



# ENCOURAGING SOUND ENVIRONMENTAL MANAGEMENT

USAID's goal of promoting environmental management for long-term sustainability rests on the understanding that lasting social and economic development requires careful stewardship of natural resources. Productive lands, forests and coasts provide the underpinnings for equitable economic growth. Clean air and water are essential to meeting people's basic human needs. Degradation of the global environment — loss of biological diversity and global climate change — ultimately endanger the well-being of people around the world.

USAID's environmental strategy seeks to mitigate these global environmental threats and to promote sustainable development by pursuing five objectives: conserving biological diversity; reducing the threat of global climate change; promoting sound urban and pollution management; increasing the use of environmentally sound energy services; and promoting sustainable natural resource management.

The broad range of USAID assistance includes expert advice to governments on strengthening resource management policies; forging alliances between the private and public sector for environmentally sound economic growth; and capacity building within local governments and communities.

## **Conserving Biological Diversity**

USAID's biodiversity conservation program helps protect millions of acres of endangered and unique habitats around the globe. USAID programs, primarily in Latin America and Africa, support improvements in the management of protected areas and the promotion of sustainable use of biological resources in both

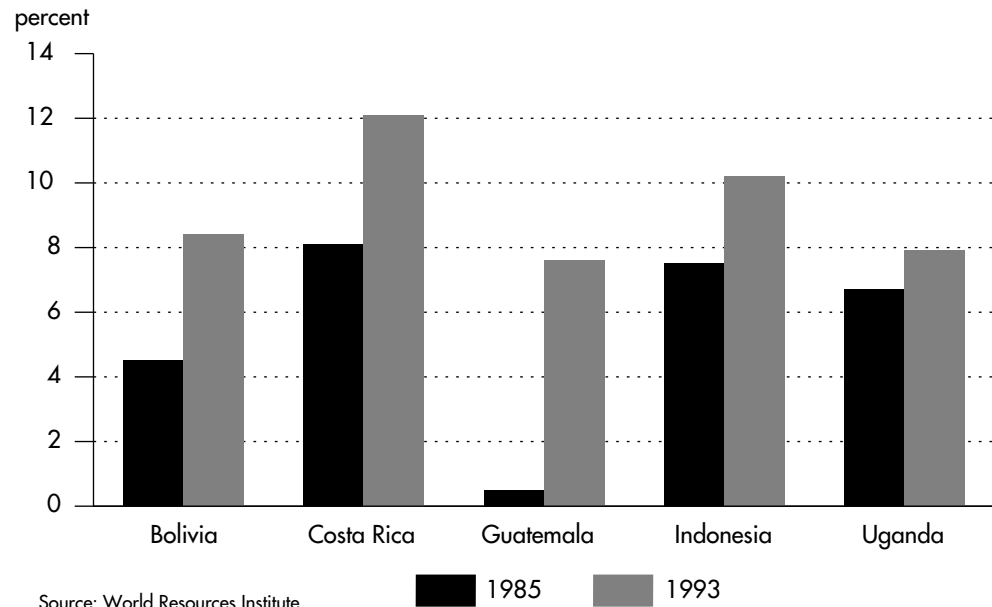
protected and unprotected habitats. USAID and its partners increased grassroots commitment to biological conservation, established self-supporting conservation financing mechanisms and enhanced indigenous capacity to manage biological resources. Headway is being made in bringing legal protection to some of the world's most valuable ecosystems. (See Figure 7.)

One of the agency's highest priorities is to increase grassroots commitment to conservation, especially among those communities living in and around parks and reserves. USAID community outreach programs give local people a stake in conservation in countries around the

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Figure 7  
Percent of National Land Area Protected



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world. In Guatemala, the agency has worked closely with the government to expand the country's national park system from 148,000 acres to 2 million acres. As a result, key areas of the Peten forest — the largest tropical forest in Latin America north of the Amazon — are now protected. In Uganda, local people are being hired as park employees, giving local communities an economic incentive and an increased responsibility to preserve wildlife. A park management plan in Indonesia, developed with the close participation of surrounding communities, provides residents with decision-making authority to manage one of the country's most important coastal parks. Following a similar intensive outreach program in Guatemala's Sierra de las Minas Biosphere Reserve, logging and agricultural encroachment decreased by 90 percent.

USAID also has helped launch a variety of mechanisms to build financial solvency in budget-strapped governments and local conservation organizations. Endowment funds represent long-term, stable sources of conservation financing. USAID support of Costa Rica's conservation fund, for example, has helped reduce the park service's dependency on external donors for its operating costs from 27 percent in 1992 to 11 percent in 1994. In Uganda, the agency used another approach — helping the government tap into the country's

flourishing ecotourism industry by increasing park entrance fees — to ensure the financial sustainability of its conservation interventions. As a result, park entrance fees generated \$700,000 in 1994, up from \$66,300 collected in 1991.

### **Reducing the Threat of Global Climate Change**

The agency's program to mitigate global climate change is among the newest areas within the environmental portfolio, with activities initiated in 1990. These efforts respond to growing scientific consensus on the link between the emission of heat-trapping greenhouse gases due to human activity and a rise in the Earth's temperature. This increase could lead to shifts of agricultural zones, rising sea levels and more weather-related disasters, resulting in possible economic, social and environmental disturbances in the United States and other countries.

USAID's climate change portfolio is directed toward reducing net greenhouse gas emissions in the energy sector and from land use. The agency's programs in the Philippines and Poland are good examples of how USAID's global climate change, energy and pollution abatement are closely linked.

In the Philippines, USAID is working with local utilities on a demand-side management program that offers economic incentives to utility customers to use electricity during off-peak hours and to purchase energy-efficient lighting and appliances. The program is expected to achieve economic savings and avert between 160,000 to 200,000 tons of carbon dioxide emissions yearly.

In Krakow, Poland, USAID is introducing low-cost alternatives to 100,000 coal-based domestic stoves and 3,000 small coal-burning boilers. The agency helped Polish companies form joint ventures with eight U.S. energy technology and engineering firms, which together planned to increase energy efficiency and reduce the emission of air particulate. USAID's energy conservation demonstration projects, located in four buildings and several smaller sites, have been replicated 10-fold by Polish counterparts without U.S. assistance. In addition to reducing greenhouse gas emissions, these initiatives are gaining considerable public interest and spurring new markets in energy-efficiency services for U.S. firms.

## **Improving Urban and Pollution Management**

The world in which USAID works today is increasingly urban. Nearly half the people in developing countries live in urban areas, and the number of "megacities" with populations of over 8 million will climb from 22 in 1994 to 33 by the year 2015. In Central and Eastern Europe and the New Independent States, the legacy of command-and-control economies,

which relied on heavy industry and laxly enforced environmental regulations, has led to dangerously high levels of pollution. Poorly managed urban and industrial growth has caused severe pollution and losses in environmental quality, economic productivity and public health. To redress these problems, USAID supports efforts to increase access to safe water, sanitation and shelter; improve urban management; and promote pollution prevention and control.

A major thrust of USAID's urban program redresses poor sanitation and reduces the prevalence of polluted drinking water by improving and expanding water supply, wastewater treatment and solid waste management. A wide range of activities are being undertaken: infrastructure development in Ukraine; technical assistance to reform policies in Indonesia; and urban and environment credit programs in Morocco.

In Cairo, where water-borne illnesses cause between 2,000 to 5,000 deaths annually and the loss of millions of work days, the agency supports infrastructure improvements to treat wastewater entering the Nile River and Lake Maryut, Egypt's principal source of drinking water. In 1994, agency targets for removing organic contaminants from water at USAID-supported wastewater treatment facilities in Alexandria and Cairo were exceeded by up to 80 percent.

USAID also works to improve access to public services by facilitating private-public partnerships. In the city of Machala in Ecuador, which struggled with severe sanitation problems because 50 tons of garbage went uncollected each day, USAID helped create a private enter-

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## *Learning from Experience:*

### **Conducting Energy Conservation Audits**

*Recent efforts in energy conservation focused attention on selective private-sector, energy-intensive industries. Energy audits are commonly used to assess how efficiently every aspect of energy is used at all phases of production. Audits often result in a combination of recom-*

*mendations to energy users to adopt new, cleaner technologies, reduce and recycle wastes and upgrade existing equipment. Recent evidence, including a study of USAID's energy conservation activities in Jamaica, revealed that energy audits serve as an effective diagnostic tool, but that*

*without sufficient follow-through and the right policy and regulatory environment, such efforts to increase energy conservation will fall short of their targets. USAID missions are now taking a more comprehensive approach to energy conservation by first analyzing the overall economic*

*policy, the degree of existing competition and the key question of sustainability. With answers to these questions in hand, USAID's energy conservation activities are having a greater impact worldwide.*

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prise that used bicycle carts to collect garbage for more than 50 percent of the population. By conducting a study of men's and women's roles and attitudes toward household waste disposal, the municipality better tailored its collection services, improved local participation and set up a realistic fee structure for households with different needs and resources.

The inadequate treatment of industrial waste is another concern in USAID's effort to promote sound economic growth. USAID provides policy advice and introduces new technologies in pollution prevention and waste management. In Central and Eastern Europe and the New Independent States, the agency funded over 100 waste minimization demonstra-

tion and impact projects that illustrated how low-cost technologies can reduce pollution while providing economic returns anywhere from \$30,000 to \$2 million each year per plant. In Poland, USAID applied this approach to help decrease the discharge of industrial and municipal waste in project areas by 22 percent between 1990 and 1993.

## **Increasing the Use of Environmentally Sound Energy Services**

USAID recognizes that energy production is a major economic, environmental and social issue for developing countries, where demand for energy is increasing seven times faster than in the industrial nations. Poor administrative and operational practices inhibit efficient energy production, and unreliable electricity supplies inhibit economic growth. Just as seriously, escalating demand for energy and inefficient energy use add to the global greenhouse gas burden, increase local and regional air pollution and deplete non-renewable fuel resources.

Policy reform is essential for increasing developing nations' energy efficiency, and doing so in an environmentally sound manner. Many of the problems of the energy sector stem from national policies that encourage energy use and investment that is not economically or environmentally rational. In a number of countries, including Ukraine, India and Brazil, and in Central America, USAID is helping design and implement major restructuring of what had been centrally controlled government energy monopolies. In Ukraine, for example, institutions established under this effort include a national regulatory commission, six generation

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## **Participant Training**

*Participant training — teaching individuals from the developing world critical skills to help improve their nations — is one of the most powerful development tools the agency possesses. Training individuals in the United States and abroad plays a major role in achieving virtually*

*every agency objective. In 1995, more than 17,000 participants were in training programs in the United States. Not only do individuals from the developing world cultivate important skills through training programs in the United States, a large number of American universities and*

*training facilities benefit from the infusion of tuition and living allowances from students sponsored by USAID. In addition, after returning home, many participants later contract for U.S. goods and services as a result of positive experiences in America.*

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companies and 27 local power and heat supply companies. These reforms will lead to a competitive market supply of electricity and significant incentives for energy conservation.

Similarly, in Egypt, USAID has helped that nation institute major reforms in the power sector. Efforts to increase the cost-effectiveness of Egypt's use of electricity have resulted in a 20 percent increase in the price of service. The increased energy efficiency resulting from reforms and facility repair have averted annual emissions of 70,854 tons of sulfur dioxides, 1.76 million tons of carbon dioxide and 2,708 tons of nitrous oxides in Cairo and Alexandria.

### **Sustainable Natural Resource Management**

The management of renewable natural resources for long-term productivity is a major goal of USAID's environmental activities. Most people in Africa, Asia and Latin America depend directly on renewable natural resources for their livelihood. Yet natural resources are being degraded rapidly by conflicts over their use, market distortions, population pressures and inappropriate technologies and practices. USAID focuses its activities under this objective on the four most important renewable resources for sustainable development: forests, water resources, agricultural lands and coastal resources.

USAID responded to the dramatic decline of the world's forested areas by promoting community forestry and sustainable timber harvesting for commercial enterprises. According to an agency study, forests under communal management show measurable increase in growth, regeneration, ground cover, soil moisture retention and reduced erosion. USAID's experience in the Philippines is instructive. The dramatic loss of forests in the country led the government to proclaim community forestry as a national strategy to achieve sustainable forest management. With USAID assistance, the government began transferring direct management responsibility for more than 494,000 acres to 22 communities. Improved management practices have increased tree cover and reduced soil erosion into local streams and raised incomes from the sustainable harvesting of non-timber forest products.

In Africa, USAID — working with key U.S. partners such as land grant colleges — pro-

motes improved agricultural technologies to boost yields of key crops, reflecting one of its strategies to promote sustainable agriculture. Programs in Senegal have increased the number of households using appropriate technologies such as agroforestry, "live fences," alley cropping and crop rotation more than 50 percent. In the Gambia, Mali and Zimbabwe, the introduction of high-yielding maize and drought-resistant sorghum, combined with improved cultivation techniques, has increased yields by up to 50 percent and led to higher economic returns for local farmers.

### **Environmental Strategies Integrate with Other Agency Goals**

Environmental programs often contribute to other USAID objectives, such as economic growth, improved health and democracy. For example, local land stewardship and the formation of grassroots environmental non-governmental organizations in the Philippines and Ecuador foster the development of democracy and strengthen civil society. Similarly, USAID support for agricultural market reforms and infrastructure rehabilitation in Africa will have limited impact if soils are not protected, water not conserved and pests not controlled in an environmentally sound manner.

