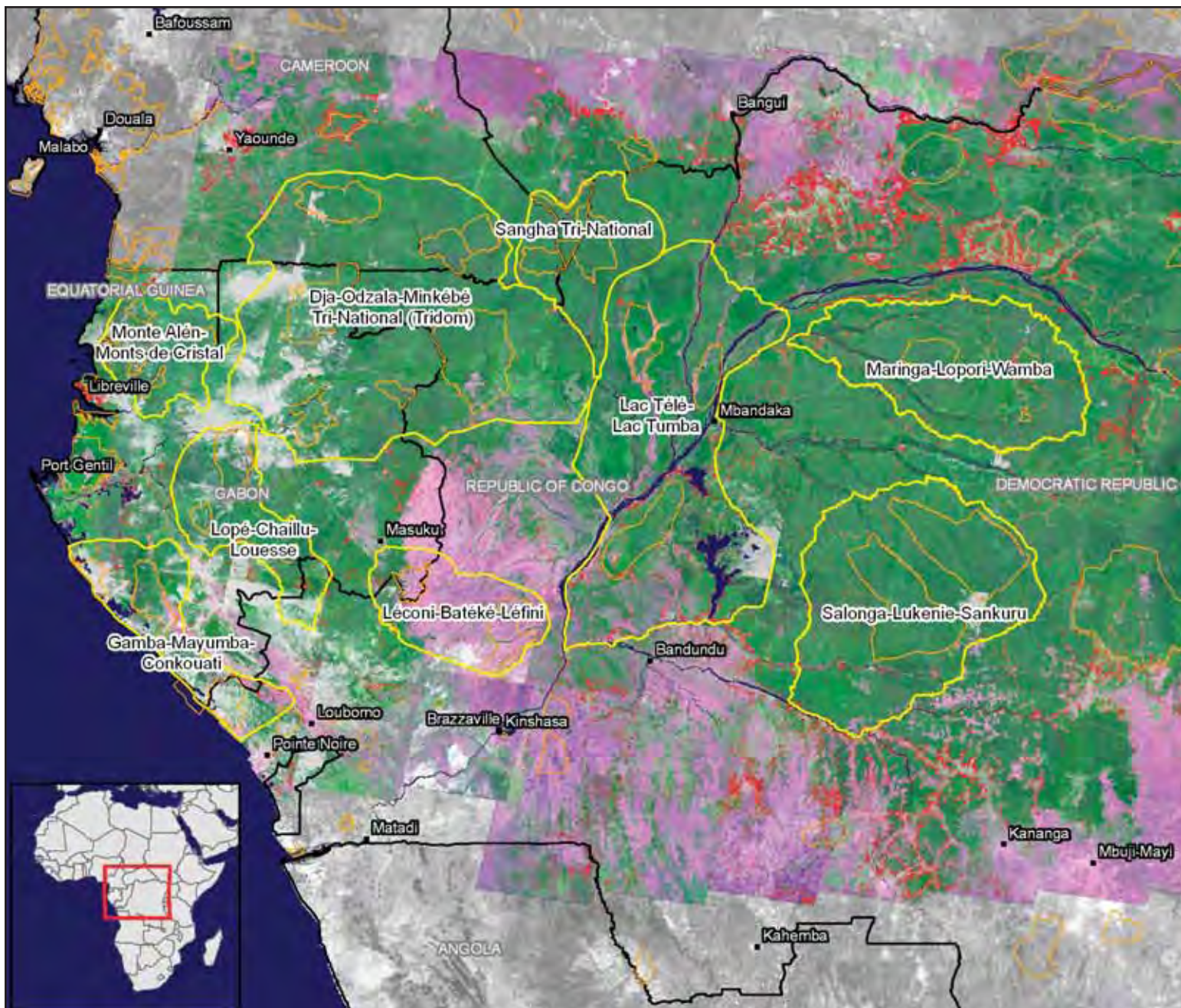
Landscape-level Conservation and Forest Management in the Congo Basin

The Congo River basin includes a massive tropical forest rich with unique and globally important wildlife. The abundance of natural resources such as water, trees, oil and minerals could generate economic growth and improved well-being for the 80 million people residing in the region, but conflict, corruption, and other factors have interfered with development. Communities continue to rely on subsistence agriculture and forest products, including wildlife, for food and income, creating an unsustainable situation that threatens biodiversity and human welfare. USAID's Central African Regional Program for the Environment (CARPE) is dedicated to reducing the rate of forest degradation

and loss of biodiversity by supporting increased local, national, and regional natural resource management capacity in the region. Conservation and sustainable development activities are focused in 12 high-biodiversity landscapes, complemented by national and regional information systems and policy efforts.

Working with multiple partners, CARPE is making progress in three integrated components: increasing the area of tropical forest under improved management; creating and deploying natural resource monitoring tools; and improving the legal, regulatory and policy framework at national and regional levels for improved forest governance. A "people-centered" strategy emphasizes comprehensive stakeholder participation in deciding resource use priorities while creating institutional structures to manage these large forest tracts. In this way governance is strengthened by increasing the capacity of local civil society, communities and national governments to manage natural resources more effectively. Reform of legislation, policies and regulations creates a stronger overall enabling framework for reaching these conservation goals.

CARPE's approach to improving tropical forest management is to create large-scale land use plans which establish resources rules and use rights for three general types of "macro-zones," which are further subdivided into "micro-zones." In each zone a systematic analysis of threats and corresponding management actions is used to reconcile conservation goals with a variety of forest uses such as farming, forestry and hunting.



DEFORESTATION TRACKER: USAID/CARPE supported work by NASA and the University of Maryland to map forest cover change in the Congo basin from 2000 to 2005. Satellite data reveal deforestation (shown in red) was highest in northern and eastern Democratic Republic of Congo. CARPE focuses effort in 12 high-biodiversity landscapes (outlined in yellow).

Land use planning and management efforts increased the total area under improved management by nearly 5 million hectares, from 49.4 million hectares in 2007 to 54.1 million hectares in 2008. The majority of this increase is from new community natural resource management zones, which now cover about 21

million hectares. Another 15 million hectares are extractive resource zones, mainly logging concessions. The remaining area is comprised of various classes of protected areas. All together, the area of improved management is larger than that of the U.S. National Forest system. As the landscape planning process

matures, USAID is consolidating gains by increasing the intensity and sophistication of management in zones already identified.

Monitoring change and management impacts is a key component of CARPE's efforts, and substantial accomplishments were registered in



IMAGE: UNIVERSITY OF MARYLAND

2008. Forest atlases for monitoring illegal logging, maps tracking deforestation, and large mammal surveys are improving forest and biodiversity management, informing new policies, and feeding into the *State of the Forest* report, a collaborative effort of the Congo Basin Forest Partnership.

Digital and paper forest atlases were created or updated for the Central African Republic, Gabon and the Republic of Congo, helping stakeholders monitor the status of forests and forestry operations. These forest atlases verify if loggers are limiting operations to their legally constituted boundaries, and report on the status of concessionaires' compliance with laws regarding development of management plans, the number and quantity of trees harvested (by species and volume), taxes paid, type of value-added processing and other factors that establish legal compliance. This effort was supplemented by a new Forest Transparency Initiative, which is summarizing and publishing information on logging for the entire region, both in printed form and through a public Web site.

Logging, mining, large and small-scale agriculture and climate change are among the many contributors to deforestation in Central Africa. In 2008, an important new methodology using satellite remote sensing imagery was adapted to map forest cover change over the entire Congo basin from 2000 to 2005. This technology is now being used by resource managers to focus on trouble spots where forest habitat loss is most dramatic.

During 2008, a standardized basin-wide methodology for surveying large mammals was adopted by CARPE's partners. Data are presently being collated to create geographically-referenced baseline information which will be published in the next *State of the Forest* report scheduled for late 2009. These data will include the abundance and distribution of key

indicator species across large regions of Central African tropical forests, providing a proxy for all wildlife and helping to manage and protect biodiversity in sensitive ecological areas. During recent monitoring activities, several new plant species were identified, particularly in the western landscapes in Gabon and Equatorial Guinea. Surveys by one CARPE partner suggest that the population of eastern lowland gorillas in the Republic of Congo is nearly double the previous estimate, with possibly 125,000 animals in the northern part of the country.

CARPE uses a comprehensive planning and management system to integrate land use planning and biodiversity monitoring with legal, regulatory and policy strengthening programs in order to support biodiversity conservation at all levels. At the national level, CARPE partners, in consultation with governments, civil society, international partners and community members, analyze weaknesses in the policy environment related to forest management and then develop a landscape-specific action plan to address these weaknesses. To date, national reform efforts have led to seven major new environmental and conservation laws enacted and implemented, with numerous new regulatory drafts under legal review. CARPE support also helped complete the conversion of logging titles in the Democratic Republic of Congo from the old law to the modern 2002 forest code which involved cancelling of over 100 existing logging titles.

At the regional level, the legal framework and capacity to enforce environmental legislation and policy

were substantially strengthened when the Central African Forestry Commission (COMIFAC) adopted the *State of the Forest* report as their official system to monitor indicators for forest management. COMIFAC has a mandate to coordinate the monitoring of activities aimed at implementing the Yaoundé Declaration of 1999, a catalytic consensus statement which asserted the role of ecosystem conservation for development in the region and still shapes USAID investment priorities.

Internationally, the Secretariat of the Ramsar Convention to Protect Wetlands formally recognized Lac (Lake) Tumba in DRC as a Ramsar wetland in 2008. When linked with the adjoining and previously approved Lac Télé in Republic of Congo, this comprises the largest Ramsar site in the world. The announcement reflects DRC's renewed commitment to undertake specific protection measures which were begun under the Lac Télé – Lac Tumba landscape program.

CARPE achievements have generated great excitement in the region and interest by the international community, a principal goal of the United States when it launched the Congo Basin Forest Partnership (CBFP) in 2002. USAID/CARPE continues to be the primary vehicle for U.S. engagement in CBFP, a collaboration among more than 20 countries and dozens of NGOs, international organizations and others. Success can be measured through the indicators in the *State of the Forest* report, but also in the ever-increasing financial commitments from both public and private sources



PHOTO: MICHEL TERELLEN

THE HIPPOPOTAMUS is a keystone species along the Mara River and other freshwater ecosystems in East Africa.

to the goals of the partnership, which exceeded \$200 million in 2008.

USAID/East Africa

Water for Biodiversity in the Mara River Basin

The Mara River basin is a critical transboundary ecosystem that supports vast numbers of wildlife, including the world-famous migration from Serengeti National Park to Masai Mara Reserve. The Mara River is the backbone of the wildlife tourism industry in both Tanzania and Kenya, but the flow of the river is threatened by increasing upstream water abstraction, erratic rainfall and worsening water pollution. The diminished quantity and quality of water threatens biodiversity, human health and economic growth. USAID/East Africa initiated the program Transboundary Water for Biodiversity in the Masai Mara River Basin (TWB-MRB) in 2006 in response to upstream threats.

In FY 2008, TWB-MRB made major advances towards improving and harmonizing river basin management practices and policies to ensure that sufficient flows of clean water are available to serve a variety of needs, especially biodiversity. The program worked closely with the East Africa Community's Lake Victoria Basin Commission to put in place policies and cross-boundary agreements that will ensure improved management of the basin over the long term.

Three major agreements formulated among key stakeholders will steer future natural resource management activities in the Mara River basin. One allowed for the establishment of technical advisory committees in the basin, bringing together key sectors from Kenya and Tanzania including forestry, water, agriculture and fishing. A second established a transboundary water users forum to coordinate water use in the basin. The third agreement detailed terms for conducting a basin-wide strategic environmental assessment.

An initial Environmental Flow Assessment (EFA) was completed with full participation of the Ministries of Water in Kenya and Tanzania to determine the flows within the Mara. The results have been incorporated into the draft Catchment Management Strategy for the Lake Victoria South Catchment (LVSC). This strategy details the legally enforceable environmental flow that must be maintained in rivers under the jurisdiction of the LVSC Office. This represents an important step in maintaining biodiversity for rivers that dry up due to dams used for irrigation and drinking water.

A Strategic Environmental Assessment (SEA) was conducted under the auspices of the Lake Victoria Basin Commission to inform the ongoing process to establish a formal Integrated River Basin Management Plan. The assessment is currently under review. Following on from this, a Biodiversity Action Plan will ensure that issues related to biodiversity in the basin have been considered and incorporated into the legally recognized EFA and SEA.

TWB-MRB also conducted detailed assessments on the costs of conservation and management interventions in the upper catchment, and on the willingness of water users to participate in a payment for ecosystem services (PES) scheme. Studies in the lower basin to quantify the dependencies of downstream users and to investigate their willingness to participate in the PES have been initiated. The Mara River basin is uniquely suited for PES because relatively better-off water users in the mid and lower basin are highly

dependent on the good practices of economically disadvantaged water users in the upper catchment.

USAID support has leveraged funding from other donors in the basin including Norway, Sweden and the World Bank, forming an integrated Mara River Basin Management Initiative. This has facilitated the formation of numerous local Water Users' Associations to enhance the governance and management of the river.

USAID/Southern Africa

Biodiversity Conservation through Improved River Basin Management

Water scarcity severely threatens freshwater ecosystems and is regarded as one of southern Africa's most pressing development challenges. Seventy percent of the region's surface water is in 15

major river basins, each shared by two or more countries. USAID's regional program in Southern Africa focuses on biodiversity conservation in the Okavango River basin through improved capacity for management and sustainable use of natural resources within Angola, Namibia, and Botswana. The lack of institutional capacity within the Southern African Development Community (SADC), financial and other resource constraints facing a fledgling Okavango River Basin Water Commission (OKACOM), and a general lack of environmental awareness in the upper watershed are continued challenges for the basin.

USAID/Southern Africa is working to strengthen OKACOM so it can better coordinate and oversee research on sustainable use of natural resources, while conserving valuable biodiversity and ecological systems. Training, research, and planning activities in collaboration with SADC and OKACOM have



PHOTO: MICHIEL TERELLEN

FIGHTING OSTRICHES in the Namib-Naukluft Rand nature reserve in southwest Namibia. USAID/Southern Africa currently focuses conservation efforts on the Okavango River basin in northeast Namibia, southeast Angola and northern Botswana.

helped institutionalize mechanisms to assess transboundary water and biodiversity issues, resolve disputes, and share data to promote improved watershed management and biodiversity protection in ecologically important areas.

Mission support in FY 2008 assisted with identifying areas of high biodiversity in the Kavango region of the Okavango basin, and produced field guides for larger tree species and mammals within southeastern Angola. In southeastern Kuando Kubango province of Angola, USAID supported delineation of wetlands and other environmental and geographic features, and funded an assessment of the protected area status of the area with recommendations for revisions. Participatory approaches to conservation included: an exchange visit of Namibian San peoples to Angola; consultations with remote communities; zoning with SADC members along the Kumbilo Wetland System; and community fire management training.

Building women's capacity in conservation activities and approaches helps ensure sustainable, long-term management of natural resources within the basin. Over the last year, 21 women were trained in mitigating conflict between farmers and elephants by using live chili peppers as crop barriers which also provide a marketable commodity. Women were also trained in methods of conducting vegetation and mammal surveys to monitor changes in flora and fauna.

The Agency has engaged other donors in nearly all program activities

while enhancing coordination through the SADC Water Strategy Reference Group. In FY 2008, the program organized a Second Annual River Basin Organization workshop. The event generated a 100-day action plan that is assisting OKACOM and other river basin organizations in the development and improved management of transboundary resources within the region.

Multinational cooperation is essential to conserving biodiversity while meeting present and future development needs. Continued USAID assistance will help all the Okavango basin countries benefit from a unique environment with sustainable income earning opportunities.

USAID/West Africa

Natural Resource Management Without Borders

In West Africa, destruction of the natural resource base is advancing more rapidly than in most other parts of the world. National boundaries administratively divide key biodiversity and natural resource areas, but policies on one side of the border often adversely impact conservation on the other side. Governments in the region have shown their commitment to solving transboundary environmental issues by meeting to analyze the problems and develop possible solutions related to governance and management of forest ecosystems. USAID/West Africa supports this commitment with programs that help

manage cross-cutting issues affecting the Upper Guinean Ecosystem.

Two biodiversity programs initiated in 2007 continued assisting governments and communities to harmonize policies and improve management of select transboundary areas. One program works in Guinea and Sierra Leone and the other in the Tano River basin (on the boundary between Ghana and Côte d'Ivoire). Both programs seek to improve forest management through community-based enterprise development initiatives, and increased participation in management by individuals who understand resource use and management in each ecosystem. Ancillary objectives include strengthening local government and civil society capacity in natural resource management, enterprise development and conflict management, and establishing a system to effectively monitor the flow and value of natural resources.

The Sierra Leone and Guinea program, implemented by the World Agroforestry Center (ICRAF), conducted an analysis of biodiversity threats and a field inventory of 217 tree, mammal, and bird species in Guinea's Madina Oula forest and Soyah and Pinsili classified (state) forests, and Sierra Leone's Outamba-Kilimi National Park in the extreme north of that country. The program developed tools for education and implementation of management plans for forest reserves and classified forests. ICRAF also supported the formation of two forest co-management committees with 600 members, which were formed after 63 local authorities trained 60 communities in participatory



PHOTO: USAID/WEST AFRICA

AN AERIAL PHOTO helps this farmer manage forests in the Nialama Classified Forest, Guinea. Co-management and information services are key areas of support for USAID/ West Africa.

forest management. The program strengthened national geographic information system capacity, geo-referenced forest boundaries and villages to update maps, and analyzed the influence of management strategies on land use and forest cover changes. ICRAF trained 13 private nursery farmers and involved 300 community members in reforestation using 16,350 seedlings on 14 hectares. An additional 31 hectares were planted with co-funding from the Jane Goodall Institute. These efforts improved management of 129 hectares, and enhanced natural resource management of about 3,000 hectares.

The transboundary program in Ghana and Côte d'Ivoire managed by CARE International focuses on initiatives that can create the framework for improved benefits sharing, better governance, and prevention of conflict in targeted high-biodiversity sites. Still in its initial phase, the

program completed a baseline study in 26 communities in the Western Region of Ghana and the Aboisso prefecture of Côte d'Ivoire that will help measure project impact over time. CARE also trained 180 people in natural resources management and biodiversity conservation, and began the process of establishing community resource management areas in seven communities.

Perhaps the largest transboundary area in the region is off the coast, where fish have been overexploited for decades by foreign fishing fleets, which encounter almost no regulation or enforcement and have few incentives for operating in a sustainable manner. With fish stocks declining, commercial and artisanal West African fishermen are forced to spend longer hours catching fewer and smaller fish, or find new livelihoods altogether. Fish diversity and marine ecosystem health have suffered, with documented impacts

on terrestrial animals as well: when local fish are scarce, prices go up, leading to a higher demand for bushmeat which decimates wildlife populations. To start addressing these issues, a USAID program related to coastal ecosystems in Gambia and Senegal will be launched in 2009. It will compile baseline information on the current type and scale of fishery practices, major threats to sustainable management of fisheries resources, critical breeding grounds and other needs for ecosystem-based management, and the economics of coastal resource use. Specific targets will be set for a reduction in illegal fishing and enhanced biodiversity conservation through the identification and mitigation of specific threats.

In the forestry sector, USAID/West Africa worked through an alliance to support the rehabilitation of cocoa farms and associated natural forest ecosystems in Côte d'Ivoire, while limiting the extent of forest clearing for new cocoa cultivation. The project helped producers plant over 70,000 indigenous shade trees (triple the number from last year) to partially reestablish natural forest crown cover and improve management of 13,463 hectares, a required step on the road to fair-trade and eco-friendly chocolate certification and ultimately higher prices for cacao growers. The alliance trained 1,922 farmers to prepare them for certification, with 1,745 becoming certified producers (a five-fold increase over 2007). Farmers are rapidly modifying their cocoa production practices and are not clearing new sections of natural forest, thus restoring the biological integrity of the cocoa-

natural forest production system. Lessons from this successful program are now being applied in Ghana.

USAID's West Africa Land Use Land Cover Trends Project, which ended this year, demonstrated that the rates, magnitudes, and spatial extent of human alterations of the land surface have assumed unprecedented levels. The U.S. Geological Survey's (USGS) final analysis in Niger revealed that in the 15 years since the central government reversed a law forbidding individuals from using trees on their own land (removing any incentive to plant or maintain trees), re-greening has occurred on over five million hectares, mostly through natural regeneration of dry forest and scrubland. A new program with USGS will help monitor forest

cover in West Africa where USAID-supported biodiversity programs are being implemented.

Democratic Republic of Congo

Conservation and Sustainable Agriculture

The Democratic Republic of Congo (DRC) is one of the world's ten most biodiverse countries and the only home to two great apes, the bonobo (*Pan paniscus*) and the eastern lowland gorilla (*Gorilla beringei graueri*), among many other endemic species. DRC contains over half of the vast Congo basin forest, about 130 million hectares virtually untouched by large-scale forestry or mining operations. With almost 70 million residents and less than

3,000 kilometers of paved road, most people make a living from what they can produce and sell locally. They rely heavily on natural resources and ecosystem services, but often lack incentives and structures to manage these for long-term sustainable use.

Two USAID missions operate out of Kinshasa, USAID/DRC and the Central African Regional Program for the Environment (CARPE). Bilateral resources from the DRC mission complement and build upon CARPE's expertise by promoting sound policies and incorporating improved natural resource management and environmental sustainability into economic growth activities. Programs are focused on conserving the use of trees in tropical production systems, increasing overall forest cover, reducing soil erosion and water degradation caused by shifting cultivation (slash and burn) practices, and maintaining and improving biodiversity habitat.

With CARPE managing conservation efforts in the region, USAID/DRC made only minor investments until now. In 2006 and 2007, the bilateral mission supported a public-private partnership designed to implement an economic reintegration, biodiversity conservation, and community recovery scheme. The program provided support to communities receiving internally displaced persons, returnees to areas abandoned due to activities of unsanctioned militias (rebels), and disadvantaged people in the Tshupa, Lulonga and Maringa River ecological zones.

A new USAID/DRC program is currently under development that



PHOTO: NICK HOBGOOD, DAI

A PAINTED REED FROG (*Hyperolius viridiflavus*) near Lake Karavia on the outskirts of Lubumbashi, Democratic Republic of Congo. Pollution in the waterways negatively impacts the frogs and can signal problems for people.



PHOTO: CHRISTINE HICKS, COUNTERPART INTERNATIONAL

PRIORITY SETTING: National and municipal Ethiopian government officials, NGOs, and community leaders work together during a USAID-funded Global Sustainable Tourism Alliance workshop to prioritize identified conservation and cultural preservation needs.

will promote improved agricultural production and management techniques as part of community land use plans, and protect biodiversity by reducing the rate of environmental degradation. This objective will be achieved through conservation outreach and livelihoods strengthening including the increased use of sustainable and high-value production, storage and processing alternatives for agricultural products at the community level.

Ethiopia

Rangeland Management and Ecotourism Development

Given Ethiopia's largely rural population and economy, the largest and most critical threats to biodiversity are natural resource degradation associated with deforestation, population pressure and unsustainable agricultural practices. USAID supports technical

assistance by the USDA Forest Service to improve rangeland management policies and practices under the Pastoralist Livelihoods Initiative. Traditional pastoralist institutions and the Ethiopian government's own pastoralist programs were strengthened to better manage natural resources in Afar, Oromia and Somali Regions. In FY 2008, thousands of hectares of rangeland were rehabilitated via improved land management, controlled burns, and use of area enclosures. With the restoration of fire, new and resurgent grass species are appearing in greater diversity and invasive species are better managed. Ecosystem-based principles are recognized by the government and communities as key to long-term rangeland management.

USAID initiated a new ecotourism program in July 2008 to create non-farm economic opportunities while improving protected area management and financial

sustainability. This community-based program will capitalize on Ethiopia's extensive and rich biodiversity, unique culture, and history. Focusing on some of Ethiopia's most biologically significant areas and associated endemic species, most activities will take place in national and regional parks and lakes, and the buffer zones that surround these areas.

Still in the planning phase, the Ethiopian Sustainable Tourism Alliance (ESTA) will strengthen biodiversity conservation and natural resource management through sustainable tourism by: facilitating community mobilization efforts for better use and co-management of natural resources; building capacity in participatory natural resource management and sustainable tourism planning; and establishing community conservation areas. ESTA will support sustainable income-generating opportunities, such as handicrafts, for people affected by HIV/AIDS and promote HIV/AIDS awareness and prevention among those working in the tourism sector and in destination communities.

Ghana

Community-based Ecotourism and Natural Resource Enterprises

Well-endowed with natural resources, from gold and diamonds to timber and chimpanzees, Ghana has about twice the per capita output of its poorest neighbors in West Africa. Agriculture accounts for about 35 percent of GDP and employs about 55 percent of the work force,



PHOTO: USAID/GHANA

FUNDS RAISER: The sacred black-and-white colobus monkeys of Boaben-Fiema Monkey Sanctuary in Ghana have been protected for generations by the local community, and now income from tourism provides an additional incentive for conservation. USAID supported development of 14 community-based ecotourism sites in Ghana in 2008.

many on cacao plantations that literally feed the global demand for chocolate. USAID/Ghana promotes diversification of the economy to include biodiversity conservation activities, which strengthen natural resources management and the tourism industry.

The goal of USAID's biodiversity program is to ensure Ghana develops ecotourism experiences that promote conservation, are self-sustaining and become competitive in the global ecotourism marketplace. By ensuring sustainable natural resource management, upon which tourism depends, USAID is developing a critical mass

of quality community ecotourism destinations and encouraging private sector participation. USAID's Community-Based Ecotourism Program (CBEP), managed by a Ghanaian NGO, builds upon the achievements of an earlier ecotourism project to promote biodiversity conservation and enhance livelihoods. In 2008, the program supported the expansion of Community Protected Areas to two new locations of previously unprotected lands; developed 14 community based ecotourism sites and 6 wildlife conservation sites; increased conserved lands by 132,000 hectares; and prompted a significant jump in domestic and foreign tourism.

CBEP recorded a 19 percent annual growth rate of visitors to the various sites, thus creating an opportunity for small and medium enterprise (SME) development and income generation for the large population of unemployed youth and women. Through improved site facilities, marketing and increased human resource capacity to manage conservation destinations, local communities are able to offer tourism experiences that help finance biodiversity protection. The successes have triggered a great amount of interest and set the stage for a significant increase in ecotourism development as a vehicle for SME development and poverty reduction. CBEP also dramatically increased awareness of the white-necked rockfowl, one of the most endangered bird species on the African continent. The program is building sustainable bird watching enterprises that have

improved livelihoods and increased incomes of local communities.

In previous years, USAID completed the first biodiversity studies of the rich and previously unprotected Nyankamba Escarpment in the northern region of Ghana. This area is now recognized as the most important example of Guinea woodland savanna remaining in Ghana. Additional components of the program included conflict mitigation over resource use, protection of natural buffers such as wetlands and coastal forests, reduced pollution, and sustainable coastal tourism. This work was jointly funded by USAID and the Netherlands Committee of the World Conservation Union.

In partnership with USAID/ West Africa and Coca Cola, the Ghana mission is also supporting the Natural Resource Based Enterprise (NRBE) component of the Transboundary Area (TBA) project. The TBA project seeks to promote sustainable management of natural resources in the transboundary region between Ghana and Côte d'Ivoire, focusing on biodiversity conservation, promotion and protection. The NRBE activity reinforces the efforts of French and Danish development activities in overlapping districts. In FY 2008, the inception year of the project, NRBE conducted a number of studies to assess the resource-base, human resource capacity, socio-economic and cultural dimensions of the target area to inform strategies for intervention, implementation, and monitoring and evaluation.

Support for active community participation in project decision-making at all levels has strengthened the partnership and feeling of ownership in the beneficiary communities, an important aspect of sustainable natural resource management. Future programming will build on this foundation and provide tailor-made interventions to further conservation efforts, especially to mitigate the impact of oil and gas exploration and extraction in the country.

Guinea

Landscape Management for Improved Livelihoods

Guinea's forests are at significant risk from destructive farming practices and poor governance of natural resources. Among the last strongholds for biodiversity in coastal West Africa, Guinea's forest habitat is a high international conservation priority.

In FY 2008, USAID/Guinea's biodiversity activities aimed to conserve important state and unclassified forests and encourage sustainable use of forest products. USAID partners assisted resource users and government advisors to improve the provision of ecosystem services to target communities. Working through the Landscape Management for Improved Livelihoods (LAMIL) activity, implemented by the World Agroforestry Centre (ICRAF), USAID conserved biodiversity by building the capacity of government resource managers and civil society organizations to co-manage forests,

GUINEA AT A CROSSROADS

Guinea's current political, social, and economic climate is one of both hope and uncertainty. The death of President Conte on December 23, 2008, ended 24 years of one-man rule. Though the military government that seized power following the President's death has promised to hold free and fair presidential and national assembly elections, the outcome of the transition to civilian rule remains unclear. The country stands at a historic crossroads that will determine whether Guinea chooses democratic governance or continued autocratic rule.

Non-humanitarian USAID bilateral assistance to Guinea is suspended until a new government is in place and recognized by the United States as legitimate. Regional USAID environmental activities that partially take place in Guinea are continuing for the time being.

by reforming national forest policy to decentralize the management of state forests, and by providing technical assistance to institute improved agriculture and forest management techniques.

The primary biodiversity goal of LAMIL was to enhance the survival of the highly threatened West African chimpanzee. Guinea remains an important refuge for the species, with over



PHOTO: TIM RESCH, USAID

IRON GIANT: Despite being adjacent to the Mount Nimba Strict Nature Reserve, a 69 square mile national park and UNESCO World Heritage Site, this area will be the site of a lucrative new iron mine in Guinea. The mountain has the highest grade iron deposits in the world, and Guinea cannot afford to leave this resource undeveloped. USAID supports efforts to reduce the impact of mining on the park.

23,000 hectares of critical habitat designated by ICRAF in and around co-managed forests. This habitat includes migration corridors where communities have agreed to refrain from agriculture and other activities in exchange for the co-management responsibilities and technical skills they have gained. Following a recent coup d'état and suspension of the constitution, LAMIL activities have taken a regional approach by focusing on two new forest reserves straddling the border between Guinea and Sierra Leone, namely Guinea's Madina Oula forest and the Soyah and Pinsili forests.

USAID also provided USDA Forest Service (USFS) technical assistance to Guinea's National Directorate of Water and Forests (DNEF), and together ICRAF and USFS reviewed and developed natural resource management procedures, disseminated tree and crop intensification models, and empowered local communities to plan and implement sound natural resource management. LAMIL helped train 63 local government representatives to implement participatory forest management legislation in FY 2008. USAID also provided training to farmers and 250 farmer associations, as well as ten government staff in integrated approaches to natural resource management including sustainable agricultural techniques. By helping to improve agricultural productivity, these initiatives helped to relieve agricultural pressure on remaining natural areas, thereby preserving biodiversity.

Kenya

Community Conservation, Sustainable Pastoralism and Land Rights

Kenya is renowned for its spectacular wildlife and scenery, but pressing natural resource management and biodiversity conservation challenges exist. USAID/Kenya aims to develop and implement national conservation strategies and recovery plans for species of high conservation value, conserve and improve biologically significant landscapes, replant and preserve native forest, and restore ecological processes on community grazing lands and wildlife ranges.

In FY 2008, USAID's biodiversity and forestry programs focused on scaling up monitoring systems, improving governance and administration systems of community based organizations to enhance performance and the delivery of benefits to members, and supporting Kenya's land reform agenda. The new Kenya Forest Service (KFS) proved to be a valuable partner, and Kenya Wildlife Service (KWS) developed an impressive integrated work plan in support of community wildlife conservation, forest restoration, and key species management that was complementary to USAID conservation efforts.

USAID made a concerted effort to improve information management systems to monitor trends in biodiversity and natural resources management. Three databases were developed that profile 15 parameters on wildlife population dynamics, vegetation, tourism numbers and socio-economic

variables. While wildlife numbers in two peri-urban areas show downward trends, two years of ranger-based monitoring across eight community conservancies found increases in 11 key species.

Surveys for wildlife management were focused on habitat mapping, seasonal wildlife distribution, elephant mortality reports, and game counts. According to monthly wildlife monitoring, sightings of key species increased in 2008 over counts in 2007. An annual survey of sand grouse and guinea fowl in target community conservancies provided KWS with data on sustainable off-take of these species for legal game-bird shooting quotas. On the coast, a framework for turtle monitoring, tagging, and data management initiated targeted activities for sea turtle conservation. Volunteers conducted day patrols to monitor, verify and protect 168 turtle nests, with almost 11,000 confirmed hatchlings.

The role of community conservancies in the preservation of endangered species has achieved high-level recognition through National Species Conservation Plans and Management Committees. In FY 2008, USAID initiated efforts through conservancies to safeguard the hirola, *Beatragus hunteri*, a unique, geographically isolated antelope species historically found in northeast Kenya and adjacent areas of southwest Somalia. Community conservancies also contain important populations of Grevy's zebra, lion and elephant.



FOUR GIRAFFE are defining features of this landscape in Masai Mara National Park, Kenya.

PHOTO: MICHIEL TERELLEN

USAID supported several species-specific conservation efforts in FY 2008. A strategy was developed for the reintroduction of the Rothschild giraffe, the second most endangered subspecies, to native habitat around the eastern shores of Lake Baringo. DNA analysis to determine the viability of small populations of rhinoceros resulted in the development of rhino recovery plans for regions not part of prior restoration efforts. Assistance to KWS helped to formulate national conservation strategies for five keystone species: cheetah, lion, wild dog, sea turtles, and wild aloe.

USAID/Kenya had several notable achievements related to sustainable pastoralism. A land use master plan was initiated on the vast wildlife and livestock ranges adjacent to Nairobi

National Park, in order to conserve critical wildlife dispersal areas. Improved grazing management was practiced on 500 hectares in the Laikipia ecosystem with the aim of restoring the biodiversity and productivity of rangeland resources. Up to 560 women were trained in rangeland improvement techniques. Three aerial and ground vegetation monitoring assessments, undertaken to investigate the impact of grazing management on vegetation recovery in different grazing zones, indicated that control of livestock grazing in core and buffer zones led to an increase in ground vegetation cover.

Kenya's critically threatened indigenous forests continued receiving support through targeted forest management activities. USAID assisted the

newly-formed KFS to establish management systems needed for its transition to a 'for-profit' state corporation capable of managing public and donor funds in support of technical forestry programs.

To reduce pressure on the forest and improve tree cover, USAID supported tree planting activities and woodlot establishment. Up to 3.7 million seedlings were planted within selected riverine ecosystems, on farms and degraded forest reserves around three biodiverse areas: Mt. Kenya, the Aberdares, and Arabuko Sokoke Forest.

Sustainable forestry was advanced through the formation and training of 12 community forest associations (CFAs) which paved the way for participatory forest management

with KFS in state forest reserves. KFS developed and adopted a forest management plan for the 340 km² Mukogodo forest, and a CFA composed mainly of pastoralist households will negotiate a co-management agreement under that umbrella in FY 2009.

Land tenure and property rights (LTPR) are not well established in Kenya, where there are many land uses and people lacking clear ownership or use rights. Several LTPR surveys were undertaken in FY 2008, including a review of Kenya's draft National Land Policy, important for its potential to address macroeconomic and social issues that have troubled Kenya since independence. An assessment of LTPR in the mission's northern rangeland and coastal conservation programs demonstrated a need to formalize and strengthen the tenure arrangements through which local communities establish and hold conservancies, particularly those operating on Trust Land. This is an essential building block for securing private-sector investment and for conservancies' long-term sustainability.

These investments in conservation of Kenya's rich biodiversity improved natural resource management techniques and brought about reforms in environmental and land administration laws and regulations, improving management in 152,630 hectares of biologically significant areas, which exceeded the mission's target by 20 percent. Likewise, the performance of nature-based enterprises was nearly 130 percent greater than anticipated, with

revenues of \$1.27 million accruing to rural households, including an estimated 18,500 women.

In terms of economic development, four ecotourism agreements were initiated between communities and the private sector worth over \$2.5 million. An additional \$120,000 came from USAID's Livestock Markets for Wildlife Conservation program, an innovative model for enterprise-based conservation that helps maintain wildlife-compatible pastoralism in community conservancies by delivering well-managed cattle to market at competitive prices. Over 600 cattle were sold through the program, which will be scaled-up on four more community conservancies in FY 2009.

Liberia

Commercial Forestry, Community Empowerment and Conservation

Liberia contains over 40 percent of the remaining Upper Guinean rainforest, the largest share among countries in the region and, therefore, a priority for conserving this critically threatened ecosystem. USAID support to the Liberia Forest Initiative (LFI) is working to promote sustainable harvesting of timber and better overall silvicultural practices, while the Land Rights and Community Forestry Program (LRCFP) and Civilian Conservation Corps (CCC) are working to strengthen two protected areas. LRCFP is also working in non-protected forests outside the expanding protected area network.

The two most important direct threats to Liberia's biodiversity and forests are unsustainable logging and the extensive trade in bushmeat. Agricultural clearing and charcoal production are also contributing to deforestation, as well as small lumber processing ("pit sawing") and mining operations which result in the unsustainable harvest of high-value timber species and wildlife. While selective logging practices may not extract large numbers of trees, logging roads attract agriculturalists and hunters into the forests. Additionally, the practice of "high grading" (taking the largest, most robust trees) is likely contributing to overall genetic decline in high value tree populations.

Initiated by the United States, but now a partnership of many stakeholders, LFI is working to improve the harvesting practices of commercial logging operators in an effort to improve forest management and protect biodiversity. Major achievements in FY 2008 include the implementation of a reformed contracting process that will lead to the first commercial logging operations in Liberia since the lifting of UN Security Council timber sanctions in 2006. LFI is working with the government of Liberia to ensure that transparent procedures and practices are followed and that contracts are awarded to reputable logging companies that follow the correct procedures for harvesting timber and paying government fees.

LRCFP is USAID/Liberia's flagship program for biodiversity conservation, operating in the forested counties of Nimba and Sinoe and around one protected area, the East Nimba Nature Reserve. The goals of the



PHOTO: DAI

CHAINSAW “PITSAWING” in Senkwehn Forest, Liberia, slated to become a protected area. Logging revenue once fueled civil conflict in Liberia, and now is poised to contribute to the country’s development. Forest degradation continues however due to artisanal chainsaw loggers, the modern version of traditional pit sawyers who used hand saws to hew lumber from logs over pits dug beneath.

harvest of forest products for income and job creation at the local level.

The establishment of a legal framework that promotes biodiversity conservation has been a challenging but important part of Liberia’s reconstruction. Actual implementation of laws and regulations is even more difficult. Ensuring that policies are implemented further requires campaigns to raise awareness about new laws. Policy development, law enforcement support and public engagement have featured prominently in both LRCFP and CCC. Government agencies and other local partners are serious about economic development and sustainable natural resource use and this commitment is enabling progress to occur despite implementation challenges.

program are to balance generation of revenue for the government and communities through sustainable extraction of forest resources with better protection of the forests and the biodiversity that they harbor. The program helps Liberia’s Forest Development Authority and its partners design pilot community forestry activities which test approaches to sustainably extracting and marketing timber and non-timber forest resources, in order to improve incomes and livelihoods for people living near forests.

Sapo National Park is Liberia’s first and only national park, with important populations of endangered wildlife such as pygmy hippo, chimpanzee and the Liberian mongoose. The CCC project has been working with six communities that reside in and around Sapo to provide alternative

livelihood opportunities in areas such as agriculture, livestock rearing and agro-forestry, thereby relieving pressure on the park and improving prospects for biodiversity. The project provided training and worked with each community to develop incentive agreements to bolster conservation goals. In 2008, more than 3,000 individuals benefited from re-stocking of small ruminants such as sheep and goats and the revitalization of crop production including cassava and assorted vegetables.

Together, LRCFP and CCC are providing alternatives to bushmeat hunting, improving logging practices, and promoting agriculture that produces more food on less land and reduces the need for land clearing. In addition, LRCFP is working on increasing the value of standing forests through the sustainable

Madagascar

Biodiversity Conservation and Sustainable Management of Forests

Among the world’s top three environmental conservation priorities, Madagascar’s biodiversity and forests are threatened by slash and burn cultivation, illegal logging, wildlife trade and mining. USAID has advanced the development and implementation of the Madagascar National Environmental Action Plan since 1989, balancing support for protected areas and forest stewardship with community-based natural resources management and sustainable agriculture.

In FY 2008 alone, USAID assistance improved the management of 1.2

million hectares of biologically-significant land, and maintained the low rate of deforestation in forest corridors documented in FY 2007. The protected area system grew from 4.1 to 4.8 million hectares of biodiversity-rich habitat, approaching the declared target of six million hectares. USAID programs produced a national guide for community management and sustainable use of natural resources, a refined protected area planning tool, and a new protected area evaluation system to be adopted by the government of Madagascar. Nearly 2,000 people participated in training and capacity building in community-based natural resource management, forest fire management, and economic valorization of natural resources. More than 200 users registered to receive forest fire alerts by email through an automated satellite-based fire monitoring system.

New species are discovered each year in Madagascar and become immediate conservation priorities, underscoring the need for more protected areas and community participation in conservation. In FY 2008, scientists reported an unknown species of the mouse lemur, the world's smallest primate, as well as a previously undescribed 40-foot tall palm with 15-foot fan leaves – the largest palm in the country. USAID supported conservation priority-setting exercises which finalized the spatial configuration of the protected area system, and laid the groundwork for creating new marine protected areas (MPAs) through the development of a national manual for MPA design, establishment of a marine biodiversity database, and inclusion of

MADAGASCAR'S UNCERTAIN FUTURE

On March 17, 2009, after months of political unrest, Madagascar's President Ravalomanana was forced out of power by Andry Rajoelina, the former Mayor of the capital city Antananarivo. At least 135 people were killed in protests and the takeover was internationally condemned as a coup d'état. Four days later Rajoelina was installed as the new leader of the country.

The Southern African Development Community (SADC) refuses to recognize Rajoelina, and the African Union and SADC have both suspended Madagascar's membership. Norway, the International Monetary Fund and other donors have frozen funding, while the United States has suspended all non-humanitarian assistance. Internationally mediated talks broke down in June, but a power-sharing deal signed in August brought Rajoelina, Ravalomanana and other opposition parties together for the first time since political violence began in January 2009. They pledged to work towards an interim government, put an end to months of political violence, and hold fresh elections within 15 months.

What does this mean for the Malagasy people and their natural resources? Reports from the countryside and ports indicate that illegal logging and exports of trees and wildlife have risen due to decreased local enforcement. Hundreds of precious rosewood trees are being harvested daily, bringing a criminal element into local communities and removing a valuable source of future national revenue. Hunting of lemurs for food and export of tortoises for medicine have both increased dramatically since the crisis began. Nature-based tourism has all but stopped on the island, forcing many small and medium businesses to shut down.

With lawlessness up and incomes down, some people are embracing open-access to resources, while others are using newspapers to decry wildlife poaching and promote sustainable forestry. And, some community natural resource management groups once supported by USAID are staying vigilant to outsiders. Madagascar remains a high conservation priority and USAID is anxious to resume biodiversity programs when the suspension is lifted. In the meantime, the mission maintains some level of engagement with rural communities at the frontlines of illegal exploitation through partners involved in humanitarian relief programs supported by the Agency and others.

In 2008, USAID took stock of 18 years of support for biodiversity conservation and natural resource management, both to plan for new programs and recommend priorities for the government of Madagascar. Best practices and lessons learned were integrated into Madagascar's new 15-year National Environmental Action Plan process, called the Sector Wide Approach (SWAP). While most institutional reform of the Ministry of Environment was realized before the coup, only time will tell if the interim or future administrations will follow the SWAP process and implement the procedures, regulations and laws developed with USAID assistance.



BLEEDING AWAY: Deforestation and land degradation from slash and burn agriculture result in accelerated erosion of Madagascar's priceless soil. Here, the Betsiboka River runs red with sediments eroded from the surrounding landscape.

PHOTO: ANDREW WATSON, DAI

MPAs in the proposed amendment of the national protected areas law. Nearly one million hectares of additional MPAs were proposed.

In FY 2008, USAID supported government reform of the forestry sector through restructuring and revitalizing public forestry institutions and promoting key forest management legislation. The law on infractions, penalties and fines in the forest sector was revised, and a manual on law enforcement procedures and management systems for production forests was finalized. An improved legal framework created mechanisms and procedures for allocating long-term production forest management rights to companies

and local communities, and these were pilot tested in two regions. Management plans were approved for more than 32,000 hectares of plantation forests, decreasing pressure on highly-threatened remaining natural forests.

The program moved forward with national, regional, and communal forest zoning which facilitated a more harmonized, sustainable land use planning approach for forest resources. USAID also facilitated the development of community forest management sites known as *KoloAla*. To date, over two million hectares of forest in four regions have an approved forest zoning plan, of which 418,000 hectares are *KoloAla* forests.

Developing sustainable finance mechanisms for conservation is a critical issue for the government. In FY 2008, the mission supported the design of a sustainable financing strategy for all environmental actions in Madagascar. New financial mechanisms including debt relief, carbon credits, and ecotourism concession fees were analyzed and incorporated into the government of Madagascar's business plan. USAID also worked with the government to identify possible tourism concessions and develop guidance for selecting and contracting concessions. Two new regional forestry commissions drafted by-laws which now guide and operationalize cost recovery mechanisms for a



PHOTO: ANDREW TOBIASON, USAID

SEEING IS BELIEVING: USAID-supported farmer field schools and cooperatives in Madagascar demonstrate alternatives to slash and burn agriculture, such as this corn field in eastern Madagascar planted with a live mulch groundcover. Live mulch produces three times as many ears as a neighboring field planted on newly cleared land, and the same land can be used again and again, conserving forest.

forestry fund that supports local sustainable forest management.

Carbon markets offer a major opportunity for tropical countries to address climate change while advancing their rural development and biodiversity conservation agendas. Two pilot projects provided approaches to modeling carbon offsets and channeling revenue from carbon markets to rural communities. Following a national workshop on Reducing Emissions from Deforestation and Degradation (REDD) in April 2008, USAID supported the government in developing its national REDD strategy. The program provided capacity building for the government and local associations to engage with and capitalize on carbon markets

as a source of forest management and reforestation funds.

Malawi

Natural Resources Management and Biodiversity Conservation

Malawi is one of southern Africa's most biodiverse countries, with many endemic species. Wood, wildlife, fish, and other natural resources are critical for rural households' income and food security, especially during years of poor harvests. Efforts to conserve forests and biodiversity are hampered by Malawi's high birthrate, a subsistence agriculture economy, over-dependence on wood for fuel, and land holdings too small for fallow fields and

soil recovery. This combination of factors causes widespread environmental degradation, including severe deforestation, soil depletion, water source contamination and loss of biodiversity.

USAID/Malawi provided training and technical assistance to communities, extension staff and district forest officials on natural resource management practices; promoted continued decentralization of natural resource management; and, helped increase sales of natural resource-based products by rural households. Additionally, USAID partners supported the establishment of community-based institutions to manage natural resources through co-management agreements, carbon sequestration projects through avoided deforestation, public awareness activities, and sound stewardship of the wildlife reserves, national parks and forests.

Through the Community Partnerships for Sustainable Resource Management in Malawi (COMPASS II) project, implemented by DAI, over 7,500 community members were trained in community-based natural resource management (CBNRM), almost half of them women. Approximately 91,600 participating households gained either directly or indirectly from COMPASS II supported activities through the end of FY 2008. As a result of these efforts, 105,000 hectares were placed under improved natural resource management and a total of 386,000 hectares under biodiversity conservation. Following these achievements, USAID helped

transfer authority to manage natural resources to communities, conducted management skills training for community members, and identified opportunities for locals to profit from sustainable utilization of natural resources while safeguarding biodiversity.

USAID efforts to combine conservation with small-scale commercialization has contributed to communities now viewing forests and parks as resources for investment rather than as public goods ripe for unfettered extraction and exploitation. Natural resource-based enterprises have emerged as “social fences” which discourage unsustainable practices such as deforestation, burning, and encroachment. Conservation has also reduced environmental and economic vulnerability to climate change impacts as communities find value in protecting the forests. In FY 2008, roughly 86 tons of honey were sold in the formal market, pumping about 22 million Malawian kwacha (MK) back into rural areas, while another MK 1 million was earned from the sale of 20 tons of baobab products. The total cumulative revenue received by households participating in CBNRM activities was approximately US\$1.3 million.

Through a public-private partnership with African Parks, USAID is helping revitalize Majete Wildlife Reserve (MWR) in southern Malawi with investments in infrastructure, game restocking, community mobilization and protection of areas of environmental significance. This partnership works closely with the Department of National

Parks and Wildlife to reinvigorate the area as a tourist destination, thereby benefiting local people.

Surrounding communities have welcomed the restoration of Majete and have benefited from the income generating activities introduced by the project, including beekeeping, mushroom production, and rabbit farming. The project has supported the start-up of several community-based organizations by providing assistance with drafting constitutions, registering with local authorities, and paying legal fees. A total of 19 community based organizations (CBOs) were engaged

in the collaborative management of MWR, representing a total population of 130,000 people in 146 villages surrounding the reserve. Additionally, a 130 km perimeter elephant-proof fence was completed, and community resource maps and a GIS system for all 19 CBOs were created.

In 2008, about 885 animals were translocated from Malawi’s Liwonde and Lengwe National Parks to Majete, including elephants, buffalo and warthogs. After two years of project implementation, the reserve has more than 1,897 animals including 70 elephants. The animal



PHOTO: ANDREW WATSON, DAI

Serval in Nyika National Park in northern Malawi. USAID-supported community-based conservation efforts around Nyika have resulted in reduced poaching and recovering populations of threatened species.



DOGON DANCERS in the village of Tele, Mali, are part of the cultural allure for tourists whose spending also contributes to biodiversity conservation goals.

PHOTO: PASCAL LANGULLON, SOLIMAR INTERNATIONAL

population is steadily increasing and there are reduced incidences of wild bushfires and poaching.

In collaboration with the Department of Forestry and Department of Parks and Wildlife, USAID began assisting communities in 2008 to develop carbon sequestration projects by implementing forest management and conservation activities, which reduce carbon emissions. Payments for avoided deforestation through voluntary carbon markets will go to communities in two pilot sites: Mukwazi Forest Reserve and a block within Nyika National Park. Ongoing efforts to promote woodlot establishment and alternatives to charcoal as energy

sources, particularly for Malawi's peri-urban areas, received renewed attention as part of climate change mitigation activities.

USAID supports a variety of other conservation efforts, including development of national standards and guidelines for forest management, training and technical assistance to district forest officials, participatory resource assessment, and devolution of authority to sign co-management agreements. About 200 such agreements are in place to enable communities and Departments to co-manage the country's various protected areas and prevent further deforestation and habitat loss.

Mali

Sustainable Enterprises and Community Management of Agroforestry Parklands

Mali is a landlocked country with varied climate and geography, from subtropical forests in the south to a portion of the Sahara desert in the north. Extensive agroforestry parklands host roughly 50 woody species in mixed farmland, fallow and pastoral areas. Mali is also home to "Dogon Country," named for the people that reside there and their unique architectural and artistic traditions. The Cliff of Bandiagara in Dogon Country

is a World Heritage Site and popular tourist destination due to its cultural and biological value.

USAID is spearheading an integrated approach to natural resource management, forest-based enterprises and ecotourism to promote environment and biodiversity conservation at grassroots and institutional levels. Local authorities, NGOs, and community leaders are involved in conservation and sustainable enterprise development in the Mopti region, where conservation of Dogon Country's unique ecosystem is achieved through a participatory and interdisciplinary approach. The program is working with the Dogon traditional leadership, the Bara Hogon, to regenerate and sustainably manage woodlands and other important habitats in common property areas.

During this past year, collaborative efforts included the establishment of plant nurseries in three villages for species such as *Acacia albida*, *Borssus eathiopum* and *Nere*. USAID partners also promoted the use of fuel-efficient stoves to reduce demand for wood and charcoal derived from natural forests, and delivered several workshops to raise awareness of biodiversity issues. Course evaluations indicated that many workshop participants were surprised to learn the importance of biodiversity conservation for their community.

Eight villages participated in tree planting efforts in FY 2008, adding 945 trees to the *cercles* (counties) of Bandiagara and Bankass. Local NGOs contributed

plants from nurseries and three hotels in Bandiagara made cash contributions toward the purchase of seedlings. USAID also launched a dune fixation program campaign via radio shows in all *cercles* of Dogon country. In response, youth and nursery associations in Kanikombole organized rotating teams to collect and plant *Euphorbia* (a genus of native, protected tree) in selected dunes.

A USAID-sponsored ecotourism route is being developed by the Academy for Educational Development and partners in the Global Sustainable Tourism Alliance (GSTA) 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. GSTA partners worked with communities to remove or control two aggressive exotic plants, *Pistia stratioides* and *Typha angustifoila*, which negatively impact crocodile, bird, amphibian and fish populations in the waterways of Dogon country.

USAID/Mali's NRM activities supported the training of almost 1,500 forestry agents, NGO staff and local beneficiaries in natural resource management and biodiversity conservation. Among these were guides trained to provide tourists with information on local biodiversity, and community members who learned about how to conserve biodiversity both within natural areas and on farmland.

Over 4,000 hectares were placed under improved natural resource management in FY 2008, primarily through the drafting and passing of agreements with nine villages to pursue assisted natural regeneration; improvement of shea tree parkland; and rehabilitation of rock lines and water channels to minimize erosion and flooding. Approximately 230,000 people have benefited from increased economic benefits due to improved NRM activities related to shea, such as shea nuts and shea butter production and marketing.

Mozambique

Conservation through Public-Private Partnerships

Biodiversity loss in Mozambique can be broadly linked to several indirect threats: poverty and population dynamics, food insecurity, low public awareness, lack of coordination and harmonization of legislation, insufficient capacity to implement even current laws, little political interest in environmental issues, and absence of funding mechanisms to support conservation. All of these factors result in a failure to address direct threats such as habitat fragmentation and deforestation, harmful agricultural practices, soil depletion and erosion, pollution and waste disposal, and overexploitation of coastal and marine resources.

USAID biodiversity activities in Mozambique conserve and restore both terrestrial and aquatic ecosystems. Through community development, education and empowerment, and natural resource management, USAID is working to



PHOTO: CAROLINE SIMMONDS, WWF

MARKING THE SEA: Community members place buoys to demarcate the Zala Bank Fishing Sanctuary, formally declared within Mozambique's Quirimbas National Park.

create a national reserve on Lake Niassa, improving management of Pemba Bay, developing a community-managed reserve in the Great Limpopo Trans-frontier Conservation Area, and helping restore the Gorongosa National Park.

USAID made significant contributions to biodiversity conservation by laying the groundwork for the establishment of a new protected area on Lake Niassa (a.k.a. Lake Malawi). Through a Global Development Alliance (GDA) with the World Wildlife Fund and the Coca-Cola Company, USAID will establish a national reserve on Lake Niassa to protect the lake's unique ecosystem, which includes 1,000 species of fish (mostly endemic) and rich bird life. The creation of a national reserve on Lake Niassa and the hinterland of the lake will protect the inland fishery and encourage investment in the area, while

the regulatory framework that established the park will address some of the major constraints relating to land ownership.

Quirimbas National Park is one of the largest conservation areas in Mozambique and one of the most biologically diverse coastal areas remaining in southern Africa. Situated along Pemba bay, the area consists of 32 coral islands stretching from Pemba to the Ruvuma River, and contains the greatest concentration of wildlife in the country, including endangered dugong and sea turtles. USAID and the World Wildlife Fund built a public-private partnership that helped establish the legal framework to manage the use of the bay, founded the Pemba Bay Conservancy group to implement this management, and produced a zoning law and associated management plans.

Through a GDA with the Carr Foundation, USAID is helping re-establish Gorongosa National Park as one of Africa's premier ecotourism destinations. This involves rehabilitation of the park to increase the wildlife population and various community development projects around the buffer zone. Activities will commence in FY 2009 that focus on preserving natural forests on Mount Gorongosa (the main watershed in the national park with some of the last remaining intact forests in Mozambique); developing environmentally sustainable alternatives to wildlife poaching and slash and burn agriculture for local communities; promoting alternatives to charcoal for household use; and addressing uncontrolled burning of forest areas.

In a related but separate activity, the mission will bring 400 wildebeest, 200 zebras, and 150 buffalos to the new Gorongosa Wildlife Sanctuary. These introductions will be repeated throughout the next five to ten years to rebuild former wildlife populations and reintroduce missing species such as rhino and roan antelope.

The Great Limpopo Trans-Frontier Conservation program is a result of a recent internationally-approved land-use plan which brings together South Africa's Kruger National Park, Zimbabwe's Gonarezhou National Park, and Mozambique's Limpopo National Park. In Mozambique, USAID program support is funneled to Banhine and Zinave National Parks as well as surrounding lands. The core area covers nearly 3.6 million hectares (35,771 km²) with the broader matrix covering 100,000 km².

In FY 2008, USAID supported development of a community-managed reserve in the Limpopo Park area, assisting the community to obtain title to land and working with them and local authorities on a management plan for the reserve. The African Wildlife Foundation designed management and business plans and assisted the community in zoning an area for the community to manage as a game park. Regrettably, this project encountered problems when land concessions in the area were sold to a sugar cane plantation. As a result, the project was cancelled and project materials and funds were moved to Banhine National Park, another area demarcated for conservation.

Biodiversity and forest conservation are both prerequisites for and drivers of economic growth. Through its Northern Mozambique Tourism project, USAID helped advance biodiversity and forest conservation in Cabo Delgado, Nampula, and Niassa provinces by preserving key environmental assets, improving promotion of the northern Mozambique tourism market, and attracting more tourists to the region. Local interest and participation is assured by demonstrating that ecologically responsible tourism can promote economic growth and job creation while improving the environment. The program is also working to link the Lake Niassa reserve with the Quirimbas National Park through a network of protected areas and corridors.

USAID programming also supports forest regeneration to create jobs, alleviate poverty and protect native forests. Implementing partner

Technoserve is providing technical assistance in sustainable forest management and native forest preservation to six companies which will establish forestry plantations on heavily degraded natural forest land in central and northern Mozambique. Each company is expected to plant at least 5,000 hectares of trees and establish roughly 1,500 hectares of native forest in each plantation patch.

Namibia

Improved Rural Livelihoods through Natural Resource Management

More than 70 percent of Namibians, many living in poverty, reside in rural areas and depend upon natural resources for their livelihoods. From 1992 through 2008, USAID/Namibia's Living in a Finite Environment (LIFE) project built the technical and institutional capacities of Namibian organizations and local communities to implement a sustainable, nationwide community-based natural resource management (CBNRM) program that impacted a large proportion of the population.

The primary approach used by the World Wildlife Fund to implement the LIFE program was to establish community conservancies. These provided conditional use rights over wildlife and other natural resources, including the right to retain the income from sustainable use of these resources. USAID worked with residents of these areas to develop business plans and community enterprises, and worked nationally with the government to integrate community rights into national

policies and laws governing natural resources. National Development Plans, including Namibia's Vision 2030 document, now recognize the contribution of the Environment Sector in general, and CBNRM in particular, towards poverty reduction.

A total of 52 community conservancies were registered over the life of the program, covering 12.2 million hectares of land (14.7 percent of the country). When added to the land covered under national protected areas and private commercial conservancies, the total land area in Namibia under conservation and biodiversity management is an incredible 37.2 percent. Conservancies increase the percentage of different vegetation types under conservation and create connectivity with national parks for free wildlife movement.

Community conservancies involve 223,620 people or nearly 13 percent of the Namibian population. About two-thirds of conservancies have committees with at least 25 percent female membership. The mobilization of these communities into representative and trained management committees has created a grassroots democratic process where communities can now advocate for their own needs, such as through participation on Regional Land Boards.

In FY 2008, cumulative conservancy income increased by \$1.4 million to \$5.7 million, exceeding the economic growth target by 34 percent. Of this, joint venture lodge partnerships between conservancies and the private sector generated \$1,900,000, while trophy hunting brought



LESSONS LEARNED: Children in the Puros community of Namibia attend a school built by Wilderness Safaris as part of a USAID-supported joint venture agreement with Puros Conservancy. Prior to its construction, children had to travel more than 70 kilometers to the nearest boarding school or were taught very rudimentary levels of education under a tree. About two-thirds of the adults in the community are employed either full-time or on a seasonal basis by the Puros Conservancy and its enterprises.

PHOTO: AARON PRICE, WWF

in \$1,014,493, both up from the previous year. On average, 37 of the most established conservancies earned \$44,834 each to cover operational costs and development activities. Of these, 15 are fully self-financing and seven are paying a majority of their operating expenses.

USAID assistance helped extend the benefits of natural resource management to individuals and communities through income generating activities created by increased tourism, and by small enterprises using natural resources. In FY 2008, the number of community enterprises increased

from 154 to 180. A total of 946 full-time and 6,227 part-time jobs were created through conservancies and their enterprises, such as live game and meat sales, trophy hunting, and wildlife tourism.

A management-oriented monitoring system, known in Namibia as the 'Event Book' system, was introduced in all 52 of the registered conservancies and provides for systematic data collection and reporting on various biophysical indicators. This information supports decision-making at both local and national levels with regard to the recovery of local wildlife populations and the sustainable use of other natural resources (indigenous plants, forests and fish). Monitoring demonstrated rapid recovery of game populations in conservancies: the numbers of springbok, oryx and Hartmann's zebra increased from less than 1,000 each in 1982 to at least 175,467, 29,500, and 18,839 respectively by 2008.

With conservancies on good footing, continued support from the private sector, strong recognition of the development value of CBNRM by the national government, and changes in USAID programming priorities, the LIFE program closed in June 2008. A comprehensive assessment of the program, from inception in 1992 through completion, was conducted to review USAID's investment, capture lessons learned, highlight the major accomplishments and results, and make recommendations for future CBNRM efforts in Namibia. This report, available at http://pdf.usaid.gov/pdf_docs/PDACL549.pdf, is a key reference for any

program working to improve rural livelihoods through enhanced natural resource rights and management.

Rwanda

Biodiversity Conservation through Ecotourism Development

Rwanda is the most densely populated country in sub-Saharan Africa, with a human-dominated rural landscape of villages and farms which end abruptly at the boundaries of national forests and parks. USAID/Rwanda currently focuses its biodiversity conservation effort on the Nyungwe Forest National Park (NNP) and surrounding areas, in the southwestern part of the country. This mountain rainforest is a biological treasure, with species counts impressive by any measure: at least 75 mammals and 278 birds, 120 butterflies, 100 orchids, and 200 trees, many of which are endemic. Nyungwe forest is also the principal watershed of Rwanda, supplying 70 percent of the country's water, while feeding both the Congo and Nile Rivers.

USAID's program, Destination Nyungwe, supports three components of an integrated program for biodiversity conservation, ecotourism development and public health implemented by International Resources Group and the Wildlife Conservation Society. 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, activities include strengthening the management capacity of NNP, developing sustainable financing mechanisms, expanding public awareness campaigns, and monitoring key species, illegal activities and ecotourism impacts. The principal threats of fire, poaching, and mining have been reduced by 46 percent since the beginning of the project in 2006, and by almost 20 percent in the past year. The program provided the Rwandan Office of Tourism and National Parks (ORTPN, now tourism and conservation divisions of the Rwanda Development

Board) with key field equipment enabling park rangers to patrol the forest and control biodiversity threats. An effective park-wide radio communication network was established allowing park staff to communicate directly with one another for the first time anywhere in the forest. Further, GPS receivers allowed rangers to record biodiversity threat data and analyze it in a geographic information system (GIS).

Conservation efforts expanded from working primarily with park staff to include communities and schools, resulting in measurable biophysical improvements in over 7,000 hectares of biologically significant land. The project trained 3,019 people, mostly youth and women, who deal with conservation challenges on a daily basis.

To promote ecotourism, USAID intends to transform NNP into a competitive tourism destination by increasing both the number of visits to the Park and tourism receipts. Visitors to Rwanda's world famous mountain gorillas can also visit Nyungwe to track chimpanzees and the other twelve species of



CHOOSE YOUR OWN ADVENTURE: USAID has been promoting development of a range of accommodations around Nyungwe National Park in Rwanda, from this nearly-completed high-end lodge with a commanding view of the Park and Lake Kivu, to a community-operated tented camp at the edge of the forest, with direct access to chimp trekking, a heritage walk through Banda village, and options for sleeping in traditional houses.

PHOTOS: ANDREW TOBIASON, USAID





PHOTO: ANDREW TOBIASON, USAID

A HAND-UP WITH HANDICRAFTS: Women in a handicraft cooperative in Kitabi village have developed a number of products, including these shopping baskets unique to this part of Rwanda. Sales to local people and tourists visiting nearby Nyungwe National Park are raising them up out of abject poverty and reducing their dependence on subsistence agriculture and forest products.

primate found there. Activities include developing Nyungwe and community ecotourism attractions, upgrading ecotourism infrastructures and services, marketing Nyungwe ecotourism, developing and implementing pilot activities for water provision and small-scale energy production, and identifying markets and developing businesses for natural products, arts and handicrafts including honey, beeswax candles, baskets and soap. Solid progress is being made, as the number of tourists rose to 4,826, a 23 percent increase from 2007. Associated revenue also increased in this period by 119 percent, from \$173,273 to \$380,205. It is expected that tourism revenues will increase further once planned park

infrastructure and accommodation facilities are in place in 2009.

Host country commitment has been strong, particularly in helping to address accommodations and staffing issues. The government of Rwanda has contracted with Dubai World to build a luxury eco-lodge, and has also committed to leverage private funds to set up campsites near the park. Other efforts include increasing the number of park staff, raising the operational budget to match the new park's infrastructural requirements and developing a visitor interpretation center. Nature-based attractions such as observation towers, marsh trails, and the world's largest canopy walkway will be complete by the end of 2009.

The healthcare component of this project is an important benefit to communities around the Park 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 HIV/AIDS prevention. 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.

While there have been significant gains in efforts to conserve and protect natural resources since Nyungwe was declared a national park in 2005, important threats remain. Rwanda's high population density and growth rate continue to fuel an unsustainable demand for land and natural resources. USAID, working with communities, the government, NGOs and the private sector, is committed to building upon the progress made so far in resolving the immediate and long-term threats to Nyungwe's biodiversity.

Senegal

Community Forestry and Local Governance

Through community-based natural resource management (CBNRM) and support for the associated national policy framework, USAID is working to raise the incomes of rural producers and local communities by increasing the amount of forest land under improved, sustainable

management systems. Activities are transforming rural communities by developing linkages between resource conservation, economic opportunities and improved local governance.

USAID's Agriculture and Natural Resource Management program, locally known as *Wula Nafaa* (Benefits from the Bush), supports community-based organizations engaged in reducing the environmental impact of natural resource exploitation. *Wula Nafaa* targets the dryland forests of southern Senegal as only two percent of this biodiverse habitat type is protected continent-wide. Conservation and natural resource management activities in 2008 included tree nursery development, reforestation, and creation of forestry management plans and local management agreements. In each of these areas, the program made a considerable effort to transfer responsibility for resource management to local communities.

Wula Nafaa activities established forest management plans for 37,800 hectares of land, put 2,850,000 hectares under local management agreements, and enriched community forests with an additional 500 *sterculia* trees (from which karaya gum is harvested) and 100 baobab trees (valued for their leaves, fruit and bark). Legally recognized community plans and management agreements regulate access to natural resources and identify zones to be locally protected against threats to biodiversity. As a result of these plans, there is no longer uncontrolled access to resources. This breakthrough program is helping to regenerate the most



FOREST-FRIENDLY CHARCOAL: USAID and the government of Senegal worked together to finalize a decree that requires all charcoal to come from forests with established management plans, putting powerful charcoal cartels outside of the law and allowing many communities to earn higher revenues.

PHOTO: USAID/SENEGAL

exploited species of trees whose survival is threatened by poor harvesting practices and overuse.

Training was provided to 2,500 beneficiaries from 16 communities in resource surveillance, developing local codes and conflict management. This enabled communities to develop forest management plans which maximize productivity, limit access to the forests, reduce herder-farmer conflicts, and establish a guard system to ensure that forests are protected and vegetation can regenerate. This new approach is expected to serve as a model for the rest of the country and will contribute to the long-term, sustainable management of natural resources.

The mission also continued working to identify and remove policy barriers to CBNRM. In FY 2008, USAID and the government of Senegal worked together to finalize an important decree that prohibits charcoal production outside of forests with established management plans. This is a major

achievement for the sustainable management of natural resources in Senegal. Forest communities with approved management plans are now empowered to produce their own charcoal, instead of the powerful charcoal cartel which used to exploit community forests and profit people mostly outside of the forest zone. Local charcoal workers now earn about three times what they did, and tax revenue for forest management has increased. Over the past five years, USAID has worked with the national government to remove 33 out of a targeted 34 policy barriers to good forest management.

Wula Nafaa promotes the active participation of women in land use planning, resource management and advocacy. The program helped establish long-term links among female NRM professionals, rural women, and resource user groups, strengthening the overall capacity of women entrepreneurs. For example, USAID provided training and seedlings for a reforestation and tree nursery program that was led

by a women and youth organization. Women now participate fully in village forest management committees and trainings. The importance of these efforts to involve women in forest management was underscored by the award of a \$40,000 cash prize and the title “Woman Entrepreneur of the Year” by the President of Senegal to a USAID-assisted women’s enterprise that produced, transformed and marketed grain products.

USAID will continue to promote full implementation of decentralization laws that transfer resource management authority to local communities, and advise on policies that promote sustainable NRM. USAID’s new Agriculture and NRM program will work closely with local and national partners to drive policy analysis and promote policy reform, quantify policy issues and evaluate their impact, and actively engage institutions and government specialists in reform.

Sierra Leone

Forest Co-management and Better Agroforestry

U.S. assistance in Sierra Leone related to natural resources has focused on developing a transparent diamond trade through the Kimberly Process. Once infamous for its “blood diamonds,” the country now has a system where a portion of revenues benefit the wider population. In FY 2008, Sierra Leone started the Promoting Agriculture, Governance and the Environment (PAGE) program, implemented by ACDI/



PHOTO: TIM RESCH, USAID

A FEW GIANTS still reside in the Gola Forest of Sierra Leone. Here, a guide gives scale to a massive tree buttress.

VOCA, which includes a natural resources management (NRM) component with forestry and biodiversity conservation activities.

The lack of a coherent and coordinated NRM and conservation policy framework is a major constraint for both decentralized governance and environmentally sustainable economic development in rural areas, where forestry programs are understaffed and presently lack both the resources and the capacity

to implement their mandate to manage and protect forest resources. PAGE will support the adoption of forestry co-management in pilot sites and nationwide, and apply a value-chain approach to improve incomes from agroforestry crops including cocoa and coffee.

PAGE is working collaboratively with the Creating an Enabling Policy Environment in Sierra Leone (CEPESL) project, implemented by ARD, to promote the policy

and legal changes required for improved resource management and biodiversity conservation. While CEPESL will address policy change at the national level, PAGE will pilot test new policies at the local level. A recent national-level workshop co-sponsored with the European Union reviewed existing forestry and wildlife policy, identified shortcomings, and made recommendations for updating Sierra Leone's legal, political, and regulatory framework.

Forest co-management is a proven approach to cost-effective biodiversity conservation and is presently being implemented in neighboring Guinea and Liberia. Co-management as a practice inherently recognizes that local people have knowledge about their ecological environment and that they are already managing their natural resources (such as allowing certain forests to regenerate and deciding which size trees to cut). While Sierra Leone's communities have little access to markets, technology, and technical knowledge, the most challenging barrier to forest co-management is lack of democratic governance. Taking a partnership approach to working with local communities, government forest officers, and local NGOs, PAGE will work to develop a common set of skills and a platform of understanding about decentralized forest management.

PAGE is working in cooperation with local stakeholders and other projects that are already on the ground, in strategic and biologically key areas such as the Kambui Hills forest reserve, the Eastern part of the Outamba-Kilimi National Park, the Loma Mountains, and

other community protected forest reserves. For example, PAGE is directly supporting the Tacugama Chimpanzee Reserve with logistical and technical support that reinforces their efforts to implement a national chimpanzee survey.

To improve economic development, PAGE will work to assess and improve the value chain for shade cocoa in Kenema, Kono and Kailahun districts. A planned baseline study of the cocoa sector and other commercial species will provide a detailed asset inventory of the existing production and opportunities for expansion.

PAGE will also work to link shade cocoa producers to niche markets and new buyers who are interested in higher quality and environmentally sustainable chocolate in Europe and the United States. While creating new economic opportunities for improved livelihoods through the value chain approach, PAGE will ensure that local people preserve their access to traditional forest products essential to their household economy such as charcoal, fuelwood, and fruits. PAGE will set up a simple, cost effective biological survey in key intervention zones in order to monitor changes in land use and species presence or absence during the life of the project.

To take co-management to the next level, PAGE is participating in the regional Mano River Union (MRU) forum on forest management and conservation, and supports and monitors the impact of the Mano River Region Forestry Initiative. PAGE is also collaborating with the Sustainable

and Thriving Environments for West African Regional Development (STEWARDS) project implemented by USDA Forest Service, Landscape Management for Improved Livelihoods (LAMIL) managed by ICRAF, and the Land Rights and Community Forest Program (LRCFP) in Liberia. More information on these programs is in the sections of this report on USAID/West Africa, Guinea, and Liberia.

Sudan

Capacity Building and Landscape-Level Conservation

Sudan's 22-year civil war ended in January 2005 with the signing of a Comprehensive Peace Agreement. Part of this agreement created an interim sub-national government of Southern Sudan and set a timetable for elections in 2011 to determine whether Sudan will ultimately be one or two countries. To support implementation of Agreement protocols related to the environment, USAID is promoting conflict-sensitive natural resource management which provides opportunities for employment and income generation. Natural resources are critical to sustainable livelihoods in Southern Sudan but will remain a source of conflict without effective governance.

In FY 2008, USAID helped create and develop governance mechanisms to safeguard resources while encouraging sustainable livelihoods in Southern Sudan's diverse ecosystems. One such mechanism was an Environmental Policy Task Force within the Ministry of



RUNNING ORYX are among the species revealed by aerial surveys of the Boma-Jonglei landscape of Southern Sudan.

PHOTO: PAUL ELKAN, WCS

Environment, Wildlife Conservation and Tourism. The Task Force was assembled to produce an environmental policy to shape the utilization of natural resources for sustainable development. USAID also collaborated with Sudanese counterparts to draft and revise a framework for environmental policies and guidelines.

USAID contributed significant organizational and capacity building assistance which resulted in the formation of a cabinet-level inter-ministerial committee on natural resources management for the government of Southern Sudan. This committee, the Natural Resource Management Group, is working towards a goal of improving knowledge and oversight of activities in areas of biological significance across Southern Sudan.

USAID made considerable investments in training, technical assistance and organizational capacity building for the conservation sector in Southern Sudan. Thirty officials from the Ministry of Agriculture and Forestry received training in professional management of forest concessions. Another 39 future national protected area managers graduated from the Boma Wildlife Training Center, established with USAID support. Almost 300 personnel from government and civil society organizations were trained in environmental impact assessment methods or administration and management of environmental programs.

Forest management and conservation require a well-trained, professional workforce. USAID established the Kagelu Forestry Training Center a few years ago, the first and only institution of its kind

in Southern Sudan, and in FY 2008 the Agency provided institutional and material support. USAID is directly supporting the training of 54 forestry guards, with 16 having graduated from a two-year course in 2008, and the remainder in their first or second year.

The astounding results of USAID-funded aerial surveys conducted by the Wildlife Conservation Society in 2007 inspired the Agency to launch a new program with them in FY 2008 which promotes environmental conservation and sustainable livelihoods in the Boma-Jonglei landscape. Most of the large wildlife were discovered to be thriving despite years of conflict, including huge populations of white-eared Kob, Tiang and Mongalla gazelle whose 1.2 million animal migration is comparable to the annual circuit of wildebeest

and zebra in the Mara-Serengeti ecosystem. The project aims to strengthen institutional capacity for sustainable management of natural resources; develop participatory land-use planning, zoning, and resource management; conserve biodiversity through protected area management, monitoring, and ecotourism development; and, improve community livelihoods.

Nascent institutions and capacity, policy development and enactment procedures, and limited infrastructure continue to pose challenges to sustainable natural resource management in Southern Sudan. USAID completed a detailed environmental threats and opportunities assessment to guide USAID programs as they move forward in FY 2009 to

assist the government and civil society in Southern Sudan with biodiversity conservation and sustainable natural resource use.

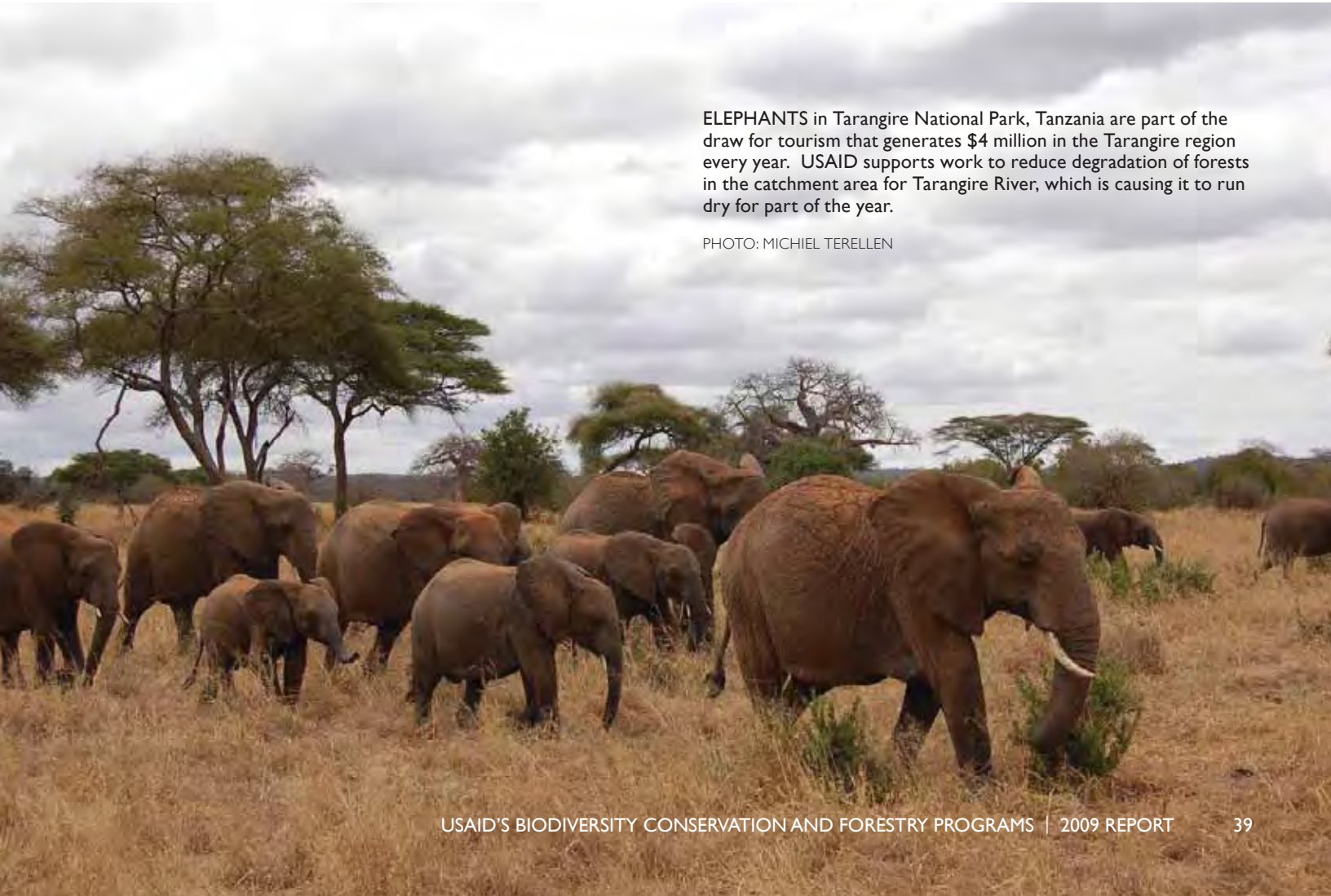
Tanzania

Targeted Landscape Conservation through a Livelihoods Approach

Tanzania boasts a high diversity of wildlife due to its extensive remaining natural land cover, primarily savanna, miombo woodland and montane forest. Economic growth relies heavily on the sustainable use of natural resources, but most of the country's population survives at a subsistence level with livelihoods dependent on the use of wildlife, fish, grazing

land and forests. USAID works to stem biodiversity loss by promoting policies, management practices, and livelihood options conducive to sustainable natural resource conservation.

USAID/Tanzania supports natural resource management in five of Tanzania's most critical ecosystems, which include threatened coastal areas, savannah steppe, wetlands, and chimpanzee habitat. Effort is focused around protected areas on land used by wildlife as a corridor for migration or dispersal to new areas. Activities include: alerting local communities to the dangers of unsustainable agricultural practices; improving land tenure and property rights; providing sustainable income opportunities; preparing village land use plans; and demarcating

A photograph showing a herd of elephants in a savanna landscape. The elephants are of various sizes, including several adults and a few calves. They are standing in a field of dry, yellowish-brown grass. In the background, there are several acacia trees and a cloudy sky. The overall scene is a typical African savanna environment.

ELEPHANTS in Tarangire National Park, Tanzania are part of the draw for tourism that generates \$4 million in the Tarangire region every year. USAID supports work to reduce degradation of forests in the catchment area for Tarangire River, which is causing it to run dry for part of the year.

PHOTO: MICHIEL TERELLEN

areas for community-based wildlife management, with associated by-laws.

By the end of 2008, 5.3 million hectares of land were under improved conservation management in targeted areas of the Tarangire-Manyara ecosystem, Ugalla ecosystem, Greater Gombe ecosystem, Ruaha-Usungu-Rungwa ecosystem and the coastal zone. This includes areas under co-management between communities and government or the private sector. Throughout these landscapes, USAID support has helped the government make tangible gains in sustainable livelihoods such that community-based conservation and associated economic benefits from tourism provide incentives for protecting Tanzania's unique ecosystems.

One approach to community-based natural resource management is a watershed management program that ensures sustainable water flow to significant biodiversity areas. For example, the Tarangire River is the lifeline of Tarangire National Park during the dry season, but degradation of the upstream catchment area has made the river run seasonally dry. The catchment includes three government and community forest reserves in the Kolo Hills threatened by illegal and unsustainable felling of trees for building poles, charcoal, and new land for agriculture or grazing. Without tree cover, soil has eroded and forests are unable to recover, streams and the river get clogged with silt, and rains sometimes lead to flooding downstream instead of percolating through the soil over many weeks. In recent

years the river flow has slowed or stopped entirely during the dry season, raising concerns for the people living alongside it and the downstream national park, whose abundant wildlife generates about \$4 million annually from tourism.

Since 2007, USAID has supported the African Wildlife Foundation's work to help Kolo Hills communities participate in joint forest management (JFM) with the Tanzanian government, in order to protect the forest from unauthorized users and manage local use of the forest for timber, firewood, honey, and other saleable forest products. Thus far the four villages of Mnenia, Kolo, Itundwi and Kandaga have engaged in the JFM process through introductory meetings, creation and training of Village Natural Resources Committees, study tours among similar program sites, and drafting of JFM documents including by-laws for each program. In these villages, illegal activities have decreased, cultivation and grazing has been stopped, and erosion is reduced. Scaling up this activity to cover all the Kolo Hills villages will contribute to the sustainability of the forest and Tarangire River along with all the benefits to local people and biodiversity.

Another CBNRM approach is promoted by Tanzania National Parks and Wildlife (a division of the Ministry of Natural Resources and Tourism, MNRT), which demonstrated a new commitment to policy reform by expanding its Wildlife Management Area (WMA) program beyond the pilot stage. The WMA program allows approved community Wildlife Management Associations to contract

with the private sector to co-develop and benefit from sustainable tourism enterprises. With USAID support, ten Wildlife Management Associations have attained user rights, and ten more applications are awaiting approval. Additionally, women are now required to serve on each Association's Board of Directors, play a significant role in conservation business enterprises, and work as village game scouts. Only six months after the gazettelement of new WMAs in 2008, \$3 million in contracts were registered with the private sector, providing communities with a tangible benefit and direct incentive to participate in conservation.

During the past year, over 27,000 people were trained in community-based natural resource management which, along with prior investments, increased economic benefits for over 500,000 people (56 percent women) involved in sustainable conservation business activities in priority zones. In addition to ecotourism in WMAs and elsewhere, conservation enterprises include seaweed farming, fish ponds, beekeeping, and specialty coffee cultivation and marketing.

The mission also works to improve environmental policies and legislation at the national level. During FY 2008, a total of 187 regulations, management plans, seminal policies, and bylaws were developed with technical assistance from USAID and ultimately adopted, including regulations under the Environmental Management Act, a coastal management strategy, and revision of the 1974 Wildlife Conservation Act. To help ensure that national environmental protection policy is upheld at the District or local

levels, further investment is required to improve communication, implementation and enforcement.

Tourism became the largest earner of foreign exchange in Tanzania for the first time in 2008, even as MNRT developed burdensome regulations to capture revenue which could ultimately reduce foreign direct investment in this important economic sector. While working to bring policies in line with conservation and development goals, USAID and its partners increased institutional capacity for MNRT's National Parks and Wildlife Division and the Ministry of Water, improved anti-poaching networks, and strengthened land-use planning and land tenure.

Policy reforms supported by USAID over the last ten years have reached a critical stage of implementation to promote natural resource management, conserve biodiversity, and develop well-functioning civil society and government institutions. Building on substantial policy and field conservation outcomes, USAID aims to position Tanzania as a premier ecotourism destination in Africa, transforming rural Tanzanians into participants and beneficiaries of well-managed landscapes, and modernizing conservation management to preserve the country's natural heritage for future generations.

Uganda

Community-based Conservation and Reforestation

The preservation of Uganda's exceptional biodiversity is essential

to sustaining economic growth, supporting healthy populations, and conserving natural resources. USAID/Uganda's environment program focuses on reducing threats to biodiversity in important ecoregions, including western Uganda's portion of the highly endangered Albertine Rift and northern landscapes along the Sudan border.

Threats to USAID's target regions include habitat loss,

habitat fragmentation, pollution from petroleum and natural gas development, and overexploitation of species. The mission works to reduce threats in these landscapes through support for community-based conservation, protected area management, sustainable tourism, economic incentives for conservation, and policy development and reform.

In the Albertine Rift, the most biodiverse ecoregion in Africa,



PHOTO: ANDREW WATSON, DAI

SPEAKING HER MIND: Uganda's Kaseeta village forest management committee has negotiated an agreement with the National Forest Authority to manage over 3,000 hectares of the Budungo Forest Reserve. Here, one of the community members expresses her opinions during a meeting held at the village tree nursery. In the short term, farmers have been granted legal access to land adjacent to the forest where they are now planting tree crops that generate household income while buffering the reserve. In the long term, the community will derive economic benefits from sustainable management of timber and other forest resources. It is currently involved in developing a carbon offset scheme that will generate a regular flow of funding linked to community conservation efforts.

activities continued to focus on communities around protected areas who still rely on natural resources and biodiversity assets but have lost access to areas they once used. In FY 2008, USAID partners assisted communities to improve management of 200,000 hectares of land designated for local use. Communities derived economic benefits from sustainable natural resource management, including increased incomes from program-supported beekeeping operations and tree nurseries.

Tourism in the Albertine Rift protected areas increased significantly in FY 2008. Murchison Falls National Park visitation increased by 15 percent over 2007, while visits to the mountain gorillas of Bwindi National Park grew by 17 percent. Chimp trekking in the Budongo Forest helped increase tourist visits by 27 percent. This growing tourism market, supported by USAID through the development of eco-lodges and chimp habituation, provides a sustainable source of revenue for the government of Uganda to invest in improved park management, increases income for local communities, and promotes biodiversity protection.

Empowering communities to manage and benefit from natural resources has significantly reduced conflict in Albertine Rift parks, but some remains. In 2008, local herdsman moved large herds of cattle into Queen Elizabeth National Park, which the Uganda Wildlife Authority was not able to remove despite USAID support. Expanding oil exploration along Lake Edward and

Lake Albert also poses a challenge to conservation efforts, bringing large numbers of personnel, vehicles and heavy equipment into the parks, disrupting wildlife and causing some to leave park boundaries. As the national government weighs its commitment to conservation against potential oil wealth, USAID and its partners will continue to work with communities to reduce conflict and encourage hydrocarbon companies to minimize their impact on ecosystems and communities.

USAID has been a lead donor in the effort to reduce the effects of global warming in Uganda and internationally through natural resource management projects. The Uganda Mission's Productive Resource Investment for Managing the Environment (PRIME) and the Wildlife, Landscapes and Development for Conservation (WILD) projects worked with communities in the Albertine Rift and northern Uganda ecosystems to establish and register reforestation projects that mitigate climate change through carbon sequestration, reduce pressure on natural forests for wood, and sustain biodiversity with revenue from individuals or companies that pay for forest conservation through the purchase of 'carbon credits' to offset their own climate change footprint.

In FY 2008, a total of 2,230 hectares of community plantations were established and are being maintained with guidance from the WILD project. Local participation was impressive: 183 schools and 46 community associations across four districts of northern Uganda

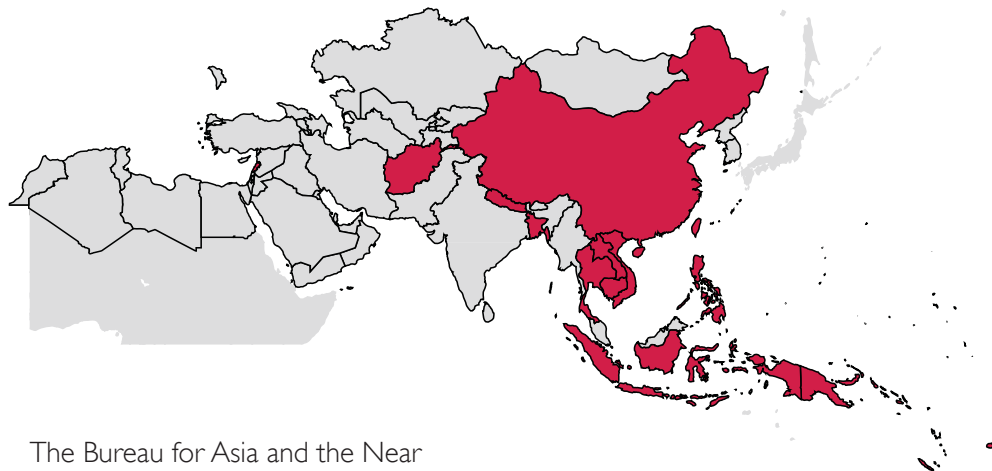
were involved in the tree planting. The purpose of reforestation is to replenish the long-term supply of wood for local fuel and building material, with a near-term benefit of being able to monetize the benefits of removing carbon in the air. A key component to this effort was developing the capacity of the National Forestry Administration to establish carbon baselines in the target areas, develop their ability to assess characteristics of relevant agroforestry trees and model the tree parameters to predict carbon reduction, and develop carbon transaction management systems for administration of carbon credit. Consistent with USAID's biodiversity and conservation efforts, a pool of beneficiaries was established that will benefit from income generation while contributing to the preservation of the environment.

The prevailing peace along the border with Southern Sudan allowed USAID's Northern Uganda Biodiversity Program to begin mapping animal movements between and outside protected areas; assist the Uganda Wildlife Authority with on-the-ground development of park and resource management plans; and identify and promote ecologically responsible land and resource use options. These activities are at an early stage and are expected to rapidly expand as risks lessen and movement eases throughout northern Uganda. In FY 2009, the mission will implement a new tourism promotion activity in the area.

ASIA AND THE MIDDLE EAST

USAID country programs funded biodiversity or forestry programs in over a dozen countries in the Asia and Middle East region.

Asia's rich biological heritage is rapidly declining in the face of unsustainable exploitation fueled by rapid economic growth, insufficient governance processes, increasing population, and agricultural expansion. An estimated eighty percent of the world's endangered species are found in Asia, while approximately 450 million people in the region directly depend on natural resources for their livelihoods. Poor governance results in illegal logging and wildlife trafficking which threaten the natural resource base, increase conflicts, and reduce opportunities for future economic growth.



The Bureau for Asia and the Near East (ANE) was reorganized in March 2008 into the Bureau for Asia and the Bureau for the Middle East. In addition, USAID missions in Central Asian Republics moved from the Bureau for Europe and Eurasia to the Bureau for Asia.

Asia and Middle East continue to share some technical support and backstopping in Washington, and this chapter covers both regions. Lebanon was the only Middle Eastern country with relevant programming in FY 2008 (forestry).



SEAWEED FARMERS harvest a sustainable marine resource in Indonesia.

PHOTO: HISWATY HAFID, DAI

Asia Regional Program

Support for Emerging Needs

The Bureau for Asia monitors new developments in forestry and biodiversity and applies this knowledge to support mission activities across the continent. In FY 2008, this included work with missions to develop several new conservation programs, including forestry and biodiversity activities in Indonesia and Bangladesh, as well as start-up assistance for the Coral Triangle Initiative, a six-nation effort for which the United States has pledged nearly \$40 million.

Illegal logging is a key challenge in the region: it destroys valuable forest ecosystems and the wildlife that depends on them, undermines legitimate commerce, fuels conflict, and has serious economic and environmental consequences. The Bureau represented USAID and worked alongside the State Department and the U.S. Trade Representative in negotiations with China on a memorandum of understanding (MOU) to combat illegal logging. The Asia Regional Program also assisted with implementation of an existing MOU with Indonesia to combat illegal logging, and supported the Responsible Asia Forestry and Trade alliance managed by the Regional Development Mission for Asia.

In addition to technical and program assistance to missions, 40 percent of the Program's resources were transferred to USAID/Cambodia in support of the Biodiversity and Grassroots Advocacy Program implemented by East-West

Management Institute. FY 2008 funds also supported a series of expert roundtables and an applied training for USAID staff entitled *Asia's Future: Critical Thinking for a Changing Environment*, which analyzed the intersections and environmental impacts of trends in climate change, food and energy security, and water supply, among others. A theme of particular note was concern with corruption and governance as challenges in addressing these trends. A principal recommendation was the need to integrate environmental concerns, including climate change, across sectors and throughout the development portfolio.

Regional Development Mission for Asia

Wildlife Law Enforcement, Forest Management and Seascape Conservation

While protected area systems have been established in countries throughout Asia, these parks are too isolated, too small, and lack adequate financial support to effectively conserve biodiversity. Recognizing the limitations of protected areas, and the need to work across political boundaries, USAID's Regional Development Mission for Asia (RDMA) strengthens regional institutions and networks to: restore ecosystem connectivity in key regional biodiversity corridors; combat illegal wildlife trafficking; improve forest management; promote legal timber trade; and improve the management of biologically and economically important coastal and marine resources.

Through the Asia Regional Biodiversity Conservation Program (ARBCP), USAID is conserving biodiversity in the Greater Mekong Sub-region by establishing biodiversity corridors. In FY 2008, RDMA worked with stakeholders in Vietnam's Lam Dong Province to develop a Biodiversity Conservation Action Plan, improving the management of 480,000 hectares of biologically important forest land. Mission-supported activities improved connectivity between protected areas and increased populations of five endangered plants through enrichment plantings on over 1,000 hectares. RDMA also funded the establishment and training of 28 community conservation units to protect and monitor forestry land in the buffer zone of Cat Tien National Park.

Vietnam's forests provide numerous ecosystem services, from storing carbon to regulating rainfall and river flows, but these services have traditionally been undervalued and ultimately compromised. Through ARBCP, USAID promoted innovative conservation finance mechanisms, including support for the development and issuance of Vietnamese Prime Ministerial Decision 380, which established the first national-level payment for ecosystem services (PES) policy in Southeast Asia, allowing natural resource management costs to be borne by companies and individuals who use or value ecosystem services. RDMA supported implementation of this law through the training of 740 government officials on PES and other topics.

THAI AND LAO FOREST RANGERS receive training during a two-week training course organized by USAID's ASEAN-Wildlife Enforcement Network Support Program.

PHOTO: JANANYA HUAMUANGKAEW, FREELAND



The Association of South East Asian Nations (ASEAN) is a natural partner in dealing with illegal wildlife trafficking, an inherently transboundary issue requiring collaboration and coordination among many agencies and countries. RDMA's ASEAN-Wildlife Enforcement Network (ASEAN-WEN) Support Program helps to protect biodiversity and combat illegal wildlife trafficking by assisting ASEAN Member Countries enforce national wildlife laws and international agreements. In FY 2008, RDMA increased capacity and awareness among almost 800 individuals in 75 institutions, which led to at least 44 related enforcement actions this fiscal year. At the third ASEAN-WEN Annual Meeting, a Special Investigations Group was formed to focus on the trade in pangolins and big cats, marking the first time member countries have decided to conduct a cross-border,

long-term investigation of wildlife crime. Long-term sustainability for the network was addressed in part through the creation of an ASEAN-WEN secretariat in Thailand.

USAID arranged for USDA Forest Service assistance to partners drafting an ASEAN-WEN sustainability plan, as well as a management plan that focuses on better coordination with U.S. agencies and ASEAN countries. An evaluation of the ASEAN-WEN program conducted in 2008 endorses the positive results of ASEAN-WEN to date and recommends increased participation of civil society organizations, strengthened Secretariat operations, and enhanced collaboration with China to address demand-side issues. RDMA has already begun responding to this evaluation with activities in China initiated in September 2008, including efforts to secure support

from the Chinese Government and NGOs to cooperate with ASEAN-WEN on wildlife enforcement.

RDMA's Responsible Asia Forestry and Trade (RAFT) program increases regional timber trade from legal sources, improves the sustainability of forest management on the ground, and strengthens regional cooperation on forest management and trade. During FY 2008, RAFT placed 2.4 million hectares of biologically significant forests under improved management regimes with 20 timber enterprises in Indonesia, Malaysia, and Vietnam. These forest concessions are being led through stepwise approaches to forest certification, which involves protecting High Conservation Value Forests and implementing Reduced Impact Logging practices, thereby conserving critical habitats for endangered wildlife species such

as the Borneo orangutan. Through RAFT's work at the regional level, ASEAN senior forestry officials agreed to explore regional timber legality standards to establish broad guidelines for countries to define what is legal. RDMA supported this decision by developing guidelines for verifying the legality and sustainability of timber using chain of custody documentation (from forest to furniture and each step in between). RAFT also provided forest resource conflict management training to stakeholders representing 20 industry, government, and civil society institutions from six countries, and has begun work with Chinese timber buyers and processors to avoid illegal timber and lumber.

The newest activity supported by RDMA is the Coral Triangle Initiative Support Program (CTSP), which aims to improve coordination among the CTI partnership of nations in the region, donors, NGOs and the private sector. The Coral Triangle covers the marine exclusive economic zones of Indonesia, Timor-Leste, the Philippines, Malaysia, Papua New Guinea, and the Solomon Islands. It is the epicenter of marine biodiversity on the planet, with resources that directly sustain the lives of over 120 million people. The Coral Triangle contains 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 anywhere. CTSP and NGO partners aim to establish at least one fully functioning seascape-scale conservation program in each country, establishing models for seascape management that can be scaled up nationally and regionally.

Afghanistan

Restoration of Rangelands and Woodlands, Conservation of Key Areas

Afghanistan's varied geography supports a high diversity of plants and wildlife. Most of the national territory is classified as rangeland, supporting wild ungulates and over 20 million head of livestock. The high mountains are still home to several endangered species. However, decades of civil conflict, poor management and drought have heavily degraded much of the remaining land, which was forested with native pine, oak, poplar, willow, pistachio and olive trees. Restoring lost forests and protecting remaining areas of biological significance and economic value through community-based natural resource management are priorities USAID shares with the Government of Afghanistan.

In FY 2008, more than one million hectares were placed under improved natural resource management with USAID support, exceeding the goal by over 250,000 hectares. With insecurity increasing in some areas, this is an incredible accomplishment and one that will help ensure continued sustainable economic growth. Included in this result are over 1,000 hectares of natural pistachio forests which are now protected by community-based forest management committees who guard against encroachers and animals, prevent illegal cutting, and only harvest nuts when ripe. As a result, pistachio production increased about 50 percent in these areas.

USAID organized workshops to mitigate conflict due to access and use of rangeland resources, and assessed about 400,000 hectares of vulnerable rangeland for overgrazing and forage competition among wild and domestic ungulates. Mapping of areas where herders release domestic yak, combined with collection of scat samples from wildlife and livestock species, is leading to a better understanding of competition between domestic and wild yaks, as well as other animals. This information will feed into a plan for managing rangelands to reduce or eliminate overgrazing which is harmful to both biodiversity and pastoralist livelihoods.

The remainder of the area under improved management comes from roughly 600,000 hectares of natural resource-rich and biologically significant areas. Support to the Wildlife Conservation Society resulted in the production and adoption of a community management plan for Afghanistan's first National Park, Band-e Amir, which was formally declared on Earth Day 2009. Like America's first national park, Yellowstone, Band-e Amir boasts both ecological and aesthetic value, including habitat for wolves, ibex, and the endemic Afghan snow finch, as well as six spectacular high mountain lakes.

The United States assists the Afghan government in formulating laws and policies that will provide both the legislative and managerial base for conservation of the important biodiversity areas of the country. With nascent government ministries and departments at both national and provincial levels, ensuring public officials have the means, knowledge



AFGHANISTAN'S FIRST NATIONAL PARK, Band-e Amir, was inaugurated on Earth Day 2009. High in the Hindu Kush mountains of central Afghanistan, the park possesses six sapphire-blue lakes, numerous streams and waterfalls, and a variety of wildlife including ibex, wolf, and the Afghan snow finch, which may be the country's only endemic bird.

PHOTO: DON BENUNAH, WCS

and ability to effectively carry out their environmental duties is key. In 2008, USAID provided technical assistance in drafting a protected areas law that is now under review by the Afghan Ministry of Justice.

In addition to management, enforcement, and policy actions, USAID provided support for farm forestry activities which reduce pressure on natural forests. One project planted more than 1.7 million trees in approximately 100 hectares of woodlots, which will help rural people meet the demand for fuel wood and construction materials more sustainably. Community-based management of nurseries was promoted, including an expansion of

home nurseries to 250 households, directly targeting women in this valuable economic activity. To the extent possible, school children are given the opportunity to participate in this and other project activities that in the long run could provide the supply of skilled advocates for and practitioners of biodiversity and forest conservation. For example, under the Adopt-a-School program, pupils in 80 schools were given saplings to be planted around the schools and their homes.

One critical element of U.S. efforts in Afghanistan is to improve the ability of Afghans to understand the economic benefit and social value of conserving, protecting

and efficiently managing their natural resources. The lack of skilled technicians and managers prevents improved environmental technologies from being adopted. With USAID support in FY 2008, more than 5,500 professionals and community members were trained in fundamentals of natural resources management or biodiversity conservation throughout the country, including almost 1,000 women. USAID investments in the communities and institutions of Afghanistan have made substantial progress in restoring the country's depleted natural resources and the sustainable livelihoods that depend on them.

Bangladesh

Co-management of Forests and Protected Areas

Bangladesh hosts the world's second largest river system, draining a million square kilometers from China, Nepal and India. Ninety percent of Bangladesh's forests and 50 percent of its wetlands have been lost or degraded due to heavy pressure on dwindling arable land. Over the past several years, USAID has responded with innovative co-management programs for community members and the government of Bangladesh in nine ecologically vulnerable areas, resulting in habitat restoration, conservation of natural resources, and improved livelihoods. In FY 2008 a new program began expanding co-management to a national level.

USAID has played a pioneering role in protecting and restoring Bangladesh's natural resources and biodiversity in a manner that simultaneously promotes income and livelihood growth for the rural poor while introducing and advancing good governance practices. Co-management is a model actively adopted by Bangladesh's government to work with communities in managing critical natural resources. USAID has been the prime donor assisting the government in developing and implementing this approach.

Building upon previous successes in aquatic and forest ecosystems management, USAID launched the Integrated Protected Area Co-management (IPAC) Project in FY 2008. Implemented by IRG, IPAC will work to develop a co-management strategy that applies to all ecosystems, including those within USAID's past



PHOTO: USAID

SHOULDERING THE BURDEN of forest management, communities in Bangladesh co-manage protected forests by conducting patrols and other activities that keep logging sustainable and legal.

project interventions and also outside freshwater and forest ecosystems. IPAC will scale-up natural resource co-management at the policy level in Bangladesh by achieving recognition, acceptance and integration of this approach by government into its management tactics. IPAC is expected to result in responsible, equitable economic growth and good environmental governance, with work in more than 50 protected areas, directly benefiting 2.5 million people.

In FY 2008, through the Nishorgo Support Program (NSP, also managed by IRG) for the co-management of forest protected areas and IPAC, USAID funded the training of over 6,000 Bangladesh Forest Department staff and community members to manage protected areas more effectively through shared authority and responsibility. More than 3,000 of the trainees were women, resulting in greater women's participation in patrolling protected areas. USAID

also spearheaded the formation of local and national conservation constituencies, involving civil society leaders, women, and youth. In the past four years, USAID income generating activities led to economic benefits for roughly 55,000 women.

Over 113,000 hectares of forest and wetlands came under improved natural resource management due to NSP and IPAC, including 46,000 hectares of biologically significant land. About 32,000 hectares of the latter have already shown improved biophysical conditions, as indicated by unchanged or increased populations of eight indicator bird species, and reduced incidents of illegal logging. Better conservation contributed to increased economic benefits for 100,000 people in FY 2008 alone.

The greatest challenge for this program is to ensure the sustainability of co-management, which requires that communities have financial

resources for conservation. To advance this goal, USAID facilitated the establishment of a mechanism for the government to share park fees with communities, which will help finance conservation efforts and support eco-friendly job development. The fee-sharing program is in the final stage of approval.

The Ministry of Environment and Forest is committed to expanding the co-management model into a national protected area systems strategy that represents all ecosystems in Bangladesh. USAID anticipates that with IPAC support, the national government can achieve this goal by 2012. Over 500,000 people are expected to benefit from alternate income generation and improved livelihood opportunities, and up to 350,000 additional hectares will be co-managed by communities and the government.

Cambodia

Grassroots Advocacy, Controlling Wildlife and Timber Trafficking

Cambodia's heavily forested Cardamom mountain range is the third largest standing rainforest in Southeast Asia and one of the world's 34 biodiversity hotspots, with 2,300 plant species and at least 14 endangered animals. Biodiversity here is threatened by forest loss and degradation, overexploitation of key species, and undervaluing of ecological services provided by forests. Asian elephant, gaur and banteng (types of wild cattle), tiger and Asiatic black bear are all at risk, as well as indigenous communities who rely on the

forest for their daily needs. USAID conservation efforts are aimed at preserving two million hectares of the Cardamoms and other forests from illegal logging and wildlife trafficking.

Support from USAID/Cambodia strengthens government agencies' law enforcement capacity to counter illegal logging and wildlife trade, raises consumer awareness to stop illegal logging and buying of wildlife products, and works with communities to develop livelihoods that do not result in deforestation.

In FY 2008, forest rangers arrested 746 suspects, filed 71 cases for illegal logging or wildlife trafficking (22 of which were sent to court), and investigated 170 land clearing cases. Remote sensing (satellite and/or aerial images) helped monitor forest cover and facilitated the zoning and demarcation of protected forest. Forest fires declined to an average of two per day in 2008, a 95 percent reduction from the baseline in 2002 of 35 fires per day. Lastly, pilot nurseries reached their reforestation target of 65,000 seedlings grown



PHOTO: BORETH SUN, DAI

SURROUNDED: Vines wrap the trunk of this Sralao tree in a community forest in Mundul Kiri, Cambodia. Sralao trees are valued for their timber, but the forest is threatened by encroachment from neighboring rubber plantations.

and planted by community members to improve an elephant corridor in the Southwest Cardamoms. Local communities will continue to plant 2.5 million trees over the next five years, even though USAID support to the nurseries has ended.

In addition to natural resource and protected area management, USAID assists communities in advocating for environmental protection of land and natural resource rights. Efforts focus on the Prey Lang Forest, the largest remaining area of lowland, dry evergreen forest in mainland Southeast Asia. In Prey Lang, an estimated 600,000 people rely on the forest for survival, but logging and mining interests have the potential to destroy this critical, fragile, and ancient forest habitat. USAID is preparing the communities to manage, protect and monitor the forest ecosystem and its valuable biodiversity.

Indonesia

Natural Resource Management and Orangutan Conservation

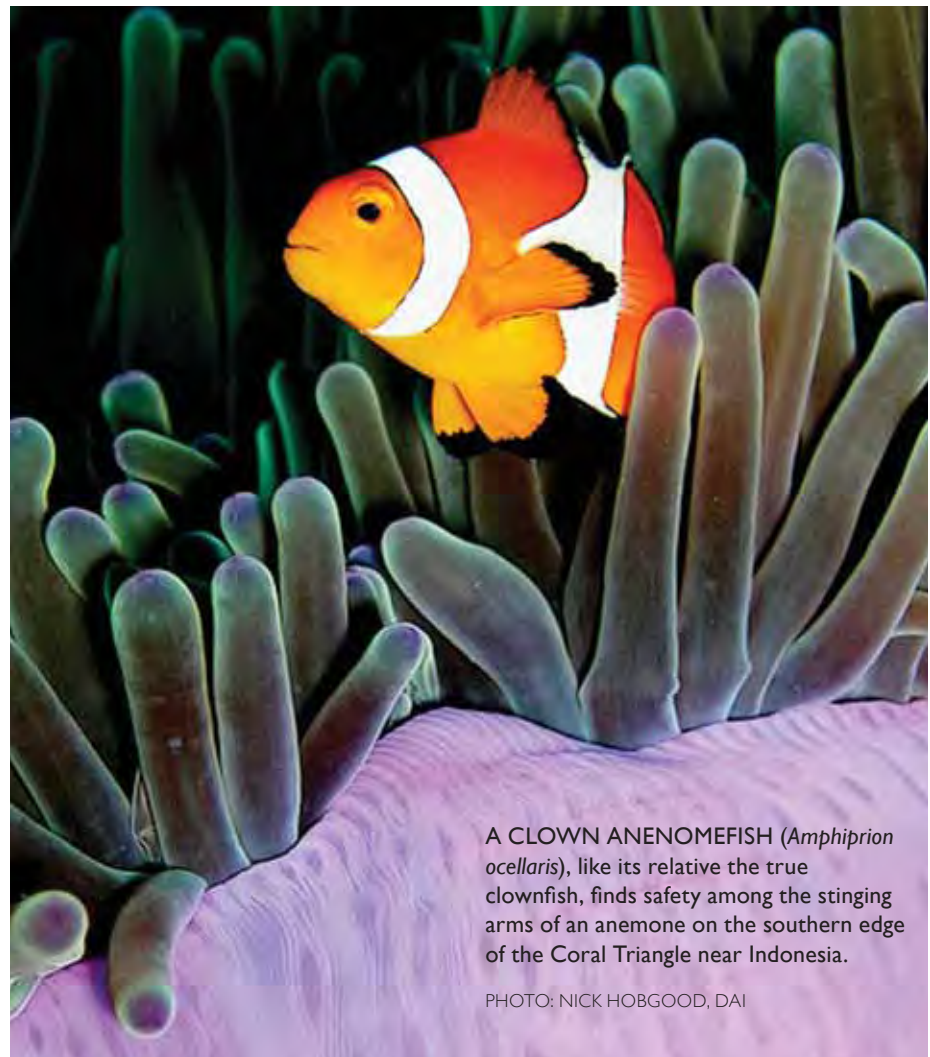
Indonesia is one of only a few “megadiverse” countries, ranked first in the world in number of species of mammals, palms, swallowtail butterflies, and parrots. It contains ten percent of the world’s flowering plant species and has the highest coral species richness in the region. A high rate of forest degradation and deforestation combined with poorly managed marine resources has put a substantial number of species at risk of extinction. USAID conservation programs are designed to conserve biodiversity through

programs focused on the orangutan and its forest habitat, important watersheds, and coral reef ecosystems.

The mission’s Orangutan Conservation Services Program (OCSP) primary objective is to conserve wild orangutan populations and their forest habitat in Kalimantan (Indonesia’s portion of Borneo) and Sumatra. OCSP activities implemented by DAI address threats at the site level, strengthen conservation practices, increase law enforcement, and improve spatial planning.

OCSP work with national government, community and private sector stakeholders resulted in several significant achievements in FY 2008. To

protect orangutan habitat, the mission initiated formal partnerships with 25 international and local NGOs through its grants program. Through such partnerships, the program implements activities directly affecting 950,000 hectares of habitat and in total impacts more than 3.3 million hectares, containing approximately 40 percent of orangutans found in Indonesia. USAID support improved patrolling, provided alternative livelihoods for communities, and suppressed peat land fires, reducing the number of fire hotspots from 207 to only 15. A National Action Plan for orangutan conservation was adopted in 2008 with the support of Indonesia’s President Yudhoyono, in which one million hectares of Indonesia’s forest



A CLOWN ANEMONEFISH (*Amphiprion ocellaris*), like its relative the true clownfish, finds safety among the stinging arms of an anemone on the southern edge of the Coral Triangle near Indonesia.

PHOTO: NICK HOBGOOD, DAI

previously slated for conversion to plantations will instead be managed sustainably, protecting almost 10,000 Bornean and Sumatran orangutans.

USAID's community-based field school approach has been adopted by the Ministry of Forestry for the development of its National Model Conservation Villages program, which is being rolled-out in national parks across Indonesia. This approach leverages experience from village leaders and local communities to develop on-site learning activities that employ a training of trainers model. These villages are intended to be models of sustainable use and serve a protective function in park buffer zones. In FY 2008, 30 national park staff received training and 132 conservation villages were established across the country. During the same period, several conservation campaigns were completed in communities adjacent to protected areas in three provinces. These campaigns raised local awareness of and commitment to local conservation initiatives and improved the conservation of nearly 6,000 hectares, the impact of which continues today through conservation campaigns led by a local university.

USAID assisted the Government to implement 18 relevant policies that will have a broad impact on water resources and forest protection. Local government decrees were developed which not only codified collaborative management and conservation between government, community groups and other stakeholders to protect water resources, but allocated funds to them through the formal government budgeting cycle. Tools and approaches

developed by USAID were adopted by several national agencies.

An estimated 150 million hectares (84 percent) of Indonesia was covered in natural forest in 1950, but only 90 million hectares remained in 2005. Twenty million hectares of Indonesia forest were cleared in the last 15 years alone, confirming one of the highest rates of tropical forest loss in the world. In parts of Indonesia, unsustainable oil palm plantation development constitutes the major threat to orangutan habitat. In July 2008, USAID led a working group tasked with developing management and monitoring guidelines for High Conservation Value Forest (HCVF) in and around oil palm plantations. Endorsed by the international Roundtable on Sustainable Palm Oil and the Indonesian Palm Oil Producers Association secretariat, the working group consists of representatives from civil society, private sector, and the government.

USAID's Environmental Services Program (ESP) focuses on collaborative conservation and land rehabilitation inside and adjacent to protected areas and other forest areas of high biodiversity value, thereby developing a solid foundation of watershed management and biodiversity conservation areas across Java and northern Sumatra. In FY 2008, activities in five provinces improved forest management on 170,666 hectares of biologically significant land and 475,000 hectares of HCVF (overlapping figures which both include protected areas). An additional 6,659 hectares of degraded land was rehabilitated to restore ecosystem services. Livelihoods development activities in communities



PHOTO: ANDREW WATSON, DAI

HANGING ON: This Sumatran orangutan (*Pongo abelii*) in the Bukit Lowing area of Leuser National Park in North Sumatra is one of fewer than 6,000 remaining in the wild. USAID supports land-use planning and protected area management to conserve orangutans, including community policing and habitat protection.

just outside of protected areas, such as agroforestry and reforestation, further maintain or enhance the quality and quantity of water. A focus on water as an entry point for local conservation management has generated significant technical and financial support from national and local government agencies as well as water utilities companies.

Commercial forestry in Indonesia is both a threat to biodiversity and an opportunity for private sector engagement in conservation. OCSF regularly partners with the extractive industry, which has rights to exploit a

large portion of orangutan habitat. In West Batang Toru Forest in northern Sumatra, a plan to conserve and manage protected and commercial forests was developed with NGOs, local communities, Government and the private sector; a gold mine and a logging company working in the area have agreed to adhere to the plan. In East Kalimantan, USAID supported the Kutai National Park Authority and adjacent timber plantations to devise a plan to protect the park and the orangutans found in both areas. In West Kalimantan, assessments of HCVF were made within two timber concessions that are actively pursuing Forest Stewardship Council certification.

Although the President of Indonesia has demonstrated the highest level of government commitment on a number of environment issues, the private sector has lagged behind and remains the driving force behind unsustainable natural resource exploitation in Indonesia. USAID/Indonesia's Private Sector Sustainability Facility (PSSF) is a special initiative to improve corporate environmental practices. The mission plans to use the facility to influence key private sector actors toward responsible and sustainable natural resource management. PSSF may assist private companies to take advantage of potential financial incentives to reduce carbon emissions from deforestation, link with markets for certified or environmentally friendly products, develop greater transparency in natural resource utilization, or become "early adopters" of better biodiversity management techniques.

Indonesia is one of six countries in the Coral Triangle, the greatest collection of coral reefs and associated marine life on the planet and the conservation target of the Coral Triangle Initiative, a partnership of governments, NGOs and the private sector. The Coral Triangle Support Program assists Indonesia and other countries to improve the management of coastal and marine resources and associated terrestrial ecosystems that support local livelihoods and national economies in Coral Triangle nations.

Lebanon

Forest Restoration and Fire Management

Lebanon's forests are limited in area but provide significant regional ecological benefits for water, carbon storage, wildlife habitat, and rural

income generation. Key threats include fire, urbanization and land use change, as well as unexploded munitions that prevent forest management in some areas. Wildfires are the most prominent drivers of forest cover loss in Lebanon and have occurred with increased frequency over the last few years, many from agricultural clearing gone out of control, and others sparked by conflict. Fire has become a hazard to even the most resilient forests in Lebanon, with a heavy impact on the historic cedar reserves.

USAID/Lebanon formed a partnership with the USDA Forest Service (USFS) at the end of FY 2008 to address the threat of fire and improve forest management. USFS worked with officials and partners to develop a workplan focused on helping Lebanon address key threats to forest and wildlife resources.



PHOTO: PETER REISS, DAI

CONSERVING CEDARS: For the Lebanese, the cedar tree is a symbol of the hopes and aspirations of the nation. Unrestrained harvesting and uncontrolled construction in cedar preserves is a source of widespread concern. Better regulation and reforestation are now successfully reversing years of mismanagement and misuse.



VOLUNTEERS OF THE LOCAL ANTI-POACHING GROUP in Khata, Nepal. These logs from a threatened khaira tree (*Acacia catechu*) were confiscated from illegal loggers with their help.

PHOTO: HELENA TELKANRANTA, WWF

Proposed activities include: providing members of the Lebanese National Committee to Combat Forest Fires the opportunity to visit and learn from regional and local fire command centers in the United States; conducting emergency management courses adapted to local needs for Lebanese firefighters and volunteers; helping retrofit military vehicles for use as firefighting engines in remote areas; and, assisting outreach and environmental education managers to develop communication strategies and educational materials to improve local awareness of the forests and forest protection.

Northern Lebanon contains most of the country's biodiversity and forests, as well as a number of economically disadvantaged communities that harvest fuel wood and other resources heavily. USFS is assisting with an assessment of these mountain forests to determine the nature of current threats and find ways to support local organizations to advance

conservation and promote energy alternatives. In southern Lebanon, USFS is working with local partners to focus rehabilitation of selected cedar reserves and other forested areas impacted by cluster munitions and related remnants of conflict in 2006.

Across the country, the Lebanon Mountain Trail Association played a critical role in helping to unify a diverse set of communities around conservation and socioeconomic objectives. USFS is helping the association to develop strategies which better ensure both their long-term success as an organization and secure future maintenance of the mountain trail and associated enterprises. Additionally, USFS is collaborating with researchers at the American University of Beirut's Agricultural Research and Education Center native tree nursery to optimize seed germination and seedling production protocols to improve the success rate of the nursery's native plant production.

These plants will be distributed to municipalities across the country as part of a reforestation program managed by the University.

Nepal

Community Natural Resources Governance

Nepal's rugged mountains, rolling plains, fertile valleys and high-altitude deserts comprise 118 ecosystems with approximately 6,000 flowering plant species, 844 bird species, and a host of large mammals from the Bengal tiger and Asian elephant to bear, deer and monkeys. The country has made great progress towards conserving this biodiversity in recent years, but major threats persist, including overexploitation of forest resources, illegal trade in wild plant and animal products, and overgrazing.

USAID/Nepal's biodiversity and natural resource management (NRM) program, implemented by CARE-Nepal and other partners, 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). The program targets over 1,100 NRM groups including community forest user groups, buffer zone user groups, conservation area management groups, various committees and councils, forestry related women's groups, and their federations and advocacy forums at local and national levels. These groups exist primarily to promote sustainable conservation, management and utilization of a specified portion of forest or protected area buffer zone entrusted to them by the Government of Nepal.

Engagement with community forest users' groups has increased knowledge and skills related to sustainable forest harvests, active forest management, participatory biodiversity monitoring, and preparation and/or renewal of forest operational plans. In FY 2008, over 8,500 hectares of community forests and buffer zone areas were better managed due to USAID investments, for a total of 49,095 hectares since 2002, one-third in sites with globally significant biodiversity. Community forest user groups harvested 32,387 metric tons of forest products on a sustainable basis for subsistence or commercial trade in local and international markets, and organized

309 issue-based campaigns at local, regional and national levels to hold government and other stakeholders accountable on issues related to management of natural resources.

A number of projects were implemented for community forest users groups, including training on sustainable forest management, mobilization of anti-poaching units, participatory biodiversity monitoring, community-based livestock insurance schemes, herders' education and awareness programs, improvement of snow leopard habitat maps, construction of watch towers, and support for ecotourism.

Community organizations in Nepal are highly participatory, and marked by transparency and accountability. A total of 565 groups conducted public hearings and audits of their programs, and recovered \$9,500 of misused funds. USAID also reached over 265,000 community group members (47 percent female) through various types of trainings, workshops, awareness classes, and issue-based advocacy campaigns focusing on sustainable forests management and biodiversity conservation.

USAID is expected to launch the Actions for Biodiversity Conservation (ABC) activity in FY 2009, which is designed to conserve biodiversity in priority landscapes of Nepal by strengthening natural resource governance, improving sustainable livelihoods and adapting to climate change. ABC will focus on biodiversity and climate change issues and pilot cutting edge tools for financing community groups and protected area management, such as payments for ecosystem services systems, where

those who benefit from plentiful clean water or climate change mitigation pay to conserve the forest which provides these benefits. The program will expand lessons and best practices in good governance across Nepal, especially at the landscape level.

Philippines

Local Conservation Through Governance and Land Tenure

The Philippines is among 17 countries on the planet which together comprise over two-thirds of the world's biological diversity. With thousands of islands and a unique geological history, the Philippines has one of the highest rates of mammal endemism in the world, and scientists have recognized it as the "center of the center" of world marine biodiversity.

The tropical forest and biodiversity assets of the Philippines are seriously threatened by human activities. Some 90,000 hectares of forest are lost each year and formerly productive fisheries are on the brink of collapse, threatening both subsistence fishing communities as well as commercial operations. Intensification of small-scale illegal logging and conversion of natural forests to farmland, largely due to upland migration and poverty, threaten both terrestrial biodiversity and the livelihoods of over 20 million Filipinos. Degradation of upland forests in turn affects the dependability and quality of water supply and coastal ecosystem health in this archipelagic nation. Inadequate sanitation poses additional threats to marine areas and costs the Philippines \$2 billion annually through its impact

SETTING THE LIMITS: Members of the Pilar Municipal Marine Park in Cebu, Philippines, regularly check and replace marker buoys damaged by wind and waves. Marine sanctuaries in the park have increased the catch of local fishermen.

PHOTO: VINCENT LUMBAB, DAI



on human health, water quality, and loss of tourism opportunities.

USAID focuses on strengthening national and local governments and community management capacities, improving policies and incentives as well as nurturing political will for conservation, enhancing law enforcement, broadening the base of environmental financing, and mitigating natural resource conflict.

In FY 2008, USAID assistance led to better management of biologically significant areas covering 78,343 hectares of forest lands and 1,965 hectares of municipal waters. Over 2,000 people participated in training to improve their awareness and skills related to natural resource management. Government environmental program implementation and law enforcement were strengthened by the enactment of 51 national and local policies. The Environmental Governance (EcoGov) project implemented by DAI and the Fisheries for Improved Sustainable Harvests (FISH) project

managed by Tetra Tech directly contributed to these results.

EcoGov addresses specific biodiversity threats including uncontained trash and inadequate sanitation and water treatment which pollute waterways and ultimately marine environments. EcoGov works in more than 30 coastal communities within key marine biodiversity areas to reduce the amount of waste entering the natural environment. Several approaches are used, including education on proper solid waste management, diversion of biodegradables and recyclables from dumpsites, and proper site selection and design of landfills.

Working through partner Local Government Units (LGUs) and private sector groups, EcoGov assists in the planning and construction of wastewater treatment and improved sanitation facilities to reduce threats to coastal-marine resources. For example, in Puerto Galera, EcoGov helped the LGU set up a tourist fees system which collected over \$200,000 in 10 months for conservation and

management activities. Through collection of users' fees, passage of local ordinances, and information campaigns, USAID is helping to eliminate a major source of coliform bacteria and other pathogens that threaten the health of Sarangani Bay.

The Philippine Sanitation Alliance (PSA) is a public-private partnership working toward conservation of biodiversity by supporting the implementation of the Philippines' Clean Water Act. Interventions include building low-cost, low-maintenance sanitation systems, and developing local ordinances and national policy directives to increase knowledge and enforcement of environmental compliance regulations on new construction. Through solid waste management and sanitation, LGUs have protected near shore corals, mangroves, and important freshwater habitats from further degradation while conserving charismatic marine species such as whales, dolphins, and turtles. With technical assistance provided by PSA, partners are financing and



MANGROVE
RESTORATION in
Tungawan, Philippines.

PHOTO: MICHELLE BAIRD, DAI

constructing sewage treatment facilities in four partner cities and sharing information through national associations to scale up impact.

EcoGov's Forest Management component develops incentives for improved forest management at the LGU and land holder levels, working in conjunction with awareness campaigns, support for enforcement mechanisms, and investment promotion. The program improved natural resource management on more than 230,000 hectares of forest lands in FY 2008. LGUs have more than doubled the award of individual property rights to upland farmers of community-based forest organizations, from more than 240 in 2007 to about 570 in 2008. This provided further incentive to preserve existing forests and generate livelihoods activities from previously unproductive and open-access forest land.

Overall, more than 160 local governments at the provincial and municipal levels have a combined budget allocation of about \$6.9 million

for local planning and implementation that addresses illegal logging, destructive fishing, and unmanaged solid and liquid wastes. The total LGU financial counterpart contribution is almost twice the amount of EcoGov's investment for the year, which does not include in-kind contribution by LGUs and resource managers.

USAID also supports local forest conservation initiatives through the Philippine Tropical Forest Conservation Foundation (PTFCF), which manages income from a debt-for-nature swap established under the U.S. Tropical Forest Conservation Act. Combined U.S. assistance, including USAID, PTFCF and a partnership with the U.S. Department of Interior, assisted Filipino government authorities in the detection of illegal logging activities in Northern Sierra Madre, the biggest and most important terrestrial protected area in the country. Thousands of illegally cut logs have been reported in this region, where authorities seized 450,000 board feet of illegal timber worth \$180,000 in FY 2008. USAID's

environmental law enforcement working group actively supported efforts by the Supreme Court to set up and activate 117 Special Environmental Courts that will hear specific environmental criminal cases.

FISH has been introducing and establishing best practices in fisheries management since 2003, always applying participatory planning and implementation to promote sustainability. Community management of marine protected areas is one example of the successful approaches put in place. The program has also been monitoring fisheries and related resources to establish baselines for measuring project impact, as well as to better understand resource dynamics and exploitation risks. A recent assessment of fish stocks in the four target ecosystems found that stocks have already increased almost 20 percent from 2004 and 2008, and fish catch per unit effort increased by more than 26 percent during the same period.

USAID/Philippines is now at the forefront of the Coral Triangle Initiative (CTI), a multinational partnership to conserve the planet's most biologically important marine resources. USAID/Philippines supported government efforts to complete and adopt the CTI National Plan of Action through Presidential Executive Order 797 in May 2008. This Plan of Action is consistent with the CTI Regional Plan of Action and captures the priority activities and commitments of the Philippines to this important collaborative effort. For more information on CTI and USAID, see the RDMA section of this report.

EUROPE AND EURASIA

USAID country programs funded biodiversity or forestry programs in two countries in Europe and Eurasia region in FY 2008.

The vast temperate and boreal forests of Eastern Europe are still home to bear and bison, leopard and tiger. Well-managed forests provide valuable wood and wildlife products now and are expected to draw tourism in the future from increasingly affluent citizens as well as Western Europeans seeking the wilderness experiences available to their east.

This vision of biodiversity conservation and thriving tourism is threatened by illegal logging and wildlife trafficking, oil development, pollution from growing cities, and a lack of legislation and enforcement among countries in the region. The



United States assists former Soviet states in adjusting to changing economic and political circumstances, including growing demand for social

and environmental responsibility in the public and private sectors.

MT. KORYAKSY is one of 29 active volcanoes on Russia's Kamchatka peninsula.

PHOTO: LARA PETERSON, USFS



Georgia

Stronger Protected Areas for Biodiversity and Tourism

The Caucasus Mountains are the traditional geographic divide between Europe and Asia, with a highly diverse topography internationally recognized for its rich biodiversity, including a host of large predators such as the wolf, brown bear and leopard. Georgia, like its neighbors with land in the Caucasus range, has been heavily transformed by human activities. Rapid economic growth and little conservation legislation or enforcement threatens remaining natural areas.

Sustainable management of the environment and natural resources is integral to promoting Georgia as an internationally attractive destination for tourists. The government's goal is to create 33,000 new long-term jobs in tourism and increase tourism revenue from \$313 million in 2006 to

\$1 billion in 2015. With 13 climatic zones, 40 percent forest cover, and as much as 25 percent of the country planned to be designated as protected areas, Georgia is well positioned to be a competitive ecotourism destination. Safeguarding and conserving Georgia's environment, biodiversity and national parks is important to achieving these goals and reaping the benefits of a vibrant tourism economy.

USAID promotes biodiversity conservation in natural and managed ecosystems of Georgia by supporting the establishment of new national parks, building the institutional capacity of the national government to manage protected ecosystems, and enhancing regional collaboration on protected areas. Activities focus principally on developing the Ministry of Environment's capacity to administer and develop the protected areas network, promote appropriate legislation, improve park operations, and plan and implement effective park management programs.

USAID assisted with the designation of the new 25,000-hectare Tbilisi National Park, which was ratified by Parliament in FY 2008. Working with the Ministry of Environment, the mission strengthened visitation services through infrastructure and interpretive trail design that will serve as models for the entire park system. To reinforce best practices in park management, USAID also supported the development of training programs, including in-country courses as well as international study tours, on internal and transboundary protected areas implementation. Training was provided to a cadre of local professionals in a training center that USAID co-financed with Georgia. To date, management practices have been improved on nearly 500,000 hectares of land in the protected areas system with USAID support. In FY 2009, a visitor center and interpretation trails will be constructed at Tbilisi National Park, and an additional 424,108



AUTUMN ADDS COLOR
to forests in the Caucasus
Mountains of Georgia.

PHOTO: USAID/GEORGIA

hectares is expected to be added to the protected areas network.

Amendments to Georgia's protected areas legislation were developed to increase the role of the general public and the private sector in the management of national parks. These amendments are expected to be introduced to Parliament in FY 2009, and once enacted, will establish concession schemes for protected areas management, as well as promote public-private partnerships and volunteering or cooperative relationships with community members. In the legislation, parks system planning is better defined, including how new lands enter into the national protected areas network. Detailed requirements for protected area five-year management plans are specified and the concept of ecological corridors for animal movement between protected areas is retained. These legislative changes ensure more comprehensive oversight of protected areas and promote biodiversity conservation, harmonizing the law with relevant legislation which Georgia needs for potential accession to the European Union.

Russia

Forest Management in Siberia and the Russian Far East

Through the USDA Forest Service (USFS) and its partners, USAID is working to promote sustainable forest management, habitat protection for endangered species, protected area management, and ecotourism throughout Russia including the Primorye region, Sakhalin Island and the Kamchatka

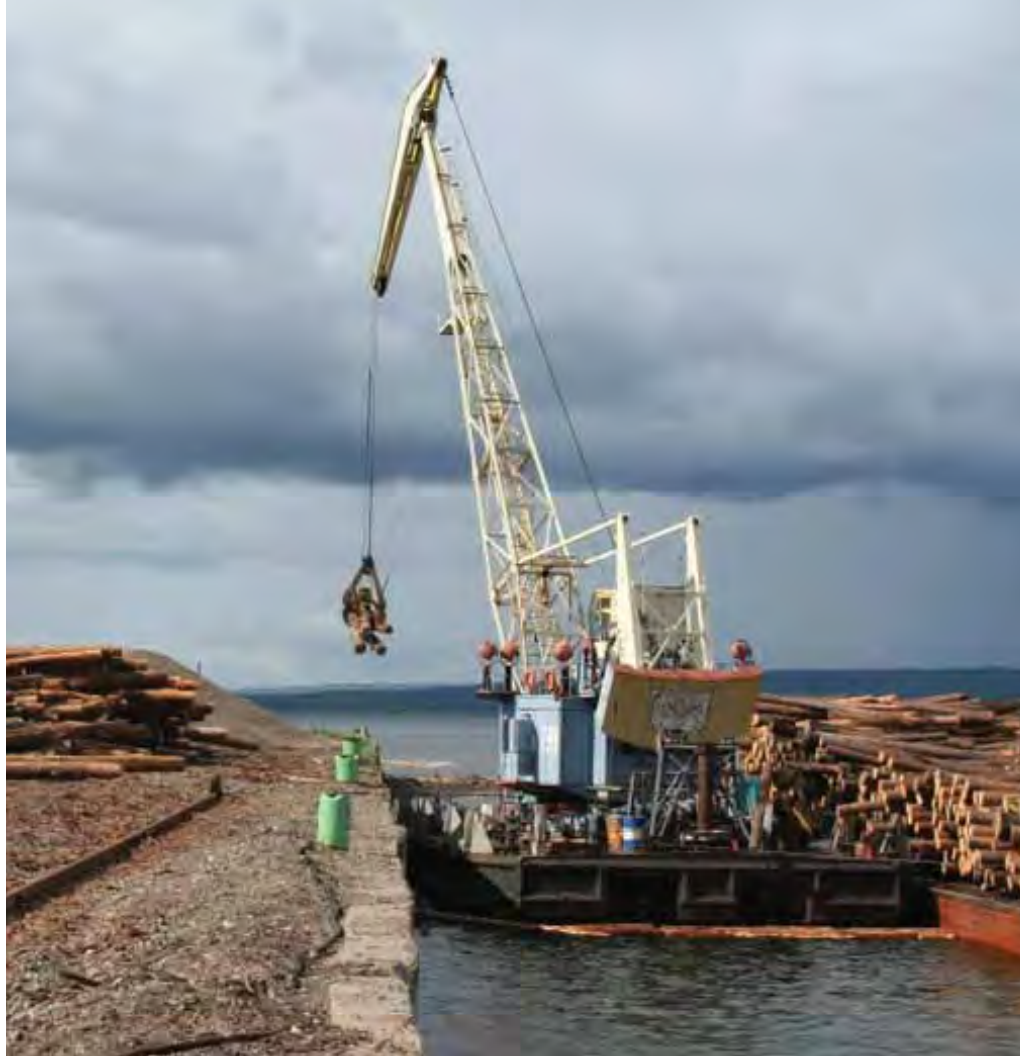


PHOTO: LARRY GRUVER, USFS

HEAVY LIFTING: Logging operations in the Krasnoyarsk Krai in central Siberia. Krasnoyarsk is one of the most heavily forested regions in Russia.

Peninsula in the Russian Far East, and parts of Siberia such as Lake Baikal and the Krasnoyarsk region.

The Russian Far East is a storehouse of timber, fish, precious metals, petroleum and natural gas spread across an area more than two-thirds the size of the United States. The region also boasts rich and diverse wildlife in scenic landscapes, and promises to one day become the country's premier ecotourism destination. Neighboring Siberia has its own forest and water resources which are important to the local and national economies.

In partnership with local authorities, USFS supported a program that leveraged private-sector funding to engage Sakhalin residents in resource management through watershed councils – community-based organizations representing the varied interests of a watershed's population, users, and visitors. These nascent councils are expected to implement a variety of activities including anti-poaching, habitat restoration, and education.

USAID programs target habitat protection for priority species in southwest Primorye such as the endangered Amur leopard



CAUGHT ON FILM: Only about 30 leopards remain in the Primorsky Krai region in the Russian Far East. Researchers from the Wildlife Conservation Society use camera traps and other methods in their efforts to study and conserve this critically endangered species.

PHOTO: WILDLIFE CONSERVATION SOCIETY

and Siberian tiger, both affected by prey depletion, poaching, and deforestation. In Kamchatka and Lake Baikal, funding from the private-sector and other organizations is supporting salmon habitat protection, watershed management, ecotourism development, and community involvement in protected area management.

Working in partnership with the regional administration and local

NGOs, USFS addressed critical issues related to forests and roads in the Krasnoyarsk region, and facilitated transboundary dialogue and cooperation on the Russia-China border in the areas of sustainable forest management and illegal logging. USFS is exploring possibilities to expand its experience with partnerships in the Russian Far East and Siberia to other parts of the country.

Nationwide, collaborative activities with the Federal Forestry Agency and regional authorities focus on fire management, climate change mitigation, combating illegal logging, and forest inventory and monitoring at the policy level. USFS has also supported professional exchanges to assist with the development of Russia's new national forest inventory system.

LATIN AMERICA AND CARIBBEAN

USAID country programs funded biodiversity or forestry programs in about 20 countries in Latin America and the Caribbean in FY 2008.

The Latin American and Caribbean (LAC) region includes almost half of the world's tropical forest and supports a tremendous array of biological diversity; however, the natural resource base is threatened by adverse trends such as habitat conversion and degradation, unplanned infrastructure development, low institutional capacity, illegal extraction of resources, poor management practices, and weak or ineffective enforcement of environmental laws and policies. Regional

deforestation rates are some of the highest in the world, particularly in the Amazon Basin. USAID works to equip stakeholders with information and tools to participate in democratic decision-making, and to better manage and benefit from nationally, regionally, and globally important natural resources.



THE ARCADIN ISLANDS off the western coast of Haiti are heavily overfished but still host a diverse seabed including these soft corals and yellow tube sponges.

PHOTO: NICK HOBGOOD, DAI



THROUGH THE FOG lies an entrance to Madidi National Park in lowland Bolivia. The Takana indigenous community works with the government to manage and benefit from the portion of the park that lies in their territory.

PHOTO: ANDREW TOBIASON, USAID



LAC Regional Sustainable Development Program

USAID promotes development in the LAC region by addressing environmental and natural resource issues that threaten to undermine sustained economic prosperity and democratic stability. The LAC Bureau's Regional Sustainable Development (LAC/RSD) program provides technical assistance to all missions in the region while operating its own program, the Initiative for Conservation in the Andean Amazon (ICAA). Technical support to the missions includes program design, review and

evaluation, as well as participation on selection panels for awarding bids.

Initiative for Conservation in the Andean Amazon

The eastern slope of the Andes mountain range, from the altiplano to the Amazon, is widely acknowledged as one of the most biologically and culturally diverse regions in the world. ICAA was established in 2006 in order to build local capacities and commitments for the conservation and sustainable use of biodiversity and environmental services in and around key protected areas as well as in indigenous territories of this important region. Program activities increase responsible management

of natural resources; support development of strong enabling legal, policy, and institutional climates; and expand market access for sustainable natural resource-based products. Projects in Colombia, Ecuador, Peru, and Bolivia complement bilateral mission activities in these Andean countries as well as projects supported by USAID/Brazil. ICAA is implemented through a contract with International Resources Group and four cooperative agreements with University of Florida, Rainforest Alliance, Wildlife Conservation Society, and The Nature Conservancy.

In Bolivia, ICAA-supported legal assistance resulted in the award of land titles for 24,250 hectares of

the Lecos indigenous territory and approximately 16,000 hectares of Takana territory. Securing land rights is an important step in conserving biodiversity because it allows people to manage land for long-term sustainability rather than short-term gain. It also mitigates against deforestation resulting from uncontrolled settlement in common property land.

In northern Ecuador, ICAA played a key role in bringing approximately 70,000 hectares under indigenous title and management. The program is providing training in land management and related issues to the entities responsible for managing the new territories. USAID helped identify and overcome small barriers to conservation such as getting driver validation for indigenous park guards, allowing them to monitor a larger area of the Cofan indigenous territory and significantly improving their ability to control threats such as land invasions, illegal mining, and illegal logging. ICAA also supports producer groups in agroforestry production of cocoa in Ecuador, combining improved production and income with forest-friendly management techniques.

In Peru, ICAA helped to slow land-use change by providing intensive training to groups dedicated to natural forest management, including forest inventory techniques, efficient utilization of non-timber resources, and reduced impact logging. Several producer groups and cooperatives now manage natural forests and agroforests for non-timber forest products like Brazil nuts and coffee. ICAA partners worked closely with Peru's regulatory agency, protected area staff, and forest



PHOTO: ANDREW TOBIASON, USAID

RESOURCE RIGHTS: USAID supports work with several indigenous groups to secure land rights and develop natural resource-based enterprises, from Brazil nut harvesting in Lago Valencia, Peru to community-operated ecotourism near Madidi National Park, Bolivia.

gatherers to develop a consensus management plan that ultimately strengthened the relationship between Brazil nut gatherers, their associations, and government staff. Program investments resulted in the development of 37 forest management plans and more efficient management of reforestation areas. In addition, an ICAA partner continued to work with the Regional Government of Madre de Dios state to consolidate a new regional conservation area, Lago Valencia. The area will allow for traditional indigenous uses as well as commercial sustainable activities such as fishing, ecotourism, and Brazil nut harvesting.


Late in FY 2008, ICAA launched an innovative small grants program that will build the capacity of indigenous

organizations, enhance their voice and role in decision-making and overall promote the conservation and sustainable management of natural resources within indigenous territories.

Caribbean Regional Program

National Investments and Natural Assets Protection

USAID's Caribbean Regional Program implements biodiversity initiatives supporting six countries, with a focus on two: Antigua and Barbuda, and Dominica. The Caribbean Open Trade Support Program (COTS) commenced in 2005 with an objective to help eastern Caribbean countries to succeed in an open trade



BRAIN CORAL is found in many parts of the Caribbean. At night the hard surface will extend soft polyps to feed on particles in the water.

PHOTO: NICK HOBGOOD, DAI

environment in which their economic futures are ultimately linked to their ability to protect the rich biodiversity endowment and fragile ecosystems. The COTS program supported the development of policies, laws, agreements and regulations promoting sustainable conservation of biodiverse areas in the two island nations. During 2008 the program exceeded its target with 8,100 hectares being brought under improved management, primarily the result of a coordinated effort and increased support by the government of Dominica.

In Dominica, COTS helped establish a management plan for the Morne Diablotin National Park that includes specific actions to improve the habitats of the Red-necked and

Imperial parrots, both endemic parrots under threat. In addition, land use plans were developed for the Pond Casse region at the request of the Government of Dominica, including guidance on reducing the level of encroachment into the Morne Trois Piton National Park, a World Heritage Site, and future development options and delineation of park buffer zone boundaries.

One of the biggest threats to critical marine habitats in Dominica is pollution and sedimentation from sand and stone quarries. 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

support in FY 2008 and prior years led to legislation and codes of practice to reduce the environmental impact of the quarry industry.

Another threat to marine life in Dominica is sea turtle poaching on beaches during nesting season. USAID supported a pilot activity in 2006 which showed that local communities could be mobilized for conservation, and continues to support a national, non-invasive sea turtle research and monitoring program implemented in collaboration with the tourism industry and coastal communities near nesting beaches. The sea turtle project improves both conservation of a threatened species and revenue from ecotourism.

USAID supported the conservation of the Codrington Lagoon on the island of Barbuda, recently declared a national park for its biological importance to 170 species of birds, and its economic importance as a breeding ground for several types of fish and lobsters. Through COTS, two key threats to the lagoon's unique biodiversity were addressed. First, communities rehabilitated dunes where two breaches threatened the ecology of the lagoon, using sand trapping fences and mangrove plantings which can easily be maintained or repeated. Second, COTS helped draft a first development and management plan for the lagoon to make the park fully operational and facilitate long-term conservation.

Demand for organic medicinal plants and herbal teas has grown in Dominica and throughout the world, leading to unsustainable harvests of wild plants from natural ecosystems. COTS supports the Kalinago Heritage Society's efforts to propagate plants in greenhouses, curtailing demand on wild plants, while ensuring the quality and quantity of tea and herbal medicine the market requires. This also provides economic opportunities for the poorest of Dominicans, Carib people also known as Kalinagos.

USAID initiated the Protecting the Eastern Caribbean Region's Biodiversity (PERB) program in 2008, providing 24 months of support for conservation of biodiversity in six countries in the eastern Caribbean. PERB aims to improve legislative processes, increase areas under protected management, build management capacity at a number of biologically significant sites, raise public

awareness about biodiversity, and increase private sector participation in biodiversity conservation. The program supports the regionally-validated Caribbean Challenge, which has a target of having at least 20 percent of Caribbean nations' coastal and marine territory under protected status by the year 2020.

Central America and Mexico Regional Program

Watershed Conservation and Sustainable Fisheries

The Central America and Mexico Regional Program (E-CAM) supports many activities that help countries in the region meet environmental standards of the United States - Central America - Dominican Republic Free Trade Agreement (CAFTA-DR). In the areas of biodiversity and forestry, USAID advanced CAFTA-DR policy change and training objectives, supported improved management and conservation of two transboundary watersheds, and worked with NASA and a regional partner, Water Center for the Humid Tropics of Latin America and Caribbean (CATHALAC), to improve modeling of climate change impacts on biodiversity. E-CAM activities improve the enabling environment and national capacity for conservation of high biodiversity areas including the Mesoamerican biological corridor and the Mesoamerican Barrier Reef. In 2008, programs collectively provided capacity building to over 3,000 government, municipal, private sector and NGO representatives from the environment, agriculture, tourism, academic, industrial, customs, police

and law enforcement sectors, more than twice the number in 2007.

Funding was provided to the Central American Environment and Development Commission (CCAD) to support policy development in the region and help institutions adhere to CAFTA-DR regulations. CCAD supports implementation and enforcement of multilateral environmental agreements including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and is developing indicators that will help monitor enforcement actions for conserving biodiversity. In addition, CCAD is developing guidelines and procedures for determining environmental damages, which will be instrumental in remedying harm committed to natural resources and biodiversity throughout Central America.

The Environmental and Labor Excellence Program works to strengthen environmental law training for the judiciary, Ministries of Environment and Agriculture, and non-governmental organizations to improve the understanding and application of conservation laws and international agreements including CITES. This involves developing sustainable environmental and labor standards for lobster fisheries and developing market-based partnerships to implement sustainable lobster fishing in the biodiverse Mesoamerican Barrier Reef. Work by CCAD and implementing partner Chemonics helped improve 25 environmental laws, policies, agreements or regulations in CAFTA-DR countries.

One of E-CAM's largest programs, Conservation of Central American

Watersheds, is implementing seven land use plans and four protected area plans 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. Ongoing work is strengthening management mechanisms for critically endangered leatherback turtles in one of the region's most important nesting areas, developing best practices for lobster fisheries, strengthening management and financial systems for protected areas in Guatemala, Honduras and Panama, and developing regional trainings in wildlife management with a special emphasis on endangered species.

Through the forestry component of the watersheds program, USAID is promoting responsible management of community broadleaf forest as well as natural pine forest certification

standards in southern Belize. USAID partners provide technical assistance for sustainable forest management in the buffer zones of protected areas with significant biodiversity in Guatemala, and best management practices for agriculture and forestry in Costa Rica and Panama. Training workshops are being developed on several topics including: forest certification as a tool to promote best management practices in forest plantations (Guatemala), implementing phytosanitary monitoring plans required for timber export (Guatemala), and community-based forest enterprise development and sustainable forest management (southern Belize).

In FY 2008, the regional watersheds program helped agribusinesses in Central America and Mexico reduce the use of chemicals by 700 tons, leading to cost savings of over \$800,000 and improved environmental management of

agricultural areas. USAID supported development of new revenue generating schemes with the private sector worth almost \$500,000 to help conserve protected areas and buffer zones. Along with marine recreation best management practices to protect endangered dolphin populations and threatened coral reef ecosystems, these USAID interventions improved management of roughly 428,000 hectares of land and sea.

Through an agreement with NASA, E-CAM utilized the Regional Visualization and Monitoring System (SERVIR) to develop a digital atlas of the Dominican Republic's natural resources, a system for predicting and alerting people to forest fires, and high resolution topographic maps that proved vital in responding to the back-to-back hurricanes that hit the island of Hispaniola in 2008. In addition, an assessment of the potential impacts of climate change on biodiversity in the Mesoamerican biodiversity corridor identified species and ecosystems most at risk. NASA will build on this foundation to update the key regional datasets in the SERVIR geographic information system including water availability and quality, ecosystems, protected areas, and changes in carbon stock, all of which provide useful biodiversity information for decision makers. NASA will also prepare and disseminate regional reports on historic trends in forest fires, sea surface temperature, and land cover change that will aid governments and NGOs in their biodiversity conservation efforts.

A new USAID program under development aims to reduce key threats to priority coastal and marine



PHOTO: JOSÉ COCOZZA

FARM IN THE FOREST: Agricultural fields in the Reventazón River valley near Orosi, Costa Rica are surrounded by forested hills and mountains. USAID/ECAM partners provide technical assistance in agriculture and forestry in Costa Rica and Panama, as well as land use planning along the Costa Rica-Panama border.



PHOTO: ANDREW TOBIASON, USAID

SACRED LAKE: USAID launched a new program in 2008 to reduce threats to biodiversity in and around the Bolivian portion of Lake Titicaca through public awareness, environmental monitoring and improved governance initiatives.

resources of Central America. The program will address unsustainable fishing and coastal development using an ecosystem approach that promotes secure access to resources and fosters market-based mechanisms. Work will focus on building institutional capacity for effective monitoring and enforcement of coastal and marine resource policies with an emphasis on environmental compliance.

Bolivia

Sustainable Forestry and Landscape-Scale Conservation

Few countries in the world possess as great a diversity of ecosystems as Bolivia. Tropical forest ecosystems cover almost 50 percent of the country and given its relatively small population, Bolivia has the largest amount of forest per capita of

any country. Twenty-two national and numerous departmental and municipal protected areas have been established to conserve this natural heritage, from the Andes Mountains to the Amazon basin. Threats include lack of clear land tenure, insufficient and inadequate local participation in and benefits from protected area and natural resource management, weak democratic governance structures and policies, and extractive industries (especially mining and hydrocarbon development).

USAID/Bolivia's forestry program promotes management planning and independent certification of some of Bolivia's most biodiverse regions. One of the main goals is to increase benefits to communities from forest resources within the framework of the country's existing Forestry Law. USAID's efforts in FY 2008 strengthened indigenous communities' ability to participate in local, regional,

and national chains of production, and receive fair compensation for their products and services. Specifically, USAID helped build 52 strategic alliances between indigenous or community forest operators and the private sector; supported allocation of 350 titles to 4,000,000 hectares of forest lands, assisted 60 wood processing companies to become more efficient in their operations, and provided support to community forestry operations that led to a 50 percent increase in family income generated from forestry activities. Monitoring and evaluation in forests indicates there has been little negative impact on biodiversity within test plots, and that deforestation rates are lower in managed forests.

The mission's flagship biodiversity conservation program continued working at the landscape scale to conserve the biologically significant Amoro-Madidi corridor in the

Bolivian Amazon. The approach of this Landscape Conservation Program, implemented by Conservation International and other partners, is to generate incentives for municipalities and communities to manage natural resources sustainably. In FY 2008, USAID supported strategic land use planning for seven municipalities and two indigenous territories, which will serve as the basis for future conservation and sustainable use efforts in this region. Conservation gains from 2007 were maintained, and the total area of biological significance under improved management increased almost 500,000 hectares due to the implementation of best practices in two large certified forest management areas in the department of Santa Cruz, as well as success in overcoming prior setbacks to management in the Apolobamba integrated management area.

USAID/Bolivia initiated a new program in FY 2008 to conserve biodiversity in Lake Titicaca and the surrounding high plateau. Titicaca is the largest freshwater lake in South America and the highest of the world's large lakes. Straddling the border between Bolivia and Peru, the "Sacred Lake" was the spiritual center of the Incan Empire and is today a designated Ramsar wetland. It is also geologically ancient, which combined with a unique geography has resulted in globally important biodiversity in the lake and surrounding area. USAID's activity aims to reduce threats negatively impacting key biodiversity targets of the lake and associated rivers, including contamination from near-shore activities, and industrial and domestic pollution emanating from urban areas such as El Alto

(a city of one million people). Environmental monitoring, public awareness, community engagement in clean-up activities, and improved governance will all be important components of this initiative.

While the overall outlook for conservation is good, during the coming year a number of issues will have important implications for the future management of biodiversity and tropical forests, and will help define the range of actions needed. Bolivia is moving toward departmental autonomy, empowering and including indigenous and other marginalized social groups in political processes, and bringing renewable natural resources into the political debate. USAID will continue to work with municipalities and communities (including indigenous ones) on conservation and management in the field, while engaging with an evolving set of stakeholders at the national and departmental levels

Brazil

Sustainable Forest Management through Capacity Building and Markets

Brazil features a wide range of climatic zones and ecosystems including a large swath of the Amazon basin, the world's largest contiguous tropical rainforest and home to diverse species, many of which are found nowhere else. Over one-third of the Brazilian Amazon has been set aside as parks and reserves, but even that is not sufficient to guarantee the health of the forest. Human activities have

increasingly encroached on these natural resources, and deforestation remains a major challenge. Macroeconomic factors such as commodity prices and economic incentives make it more attractive to clear forests for agriculture and cattle ranching than to keep them intact.

USAID/Brazil's environment program is designed to complement federal, state and municipal conservation on public lands through capacity building, improved land management inside and outside of protected areas, and sustainable income opportunities. Together, USAID and the Government of Brazil are working to slow and reverse deforestation, and thereby conserve biodiversity while reducing carbon emissions, a major driver of global climate change.

In FY 2008, USAID focused its conservation efforts on the southwestern Brazilian Amazon, a sub-region particularly rich in biodiversity that has recently faced major threats such as conflict over land rights, deforestation, illegal logging, and mining. New infrastructure projects are stimulating land occupation and production in the region, making it more difficult to slow the advance of the deforestation frontier. A weak regulatory framework for land tenure is a serious constraint to environmentally sustainable development of this region. USAID-supported activities have addressed these threats by promoting natural resources management and protecting indigenous peoples' land rights.

The Communities and Markets activity led by World Wildlife Fund helped eight member organizations increase sustainable production,



PHOTO: ERIC STONER, USAID

FIRE WARRIORS: Twenty-seven indigenous young people from four ethnic groups in the Xingu River basin received training in fire preparedness techniques and fire safety measures during a two-week field course inside the Capota-Jarina Kayapó Indigenous Reserve in Mato Grosso, Brazil.

marketing, and trade of natural resource-based products and services. For example, one project facilitated access to markets for sustainable forest products made by local cooperatives of small rural producers living in and around forest areas, earning them nearly \$60,000 in revenue. Using financial incentives, this activity improved management of 1,556,469 hectares in FY 2008.

The Partnership for Indigenous Conservation, a joint initiative of NGOs Kaninde and Amazon Conservation Team, assisted the Surui indigenous people to learn

multiple-use forest management within their territory, including participatory mapping. As a result, a complete reserve land management plan was prepared by Metareila, the Surui Indigenous Association.

A new consortium known as FORTIS focused on strengthening local institutions involved in forest conservation and sustainable use of natural resources. This consortium promotes social justice and sustainable livelihoods in the Brazilian Amazon, and improved environmental monitoring of landscapes in the southern portion

of the State of Amazonas, within seven focal municipalities: Humaita, Apui, Manicore, Novo Aripuana, Boca do Acre, Labrea and Canutama.

USAID partner Amazon Institute of People and the Environment (IMAZON, in Portuguese) helped the Brazilian Forest Service evaluate deforestation associated with population pressures in the Jamari National Forest, and supported public action against illegal logging and land clearing. USAID supported efforts of another partner in large-scale forest conservation, the USDA Forest Service, which provided

technical assistance to their Brazilian counterparts in areas such as forest inventory and systems analysis, forest administration and fire management. Working in partnership with State of Mato Grosso's environmental secretariat, these and other partners conducted an assessment of existing systems for controlling and monitoring forest management plans in Mato Grosso. At the request of the environmental secretariat of the State of Pará, AMAZON established a training course for state environment technicians in monitoring logging activities with satellite images.

Overall in FY 2008, the mission environment program supported 25 NGOs which improved natural resource management and monitoring across more than 2.5 million hectares, mostly within indigenous lands in the Amazonian State of Pará. Mission partners provided training in sustainable agricultural production, community forest management, natural resources management, biodiversity conservation, and community development for over 1,000 people, and leveraged over \$1,400,000 from other donors and partners to undertake complementary activities.

Colombia

Sustainable Development and Stronger National Parks

Colombia is one of the top ten most biodiverse countries in the world, but a growing population and an expanding agricultural frontier threaten this natural endowment, with roughly 30 percent of Colombia's biodiversity lost in recent decades. Conservation efforts in Colombia



PHOTO: ANDREW TOBIASON, USAID

THE WALKING TREE is common to the Andean Amazon lowlands including those in Colombia. The tree is supported far above spiny roots (shown here) which move towards precious sunlight when neighboring trees fall and leave gaps in the canopy.

must overcome poverty, weak governance, and few economic development opportunities, which are root causes of biodiversity loss as well as drivers of conflict, illicit crop production and narcotics trafficking which undermine natural resource management efforts. USAID/Colombia's environment program works to improve forest management as a foundation for economic growth, strengthen national

parks, and promote governance and sustainability in buffer zones.

Forestry contributes less than 0.5 percent of GDP even though more than half of Colombia is covered in natural forest. USAID's Increased Investments for Sustainable Alternative Development program (MIDAS, in Spanish) works to develop the forestry sector using a three-pronged approach: establishing quality

commercial timber plantations on degraded lands; working with two rubber associations and a regional government to develop rubber plantations in the “rubber corridor” of north-central Andean valleys (from nurseries to grafting and planting trees); and promoting wider implementation of agroforestry practices, such as intercropping of eucalyptus with cash crops (beans, corn, cassava, etc.) or grazing areas. All three approaches involve alliances among small farmers and commercial wood enterprises, which co-own the wood produced at harvest time. Forest projects are being implemented in areas prone to illicit economies or where illicit crops have been eradicated; they bring farmers back to the formal economy, restore attachment to the land, and promote the creation of small farmers associations. Capacity building is built into each project, particularly related to environmental agricultural practices, community organization, and forest management planning. 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.

Two USAID/Colombia biodiversity programs ended in FY 2008: a buffer zones program implemented by the Pan-American Development Foundation and a national parks strengthening program managed by a Colombian NGO affiliated with the National Park Unit. Both programs have been successful in protecting vulnerable environmental areas, defending indigenous cultures, strengthening institutions, and shielding sensitive protected areas from coca production. Approximately

7,600 families living in and around protected areas received assistance under these two programs.

A new protected areas program was launched in early FY 2009 using FY 2008 funds. This \$11 million, three-year program is working from the ground up, collaborating with the Fondo Patrimonio Natural (FPN), the National Parks Unit, entities of the National System of Protected Areas (SINAP), and local communities to strengthen governance and sustainability in protected areas and buffer zones. The program’s overall objective is to build the institutional capacity and governance of Colombia’s protected areas for long-term environmental conservation, community and cultural preservation, and improved livelihoods. A key component of the

program is to ensure that targeted protected areas and their surrounding communities are linked to income-generating sectors and conservation practices that can contribute to economic and ecological sustainability when USAID assistance ends.

Dominican Republic

Institutional Capacity Building for Environmental Protection

Comprising about two-thirds of the island of Hispanola and several surrounding islands, the Dominican Republic has rich living resources that support two of its main sources of income: agriculture and tourism. Unmanaged agricultural development is polluting rivers and eventually



PHOTO: NICK HOBGOOD, DAI

PINK TIPPED ANEMONE (*Condylactis gigantea*) from the north coast of Dominican Republic. The stinging tentacles of this anemone often serve as a protective home for small cleaner shrimp.

marine zones, and threatening fisheries and tourism. Deforestation makes runoff worse, and frequent tropical storms and hurricanes exacerbate the problem. USAID assistance to the government and communities focuses on policy development and better management of watersheds, coasts and marine areas.

USAID/Dominican Republic continued assistance to the Secretariat of the Environment and Natural Resources (SEMARENA) and civil society groups through the Improved Policies for Environmental Protection (IPEP) program. With IPEP technical and financial support, SEMARENA signed a regulation on environmental enforcement with accompanying instruments for assessing damages and assigning fines for environmental infractions. IPEP also assisted SEMARENA with the preparation of procedures to handle information requests and environmental complaints, and provided environmental enforcement training to them and the Environmental Attorney General's Office.

In marine environmental policy, the mission worked with the Secretariat of Coastal and Marine Resources and other entities to draft two marine biodiversity laws which are being reviewed by the nation's congress. The government also approved a strategic plan, developed with USAID support, for the Jaragua-Bahoruca-Enriquillo Biosphere Reserve.

USAID supported training workshops through IPEP for municipal officials on the implementation and enforcement of environmental compliance under Chapter 17 of the Central America – Dominican Republic Free Trade

Agreement (CAFTA-DR), a portion of which is related to biodiversity conservation. In FY 2008, ten new municipal environmental ordinances were drafted and approved, addressing biodiversity threats related to logging controls, reforestation promotion, protected area management (including co-management between government and communities), and training for local government personnel on compliance with the Convention on International Trade in Endangered Species of Flora and Fauna (CITES).

USAID worked closely with farmers in three micro-watersheds to establish functioning watershed management committees responsible for addressing biodiversity threats of deforestation and pesticide runoff into rivers. In the Tireo micro-watershed, within the buffer zone of the Madre de las Aguas region which includes five national parks, the watershed committee organized itself into a formally recognized NGO. A watershed management plan was prepared and implemented, and native tree seedlings provided by SEMARENA were planted along the river as a buffer to protect and restore the native biota.

USAID's Dominican Republic Sustainable Tourism Alliance (DSTA) prioritizes protected area management in three national parks, the marine sanctuaries of Estero Hondo and Samana, and the Lower Yuna River Mangroves. DSTA completed an assessment, design and stakeholder coordination phase, which involved nine regional workshops where 308 participants, including 101 women, mapped out the context of sustainable tourism and helped identify and assess over 1,400 natural and cultural resources. Workshop

participants were exposed to the idea of conservation areas as the "natural capital" for sustainable tourism, and the concept of co-management whereby civil society collaborates with the Dominican Government in the management of natural resources for the benefit of both. As a result of the workshops, the DSTA program is proposing to develop co-management agreements, business plans, and conservation plans for all five protected areas.

In July, DSTA partner The Nature Conservancy (TNC) and SEMARENA completed an analysis of the capacity of the protected areas system, revealing that protected area managers lack experience and expertise for effective management, especially in the area of ecotourism. A major focus of the DSTA Program will be to improve understanding among key staff regarding the potential ecological, economic and social benefits of sustainable tourism, as well as potential impacts and how to mitigate them. DSTA partners will also assist community groups to build capacity in areas such as sustainable use of natural resources, ecotourism, participatory action research, and institutional development.

Several DSTA activities planned in 2008 will take place in 2009 with FY 2008 funds, such as evaluating the impacts of cruise ships and whale-watching vessels on marine mammals in Samaná Bay, establishing "voluntourism" opportunities to observe nesting and care of sea turtles in Parque Nacional del Este, and providing management and leadership training to administrators, supervisors, and park rangers.

USAID is just beginning work with Indiana University on a new marine protected areas activity designed to protect coral reefs and preserve the recently discovered Captain Kidd shipwreck off Catalina Island in the eastern Dominican Republic, along with three other underwater preserves in the country. These “Living Underwater Museums” will protect precious corals and other threatened biodiversity in the surrounding reef systems.

Ecuador

Protection of Indigenous Land and Rights

Protected areas and indigenous lands cover one-third of Ecuador and are home to some of the world’s richest biodiversity, as well as many of the country’s poorest people. Overhunting is reducing wildlife populations, and valuable timber is exploited without attention to good forest management. USAID funds are directed toward protecting large areas of contiguous habitat and creating benefits for people through economic activities that reduce pressure on forest resources and build local support for conservation.

Ecuador has one of the highest deforestation rates in Latin America, resulting in significant carbon emissions. Climate change vulnerability and adaptation is also an important issue, as many of Ecuador’s population centers rely on receding alpine glaciers and high-elevation grasslands for their water supply. In FY 2008, work with lowland indigenous groups in the Amazon Basin and on the Pacific Coast improved management



PHOTOS: SUSANA ESCANDÓN, FONAG

COMMUNITIES AROUND ECUADOR’S CAYAMBE-COCA RESERVE have moved their cattle from delicate high-altitude grasslands where they are prone to predation by Andean bear to more sustainable lowland grazing managed with fences (above). Some families opted for livestock requiring less land such as guinea pigs (below), or have gained employment as park guards.



of more than 540,000 hectares of tropical forests by establishing secure ownership and access rights to land, clear boundaries, and participatory surveillance systems. A watershed conservation activity worked with municipal water companies to pay the costs for putting high-value watersheds under better management, conserving alpine grasslands while securing the water supply. In addition, the program helped Machalilla National Park implement new planning and monitoring methods that are controlling ecosystem damage from tourism. All together, USAID supported improved management of 660,000 hectares of critical ecosystems in Ecuador this year.

To improve the financial sustainability of protected areas, USAID supported replication of the Quito Water Fund (FONAG), in which water users pay into an endowment fund for conserving the forests which provide clean and abundant water. Watersheds critical to municipal water companies in Quito, Zamora, Tungurahua, Paute, and Loja have leveraged nearly \$1 million in seed capital, established technical operating units, and began new programs in environmental education, park guard systems, and conservation planning to complement USAID programming. Natural resource management activities in the same watersheds brought economic benefits to almost 9,000 people engaged in activities such as organic farming, milk production, sustainable medicinal plant harvests, and guinea pig ranching, all of which can be more profitable than destructive livestock grazing. Women are the targeted beneficiaries of income-producing activities that have helped 40 families to improve nutrition

and livelihoods, and promoted women as park guards. Financial support for improved management practices and sustainable enterprises reduced threats to biodiversity and improved water quality.

Indigenous communities are key partners for conservation in Ecuador. In 2008, USAID worked through the Wildlife Conservation Society to help several indigenous groups engage in beekeeping, handicrafts, ecotourism, and agroforestry activities, leading people to value the standing forest and thereby conserve biodiversity. The Waorani Indigenous Women's Association is providing \$46,900 in counterpart funding for work developing and marketing handicrafts, strengthening their organization, and expanding membership to new Waorani communities. With USAID support, Awa indigenous groups are implementing an Ecuadorian-Colombian Strategic Plan, including strengthening of cultural identity through language training and environmental education. Preparation has begun on a similar strategic plan for the Cofan indigenous group.

USAID improved coordination between the Ministries of Environment and Tourism through the Ecuadorian Sustainable Tourism Alliance (ESTA). This public-private partnership aims to increase economic benefits to local communities from sustainable tourism in and around protected areas, and provide income alternatives to more destructive livelihoods which threaten biodiversity. Tourism revenue also supports local conservation strategies. ESTA is advancing the operation of community-based tourism through improvements to visitor facilities in Cotopaxi National

Park and the Ecological Reserves of Chimborazo and Manglares Churute. In the Galapagos National Park, the Alliance supported preparation of legal and contracting documents and trained park staff in new procedures, resulting in a new tourism concession model for the islands. ESTA also assisted residents of the Cayambe-Coca reserve with capacity building for tourism marketing and services, providing benefits for their current businesses and preparing them for new investments in 2009.

A new coastal and lowland program will begin in late 2009, in which field conservation in three large tropical forest areas bordering the Pacific Ocean will be tied to improvements in national level policies. The program will build long-term partnerships among local organizations and the public and private sectors to improve the conservation and sustainability of natural resources and the livelihoods of local residents.

El Salvador

Management and Conservation of Critical Watersheds

El Salvador's important natural areas have been neglected, degraded and overexploited for decades. Even in recent times, many protected areas existed only on paper or were poorly administered. Ministry of Environment (MARN) resources have been too limited for effective management, and private land owners have not had incentives to better manage their lands. Since late 2006, USAID has supported the Government of El Salvador in the consolidation and



HISTORY IN THE MAKING: USAID assistance helped delimit the boundaries of El Salvador's first marine and coastal natural protected area, Los Cobanos, on the western coast of the country. In a process that lasted almost a year and a half, milestones were placed along the perimeter of the terrestrial portion and four bright yellow 3.5-meter high oceanic buoys were anchored to 1.6-ton concrete blocks in the corners of the marine zone.

PHOTO: DAI

effective management of Salvadoran protected areas and natural resources.

Efforts are focused on two critical watersheds identified as MARN biodiversity priorities: Rio Grande in Sonsonate and El Imposible in Barra de Santiago, both part of the Mesoamerican biological corridor where critically endangered species occur. Activities include biodiversity inventories, monitoring of birds in biological corridors, and shade-grown coffee certification. USAID is also supporting conservation of the Hawksbill sea turtle, which favors El Salvador's beaches over others for nesting in the eastern Pacific, with campaigns to reduce local consumption of turtle eggs.

USAID has helped the Ministry of Environment incorporate 57 new areas into the National Protected Natural Areas System. Topographic work is now 50 percent complete

and will help the Government determine the exact borders of these protected areas. In Los Volcanes National Park, delimitation and declaration is complete for Izalco Volcano, covering 1,600 hectares. El Salvador also declared its first marine protected area, Los Cobanos, on the western coast of the country. Los Cobanos is 21,312 hectares of which 97 percent is underwater, featuring several coral reefs unique to the Central American region.

USAID has leveraged contributions and cost-sharing for conservation, while payments for ecosystem services programs have far surpassed the original goal of \$100,000. The Government has invested \$3 million, while coffee farmers, small-scale farmers of other products, and local stakeholders have invested more than \$400,000 of their own funds in measures to conserve soil, water, and biodiversity.

The private sector has learned to manage complex certification requirements and the Government has increased ownership and capacity for environmental management. To achieve sustainability, USAID/El Salvador has been training trainers from local government, NGOs, and Peace Corps; building the capacity of coffee exporter technical staff; strengthening local tourism committees; and sharing successful approaches with other donors and government offices. USAID has assisted over 900 coffee producers to date, including 235 women, to achieve specialist coffee certification. Almost 300 private farms and coffee processing plants in the targeted watersheds have been certified, bringing improved management to more than 10,000 hectares of agroforestry systems.

Guatemala

Sustainable Enterprises and Forestry Certification

Combined with neighboring areas in Mexico and Belize, Guatemala's tropical forest is the largest in Mesoamerica and hosts a diversity of species. Economic growth and poverty reduction require sustainable management and conservation of the nation's forests and rich biodiversity in the face of numerous threats. USAID/Guatemala is working with rural enterprises in the forestry and tourism sectors to ensure that investments are made and managed in an environmentally sustainable way, often by harnessing the financial incentives for conservation provided by international markets that demand certified and environmentally friendly products, services, and destinations.

The Maya Biosphere Reserve (MBR) is the largest protected area in the department of Petén, with dense forests teeming with life and valuable timber, which also provide ecosystem services such as climate change mitigation. The forest is under threat from drug smuggling, trafficking in wildlife and cultural artifacts, and fires set to facilitate hunting and farming which subsequently rage out of control. In 2008, USAID helped community foresters address the forest fire threat by pilot testing a satellite early warning system to identify areas susceptible to burning and prioritize prevention efforts. With USAID support, locally established fire brigades conducted 149 patrols and maintained over 150 kilometers of fire breaks and forestry concession boundaries.

USAID also supported the development of systems for monitoring and evaluating the area's

ecological integrity, helping pinpoint where forest cover is declining due to logging or land conversion, especially around Mayan archaeological sites of interest to tourists. In order to ensure that the various monitoring systems are coordinated and complementary, the U.S. helped establish a biological monitoring roundtable of organizations working in the MBR.

The MBR includes areas of working forest where rights to use forest resources are allocated to communities or companies. Several community concessions received USAID support to improve revenue from sustainable forestry including extraction of timber and non-timber forest products. The volume of harvest in these concessions has increased more than 50 percent, with 4.12 million board feet of certified and "in process of certification" forest products sold for \$5.8 million in FY 2008. An evaluation of the forestry concessions in the MBR found that they restrain the expansion of agriculture by local people who now benefit from and increasingly appreciate the long-term value of standing forest over the short-term gains available from additional low-productivity farmland.

More than 3,700 people improved their economic welfare from sustainable forestry activities, including hundreds of women who mostly earned incomes from processing non-timber forest products. Activities initiated in the Alta Verapaz department increased incomes for more than 1,000 people, a number likely to rise because more than 5,000 families are involved in the sustainable resource management and conservation activities there.



PHOTO: COUNTERPART INTERNATIONAL

BIRDER'S PARADISE: USAID is supporting efforts to improve management of the Maya Biosphere Reserve in Petén, Guatemala, known as a premier birdwatching destination.

The USAID-supported Community Forestry Enterprise Organization (FORESCOM) began an alliance with a construction business and increased sales of lesser-known species for decking and flooring. It also supported the Verapaces Cooperative Federation (FEDECOVERA) of 28 cooperatives to obtain sustainable certification for 454 hectares of pine. FEDECOVERA develops value-added timber products like pallets and bed components from small diameter pines which had no market two years ago.

Xate (pronounced "sha-tay") is a palm of the Mesoamerican forest understory used in flower arrangements and Palm Sunday celebrations in the United States and elsewhere. With USAID assistance, MBR communities learned to sustainably manage the *xate* harvest and have doubled their earnings selling directly to large buyers. In 2008, over 21,000 *xate* bunches sold for \$222,815. USAID helped the community concessions become the world's first source of certified *xate*, with 189,294 hectares certified in 2008. Along with half a million hectares of certified forest managed for timber, nearly 700,000 hectares of the Péten forest was put under improved management. USAID's program in the MBR is a model for what can be achieved for gender equity with biodiversity conservation funds: women from various communities now have business and management skills, new sources of employment (such as *xate* sorting and selection), and greater access to resources and positions within their communities.

USAID also supported technical assistance to develop payments for

ecosystem services initiatives for the MBR. Rainforest Alliance, USAID's main partner in the forestry sector in Guatemala, initiated "GuateCarbon" to establish a transparent and cost-effective scheme for monetizing the value of avoided deforestation. Nearly 500,000 hectares of forest are currently undergoing independent third-party certification for carbon sequestration value. Individuals and entities participating in the voluntary carbon market will soon be able to purchase carbon offsets in the MBR to finance maintenance of the standing forest and thereby reduce greenhouse gas emissions. Estimates suggest the certification and management of this amount of Maya forest could avoid emissions of at least 50 million tons of carbon dioxide over 20 years. At about \$5 a ton that could generate \$250 million dollars, an important source of sustainable financing for managing the reserve.

One of the biggest threats to biological diversity is lack of enforcement of environmental regulations, policies and procedures. To address this, USAID strengthens the Ministry of Environment to implement and ensure compliance with the Central America - Dominican Republic Free Trade Agreement (CAFTA-DR), which includes penalties associated with environmental regulations. USAID supported development of an environmental justice board and trained legal officers who deal in these areas. The mission also provided assistance to the Government of Guatemala in evaluating and promoting new options for diversifying Guatemalan exports to the United States, focusing on biological resources which are an untapped source of sustainable wealth.

One CAFTA-DR activity helped develop community-based hunting tours in the MBR targeting the wild Ocellated turkey (*Melleagris ocellata*) in an ecologically-appropriate manner. The program maintains a manageable number of male turkeys while providing an important revenue stream to the community. The 2008 harvest season resulted in 35 visitors (hunters) who harvested 58 adult male turkeys and generated net incomes worth \$66,850, not including tips, handicraft sales and personal donations. Continued wildlife monitoring has shown that Ocellated turkey and other species populations are stable or improving due to the fact that incidental hunting has been reduced as community members become engaged in camp preparation and other aspects of trophy hunting.

Guatemala's diverse biodiversity, rich archaeological sites and colorful indigenous products make tourism the country's largest foreign exchange earner. With U.S. assistance in FY 2008, almost 2,500 people (44 percent women) received increased economic benefits by providing lodging, guiding and food services for sustainable tourism. Working together with Guatemalan NGO Alianza Verde, USAID partner Counterpart International has been promoting sustainable tourism certification in Guatemala, with 65 Sustainable Tourism Green Deal certificates awarded between 2007 and 2008. USAID also participated in an initiative of the National Geographic Society, national government, and the private sector to develop a Geotourism Map Guide that highlights culture, folklore, archaeology, natural resources, textiles and handicrafts.



TAKING CHARCOAL TO MARKET through denuded hillsides in Haiti. USAID is working to promote hillside stabilization and natural resource management in two of Haiti's vulnerable watersheds, Limbé and Montrouis.

PHOTO: NICK HOBGOOD, DAI

Haiti

Economic Development for a Sustainable Environment

Environmental degradation in Haiti is a major threat to biodiversity, and continues to destroy productive infrastructure, stagnates rural economies, and leads to catastrophic flooding. Reducing and controlling environmental degradation has long been a priority for the government of Haiti, and has become the focus of increased urgency following floods during the 2008 hurricane season. The objective of U.S. assistance is to improve government and community management of biologically significant terrestrial, coastal, and marine habitats by promoting more sustainable

natural resource-based livelihoods and expanding Haitian capacity for biodiversity conservation.

In FY 2008, USAID began the Economic Development for a Sustainable Environment (DEED) project, a watershed development program to promote economic development, hillside stabilization, and sustainable natural resource management in two of Haiti's vulnerable watersheds, Limbé and Montrouis. The marine and coastal zones of these watersheds are habitat for diverse endangered species including marine turtles and manatees, however coral reefs are continuously being mined for cement and other building materials, and two important mangrove and

wetland zones are harvested for construction poles or charcoal despite government interdictions. The coastal zone of Limbé receives excessive amounts of sediment from the Limbé River and its tributaries because of substantial deforestation in the upper watershed. Fish stocks in both of these coastal areas are decreasing because of unsustainable fishing practices, constituting a serious threat to ecosystems and the livelihoods of fishing communities. These areas have high potential for beach tourism and ecotourism, but only if threats are addressed.

The DEED project provides technical assistance in habitat and biodiversity conservation and promotes alternative livelihoods among local

stakeholders, especially fishermen. In 2008, DEED worked closely with the Limbé and Montrouis watershed communities to design participatory land use maps, establish conservation and biodiversity priorities, and identify economic development options. A management plan for over 8,000 hectares was designed and will be implemented in each sub-watershed with the active involvement of farmers, producer groups, and local government officials. A public-private partnership with hotel and restaurants owners in Cap-Haitien (near Limbé) is under discussion in order to develop a historical and natural walk on the Islet of Limbé, which features a colonial fortification and habitat for the endangered rhinoceros iguana. The DEED program has increased stakeholder knowledge of and support for improved land-use and management practices that will positively impact long-term economic well-being.

As a result of the disastrous hurricane season, both the Limbé and Montrouis watersheds suffered damage to road and agriculture infrastructure, and crops and livestock were lost. When USAID shifted its attention to work on damage assessment and a concerted recovery program, some critical activities aimed at local capacity building in natural resource management, governance and income generating activities were postponed. Even so, DEED trained about 600 participants in community mapping and planning, sustainable agricultural production, and other approaches to reducing impacts on biodiversity. The USAID food aid program trained an additional 700 people in natural resource management. The hurricanes and tropical storms of 2008 offered

a stark reminder to all Haitians that conservation and good natural resource management are critical components of disaster prevention.

The United States has taken a leadership position among other donors in watershed management in Haiti and heads a donor coordination group for watershed investments. USAID has worked closely with the government of Haiti and local officials to improve their capacity to lead on environmental issues, and will continue to expand Haiti's ability to design, direct, and coordinate efforts to improve environmental management.

Honduras

Integrated Watershed Resources Management

Like other countries in Central America, Honduras hosts high levels of biodiversity. Forest cover loss,

wildlife poaching, and pollution from pesticides, fertilizers, untreated solid waste and untreated wastewater all negatively impact this natural heritage. Low government capacity, weak laws and enforcement, widespread poverty, and a reliance on fuelwood for energy collectively reduce prospects for addressing the causes of biodiversity loss.

USAID's Integrated Watershed Resources Management (MIRA, in Spanish) program continues to support the adoption of economic, scientific, institutional, and social processes that strengthen natural resources management. Working at the landscape level, the program integrates watershed and protected areas conservation with sustainable economic activities, such as sustainable agriculture, community-based ecotourism, and small-scale conservation enterprises which give biodiversity and forest resources greater value at the local level.



PHOTO: USAID/HONDURAS

TREE NURSERIES help reforest priority micro-watersheds that link to ecotourism destinations along Honduras' north coast.

USAID partners in government and civil society have undergone notable institutional strengthening to support these efforts. This year MIRA trained nearly 3,800 people on topics such as disaster prevention and response, watershed management and conservation, strengthening of ecotourism services, and micro-enterprise development. Over half of the trainers were women who play active roles in the social, economic, and environmental processes in their communities. At the national level, MIRA supported the creation of a national authority to more closely monitor and respond to illegal trafficking of plants and animals.

USAID began the implementation phase for management of 18 priority micro-watersheds that are linked with key protected areas and ecotourism destinations on Honduras' biodiverse north coast, covering 84,130 hectares. Activities included reforestation, expanding the use of fuel-efficient stoves, and promoting community-based projects as economic alternatives to illegal logging. In the Pico Bonito National Park, the program assisted in the creation of the Cangrejal Trail, a route connecting six community-based ecotourism initiatives which contribute to park management while serving tourists.

Improvements in management of protected areas strengthened their role as buffers against extreme weather events that cause most natural disasters in Honduras. Combined with ongoing disaster mitigation activities such as the creation of 79 community emergency

response committees, early warning systems, weather monitoring, risk mapping and evacuation plans, the North Coast weathered the 2008 hurricane season without loss of life and a marked reduction in flooding and landslides.

With USAID assistance, USDA Forest Service specialists provided technical assistance and training in environmental interpretation for visitors centers and trails in key protected areas, and updated norms and regulations for wildlife and protected-areas management. In a separate activity, environmental education modules for primary grades were validated and incorporated into the national school curriculum. These measures increase knowledge and awareness of biodiversity among Hondurans, and connect conservation with economic development.

Jamaica

Natural Assets Managed for Rural Development and Sustainable Growth

Ranked fifth among islands in terms of endemic plants, Jamaica also harbors species of snails, terrestrial crabs, amphibians, reptiles, and birds found nowhere else. Jamaica's forests are the main repositories of biodiversity, but more than 20 percent of land in forest reserves has been impacted by agriculture and other human activities, resulting in habitat destruction and fragmentation. Forest reserves and associated conservation areas are priority sites for USAID

initiatives promoting sustainable enterprises and agricultural practices that create opportunities for the rural poor while achieving biodiversity conservation.

USAID/Jamaica's Protected Area and Rural Enterprises project (PARE), with technical assistance from the USDA Forest Service, partnered with The Nature Conservancy, Forestry Department and others on several activities. For example, PARE helped develop Flagstaff Heritage Tours and Trails, a model for community tourism which demonstrated some of the critical aspects of effective and sustainable enterprises, including well-defined leadership and management arrangements, clear land ownership and rights, and private sector involvement.

Forests are threatened from the inside by small agricultural clearings and invasive species. In FY 2008, 6,200 native tree seedlings were planted in the Blue and John Crow Mountains National Park (BJCMNP) to seal openings made by encroachers and rehabilitate 15 hectares of forest. Overall, PARE improved management on approximately 8,755 hectares of biodiverse lands in BJCMNP through enforcement, reforestation and invasive species removal activities in partnership with the Jamaica Conservation and Development Trust (JCDDT).

PARE conducted an assessment of opportunities and constraints in the Jamaican cocoa value chain, from production to marketing, which determined that changes in the current regulatory and management



PHOTO: KIMBERLY FLOWERS, USAID

SIMPLE GREENHOUSES like this one help Jamaican farmers make use of otherwise unproductive land, even former mining sites, and thereby reduce pressure on remaining natural forests.

framework for the sector, along with significant capital inflows from local and international investors, will be needed if the sector is to contribute to economic growth and biodiversity conservation. In other areas, micro-propagation and commercial scale production of select endemic medicinal plants reduced the threat of unsustainable wild harvesting. And, USAID support helped reduce mortality and improve growth rates for endemic Jamaican Iguana hatchlings being reared in captivity for release to the wild.

The USDA Forest Service conducted two strategic forest management planning workshops, and in collaboration with Jamaica's Forestry Department they drafted a 2008–2013 Strategic National Forest Management Plan focused on maintaining ecological integrity by defining forest access rights and socio-economic

benefits for communities and private land owners. Fire is one of the primary threats to Jamaica's forests, often associated with clearing land for agriculture. A USAID assessment of fire causes established that there was low awareness among rural communities on the impact of fires on the environment. Likewise there were few public awareness tools available to convey this message. PARE partnered with the public and private sector to disseminate public awareness messages under the *Think Before You Burn* campaign developed in 2007. Campaign messages were disseminated through posters, bumper stickers, billboards, brochures and school curriculum aids. In BJMNP, park rangers distributed fire prevention and awareness posters in communities found to have high fire danger ratings. The rangers also used

the series of posters in over 10 community meetings held to sensitize buffer zone communities on the risk of fires to their livelihoods and natural resources. In Cockpit Country, forestry and fire prevention officers trained in bush fire awareness developed plans and delivered awareness sessions to over 15 communities around the reserve.

Certain components of USAID's JA FARMS agriculture program complement PARE's biodiversity conservation and natural resource management objectives. In FY 2008, JA FARMS addressed unsustainable agricultural practices by introducing small farmers to low cost, hurricane-resistant greenhouse technology for growing high-value vegetables as an alternative to traditional slash-and-burn agriculture in 385 hectares of biologically important land. The program also demonstrated the successful use of protected agriculture (greenhouses and the like) on otherwise unproductive mined lands, again to reduce pressure on natural forests. USAID interventions led to 113 farmers and processors adopting new technologies or management practices, while 211 people received increased economic benefits derived from sustainable natural resources management. To scale up these approaches, a reference manual on best practices and lessons learned in protected agriculture was completed for use and distribution by the Ministry of Agriculture.



PHOTO: IVANA FERTZIGER, DAI

NEW OPPORTUNITIES: Fishermen pack fish while pelicans look on in Mexico's Marismas Nacionales, a mangrove system stretching nearly 200,000 hectares across the Pacific states of Nayarit and Sinaloa, soon to be declared a protected area. Further north in the Gulf of California, USAID partners are helping fishermen pursue alternative employment and thereby reduce unintended bycatch of the vaquita, a critically endangered porpoise found nowhere else.

Mexico

Private Sector Initiatives and Capacity Building for Conservation

With flora and fauna typical of North or Central America and many species found nowhere else, Mexico has been ranked the fourth most biodiverse country in the world. USAID has worked since 1995 to improve natural resource management, promote effective watershed management, and develop sustainable economic opportunities for rural communities in high biodiversity areas. In 1998 the United States began a program

on wildfire prevention and fire management to mitigate the impact of fires on human lives, natural ecosystems and U.S. border states, enabling Mexico to move from basic firefighting to an integrated fire management approach.

Forest fires represent a growing threat to forest resources and to the conservation of Mexico's biodiversity. USAID worked with the USDA Forest Service, the government of Mexico, NGOs, and communities to reduce the incidence of fire through a comprehensive national, state and local capacity building program. The government

increased its budget for forest fire management from \$4.5 million in 1998 to \$27.6 million in 2008, and a forest fire alert system was established that integrates the efforts of communities, NGOs and government. U.S. assistance also contributed to the professionalization of forest fire management training through the Mexican Forest Commission (CONAFOR). Despite local customs, especially in indigenous communities, the project is working to increase the participation of women in rural areas, where fire fighting and management has been a traditionally male-dominated activity.

Recognizing biodiversity protection as a cross-cutting theme, USAID also focused its economic growth activities on geographic areas of biological significance. Access to financial services, such as loans for micro-, small- and medium-sized enterprises, savings plans, and insurance, can help rural families prosper in ways that benefit or do no harm to the environment. For example, USAID promoted collaboration among Conservation International, local NGO Lazos del Mar, and a Mexican microfinance institution, which is helping protect the vaquita, a porpoise endemic to the upper Gulf of California and currently at risk of extinction. The program reduces the direct threat of unsustainable fish harvesting practices by providing microfinance loans for alternative livelihoods.

In the Usumacinta Basin of Chiapas State, conservation of marine environments was advanced through an analysis of constraints to growing and marketing organic mangos in Chiapas. Studies have documented that fertilizer and pesticide pollution from mango production in the upper watershed is an identified threat to 150,000 hectares, roughly 17 percent of Mexico's coastal mangroves, which serve as nurseries for fish, crustaceans and coastal birds. The cultivation of organic mangos reduces runoff harmful to coastal mangroves while increasing incomes of rural producers receiving higher international prices for organic fruit.

Other initiatives were designed to maximize synergies between natural resource management and private sector competitiveness.

These include: studies on the use of payment for environmental services (PES) systems as mechanisms to pay communities in critical ecosystems for careful management of natural resources; resource materials developed to educate and inform Mexican legislators on important environmental issues; and a new program to improve the transparency of environmental policy decision making.

During 2008, USAID's TIES (Training, Internships, Exchanges and Scholarships) program began funding two U.S.-Mexican university partnerships to address biodiversity conservation. Florida International University and the National Polytechnic Institute of Mexico will work on protected areas and coffee farms in Oaxaca and Chiapas. Michigan Technological University, the Technological Institute of the Oaxaca Valley, and the Southern Border College will enhance capacity for sustainable forest management and PES mechanisms in Oaxaca and Chiapas.

FY 2008 was the final year for USAID/Mexico's community-oriented approach to sustainable management of natural resources and conservation. Starting in FY 2009, USAID will launch a Mexican Competitiveness Program, building on other ongoing initiatives in enterprise-based conservation. The new program asserts that biodiversity protection is essential to economic growth in the short and long term, and will reinforce this link with demonstration projects at sites selected in part based on their biodiversity significance.

Nicaragua

Biological Monitoring and Sustainable Forest Certification

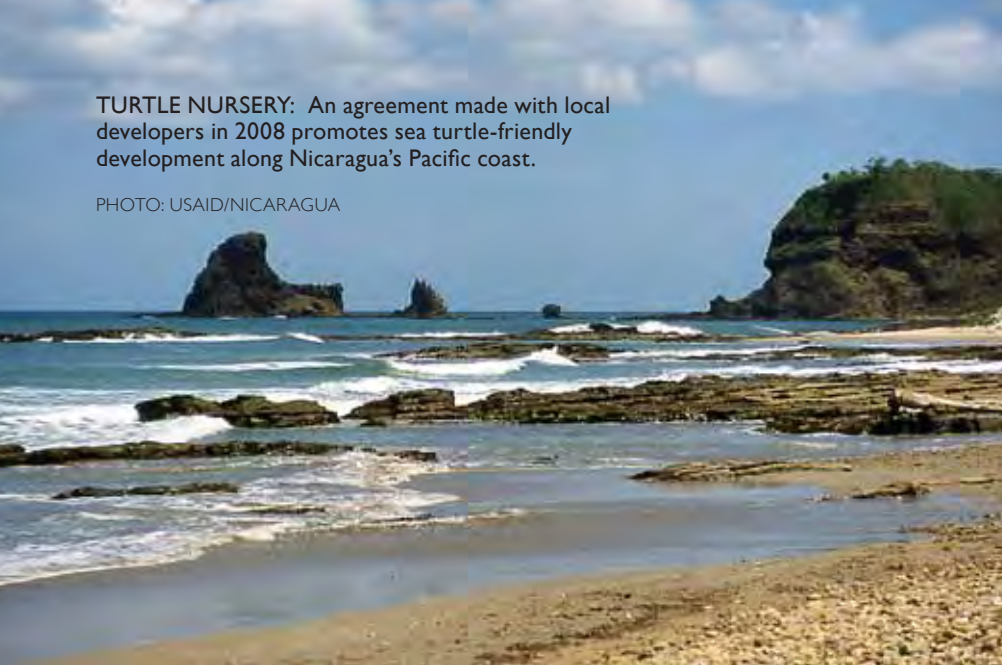
Nicaragua has an ecologically rich and fragile environment. High levels of biological diversity and distinct terrestrial and aquatic ecosystems are the basis for the country's ecological and economic wealth. Protecting these resources from the threats of natural disasters and human encroachment is critical for sustainable economic development. USAID biodiversity and forestry programs support many of Nicaragua's priorities for the environment, including watershed protection, global climate change mitigation and adaptation, and improved forest management.

USAID/Nicaragua's environmental portfolio focuses on sustainable tourism and agroforestry. Other activities fall under the four main themes of the Environmental Cooperative Agreement of the Central America - Dominican Republic Free Trade Agreement (CAFTA-DR): institutional strengthening for the application and effective enforcement of environmental laws; biodiversity and conservation; market-based conservation; and improved private sector environmental performance.

With assistance from the USDA Forest Service and other partners, the mission supported a number of efforts to improve the capacity of Nicaragua to collect, analyze, and monitor scientific information. In one project, species-specific protocols were developed for monitoring bats and birds as proxies

TURTLE NURSERY: An agreement made with local developers in 2008 promotes sea turtle-friendly development along Nicaragua's Pacific coast.

PHOTO: USAID/NICARAGUA



for overall biodiversity, and training was provided in their use. USAID engaged with private landowners to allow data collection on their lands, and established biodiversity monitoring plots for representative bird and bat species in two private reserves and three public reserves. A separate project continued a series of trainings and workshops for field biologists and park rangers, who are now certified to conduct scientifically sound and quantitative monitoring efforts throughout Central America.

USAID/Nicaragua facilitated six agreements between conservation NGOs and private landowners in critical watersheds to ensure long-term biodiversity protection. An agreement signed with local developers promotes sea turtle-friendly development near a national Wildlife Refuge and at coastal drainages of critical watersheds on Nicaragua's Pacific Coast.

Work by USAID partner Rainforest Alliance led to improvements in forest management, agroforestry and sustainable agriculture which are helping slow forest destruction and

degradation by improving productivity on lands already under cultivation and by increasing the economic value of timber and tree crops through conservation certification. Forestry and agroforestry activities support the development and implementation of sustainable management plans for forests, and link communities to wood processors interested in marketing certified forest products. Forestry and protected areas projects resulted in over 26,500 hectares of biological significant land being sustainably managed, including third-party certified forest. Agroforestry promotion resulted in an additional 1,500 hectares of coffee and 2,308 hectares of cocoa receiving eco-friendly certification. In the areas affected by Hurricane Felix, USAID supported the controlled harvest of salvage timber to help communities in reconstruction as well as economic development.

Tourism activities are building networks of responsible tourism service providers, including tour operators and communities in protected areas. The USDA Forest Service is providing training

and technical assistance to local communities so that they can play a greater role in management plans for protected areas, reaching over 1,500 people in FY 2008. USAID developed a public use plan for the Dantali El Diablo Protected Area which supports tourism and economic opportunities for communities while protecting the environment. The Forest Service is also assisting small and medium enterprises to develop new business and increase opportunities for providing services to national and international tourists.

Panama

Watershed Conservation in the Canal Zone

The Panama Canal watershed has important tropical forests with rich biodiversity threatened by unsustainable and unplanned agricultural development. USAID supports forest protection and sustainable use of non-timber forest products to maintain ecosystem health and water quality, with efforts focused on seven sub-watersheds in the Panama Canal Watershed and the Soberanía and Chagres National Parks.

Reforestation and planting of native trees is being supported through the establishment of plantation and agroforestry systems on cattle farms. Useful as live fencing, windbreaks, and shade, trees help conserve soil and make habitat more suitable for birds and monkeys passing through farms. USAID provided training and technical assistance to a network of eight community nurseries responsible for collecting seeds of native trees, protecting seedling trees, producing

plants, and establishing forestry plantations of species. In FY 2008, the nurseries collectively produced 90,000 seedlings and are on their way towards meeting a demand for more than 200,000 trees.

USAID supported the development of strategies to protect 2,000 hectares of deciduous and semi-deciduous forest inside the Chagres National Park, an important ecosystem type underrepresented in Panama's protected areas system. Threatened by unregulated extraction and fires, USAID worked with local communities to monitor the forest and provide environmental education. The mission also supported 15 small producers in areas neighboring these forests, who implemented best management practices in agroforestry systems, reforestation, and sustainable agriculture.

Another activity helped develop action plans to establish a biological corridor between the Soberanía and Chagres National Parks and improve the viability of species in the long term. The plans were incorporated into the national natural resource management strategy being pursued by the Inter-institutional Commission for the Panama Canal Watershed.

USAID and the Panama Canal Authority (PCA) partnered to finance activities in the watershed, starting with 13 demonstration activities. These promoted efficiency in protected areas management, sustainable resource use, and strong environmental governance. The PCA initiated an environmental incentive program in a group of pilot sub-watersheds, and aims to develop plans for each farmer willing to adopt

best practices. USAID promoted reforestation with trees that provide fruit or timber, and encouraged excluding agricultural activities from steep slopes to conserve soil.

An environmental incentives program offers support to obtain land titles, develop farm planning, receive technical assistance and training, and participate in a payment for ecosystem services (PES) scheme. If the environmental incentive program proves to be an effective tool to foster sustainable development in the Panama Canal Watershed, it could serve as a model for other critical watersheds in Panama.

Support for sustainable enterprises advances common objectives in watershed management and biodiversity conservation. Several environmentally-friendly businesses were strengthened through training in business plans, financial management, technical issues, and marketing strategies. These businesses created full-time jobs and closed important commercial deals for future sales.

Building on previous progress through USAID assistance, a group of entrepreneurs were trained in new techniques for designing, building, and selling furniture and other products, all made from readily-available bamboo planted by a USAID project five years ago. Small agricultural producers in the target sub-watersheds, which in the past lacked contacts with markets and sold their products in local community markets, completed their first commercial transaction with a grocery store chain.

With USAID assistance, environmental governance and advocacy were strengthened among a variety of stakeholders. For example, a group of environmental NGOs developed a five-year national Environmental Agenda for presentation to the 2009 Panamanian presidential candidates. Two watershed management councils were established covering target geographic areas in the Panama Canal Watershed, with each council completing action plans for their sub-watersheds. USAID also



PHOTO: USAID/PANAMA

CATTLE RANCHES around Chagres National Park in Panama are becoming conservation partners by agreeing to develop plantations and agroforestry systems that use native trees.

supported the development of policy proposals to adapt existing forestry policy in order to provide greater coherence in the legislation.

USAID supported the National Environmental Authority (ANAM) in the dissemination of legislation related to illegal uses of the forest, principally through the design of an environmental regulation containing diverse environmental legislation including legal provisions related to forest management. USAID also provided training to 38 judges and prosecutors in the application of the penal legislation for environmental crimes, including crimes related to illegal logging. A training course in environmental administrative procedures was developed and offered, benefitting 105 ANAM officers tasked with the application of environmental regulations related to illegal logging. A public awareness campaign promoted behavior changes to address illegal forest activities, illegal hunting, and burning of natural forests.

Paraguay

Environmental Policy Development and Law Enforcement Support

Biodiversity and other natural resources in Paraguay are depleted by unsustainable and illegal activities in national parks and other areas. USAID/Paraguay works to reduce these threats by promoting public-private partnerships for conservation, creating environmental regulations and policies at all levels, and providing technical assistance to government authorities. The new administration in the country is committed to

addressing social and environmental issues and is a valuable partner.

Deforestation is a priority issue for the Ministry of Environment, and a new deforestation moratorium of five years is planned for the country. With USAID assistance a prior moratorium (the “Zero Deforestation Law”) resulted in a 92.5 percent reduction in the rate of land clearance in FY 2008 compared to the rate reported for Paraguay by the Food and Agriculture Organization in 2002. Paraguay’s Minister of Environment has started new activities to fight corruption and increase transparency within the Ministry, and has prioritized efforts to combat illegal logging, especially by squatters who claim forested areas and sell timber for which they have no legal rights.

In the policy arena many new regulations, laws and by-laws were promoted by local partner Instituto de Derecho y Economía Ambiental (IDEA) with USAID support. Some regulations update the Environmental Protection Act, while others promote the independence of the Environment Secretariat (SEAM). IDEA continued providing technical assistance and encouraging transparency and citizen participation in congressional commissions. They also supported the preparation of regulatory by-laws for the newly created Forestry Institute (Instituto Forestal Nacional - INFONA), which replaced the former Forest Service.

A campaign for the reforestation of the Atlantic Forest has had a major impact on local communities. Important achievements include



PHOTO: WORLD WILDLIFE FUND

EXPLOSIVE GROWTH in the soybean market over the last several years led to major conversion of forests into cropland for soybean production in Paraguay and other countries. The government of Paraguay is planning to implement a five-year moratorium on deforestation.

giving legal title for Caazapa National Park to SEAM, and the implementation of a project in nearby sawmills to detect illegal logging. In the San Rafael National Park, USAID supported a successful fire awareness campaign resulting in a very low occurrence of fires in comparison with previous years. A project working with 40 rural women from three communities involves planting native medicinal plants, which will increase incomes and avoid unsustainable and illegal exploitation of these forest products.

USAID continues strengthening and promoting protection of national parks and private reserves. New areas have been created while others are in the process of being declared, and some conservation measures were applied throughout the protected areas system. USAID through World Wildlife Fund (WWF) assisted a group of private protected areas owners to form an association. WWF and the association then consolidated efforts to defend private protected areas from squatters and land invasions, promote eco-friendly activities and an awareness campaign in the media, and publicize the objectives of the association and its purpose.

In 2008, a public-private partnership with Evensen Dodge International and local partner Fundacion Moises Bertoni (FMB) provided grants and loans for long-term environmental projects, drawing down a Green Fund established in 2007. A new partnership with FMB and a local commodities producer with investors from different countries will work to decrease poverty

in a rural part of San Pedro while reducing the dependency of local communities on forest products for their livelihoods.

Peru

Forestry Sector Reform and Incentives for Conservation

Peru contains some of the most biologically diverse ecosystems in the world. Poverty and illegal logging are major threats to habitat in the Peruvian Amazon, where USAID's environment program works to reduce poverty

through trade-led growth and biodiversity conservation. In 2008, USAID helped Peru establish trade-based incentives for conservation and sustainable management of natural resources and reduced illicit activities that harm the environment. The program strengthened the capacity of environmental authorities at the national and local levels and improved environmental management to meet international commitments.

USAID supported the Government of Peru in bringing its environmental management systems into compliance

STEEP SLOPES only offer partial defense against logging and slash and burn agriculture in Peru's portion of the Andean Amazon.

PHOTO: HANNAH FAIRBANK, USAID



with the Peru Trade Promotion Agreement (PTPA). For example, in May 2008 Peru created its first Environment Ministry (MINAM), and subsequently issued four new laws and regulations to improve the management of natural resources. One of the laws established the Forestry Supervisory Office as an autonomous entity under the Prime Minister's Office, which will substantially elevate the profile and stature of forest management in Peru. The Government also promulgated detailed and comprehensive regulations for the Forestry and Wildlife Law, a necessary first step for managing and protecting these important resources.¹ Regulations established the system to approve the management plans for sustainable use of Brazil nuts in Bahuaja Sonene National Park and Tambopata National Reserve, two of the most biodiverse areas in the world. Brazil nuts are a prime source of income for families living near Tambopata reserve, among the principal stewards of Peru's rich forest resources.

The protected area oversight role of the former National Institute of Natural Resources (INRENA) has been absorbed by MINAM under its National Service for Protected Areas (SERNANP). USAID's support to modernize and strengthen INRENA's capacity to manage protected areas is continued under SERNANP. For the first time, park management monitoring data can be entered online. USAID trained 35 officials (46 percent women) in automated cartography, environmental impact assessment

of activities using non-renewable resources, and allocating permits for tourism operators in protected areas. Technical assistance was provided to more than 2,000 protected area buffer zone community members on the sustainable use of natural resources and market connections for forest products including ornamental fish, Brazil nuts, and various plants used in clothing and handicrafts. USAID also trained 253 community representatives and micro-entrepreneurs on issues such as ecotourism, natural resources management and conflict resolution.

USAID continued efforts to facilitate market linkages for logging companies and indigenous communities that obtain international certification from their management of forest concessions. Certification of sustainable forest management increases the selling price of forest products, which in turn creates an incentive to protect forest resources and combat illegal logging. As part of the international certification process, USAID-funded experts from INRENA evaluated 179,700 hectares of forestry concessions. This review covered five private sector forest concessions and two native communities with forest use permits. In FY 2008, nearly 50,000 hectares were certified, bringing the three-year total to 653,632 hectares. On September 30, USAID entered into a public-private partnership which provided support to the World Wildlife Fund to strengthen and expand forest certification in the Amazon region, with an additional

123,000 hectares expected to be certified in early FY 2009.

The development of environmentally sustainable forestry businesses in these certified forests reduces large-scale deforestation, thereby maintaining an effective form of carbon sequestration and reducing greenhouse gas emissions from the burning of forests. USAID's program is showing that certified forestry management provides a credible incentive to manage forest sustainably. Internationally certified forests increase legal trade and provide income and jobs for poor and indigenous people through increased market access for Peruvian forest products.

USAID's Strengthening Environmental Management to Address Priority Problems (STEM) activity continued working with Peruvian institutions to enhance oversight and monitoring of forest concessions and further refine and implement national environmental management policies, especially for protected areas. The most recent mission initiative for protected areas was formalized in late FY 2008, when USAID agreed to a public-private partnership with the Chicago Field Museum, the MacArthur Foundation, the Moore Foundation, and the Center for Conservation, Investigation, and Management of Natural Areas (CIMA), a local NGO, to protect the vast biological diversity of the Cordillera Azul National Park and ensure sustained funding for its long-term management.

1. Although the Forestry and Wildlife Law was repealed in response to Amazon native communities' claims that they were not consulted (per ILO Convention 169 on Indigenous and Tribal Peoples), the GOP and representatives of the communities have set up a working group to draft a new Forestry and Wildlife Law which they will present to the Peruvian Congress in October 2009.

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 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. 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 2008, staff provided direct assistance to several missions including Ecuador, Jamaica, Kenya, Liberia, Mali, Namibia, Panama, Philippines, the Regional Development Mission for Asia (Laos and Thailand), Rwanda, Tanzania, and Uganda, and provided other forms of backstopping, U.S. partner coordination or virtual support to numerous other missions.

The Biodiversity Team provides technical leadership in many forums for sharing conservation information and best practices,

including meetings of the UN Convention on Biological Diversity, the UN Convention to Combat Desertification, and the Consultative Group on Biological Diversity. The Team also provides frequent support to other federal agencies working on issues or in places that complement USAID efforts, including the Department of State and the U.S. Fish and Wildlife Service.

In addition to advising missions, bureaus and U.S. government agencies, the Team manages its own programs in order to promote innovation and new approaches to biodiversity conservation. The Global Conservation Program

SABLE ANTELOPE are found in wooded savannas in many parts of Southern and East Africa. A variety of teams and offices in USAID headquarters manage biodiversity programs in this range, including landscape-scale conservation in Tanzania, conservation-friendly agriculture in Zambia, and a program to scale up CBNRM work throughout Southern Africa.

PHOTO: MICHIEL TERELLEN





PHOTO: ENRIC SALA, WCS

NASSAU GROUPER SPAWNING: Global Conservation Program support to the Wildlife Conservation Society contributed to an increase in the population of the endangered Nassau grouper in Glover's Reef, Belize, from 800 fish in 2007 to 1,150 fish in 2008. New laws announced in April 2009 will protect beneficial algae grazers such as parrotfish, limit the catch of grouper, ban spear fishing in all marine reserves, and add no-fishing zones in two marine reserves.

(GCP), initiated in 1999, is the team's largest initiative and one of USAID's flagship conservation programs. GCP supports site-based conservation by six organizations in 22 countries, as well as a number of learning activities which foster collaboration among partners and advance knowledge and best practices in the field of biodiversity conservation. The program focuses on achieving landscape-level conservation results in some of the world's most biodiverse areas. GCP applies a threats-based approach, where specific actions are tailored to directly address barriers to conservation. For example, if wildlife poaching is the overall threat,

a project could address the underlying conditions that promote it, such as lack of domestic protein sources, few economic alternatives, insufficient law enforcement and lack of awareness among poachers about the immediate and long-term consequences, from a fine or imprisonment to foregone opportunities for sustainable hunting or wildlife tourism.

GCP partners support a number of activities that contribute to biodiversity conservation, including community-based natural resource management, improved protected area management, integrated landscape and seascape planning,

conservation friendly enterprises such as ecotourism, strengthened environmental policy and legal frameworks, and community training and capacity-building. Across the 18 active GCP sites, new and ongoing activities have resulted in over 20 million hectares of biologically significant area coming under improved management and almost 20,000 people trained in natural resources management (including at least 6,000 women). Highlights from FY 2008 include:

- WWF efforts in East Africa and years of advocacy for sustainable fisheries management led to the

signing of a historic declaration on illegal unregulated and unreported fishing for coastal countries of the Southern African Development Community.

- Work by EnterpriseWorks/ VITA with community-based forest management groups in the Philippines brought a cumulative 312,000 hectares into effective management, exceeding the target due to successfully linking landscape level planning with provincial multi-sector task forces.
- Madagascar's flat-tailed tortoise has maintained a stable population over the last four years and will soon be better protected from deforestation and the pet trade across 75 percent of its range in the new *Menabe-Antimena* protected area developed with assistance from Conservation International.
- The Nature Conservancy and local partners completed scientific and participatory conservation action plans for five marine protected areas in the Mesoamerican Reef, including two in Mexico and one each in Belize, Guatemala, and Honduras.
- The African Wildlife Foundation made progress toward establishing a 67,500 acre conservancy in the West Chyullu area of the Imbirikani Group Ranch, Kenya, where revenue from ecotourism and other conservation enterprises will be distributed to landowners in accordance with the number of acres they own.
- Wildlife Conservation Society activities in Glover's Reef, Belize, contributed to a 45 percent

increase in the local population of the endangered Nassau grouper. New laws announced in April 2009 will protect beneficial algae grazers such as parrotfish, limit the catch of grouper, ban spear fishing in all marine reserves, and add no-fishing zones in two marine reserves.

GCP partners apply principles of adaptive management at their sites, whereby monitoring and evaluation of project indicators informs decision making and advises project managers on where to focus attention and when to adjust course. Partners also tackle challenges through explicit learning activities which document lessons for themselves and the wider conservation community. For example, four of the partners participated in a learning activity on designing and implementing networks of marine protected areas, resulting in a report that is informing the development of the Coral Triangle Initiative. GCP was itself evaluated in 2008 to determine the program's impact on the practice of large-scale conservation. The evaluation suggests that GCP has been effective in addressing several factors limiting conservation at program sites worldwide, and has changed the way some of the largest NGOs approach conservation. Both reports are available at <http://dec.usaid.gov>.

In addition to the centrally-managed activities which advance broad conservation objectives, the Global Conservation Program is also a mechanism whereby other USAID operating units can develop their own stand-alone agreements with any of the six GCP partners, consistent with the overall program objectives. To date, 55 agreements

totaling more than \$150 million have been funded and managed primarily by USAID missions.

The Biodiversity Team also supports the Business and Biodiversity Offsets Program (BBOP) through a cooperative agreement with Conservation International, in partnership with Forest Trends. BBOP helps industries and nations plan for "no net loss" of biodiversity from extractive activities through improved industry practices and policy change. In 2008, USAID supported efforts with a platinum mine in South Africa and a nickel mine in Madagascar. Work in Madagascar led to reforestation of a buffer zone to prevent logging of primary forest, and resulted in temporary protected status for the offset site. BBOP tools, guidelines, discussion documents, and reference materials are being expanded, refined and widely disseminated through its Web site, bbop.forest-trends.org, which responds to the growing interest in biodiversity offsets.

USAID continued to support the Life on the Edge program of Flora and Fauna International (FFI), which develops rapid response mechanisms in the wake of unforeseen threats, natural disasters and conflicts. In FY 2008, the program continued to develop an effective methodology for the multi-partner Rapid Response Facility to assist UNESCO World Heritage Sites in crisis. Draft guidelines are in review which draw on partnership lessons garnered from FFI's work in post-conflict and post-disaster areas of Mount Nimba in Guinea, the Cardamom Mountains of Cambodia, Sapu National Park in Liberia, the Golden Stream Watershed Preserve in

Belize, and Aceh Province of Sumatra, Indonesia. The guidelines are being tested in a pilot phase with rapid response to several natural disasters in order to help first responders address the short- and long-term needs of people and the biological resources on which they depend.

FY 2008 saw the launch of the first environment and natural resources management (ENRM) training course for USAID staff, developed by the Biodiversity Team and colleagues in the NRM and Environment and Science Policy offices. A five-day course took place in Panama City, Panama in July 2008 and attracted a diverse audience of environmental officers from the Latin American and Caribbean region. Subsequent courses have been offered in Pretoria, South Africa (April 2009) and Washington, DC (July 2009). The course has been adapted into both a one-day overview for Foreign Service officers in training and a distance learning course. For more information, see the Land Resources Management Team section on the CK2C program.

EGAT/NRM/ Forestry Team

Sustainable Forest Management

Forestry 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,



PHOTO: BAMBANG WAHYUDI, TNC

MONO CABLE at Belayan River Timber Concession, East Kalimantan, Indonesia. Reduced Impact Logging includes concepts as simple as using a cable to remove felled trees from forests, which decreases the need for roads and is less damaging to remaining roots and undergrowth than tractors.

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. Forests also provide ecosystem services like mitigation of climate change and regulation of water quality and supply.

In FY 2008, the Forestry Team continued its support of the Sustainable Forest Products Global Alliance (SFPGA), a public-private partnership that works to reward sustainable forest management in the global marketplace. SFPGA works closely with the Global Forest and Trade Network (GFTN), a World Wildlife Fund initiative that links wood buyers with sustainably managed forests. In FY 2008, three new corporate members joined GFTN: Wal-Mart Stores, Inc., Williams-Sonoma, Inc., and Procter & Gamble. By joining GFTN, these companies

have committed to increase the proportion of wood products that originate from credibly certified forests in their supply chains and to phase out unknown and unwanted wood sources for their brands in the United States and Canada.

With the three new corporations, GFTN membership increased to 84 companies managing over 27 million hectares of forests, with nearly 90 percent of these forests now under effective management. Through SFPGA these companies have come together to share experiences and methods in examining supply chains, working with their suppliers, and improving sourcing and procurement policies for all wood and paper products. By the end of FY 2008, GFTN had generated 183 market linkages worth an estimated \$80 million.

An interagency agreement with the USDA Forest Service (USFS)

provides training, analysis and technical assistance to USAID missions and partners and improves forest conservation in at least 37 countries worldwide. For example, USFS and its partners helped conduct a remote sensing assessment of the 224,000 hectare Jamari National Forest in Brazil, and provided extensive training to the newly-created Environment Rangers of Jordan. In Asia, USFS conducted several workshops, training activities and study tours involving participants and sites in eight countries. Support by USFS is detailed throughout this report, including programs in Mexico, Tanzania, Liberia, Namibia, Lebanon, Russia and countries in Central Africa.

The Forestry Team provides technical leadership on forest issues and often represents the U.S. Government in its policy work with other nations, international organizations and donors. In FY 2008, staff played a leading role on the U.S. Delegation to the International Tropical Timber Organization (ITTO), a 45-nation institution that sets policies and standards for production and trade of tropical wood. The Department of State negotiates tropical forest policies and programs through ITTO and invited USAID to serve on an ITTO Expert Panel for Project Appraisal and represent the U.S. at pre-negotiation in Accra, Ghana. USAID strongly influenced the development of new thematic programs for the organization and helped produce *Biodiversity Guidelines for Tropical Timber Producing Forests*.

Forest destruction and degradation account for 20 to 30 percent of

global carbon emissions, spurring a series of international policy negotiations designed to reduce this contributor to climate change. The Forestry Team continued to prepare the Agency for work in this new policy environment by co-funding short courses with the Global Climate Change team that will build capacity within missions and partners to understand the complex and varied technical topics related to forests and climate change. Training courses held in Bangkok, Pretoria, and Washington, DC provided both broad and in-depth analyses of the technical and policy issues related to reducing emissions from deforestation and forest degradation, forest carbon measurement and accounting techniques, and volunteer and mandatory carbon exchange markets.

Looking forward, the Forestry Team is developing two new public-private partnerships that will address global market opportunities, governance, and management issues for forest products and ecosystem services, including carbon sequestration. Working with the private sector, communities, and other stakeholders, USAID will develop models of sustainable production driven by improved supply chain management, transparency, and new demands for measurement and monitoring. The programs are intended to improve livelihoods by enhancing participation in markets, controlling illegal logging, and building a strong foundation for generating revenue from payments for ecosystem services.

EGAT/NRM/ Land Resources Management Team

Conservation Innovations for Improved Policy and Practice

USAID's Land Resources Management (LRM) Team works to ensure that land use is mutually beneficial for people and biodiversity. The team supports technical assistance and training in sustainable natural resources management; empowerment of local people with rights to use and benefit from forests, fish, water and wildlife; and conservation-based enterprises which provide economic incentives for good stewardship. Most LRM team efforts apply the "Nature, Wealth and Power" framework, an approach to improving conservation, economic growth, and governance through natural resource management.

Lack of secure resource rights and land tenure can lead to conflicts when different groups compete for the use of natural resources, especially where there is open access to a resource that many groups use, but none control. Lack of secure rights also diminishes people's incentives to make long-term investments in land resources. Poor management and overuse often result in resource degradation, leading to an economically and ecologically unsustainable situation. USAID is working to address land resource overexploitation through the Property Rights and Resource Governance (PRRG) program, a five-year initiative started in 2007. The program provides practical tools, training and technical assistance to U.S. Government staff and decision makers in developing countries

in order to address land tenure and resource rights issues.

PRRG is improving resource management and protection in several African countries. Following a land tenure and property rights training course in 2007, Kenyan participants developed a new program for the Kibodo Trust in the Lamu district of coastal Kenya to strengthen property rights for hunter-gatherers and fishing communities and help protect biodiversity in two fragile parks (see DCHA/CMM section of this report for more on Kibodo). The same training course inspired two new programs in Southern Sudan: one focused on developing land law and policy for natural resource management; and the second focused on strengthening resource rights to protect fragile biodiversity areas. PRRG also resulted in three different programs that integrate property rights and biodiversity conservation in Central African Republic, Uganda and Liberia.

The LRM Team's Global Sustainable Tourism Alliance (GSTA) provides USAID missions with expertise for designing tourism projects that include biodiversity conservation objectives. GSTA is currently active in Ecuador, the Dominican Republic, Mali, Ethiopia, Montenegro, and Albania. In 2008, The Nature Conservancy, a GSTA partner, helped communities near protected areas in Ecuador build tourism-related business activities without compromising biodiversity conservation goals. In the Dominican Republic, the Alliance promoted environmental sustainability standards among local hotels to demonstrate eco-friendly

operations for which tourists pay higher rates. In Mali, GSTA works in the Cliff of Bandiagara (land of the Dogons) World Heritage Site to develop tourism as a financial incentive to local communities to reduce the threat of deforestation.

Another LRM initiative, Capitalizing

2008, CK2C supported stock-taking assessments to determine the long-term impacts of USAID natural resource management programs which have closed. Where impacts were positive, CK2C worked to remove barriers to scale up similar activities and impacts. The work has led to increased awareness of



PHOTO: RON HOFF, WILDLIFE CONSERVATION SOCIETY

GIANT IBIS: USAID's TransLinks activity supports community-based ecotourism in Cambodia and has put in place a system that pays residents to protect the nests of endangered birds, including the Giant Ibis and the White-shouldered Ibis. Through ecotourism and conservation payments, incomes in five villages have almost doubled.

Knowledge, Connecting Communities (CK2C) is implemented by DAI and promotes best practices in management of land, water, forest and biological resources; provides web-based tools that improve networking and communication between local communities and resource managers; and delivers training for USAID staff managing environment programs. In

how on-farm forest management in the Sahel of West Africa benefits soil health and biodiversity and reverses desertification. A course was launched in Panama for USAID environmental program staff working in the Latin America and Caribbean region, with subsequent offerings in South Africa and Washington, DC in FY 2009. The

next training course is scheduled for early FY 2010 in the Philippines.

As part of its Geographic Information for Sustainable Development program, the LRM team continued to support SERVIR, an earth observation, monitoring and visualization system

of American Geographers' *My Community, Our Earth* initiative to build the capacity of African university students to apply geospatial information technologies to biodiversity issues. This capacity building activity is available to 15 member countries of SERVIR-Africa in east and southern Africa.

resource use. The program offers research, capacity building, and technical assistance to promote outcomes related to payments for ecosystem services (PES). Activities complement current USAID-funded biodiversity projects in over 20 sites globally. In FY 2008, TransLinks completed 18 research activities and five case studies at select sites. Two new methodological tools on PES and natural product market assessments were also developed. TransLinks trained more than 1,200 people in natural resources management, nearly double the goal, of whom 38 percent were women.

TransLinks supports community-based ecotourism in the Tmatboey community in Cambodia, with a system that pays residents to protect the nests of critically endangered birds, including the Giant Ibis and the White-shouldered Ibis, both prized by bird watchers. Through ecotourism and conservation payments, incomes in five villages have almost doubled. In addition to the Wild Asia Responsible Tourism Award in 2007, the project received two international awards in 2008 - an Equator Prize and a World Bank Development Marketplace Award. Another WCS/TransLinks program brought the first combined forest carbon and biodiversity project in Madagascar to the international voluntary carbon market in 2008. This includes a precedent-setting agreement with the government in which most of the revenue from carbon sales go to the communities that live in and manage the Makira watershed.

Initiated in FY 2008, the Southern Africa Conservation Partnership was created to scale up community-



PHOTO: WILDLIFE CONSERVATION SOCIETY

NICE RICE: In 2009, TransLinks introduced wildlife-friendly Ibis rice™ to a suite of conservation enterprises in Tmatbuoy, Cambodia. This branded product of sustainable wetlands agriculture will be sold at a premium to environmentally conscious restaurants and consumers, bringing landscape-scale habitat protection to the program.

established through an inter-agency agreement between USAID and NASA. SERVIR supports online mapping, web-based geospatial data sharing, and decision-support tools that address issues related to biodiversity, climate, disasters, ecosystems, health, water, and weather. In 2008, SERVIR partnered with the Association

More than 300 students from 12 countries applied to participate.

TransLinks, a cooperative agreement between USAID and the Wildlife Conservation Society (WCS), was developed to promote an integrated approach to strengthening governance, poverty alleviation, conservation, and sustainable

based natural resource management (CBNRM) impacts produced by conservation investments made over the last 25 years. Partnership efforts, implemented by the World Wildlife Fund, center on wildlife conservancies and other biodiversity-focused CBNRM projects in Southern Africa. The partnership will consolidate examples of successful outcomes and lessons learned throughout the region, and use them to engage decision makers in discussions about how CBNRM can be used to address national priorities for improved resource management.

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. The team manages three programs that support biodiversity objectives through sustainable management of marine and freshwater resources.

The Sustainable Coastal Communities and Ecosystems (SUCCESS) program strengthens community-based natural resources governance efforts in order to influence policies at the provincial, national, and regional scales. Livelihood and enterprise development are features of all interventions to ensure sustainability beyond the life of USAID investment. In FY 2008, SUCCESS improved management across 222,000 hectares (151,000 marine and 71,000 terrestrial) in



PHOTO: WILDLIFE CONSERVATION SOCIETY

THE SPINY LOBSTER fishery reform project of USAID's Global Fish Alliance will focus on the Bay Islands and off-shore waters of Honduras and Nicaragua, noted for their outstanding marine biodiversity and part of the globally significant Mesoamerican Reef. The activity promotes an ecosystem-based approach to fishing through the use of fishing reserves and market-based approaches to management reform. The lobster fishery is extremely important as an export product and will be used as a "hook" for engaging stakeholders in fishery reform.

three biologically significant areas.

- In Nicaragua's Padre Ramos and Estero Real estuaries, biodiversity is threatened by poor water circulation due to sedimentation and poorly constructed shrimp ponds, water pollution and the loss of mangrove forests. SUCCESS is linking biodiversity protection, health, environmental quality, and good business practices by developing aquaculture, providing national and international niche marketing of local natural products such as fruits and "organic" shrimp, and encouraging adoption of best practices for mariculture.
- On the Fumba Peninsula of Zanzibar in Tanzania, a zoning scheme with three seasonal no-take areas was established to address cockle overharvesting, threatening a valuable food and income source. Coral, fish and other marine life benefit, while jewelry and half-pearl culture initiatives are paying dividends to many local women, improving their quality of life and reinforcing their commitment to conservation.
- In the Cojimies estuary of Ecuador, a nesting site for several species of sea turtles, the local fishery is in decline due to overfishing, excessive logging and resulting sedimentation, and conversion of mangrove forests to shrimp ponds. Local communities are improving the environment and their welfare through reforestation and eco-friendly livelihoods activities, such as use of the native *chame* fish, home gardening, and beekeeping.

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 through

improved governance, field research, information management, and capacity building in three biologically important field sites. For the life of the project, GLOWS expects to achieve improved management in approximately 2.23 million hectares.

- In the Pastaza River basin in the upper Amazon, GLOWS facilitated water forums on major water challenges and cooperative solutions; supported the Yungani Fishers Committee of the lower Pastaza with fish catch monitoring, overfishing vigilance committees, and detailed technical training; and collaborated to identify key entry points in oil and gas concessions whereby indigenous organizations can take legal action if their cultural or environmental rights are violated.
- In the Mara river corridor in Kenya and Tanzania, GLOWS initiated discussions with Barrick Gold Corporation to work with communities to improve livelihoods and reduce pressures on the Serengeti National Park; conducted water quality monitoring to improve understanding of the threats to the health of aquatic ecosystems; and supported students from Kenya to study the causes of land degradation in the basin and best practices for its remediation.
- In India's Wakal River basin, GLOWS conducted campaigns in 14 villages to diffuse integrated water resource management concepts among community-based organizations, NGOs, universities, local governing bodies, and the general public, laying the groundwork for more transformative interventions. The basin harbors hundreds of

species of plants and was recently declared one of India's *Important Bird Areas* by BirdLife International.

The newly launched Global Fish Alliance aims to implement a holistic approach to fisheries reform through partnership with private industry, governments, and civil society. Overfishing, destructive fishing and unsound aquaculture have been identified as major threats to marine and freshwater biodiversity, and urgent reform of fishing and aquacultural practices is needed to counter these threats. The Alliance is led by AED and includes eight other partners from the private sector, NGO community, and USG. Objectives are to: design and replicate a global public-private partnership model that promotes aquatic biodiversity conservation, sustainable fisheries management, and secure livelihoods; pilot the model with an initial focus on reforming the spiny lobster fishery in Central America; provide training to USAID staff on the design, management and evaluation of sustainable fisheries programs; provide knowledge management and learning opportunities for USAID and Alliance partners; provide access to information and communication technology that could be used for fishery reform; and, provide Missions with access to the expertise of Alliance partners.

EGAT/Agriculture

Collaborative Research Support Programs

USAID's Office of Agriculture supports and manages two Collaborative Research Support Programs (CRSPs) with biodiversity components: the



PHOTO: DR. KASSAHUN ZEWDIE, ETHIOPIAN INSTITUTE OF AGRICULTURAL RESEARCH

NATURAL DEFENSE: *Parthenium* (above) is a highly invasive species accidentally introduced to East and Southern Africa from the Neotropics. It reduces the yield of all major crops, competes with native biodiversity including preferred pasture species, and taints the milk and meat of livestock that consume it, reducing their value. *Parthenium* also causes respiratory and skin problems in humans. Two natural enemies are being tested at a quarantine facility in South Africa, including the beetle *Zygogramma bicolorata* (below).

PHOTO: DR. ANDREW MCCONNACHIE, PLANT PROTECTION RESEARCH INSTITUTE, SOUTH AFRICA



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, encouraging beneficial insects, introducing natural predators, or growing different plants together or in succession helps keep pest populations manageable. USAID support to the IPM CRSP in FY 2008 addressed biodiversity in two programs.

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, decreases the need for pesticide, increases income, and should enhance biodiversity in avian migratory corridors and buffer zones near rainforest habitats. The 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*, a highly invasive species in East and Southern Africa that 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 Africa, followed by road surveys in Ethiopia, Uganda, Botswana, Swaziland and South Africa to map the actual distribution. An IPM approach involving screening and testing for natural enemies should effectively and sustainably curb 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 2008 included on-going work to identify best practices in sustainable agriculture, and five long-term awards addressing comparative research with activities in ten countries.

SANREM partners Cornell University and Wildlife Conservation Society continued 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 storing harvests and selling when demand is highest. In FY 2008, almost 4,000 women and over 3,000 men were trained in conservation farming practices to improve production while reducing impacts on wildlife. In addition, 14 village hunting representatives and former poachers were trained to become safari hunting monitoring scouts. COMACO market incentives foster sustainable agricultural practices and 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 the Kenya Forestry Research Institute are implementing a SANREM project reviewing 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. During FY 2008, a National Advisory Committee was established in each country, and 396 men and 213 women community members and researchers were trained in tree and soil management, as well as research methods.

EGAT/Environment and Science Policy Office

Natural Resources and Climate Change Research

The Office of Environment and Science Policy (ESP) provides two lines of support for biodiversity conservation and forestry: funding for applied research by centers in the Consultative Group on International Agricultural Research (CGIAR), and the development of carbon accounting tools which provide additional incentives to protect and sustainably manage forests. In



RESEARCH ON CACAO in West Africa reveals that when grown as part of a complex agroforestry system with fruit and timber trees, this main ingredient in chocolate can provide habitat for numerous species.

PHOTO: NICK HOBGOOD, DAI

estimated 400 critically endangered Sumatran orangutan (*Pongo abelii*). The program explored options for improved protection of orangutan habitat as well as sustainable economic alternatives for local communities in Batang Toru. Working with community members, ICRAF helped to identify the socio-economic threats and opportunities of local livelihood systems, macro-economic development, and markets. In 2008, land use and land cover in the project area was mapped, and a community-led strategy to develop sustainable alternatives to destructive forest activities was designed.

The International Center for Tropical Agriculture (CIAT) studied the challenges to managing ecosystems sustainably for poverty reduction in the Amazon. CIAT found that certain incentives promoted conservation effectively, such as tax exemptions and payments to members of communities who help stave off deforestation. Furthermore, engaging local communities in conservation enterprises, such as ecotourism and product certification, can boost incomes while simultaneously safeguarding the forest.

The WorldFish Center has introduced a new *Lessons Learned and Best Practices Toolkit* for researchers and resource managers to gain tips about proven strategies and mistakes to avoid in coral reef management. The toolkit offers access to technical reports, projects summaries, and other practical information about coral reef management in eight key areas, such as program design, community participation, policy development, monitoring approaches and capacity building. The material is

FY 2008, 13 of the 15 CGIAR centers contributed to biodiversity objectives, at least three of which advanced knowledge in forestry and agroforestry. Highlights from some CGIAR centers are included below.

The Center for International Forestry Research (CIFOR) program worked to develop community forest co-management guidelines in Guinea. CIFOR was able to help forest communities and government officials test institutional arrangements that may be more effective than the current local level policies for natural resource

management. It was found that improving agricultural productivity, market access and local governance is an effective way to empower communities and generate enthusiasm for joint management schemes. Communities now monitor illegal hunting activities, which has reduced poaching and brought back several species that had disappeared from forest areas.

The World Agroforestry Centre (ICRAF) worked to develop an orangutan habitat protection program in the Batang Toru Watershed of northern Sumatra, home to an

available through a Web site (<http://gefill.reefbase.org>) where individuals involved in coral reef management can share ideas and experiences.

The International Institute of Tropical Agriculture (IITA) Sustainable Tree Crops Program conducted research on the biodiversity of smallholder cocoa production systems in the main cocoa regions of West Africa. Cocoa systems in West Africa range from no-shade mono-specific systems to complex cocoa-fruit-timber-medicine agroforestry systems with biodiversity values nearly equivalent to secondary forest. Results highlight the need to save remaining protected areas from encroachment by cocoa producers.

EGAT/ESP's Carbon Reporting Initiative developed methodologies to geographically model deforestation risk and thus threats to biodiversity habitat and sources of greenhouse gas emissions from deforestation. For the past two years, the Carbon Reporting Initiative worked to incorporate these methodologies into a user-friendly web-based forest carbon calculator. In FY 2008, the carbon calculator was used for the first time by USAID missions as part of their annual global climate change reporting. Users enter the location, geographic size and type of forest sector activity and the calculator provides a scientifically rigorous estimate of the amount of carbon dioxide emissions avoided or sequestered through that activity during the year. Experiences in using the tool by missions in Brazil, Ecuador, and the Philippines led to insights that continue to guide modifications and improvements.

Carbon accounting adds policy value to forests because countries

can count them towards their efforts to mitigate climate change. By using USAID's carbon calculator, USAID missions and their partners are developing the awareness, skills, and data systems needed for the more detailed accounting that would be required for future potential carbon offset markets. In combination with governance strengthening and reform, land-use planning, and a package of livelihood diversifications, accurate carbon accounting can help bring in additional revenue to justify and encourage forest conservation. For example, in Indonesia, USAID's Orangutan Conservation Support Program works in peat swamp forests with the highest carbon contents in the world. Through carbon accounting, local partners will be able to argue that government of Indonesia climate change mitigation projects should be in orangutan habitat.

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, creating a situation where any political solution can take hold no matter how short-sighted or authoritarian. In contrast, good management 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 2008 supported peace-



PHOTO: DAI

A FAIR TRADE: Wildlife poachers turn in their weapons at Queen Elizabeth National park, Uganda. More money is now made from USAID's Arabica coffee program than through poaching.

through-conservation programs in the indigenous lands of northern Ecuador and southern Colombia, and land rights for biodiversity management in Colombia and Kenya.

Through the Integrated Management in Indigenous Lands Program, USAID supports the Awa and Waorani indigenous groups to secure their territories, strengthen their institutions, improve their livelihoods, and sustain the long term conservation of their lands and cultures. The program works with the Cofan and Awa indigenous groups of northern Ecuador and southern Colombia to mitigate actual and potential conflict by maintaining the integrity of their cultures and their territories in the face of threats from illegal logging, coca cultivation, trafficking, displacement and illegal settlements. Activities link current programs in Ecuador with work in southern Colombia to improve governance, territorial control, and resource management.

In Colombia, CMM promoted conflict mitigation and reconciliation through dialogue between indigenous groups and local, regional and national actors, as well as among indigenous organizations. One objective was to resolve conflicts without threatening indigenous representation of their constituencies, or their ability to consolidate and manage their territories. To this end, the program is mitigating inter-ethnic conflicts through the use of constitutional protections of indigenous land rights and effective governance in ecologically and culturally significant locations.

CMM is also supporting activities to protect biodiversity, improve

livelihoods and reduce conflict over scarce resources in and around reserves of the Kibodo (Kiunga Marine National Reserve, Boni Forest Reserve and Dodori National Reserve) area in northeastern coastal Kenya bordering Somalia. Working with two historically marginalized ethnic groups – the Boni and the Bajuni – the project aims to redress long-standing grievances over the ownership of and access to scarce resources that will reduce conflict and improve and diversify

livelihoods of these communities, thereby reducing pressure on the biological reserves in the region.

Global Health / Population and Reproductive Health

Population, Health and the Environment

Healthy people and healthy environments are inextricably



PHOTO: CARA HONZAK, WWF

LOW TECH, HIGH IMPACT: USAID support has introduced a fuel-saving wood stove technology to this village in the spiny forest region of southwest Madagascar, where a local villager demonstrates how the stoves are constructed. Less firewood means more forest habitat for lemurs and tortoises, and also more time for women to undertake child-care and farming.

linked: forests regulate the quality and quantity of water used for agriculture, cooking and bathing, while mangroves and coral reefs are nurseries for fish that feed billions. Likewise, disease prevention and good nutrition contribute to economic growth and reduce overexploitation of wildlife and trees. The Global Health Bureau's Office of Population and Reproductive Health (PRH) recognizes and addresses these linkages through its Population, Health, and Environment (PHE) program. PHE projects seek to improve access to family planning and related health services while helping communities conserve wildlife and other biological resources, simultaneously improving health, protecting environments, and enhancing livelihoods.

BALANCED, a new project initiated in 2008, aims to advance wider use of integrated PHE approaches worldwide by building capacity for program implementation, developing and sharing knowledge and tools, and implementing field activities in areas of high biodiversity. During 2008, the BALANCED project trained 61 individuals in PHE approaches, developed a central Web site, and integrated family planning and reproductive health into the Tanzania Coastal Management Project in Saadani National Park.

USAID continued to support the Jane Goodall Institute's (JGI) innovative approach to community-centered conservation in the Graueri Landscape, in eastern Democratic Republic of Congo. The program links natural resource conservation and family planning service delivery to sustainable development activities prioritized by the community.





A GOOD DEAL FOR ORANGUTANS: The United States and Indonesia signed the largest TFCA agreement in the history of the Act on June 30, 2009, cancelling nearly \$30 million in Indonesian debt in exchange for forest protection on the island of Sumatra, home to endangered tigers, elephants, rhinos and orangutan.

This is the first TFCA agreement with Indonesia, which has one of the fastest deforestation rates in the world. Annual fires set to clear carbon-rich peat forest, in conjunction with draining and clearing for agriculture use, is so extensive that Indonesia is the world's third-largest emitter of carbon dioxide, behind industrial polluters United States and China.

Under the deal, Indonesia will redirect payment of about \$30 million into a trust over eight years instead of repaying it to the United States. The trust will then issue grants for conservation efforts in 13 forest areas of Sumatra. Conservation International and the local NGO partner Yayasan Keanekaragaman Hayati Indonesia (KEHATI) each helped organize the deal and contributed \$1 million towards reducing the debt.

In the Bukit Lawang area of Leuser National Park in North Sumatra, it is estimated that fewer than 6,000 Sumatran orangutans remain in the wild. USAID projects continue to support orangutan conservation efforts focused on improved land-use planning, protected area management including community policing, and habitat protection.

PHOTO: ANDREW WATSON, DAI

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 the eastern lowland gorilla, chimpanzee, forest elephant, and okapi. JGI supported health centers and clinics that serve a population of 570,000 in and around the landscape.

In 2008, USAID's Office of Population and Reproductive Health and Johnson & Johnson joined together to support the Population, Health, Environment Alliance, a new three-year, \$3 million public-private partnership. Through the Alliance, World Wildlife Fund received support to initiate health and biodiversity conservation projects in the Terai Arc Landscape in Nepal, the Salonga-Lukenie-Sankuru Landscape in the Democratic Republic of Congo, and the Kiunga Marine National Reserve in Kenya. Thousands of rural community members bordering protected areas in these three nations will benefit from activities that include family planning, obstetric health, and HIV/AIDS education together with community-based natural resource management and conservation education.

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 debt owed the U.S. Government while generating funds in local currency to support tropical

forest conservation activities. In addition to forest conservation and debt relief, TFCA strengthens civil society by creating local foundations that support small grants to NGOs and local communities. The program also offers a unique opportunity for public-private partnerships. To date, the majority of TFCA agreements have included funds raised by U.S.-based conservation organizations.

As of December 2008, approximately \$115 million in congressionally appropriated funds were used to conclude 14 TFCA debt-for-nature agreements with 12 countries: Bangladesh, Belize, Botswana, Colombia, Costa Rica, El Salvador, Guatemala, Jamaica, Panama (two agreements), Paraguay, Peru (two agreements), 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. The local "TFCA Funds" have awarded 257 grants and otherwise invested in protected area activities totaling nearly \$26 million, including over \$7.9 million in 2008 alone. The collective balance accumulated thus far in these local accounts is about \$37 million in grants accounts and \$14.6 million in endowment accounts.

By 2017, the TFCA programs will together have generated more than \$188 million for grants and projects to help protect and sustainably manage tropical forests

in beneficiary countries. The debt swap agreements with the three U.S. NGOs could contribute to conservation and improved management of up to 50 million acres of high-value tropical forests in Latin America, including several national parks and other protected areas.

As this report went to press, USAID, State Department and Treasury Department finalized negotiations on a TFCA agreement with Indonesia in collaboration with Conservation International and local NGO partner Yayasan Keanekaragaman Hayati Indonesia (KEHATI) that will generate much-needed funds for forest conservation on the biodiverse and threatened island of Sumatra.

USAID BIODIVERSITY AND FORESTRY FUNDING OVERVIEW

Biodiversity Budget

Analysis of FY 2008

USAID provided more financial support to biodiversity conservation activities in FY 2008 than in any previous year. Central, regional and bilateral programs provided \$202 million for work in Africa, Asia, Europe and Eurasia, and Latin America and the Caribbean, of which \$193.5 million were Development Assistance (DA) funds.

The Africa Bureau provided \$69 million for biodiversity conservation through four regional programs, 16 country programs and initiatives managed out of Washington. About one-quarter of these funds supported biodiversity conservation and forest management in the Congo Basin, including support to the Great Ape Conservation Fund administered by the U.S. Fish and Wildlife Service with input from USAID.

Over \$43 million (21 percent) of biodiversity conservation funding was programmed for Asia by country and regional programs. USAID supported activities to address wildlife trafficking, illegal logging, coral reef protection and recovery, and conservation of endangered wildlife like the Sumatran orangutan in Indonesia and the

greater one-horned rhinoceros in Nepal. Indonesia and the Philippines, both global hotspots for conservation, account for about half of biodiversity expenditures in FY 2008.

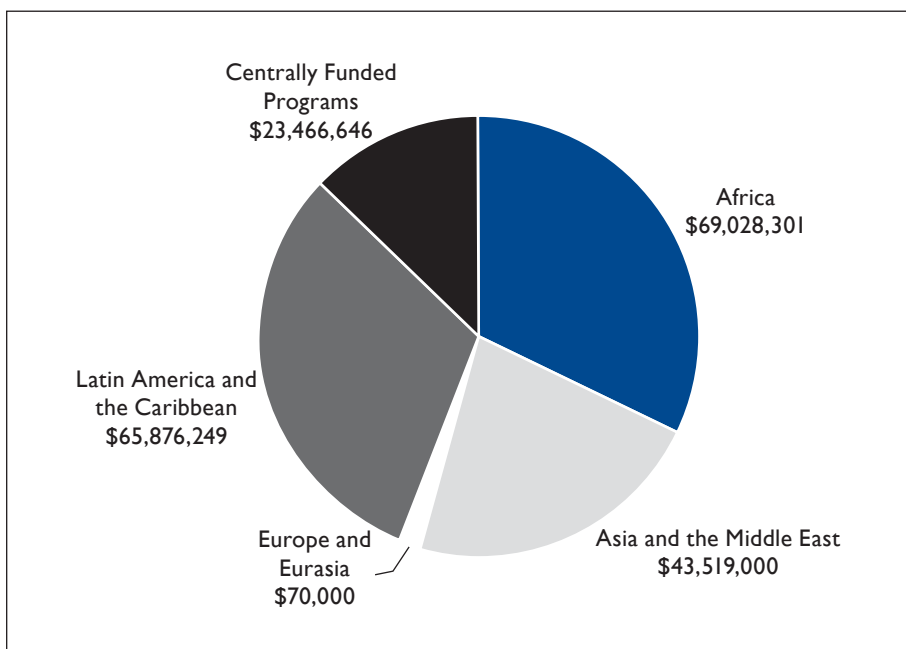
Only one mission in the Europe and Eurasia region reported biodiversity programming, totaling \$70,000. USAID/ Georgia's funding was leveraged well to help establish a new protected area in the Caucasus.

Bilateral and regional missions in Latin America and the Caribbean distributed almost \$66 million

for biodiversity conservation in FY 2008. Well over half of these funds supported regional and bilateral programs in Amazon basin countries. The LAC Bureau also made large investments in Central America and the Caribbean.

Centrally funded programs supported more than \$23 million in biodiversity activities, about 12 percent of USAID expenditures overall. Central programs test innovative approaches and collect and disseminate best practices in conservation. They also support

Figure 1. USAID Funding for Biodiversity by Region in FY 2008*



* Amounts shown here are from all accounts (DA, ESF, FSA and GHCS)

THE BIODIVERSITY CODE

USAID carefully assesses which programs meet the requirements of the Congressional 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.

These criteria allow the Agency to fully track its biodiversity conservation programs, including those which also address other key development issues, rather than considering only a narrow slice of biodiversity programs. At the same time, the criteria are sufficiently rigorous that programs which only incidentally or indirectly address biodiversity conservation issues are excluded.

In 1986, Sections 118 and 119 of the Foreign Assistance Act were amended, which placed a greater emphasis on tropical forests and endangered species conservation in U.S. foreign assistance. The FY 1986 Appropriations Act also incorporated a \$1 million directive for Biodiversity Conservation, which 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.

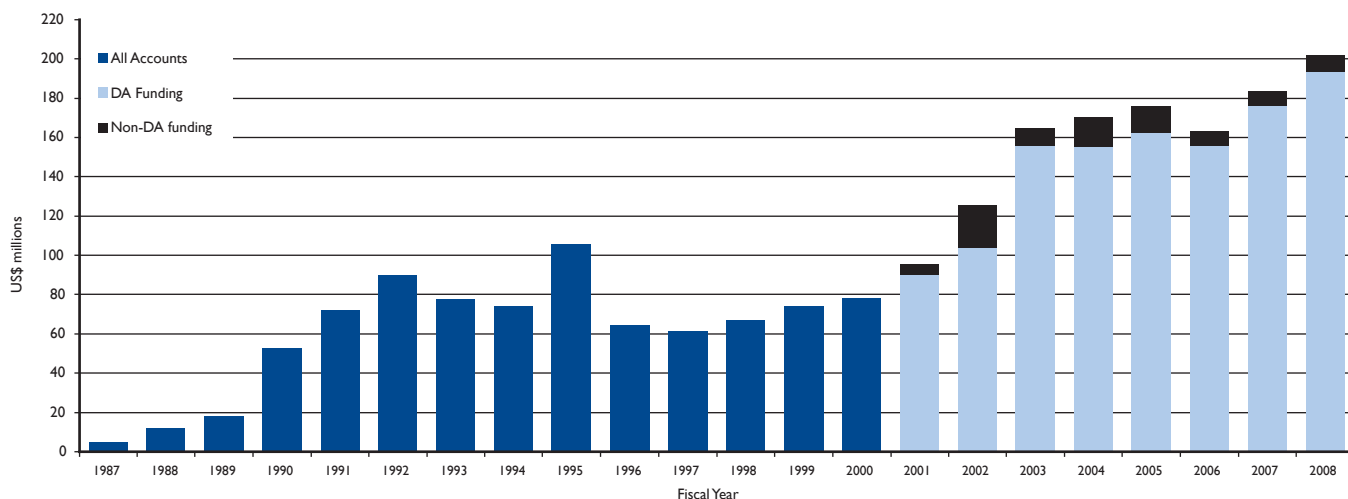
activities which address a certain theme (reducing conflict, enhancing conservation-health linkages), promote a certain approach (such as landscape-level conservation), and/or operate on a global level, even in USAID non-presence countries due to the regional or transboundary nature of biodiversity.

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 FY 2004, Congress created a biodiversity earmark of \$155 million, to come from Development Assistance (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 almost

Figure 2. USAID Funding of Biodiversity Conservation Activities, 1987 – 2008*



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

Table I. U.S. Government International Biodiversity Funding, FY 2008*

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	202
Global Environment Facility	U.S. Department of Treasury	81
Tropical Forest Conservation Act	U.S. Department of Treasury	20
International Affairs Division	U.S. Fish and Wildlife Service	11.6
Multinational Species Conservation Funds	U.S. Fish and Wildlife Service	8
Office of International Programs	U.S. Forest Service	7.5
International Conservation Programs	U.S. Department of State	6.55
Neotropical Migratory Bird Conservation Act	U.S. Fish and Wildlife Service	4.5
International Program	U.S. National Park Service	0.88
TOTAL		342.03

\$30 million in FY 2008 to \$195 million (\$191.5 million after rescission and diversion of funds for food crises). New language from Congress allows the biodiversity earmark to be met with funds from any account, not just DA funds, starting in FY 2009.

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 2008 the earmark amount was exceeded by about \$2 million, with \$193.5 million in DA funds and \$202 million from all accounts.

In FY 2008, almost 20 percent of the biodiversity earmark was allocated to four 'megadiverse' countries: Brazil, Indonesia, Madagascar and the Philippines. Three large regional programs – Central Africa Regional Program for the Environment (CARPE), Regional Development Mission for Asia (RDMA), and LAC-RSD's Initiative for Conservation of the Andean Amazon (ICAA)

– managed activities accounting for another 20 percent. These programs helped protect the largest concentration of western lowland gorillas on Earth, began a six-nation effort to conserve the “center of the center” for marine biodiversity in the Coral Triangle, and supported sustainable management of dozens of indigenous territories on the eastern slopes of the Andes mountains.



BOEHM'S BEE-EATER
in Lengwe National
Park in the Shire Valley
of southern Malawi.

PHOTO:
ANDREW WATSON, DAI

Table 2. USAID Funding for Biodiversity and Forestry Programs, FY 2008

Program Name	Program Description	FY 2008 Biodiversity Funding in US\$	FY 2008 Forestry Funding in US\$	Forestry Overlap with Biodiversity	Type of Funds*
TOTALS					
	TOTAL FUNDING IN FY 2008	\$201,960,196	\$113,666,268	\$105,945,467	ALL
	TOTAL FUNDING IN FY 2008 (DA funds only)	\$193,537,934	\$105,905,768	\$100,584,967	DA
	TOTAL TROPICAL FOREST FUNDING IN FY 2008		\$106,055,768	\$102,334,967	ALL
AFRICA					
Africa Regional	Office of Sustainable Development	3,413,000	3,163,000	3,000,000	DA
Central Africa Regional	Landscape-level Conservation and Forest Management in the Congo Basin	15,000,000	15,000,000	15,000,000	DA
East Africa Regional	Water for Biodiversity in the Mara River Basin	456,500	0	0	DA
Southern Africa Regional	Conservation through Improved River Basin Management	2,234,087	0	0	DA
West Africa Regional	Natural Resources Management without Borders	2,000,000	2,000,000	2,000,000	DA
Dem. Republic of Congo	Conservation and Sustainable Agriculture	2,000,000	2,000,000	2,000,000	DA
Ethiopia	Rangeland Management and Ecotourism Development	750,000	0	0	DA
Ghana	Community-based Ecotourism and Enterprises	1,000,000	0	0	DA
Guinea ¹	Landscape Management for Improved Livelihoods	1,000,000	1,000,000	1,000,000	DA
Kenya	Sustainable Pastoralism and Community Land Rights	5,713,100	2,381,227	1,869,326	DA
Liberia	Commercial Forestry and Community Conservation	2,000,000	2,000,000	2,000,000	DA
Madagascar ²	Conservation and Sustainable Forestry	7,300,000	6,223,734	6,223,734	DA
Malawi	Biodiversity and Natural Resources Conservation	3,500,000	1,464,000	1,464,000	DA
Mali	Sustainable Enterprises and Community Management	650,000	380,900	80,900	DA
Mozambique	Conservation through Public-Private Partnerships	2,034,000	444,276	178,376	DA
Namibia ³	Improved Rural Livelihoods through NRM	0	0	0	n/a
Rwanda	Conservation through Ecotourism Development	1,500,000	1,500,000	1,500,000	DA
Senegal	Community Forestry and Local Governance	2,000,000	1,802,000	1,802,000	DA
Sierra Leone	Forest Co-management and Better Agroforestry	1,000,000	800,000	800,000	DA
Sudan	Capacity Building and Landscape-Level Conservation	5,000,000	0	0	DA
Tanzania	Landscape Conservation through Livelihoods Approach	4,977,614	584,000	584,000	DA
Uganda	Community-based Conservation and Reforestation	5,500,000	1,500,000	1,500,000	DA
	Africa Total	\$69,028,301	\$42,243,137	\$41,002,336	
	Africa Total DA	\$69,028,301	\$42,243,137	\$41,002,336	
ASIA AND THE MIDDLE EAST⁴					
Asia Regional	Support for Emerging Conservation Needs	1,500,000	975,000	975,000	DA
Regional Development Mission for Asia	Wildlife Law Enforcement, Forest Management and Seascape Conservation	11,060,000	2,560,000	2,560,000	DA
Afghanistan	Woodlands Restoration and Conservation	0	3,000,000	0	DA
Bangladesh	Co-management of Forests and Protected Areas	5,000,000	2,500,000	2,500,000	DA
Cambodia	Grassroots Advocacy and Controlling Wildlife Trade	1,000,000	1,000,000	1,000,000	DA
China ⁵	Wildlife Law Enforcement and Forest Management	1,000,000	600,000	600,000	DA
Indonesia	Forest Management and Orangutan Conservation	10,500,000	8,500,000	8,500,000	DA
Lebanon	Forest Restoration and Fire Management	0	500,000	0	ESF
Nepal	Community Governance of Natural Resources	3,000,000	3,000,000	3,000,000	DA
Philippines	Local Conservation through Governance and Land Tenure	10,409,000	2,546,575	2,546,575	DA
		50,000	0	0	ESF
	Asia and the Middle East Total	\$43,519,000	\$25,181,575	\$21,681,575	
	Asia and the Middle East Total DA	\$43,469,000	\$24,681,575	\$21,681,575	
EUROPE AND EURASIA					
Georgia	Protected Areas for Biodiversity and Tourism	70,000	10,500	10,500	FSA
Russia	Forest Management in Siberia and the Russian Far East	0	500,000	0	FSA
	Europe and Eurasia Total	\$70,000	\$510,500	\$10,500	
	Europe and Eurasia Total DA	\$0	\$0	\$0	

Table 2. USAID Funding for Biodiversity and Forestry Programs, FY 2008 continued

Program Name	Program Description	FY 2008 Biodiversity Funding in US\$	FY 2008 Forestry Funding in US\$	Forestry Overlap with Biodiversity	Type of Funds*
LATIN AMERICA AND THE CARIBBEAN					
LAC Regional	Initiative for Conservation in the Andean Amazon	11,517,528	3,907,337	3,907,337	DA
Caribbean Regional	National Investments and Natural Assets Protection	2,000,000	0	0	DA
Central America and Mexico Regional	Watershed Conservation and Sustainable Fisheries	3,230,500	440,504	440,504	DA
Bolivia	Landscape Conservation and Sustainable Forestry	4,877,974	1,703,400	1,703,400	DA
Brazil	Sustainable Forest Management and Market Access	9,500,000	8,748,378	8,648,378	DA
Colombia	Sustainable Development and Stronger National Parks	5,000,000	6,400,000	5,000,000	ESF
Dominican Republic	Capacity Building for Environmental Protection	1,500,000	750,000	750,000	DA
Ecuador	Protection of Indigenous Land and Rights	5,000,000	1,865,000	1,865,000	DA
El Salvador	Management and Conservation of Watersheds	2,243,144	0	0	DA
Guatemala	Sustainable Enterprises and Forestry Certification	3,000,000	1,740,000	1,510,000	DA
Haiti	Economic Development for a Sustainable Environment	2,000,000	750,000	750,000	DA
Honduras	Integrated Watershed Resources Management	3,180,421	700,000	350,000	DA
Jamaica	Natural Assets Managed for Sustainable Growth	1,276,000	330,717	330,717	DA
Mexico	Partnerships and Capacity Building for Conservation	4,260,000	1,353,256	1,353,256	DA
Nicaragua	Biological Monitoring and Sustainable Forest Certification	1,070,682	1,070,682	1,070,682	DA
Panama	Watershed Conservation in the Canal Zone	2,180,000	2,180,000	2,180,000	DA
Paraguay	Policy Development and Law Enforcement	1,000,000	264,000	264,000	DA
Peru	Forestry Sector Reform and Incentives for Conservation	3,040,000	3,040,000	3,040,000	DA
Latin America and the Caribbean Total		\$65,876,249	\$35,243,274	\$33,163,274	
Latin America and the Caribbean Total DA		\$60,876,249	\$28,843,274	\$28,163,274	
CENTRALLY FUNDED BIODIVERSITY PROGRAMS					
EGAT Bureau					
NRM - Biodiversity Team	Global Biodiversity Conservation	5,044,781	2,168,880	2,168,880	DA
NRM - Forestry Team	Sustainable Forest Management	3,017,395	3,017,395	3,017,395	DA
NRM - Land Resources Management Team	Conservation Innovations for Improved Policy and Practice	4,897,284	2,234,326	2,234,326	DA
NRM - Water and Coastal Resources Team	Conservation of Coastal and Freshwater Resources	1,141,026	0	0	DA
Agriculture Office	Collaborative Research Support Programs	668,862	227,180	227,180	DA
Environment and Science Policy Office	Natural Resources and Climate Change Research	5,000,000	2,200,000	1,800,000	DA
Other Central Bureaus					
Democracy, Conflict and Humanitarian Assistance	Conflict and Environment	395,036	290,000	290,000	DA
		1,149,262	350,000	350,000	ESF
Global Health	Population, Health and Environment Program	2,153,000	0	0	GHCS
Centrally Funded Biodiversity Programs Total		\$23,466,646	\$10,487,782	\$10,087,782	
Centrally Funded Biodiversity Programs Total DA		\$20,164,384	\$10,137,782	\$9,737,782	

- * Development Assistance (DA), Economic Support Fund (ESF), FREEDOM Support Act (FSA), Global Health and Child Survival (GHCS)
1. Guinea experienced a *coup d'etat* and a suspension in USAID environment funding, however most activities continued through the USAID/West Africa regional mission. A small portion of funds will be held for programming when the suspension is lifted.
 2. Madagascar experienced a *coup d'etat* and a suspension in USAID environment funding. Several activities already scheduled to close in FY 2009 did so on an expedited schedule. A small portion of funds will be held for programming when the suspension is lifted.
 3. USAID/Namibia continued activities in FY 2008 using FY 2007 funds, but no new funds were committed for biodiversity or forestry.
 4. In March 2008, halfway through the fiscal year, the Bureau for Asia and the Near East (ANE) was split into the Bureau for Asia and the Bureau for the Middle East. Budgets and report narratives are combined because they were combined at the start of the reporting period and continue to share some technical support and backstopping in Washington. Lebanon was the only Middle Eastern country with relevant programming in FY 2008 (forestry).
 5. Program implementation in China started late in FY 2008 in collaboration with the Regional Development Mission for Asia; activities are described in the RDMA section of the Asia and the Middle East chapter.

Forestry Budget

Analysis of FY 2008

USAID supported almost \$114 million in forestry activities in FY 2008, the highest level of investment since 1995 and the third highest since reporting began in 1987. The vast majority (\$106.1 million) of work 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.

The largest share of forestry support was provided by Africa regional and country programs, which managed \$42.2 million (38 percent) of total USAID forestry expenditures. Of this funding, about half went to the Central African Regional Program for the Environment (CARPE) and the Madagascar mission. CARPE promotes forest conservation, sustainable forestry, and control of illegal logging in the second largest rainforest on Earth, while in Madagascar USAID has invested heavily in protecting the last remaining eastern rainforests from slash and burn agriculture.

The Bureau for Asia received \$24.7 million of overall forestry spending and the Bureau for the

Middle East supported \$500,000 of work in Lebanon (the two bureaus were combined at the start of this reporting period). Most missions in Asia had large forestry programs in the range of \$3 million in FY 2008, however Indonesia alone represents over one-third of the total, for their programs to conserve orangutan habitat and reduce illegal logging.

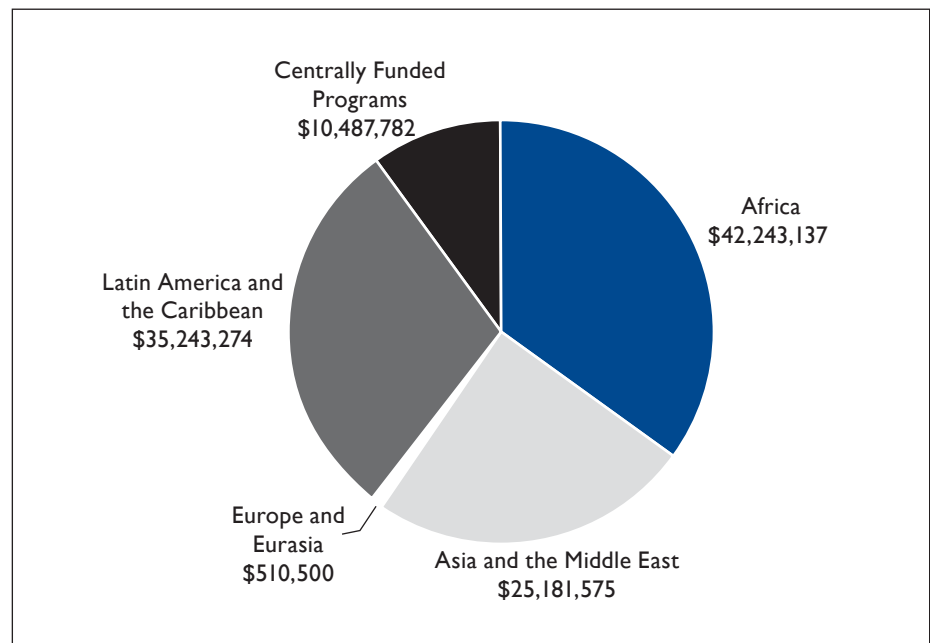
Europe and Eurasia have huge forest resources but few USAID forestry programs. Of the Bureau's \$510,500 forestry investment, \$500,000 is for work in Russia to improve forest management in Siberia and the Russian Far East.

Latin America and the Caribbean (LAC) programs supported \$35.2 million in forestry activities in FY 2008, about 31 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 funds to a wide range of activities involving stakeholders of every variety. About half of LAC forestry support was for initiatives in the Andean Amazon managed from Washington and bilateral missions in Bolivia, Colombia, Ecuador and Peru. Another quarter of LAC funds went to Brazil, which contains the majority of the Amazon basin as well as dwindling coastal forests.

USAID centrally funded programs supported \$10.5 million in forestry work around the world. The EGAT Natural Resources Management Office managed the bulk of these activities and provided technical assistance to Missions and international leadership via the Forestry Team, in collaboration with the USDA Forest Service. The Forestry Team continued its support for the Sustainable Forest Products Global Alliance, and about half

Figure 3. USAID Funding for Forestry by Region in FY 2008*



* Amounts shown here are from all accounts (DA, ESF, FSA and GHCS)

of the Biodiversity Team's Global Conservation Program supported forest management, conservation or sustainability certification. The ESP and Agriculture Offices collectively funded over \$2.4 million in applied forestry research by universities and international research institutes.

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 the Treasury, with the exception of FY 2003 when TFCA funds were appropriated to USAID and then transferred to Treasury (not the spike in funding for this year in Table 1). TFCA is not listed in the biodiversity and forestry budget table for FY 2008.

Budget trends

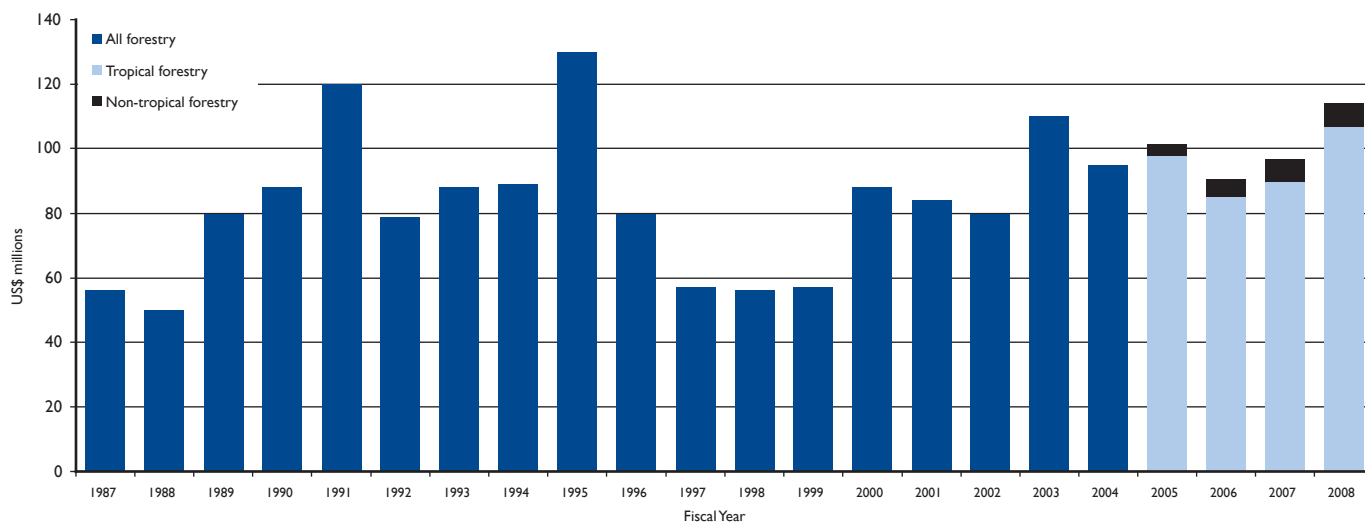
Forest management and conservation has been an important part of USAID's mandate since 1986, when Section 118 of the Foreign Assistance Act was enacted and the importance of tropical forests to development was formally recognized. In the late 1980s and early 1990s, USAID investments in forestry activities increased substantially, reflecting increased awareness of the environmental 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). From 2004 to 2007, forestry funding hovered around \$100 million.

FY 2008 forestry investments increased dramatically over the previous year largely due to a \$30 million increase in the biodiversity earmark. \$100.6 million of Agency-supported forestry work – 95 percent - met the requirements of the Congressional earmark. The relatively high levels of funding observed in the last several years reflect increased 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.

Figure 4. USAID Funding of Forestry Activities, 1987 to 2008*



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

Table 3. U.S. Government International Forestry Funding, FY 2008*

Program or Funding Type	USG Department or Agency	FY 2008 Funding for Forestry and Forest Conservation (US\$ millions)
Forestry Activities	U.S. Agency for International Development	113.7
Tropical Forest Conservation Act	U.S. Department of Treasury	20
Office of International Programs	U.S. Forest Service	75
TOTAL		141.2

* This list is not necessarily comprehensive

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. Forests store and clean water for human and

wildlife communities downstream, including marine and estuarine areas. Forests are also habitat to globally important biodiversity including locally important plants and wildlife. Perhaps the most publicized ecosystem service of forests is

climate change mitigation; new measures of “avoided deforestation” emphasize the value of maintaining standing forests rather than adding to carbon emissions that contribute to global climate change.



WORKING ELEPHANTS are used for law enforcement, forest management and tourism in the Bardia district of Nepal, where USAID supports landscape-scale conservation.

PHOTO: DREW CRANDALL, WWF

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 afforestation; establishment of woodlots and agroforestry systems which reduce pressure on forests through 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, China, Georgia, Lebanon, Nepal, and Russia. Activities meet the Tropical Forests definition except they do not take place in tropical regions.

Glossary of Terms

Adaptive Management

Adaptive management emphasizes designing, implementing and monitoring project activities in a way that helps people learn more about complex ecological and social systems, which in turn can help them to make better choices and design more effective interventions. Adaptive management provides a framework to experimentally test assumptions, adapt project activities, and learn from project impacts.

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 CO₂, 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.

Co-management

A specific type of community-based natural resource management in which communities or community groups share responsibility for managing a protected area or other clearly designated resources (forest, freshwater or marine fishery, etc.) with a local or national government entity.

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.

Ecological Corridor

Corridors are linear landscape elements that may function as habitat, dispersal/movement conduits, or barriers for various organisms and other non-living landscape elements (e.g., nutrients, water, etc.).

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 (Ecosystem Service)

An ecological process from which humans benefit. 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 Services or Payments for Environmental Services (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 it 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 (Ecoregion)

A relatively large unit of land or water, sometimes known as an ecoregion, that contains a distinct assemblage of natural communities sharing a majority of species, dynamics and environmental conditions. Landscapes may also be defined by a set of common threats or opportunities, the ranges of particular focus species, or other factors, but generally are not limited by political or protected area boundaries.

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

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.

Slash and burn agriculture

A farming practice by which forests or woodlands are cut or burned to clear land for agriculture and add nutrient-rich ash to soil. This practice is also known as shifting cultivation, because poor tropical soil farmed in this way has only a few years of productivity before farmers must move on to other plots of land.

Silviculture

Management of the establishment, growth, composition, health, and quality of forests to meet the needs of resource uses.

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).

Watershed (Basin, Catchment)

All these terms describe the land area from which surface water runoff drains into a stream, channel, lake, reservoir, or other body of water. The terms are sometimes used interchangeably, as they all refer to the surface hydrologic system. However, ‘basin’ generally refers to a much larger geographic area than watershed, usually the drainage surface of a major river or lake system. While ‘watershed’ is used in some places to describe entire river basins, it is most often used to describe smaller sub-basins or micro-basins draining to secondary or tertiary streams or tributaries. The term ‘watershed management’ also often has a connotation of traditional soil and water conservation activities in some regions (as opposed to the more comprehensive IWRM). Catchment is a term in more common usage in Africa, Australia, and Europe, and can describe drainage basins or watersheds of many different sizes.



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