

[This on-line version does not contain any figures, charts, graphs, or tables. To receive a published copy of this highlight, contact DISC, 1611 North Kent Street, Suite 200, Arlington, VA 22209-2111. Phone 703-351-4006; fax 703-351-4039; internet docorder@disc.mhs.compuserve.com]

USAID Evaluation Highlights No. 52
August 1995

Stemming the Loss of Biological Diversity: An Assessment of USAID Support for Protected Areas Management (PN-ABS-532)

Summary

USAID's environmental strategy includes helping developing countries set aside, protect, and manage natural forest and marine habitats for conservation of biological resources, particularly where these resources are under threat.

In 1993-94 USAID's Center for Development Information and Evaluation (CDIE) conducted extensive field evaluations of the early progress and performance of the Agency's program in biodiversity conservation. The evaluations were based on projects carried out in six countries (see table 1). In three of them (Costa Rica, Jamaica, and Sri Lanka) USAID supported creating and managing new official parks and protected areas; in the other three (Madagascar, Nepal, and Thailand) USAID provided one or more smaller grants to nongovernmental organizations (NGOs) working with communities around existing protected areas to develop new livelihood activities as alternatives to encroachment into parks for hunting, farming, and timber harvesting. The resultant CDIE Synthesis Report, *Stemming the Loss of Biological Diversity: An Assessment of USAID Support for Protected-Areas Management*, underlies this Highlights.

USAID's programs in biodiversity conservation, the evaluation found, have helped expand protected ecosystems and raise public knowledge of the value of endangered living resources. However, moving from officially protected areas and heightened public awareness to more responsible environmental practices has proven more difficult to achieve. Close coordination with other Agency programs agriculture and microenterprise development, democracy and governance, and economic policy reform can enhance the impact and performance of USAID efforts in biodiversity conservation.

Background

The world's biological resources, a large share of which are found in countries assisted by USAID, are critical to sustainable global economic and social progress. Known and still undiscovered plant and animal species within many threatened ecosystems may offer solutions to the hunger and health problems of this and future generations. Many wildlife habitats provide direct and immediate support to economic development for example, as watersheds for farm irrigation, electric power generation, and

urban potable water supplies.

Support for conservation of biological diversity has recently emerged as a significant component of USAID's development and environment programs. Since 1987, when Congress mandated a Tropical Forest and Biodiversity Conservation Program, USAID funding for the protection of biological resources has generally increased year by year. It has averaged about \$80 million annually since 1990. Figure 1 shows the growth in USAID funding for this program.

The CDIE assessment examines how a few USAID programs have helped developing countries set aside, protect, and manage natural forest and marine habitats for in situ conservation of biological resources. There are both in situ and ex situ approaches to biodiversity conservation (see box 1). Over the years USAID has supported both.

Before the mid-1980s, USAID directed its support of biodiversity conservation through international agriculture research centers that acquire and maintain genetic materials for the world's basic food crops. The world's germ plasm collections now contain more than 100,000 varieties of wheat, 94,000 of rice, and 12,000 of corn. Scientists use these genetic stocks to develop grain crops that resist pests and diseases and tolerate a range of growing conditions.

Of course, all the millions of plant and animal species cannot be stored in seed banks or zoological gardens. Ex situ conservation of genetic resources covers only a relatively small number of species of current economic value.

With its Tropical Forest and Biodiversity Conservation Program, USAID has added in situ approaches to stemming the loss of biological resources. These approaches have the potential to reach the vast array of plant and animal species, many still unknown to science. Strengthening systems of parks and protected areas, particularly in countries with biologically rich areas under threat, is a major component of the Agency's strategy for sustainable development.

Data in figure 2 compiled by the World Conservation Monitoring Center show rapid expansion in the amount of area under some form of protection. These areas range from strictly enforced wildlife sanctuaries (where no unofficial human entrance is allowed) to areas where some limited economic activity (such as crop cultivation and forest product harvesting) is permitted.

Area protected has increased fourfold during the past 2 decades. By 1990, developed and developing countries combined had set aside more than 650 million hectares of land, one twentieth of the earth's land surface. That's an aggregate area twice that of India and is exceeded in size by only six countries Russia, Canada, China, the United States, Brazil, and Australia. Protected marine habitats add to this total.

Two thirds of these protected areas are found in the developing countries of Africa, Asia, and Latin America. Today, Costa Rica, Nepal, Sri Lanka, and Thailand protect more than 10 percent of their land area, about the same share of protected land area as that of the United States.

Creating protected areas by law or decree, however, makes them no more than paper parks unless money and trained staff are allocated to manage them. Given the other social and economic demands they face, developing-country governments have limited resources to invest in biodiversity conservation. One of the challenges is thus to make the best use of limited public funds while fostering ways to leverage additional resources and commitment from other sources public and private, local and national.

Evaluation Findings

Program Impact and Performance

CDIE's assessment of selected projects carried out from 1980 through 1992 suggests that stemming the loss of biological diversity through in situ conservation requires an extended period to produce demonstrable changes in habitat quality and species viability. Nevertheless, evidence of impact and indicators of performance were available. They include the following:

USAID has contributed directly to the inventory of protected habitats in countries where protected-area creation has been an objective. In countries such as Costa Rica, Jamaica, and Sri Lanka, newly designated parks and protected areas owe their existence to USAID programs that supported their planning and demarcation. Still, many officially protected areas are threatened by degradation and fragmentation that limit their capacity to support viable populations of many plant and animal species they were created to protect (see box 2). In Costa Rica and Madagascar, USAID has helped address this problem by supporting broad land-use approaches to managing parks and surrounding areas.

These USAID projects demonstrate that investments are needed not only in improved facilities and infrastructure for protected-area operations but also in increased human and institutional capacity to manage the biological resources of such areas. In Costa Rica, Jamaica, and Sri Lanka, USAID's projects have helped increase capacity to patrol against encroachment (with vehicles, staff lodging, and communications equipment) and to provide assistance to visitors (with roads, trails, and interpretation facilities). Experience with these activities suggests that effective conservation also requires recruiting and training staff to prepare management plans, restore degraded habitats, and inventory and monitor wildlife populations. Needed also is more and better information on which to judge what is happening to biological resources in these countries.

These projects show that awareness of the value of biodiversity conservation can be quickly raised, but changes in practices require the commitment of resources over a much more extended period. In Costa Rica, Jamaica, Nepal, and Thailand, environmental messages increased awareness and changed attitudes, even in rural areas with low literacy and income levels. However, converting awareness to better conservation practices has proven to be a long-term endeavor. It requires sustained efforts at, for example, introducing new livelihood activities to break the debt-and-poverty cycle that has forced many rural dwellers to encroach into protected areas to log, hunt, fish, or farm for survival. NGOs chosen to run these integrated conservation and development programs also often require time and resources to build skills in rural development, community organization, and dissemination of better agricultural production to conduct these activities.

USAID's early efforts demonstrate that economic and financial incentives will be critical to sustaining biological diversity. Often requiring reform are national economic policies (such as timber export subsidies) that foster destructive resource extraction practices in biologically rich areas. Project-level activities may be thwarted or their effectiveness diminished in the absence of such reforms. New financial mechanisms such as environmental trusts (set up in Costa Rica, Jamaica, and Sri Lanka) and visitor fee and user tax systems (in Costa Rica and Nepal), offer promise for generating revenue to meet a share of protected-area operations and management costs.

Strategies That Produce Results

Four strategic approaches to protecting biologically rich areas have emerged from the study. Figure 3 depicts an analytical framework based on these approaches. No hierarchical or sequential order is implicit in the strategies, and all should be considered in formulating a program. The strategies:

1. Creating officially designated protected areas. This includes demarcating land and marine habitats for the conservation of biological resources, securing title and access to protected areas, and planning protected-area systems.
2. Improving management of protected-area resources. Activities include developing management plans, improving operations where habitats serve as parks, monitoring ecological conditions, assisting in natural regeneration of degraded habitats, and generating revenues to help finance protected-area management.
3. Integrating development and conservation activities in areas surrounding protected habitats. Creating protected areas may limit traditional income-producing activities of nearby communities. Reducing encroachment of communities into newly demarcated protected areas involves increasing local awareness and understanding, organizing local communities to promote environmental awareness, and introducing alternative income-producing activities so residents will not find it

necessary to encroach on protected habitats to hunt, fish, log, or farm.

4. Reforming national policies that affect biodiversity conservation. This includes improving understanding by the public and by policymakers of the value of critical habitats and their biological resources. It involves orchestrating partnerships between government and nongovernmental conservation groups. And it means introducing economic and financial incentives or legal reforms to discourage activities that promote habitat destruction. Such policies as agriculture and export subsidies and low logging concession fees merit particular scrutiny.

Recommendations

Several recommendations for enhancing the impact and performance of USAID biodiversity programs emerge from the evaluation:

Foster government partnerships with NGOs to help public agencies extend the reach of biodiversity programs. USAID should support public partnerships with national and international NGOs to mobilize complementary talent and funding. USAID programs can also foster community and group participation in conservation, in restoration of degraded habitats, and in operation of tourist lodges and transport and guide services. Involving local people (for example, as nature guides) enhances commitment to conservation.

Promote ways of managing protected areas to generate revenues for their operation. In many places wildlife and its natural habitats are becoming popular attractions for tourists, both domestic and international. At such sites USAID program resources can support the design and implementation of measures to mobilize revenues from visitor fees and taxes to fund conservation activities. Other ways to generate revenue include granting concessions for biological prospecting, and licensing commercial plant nurseries, game ranches, and marine fisheries.

Identify and promote opportunities for private investments consistent with sustainable use of biological resources. Wildlife and its habitats are becoming popular investments for domestic and international firms in such ventures as nature tourism and biological prospecting for new pharmaceuticals. USAID programs can support efforts to convert areas around protected habitats into sites for tourist facilities, artisan crafts, game ranches, farm forestry, and commercial plant nurseries. Areas around marine sanctuaries are popular as resorts and for sport fishing. Private ventures such as these enhance public awareness of the value of biological resources. They also generate tax and concession revenues for protected-area operations and create jobs and incomes for local people. Of course, USAID programs should recognize the need for regulatory and fiscal reform and better enforcement to avoid potential environmental damage from overdevelopment of tourism.

Support removal of market distortions and reform of other

economic policies that cause biodiversity loss. USAID can enhance the effectiveness of its conservation programs by identifying for reform those pricing and market policies that encourage conversion of habitat to unsustainable uses. (Agricultural and export subsidies exemplify such policies.) USAID can also promote economic incentives for expanding enterprises based on sustainable local use of biological resources. (Tree farming, nature tourism, and biological prospecting are examples.)

Coordinate USAID program resources to ensure effectiveness of biodiversity conservation efforts. USAID can use its available biodiversity conservation funds most effectively when they are coordinated with other Agency programs. For example, USAID microenterprise programs can finance nature tourism ventures; agriculture and agribusiness programs can generate farm and off-farm alternatives to habitat encroachment; policy reforms can remove market distortions that undervalue biological resources and lead to their destruction; and democracy and governance programs can increase capacity of nongovernment organization and public agencies to address conservation needs.

Suggested Reading

Biodiversity Support Program (A USAID-funded Consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute). 1993. African Biodiversity: Foundation for the Future. Beltsville, Md.: Professional Printing.

International Resources Group. 1992. Ecotourism: A Viable Alternative for Sustainable Management of Natural Resources in Africa. Washington: U.S. Agency for International Development.

Norse, E.A., ed. 1994. Global Marine Biological Diversity: A Strategy for Building Conservation into Decision Making. Washington, D.C., and Covelo, Cal.: Island Press.

Reid, W.V., et al. 1993. Biodiversity Prospecting: Using Genetic Resources for Sustainable Development. Washington: World Resources Institute.

Webster, J. 1994. Conserving Biodiversity in Africa: A Review of the USAID Africa Bureau's Biodiversity Program. Washington: Biodiversity Support Program.

Wells, M. and K. Brandon (with L. Hannah). 1992. People and Parks: Linking Protected Area Management with Local Communities. Washington: The World Bank, World Wildlife Fund, and USAID.

World Resources Institute (WRI), The World Conservation Union (IUCN), and United Nations Environment Program (UNEP). 1992. Global Biodiversity Strategy. Washington: WRI, IUCN, and UNEP.

USAID and Center for International Development and Environment of the World Resources Institute. 1993. Green Guidance for Latin America and the Caribbean. Washington: U.S. Agency for International Development and World Resources Institute.

This Evaluation Highlights, by Phillip E. Church of USAID's Center for Development Information and Evaluation, summarizes the findings of the forthcoming USAID Program and Operations Assessment Report No. 11, *Stemming the Loss of Biodiversity: An Assessment of USAID Support for Protected-Area Management*, (PN-ABS-518). Reports may be ordered from the DISC, 1611 North Kent Street, Suite 200, Arlington, VA 22209-2111; telephone (703) 351-4006; fax (703) 351-4039; Internet docorder@disc.mhs.compuserve.com.