

**IMPLEMENTING THE WORLD CONSERVATION STRATEGY:
SUCCESS STORIES FROM CENTRAL AMERICA AND COLOMBIA**

**James R. Barborak
Gina C. Green**

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ABSTRACT

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C I D I A

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Severe environmental degradation is occurring in Latin America, including deforestation, soil depletion, mismanagement of watersheds, destruction of coastal environments, and over-harvested/under-utilization of wildlife and fisheries resources. These trends reduce options for sustainable development in the region, are destroying its biological capital, and are major factors promoting civil strife.

However, a number of successful pilot conservation for development projects are underway in the region. These include the La Planada Ecodevelopment Project, Colombia, Kuna Indian Wildlands Project, Panama; Costa Rican National Park System; and the conservation training program of CATIE. Each project deals with priority themes identified in the World Conservation Strategy.

La Planada is a combined wildlands conservation/rural development project of the Colombia Foundation for Education (FES). FES has developed La Planada as a model private preserve to protect its extremely diverse ecosystems and promote scientific research. To eliminate reserve degradation and improve resource utilization and living standards of colonist and Indian neighbors, FES carries out extension and environmental education programs, and contributes to improvement of infrastructure and social services.

* M.S., Head, Wildlands Program, CATIE, Turrialba, Costa Rica.

** Ph.D. Candidate, Oxford University, England. Associate Staff Wildlands Program, CATIE, Turrialba, Costa Rica.

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The Kuna illustrate the possibilities for conservation based development of Indian reserves. With considerable outside assistance, they established a 60,000 ha protected area within their reserve, to protect downstream agriculture and fisheries, maintain water supplies, and prevent invasions by colonists. A team of Kuna professionals is finishing a reserve management plan, a Kuna ranger force is in place, resource inventories are underway, boundaries are being surveyed and basic infrastructure to promote scientific and natural history tourism is being constructed. Environmental education and agroforestry projects have been initiated in buffer zones.

Costa Rica is one of the smallest, yet most ecologically diverse nations on the American mainland. A large part of its heritage is protected in a model national park system covering over eight percent of the country. The 14 year old Park Service has a highly trained staff, basic infrastructure has been established in all parks, most inholdings have been purchased, and environmental education has increased public and political support for the system, now emulated by many countries. The parks are a mecca for researchers, have increased foreign exchange earnings through nature tourism, and protect watersheds which provide potable water and electricity to much of the country's population.

The support of CATIE's Wildlands and similar Programs have contributed to the success of these projects. Since 1976 it has trained over 1200 Latin Americans in short courses on wildlands and watershed management, interpretation and environmental education, ranger skills and similar themes. Over twenty students have graduated from its M.S. program in wildlands and watershed management; most hold key positions in natural resources agencies in their countries. This program has created a critical mass of trained and motivated conservationists responsible for major expansion of protected areas systems in the region.

In addition to these efforts, other projects to put the World Conservation Strategy into action in Central America and Colombia are briefly mentioned.

**Implementing The World Conservation Strategy:
Success Stories From Central America and Colombia**

By
James R. Barborak and Gina C. Green

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INTRODUCTION

Recently, much press coverage has been given to the deforestation and natural resource degradation which is occurring throughout the tropical world. The reasons for this degradation are complex biological, social, and economic processes which include rapid population growth, uncontrolled development to produce foreign exchange, and destructive land uses. These processes are characterized by deforestation, soil erosion, degradation of coastal environments and simultaneous over-exploitation and under-utilization of natural resources.

In response to the growing worldwide concern about deforestation and resource degradation, the International Union of Conservation of Nature and Natural Resources (IUCN), the World Wildlife Fund (WWF), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and many other national and international organizations are supporting pilot conservation projects in Central America and Colombia. These projects, implemented by local government agencies and private conservation groups, are designed to support the objectives of the World Conservation Strategy which aim to integrate conservation and economic development.

The World Conservation Strategy, since its publication in 1980, has served conservation practitioners throughout the world as a guide for action to meet three primary objectives: 1) maintain essential ecological processes; 2) preserve genetic diversity; and 3) utilize species and ecosystems sustainably (IUCN, 1980). The strategy outlines priority actions needed to achieve these objectives, including the preparation and implementation of national and sub-national conservation strategies; integration of conservation concerns in national and regional project development plans; the improvement of conservation legislation and resource management agency administration; the training of conservation practitioners; increased investigation of resource values, uses and management alternatives; increased environmental education efforts to all segments of national populations; public participation

in conservation issues; and conservation based rural development.

In Latin America, many conservation efforts have failed due to a lack of local support, insufficient efforts to stabilize land use and tenure around protected areas, inadequate budgets, and deficient institutional frameworks. Among the governmental and private sectors there is a general resistance to consider wildland conservation as an integral component of broad based rural development. However, this paper documents four projects that have managed to overcome the problems listed above. These projects are CATIE's Wildlands Program; The La Planada Ecodevelopment Project, Colombia; The Kuna Indian Wildlands Project, Panama; and the Costa Rican Park System. They follow the guidelines for action outlined in the World Conservation Strategy and provide successful, though admittedly not perfect, models for additional projects in Central America, Colombia, and other regions.

This paper also discusses additional successful conservation projects in Latin America and the key participation of non-governmental organizations in the implementation of the World Conservation Strategy.

CATIE's WILDLANDS PROGRAM

The Tropical Agriculture Research and Training Center (CATIE) is a non profit institution, founded in 1973 in Turrialba, Costa Rica. The Center is dedicated to fostering rural development, particularly in Central America and the Dominican Republic, through research and training in agriculture, animal husbandry and renewable natural resource management. Its Wildlands Program is part of CATIE's Renewable Natural Resources Department, which also includes programs of tropical forest silviculture, agroforestry, and watershed management.

The Wildlands Program carries out projects and activities which form a regional strategy designed to create and manage an integrated regional network of protected areas in which conservation is considered a part of sustainable development. Key elements are technical cooperation, fund-raising assistance, research, short term and post-graduate training courses, and information/documentation services. All activities are interwoven through demonstration projects in the countries of the region. Projects and activities are designed, implemented, and managed jointly with national resource management institutions.

Virtually all the services described are provided without charge to Central American countries. The Wildlands Program assumes direct responsibility in pilot projects, particularly those involving management of critically important wildlands, in preparing resource inventories, management plans and funding proposals, through cooperative agreements with national governments of the region and/or international or bilateral aid agencies and conservation organizations. Teams of national professionals are always involved in planning and implementing the Wildlands Program's activities and in service training is an integral part of such efforts. Recent cooperative projects include the La Amistad-Talamanca Range Biosphere Reserve Resource Inventory and Planning Project in Costa Rica (Morales et al., 1983; development of a methodology for biosphere reserve systems planning and its application to a test case in Costa Rica, (Cifuentes, et al 1984), and advising the planning process for Braulio Carrillo National Park, Costa Rica.

The Wildlands Program also acts as an unofficial regional liaison office for a number of aid agencies and conservation organizations that lack offices in the region, such as IUCN/WWF-International, WWF-US, UNESCO, the US Fish and Wildlife Service (USFWS), the US National Park Service (USNPS), and Unesco's Man and the Biosphere Program and World Heritage Convention Secretariat.

The Program has been very successful at obtaining small amounts of operations funding, substantial financial support for individual "on-the-ground" projects in each country, and assistance for regional and national training events. Funding sources include IUCN; WWF-Int; U.S. AID; DDA (Swiss Development Assistance); FAO; The Fauna and Flora Preservation Society; The Inter-American Foundation; The Bonner, Wildwings, and Kellogg Foundations; The Rockefeller Brothers Fund; Rare Animal Relief Effort (RARE); UNEP; UNESCO (World Heritage and MAB Programmes); USFWS; USNPS; and WWF-US. Unfortunately, UNEP, UNESCO and World Heritage Convention support is dropping due to the U.S. withdrawal from UNESCO, the U.S. reduction in support to UNEP, and U.S. failure to pay its treaty-obligated annual support to the World Heritage Convention.

A major factor contributing to the success of many conservation projects in Central America and Colombia has been the training opportunities, technical assistance, and help in fundraising the projects have received from the Wildlands Program. In each of the following three examples, La Planada, the Kuna Wildlands Project and the Costa Rican Park System, such assistance has played a key role in project success.

THE LA PLANADA ECODEVELOPMENT PROJECT, COLOMBIA

One million hectares of Colombian forests are destroyed each year. Deforestation is due to migratory agriculture practiced by landless peasants, land speculators, and expansion of extensive grazing. However, in spite of this trend, several government and private conservation efforts in Colombia have been quite successful, such as the establishment and management of the La Planada Natural Reserve and Ecodevelopment Project.

La Planada is located between between 1000-2000m in the Narino department on the Pacific slope of the Andes. A Colombian biologist, working to determine needs for future protected areas in the country, funded by the World Wildlife Fund-US, visited the site and documented its great ecological diversity and importance as a center of endemism for the Choco biogeographical province, the world's most diverse biome. The biologist and his assistants discovered that loggers were negotiating with the owner of a 2000 ha tract of forest to remove all valuable timber. They would leave in their wake a network of logging roads which almost certainly would serve as pathways to colonization and complete destruction of the forest within several years.

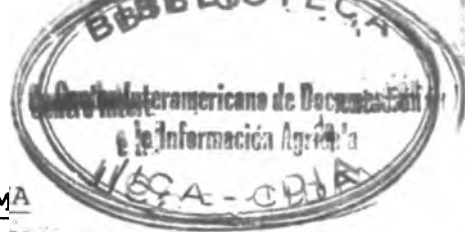
The concerned researcher relayed the news to WWF-US that immediate action was needed to save the site. He also enlisted the support of the Colombian Foundation of Higher Education (FES) which has a long history of promoting integrated rural development and also had an expanding environmental education program. Through a cooperative agreement, the Foundation and World Wildlife Fund-US bought the land and sponsored the conservation and development of the La Planada region to serve as a pilot project for integrating conservation and rural development.

Since 1983, progress in implementing the project and its activities has occurred at a pace unmatched by the majority of similar projects in northern Latin America. WWF-US and FES initiated activities by hiring the biologist who first identified the site as project director, as well as two more Colombian biologists as assistant director and environmental education specialist. With CATIE and WWF-US consultants they prepared a three year operational plan outlining all reserve management programs (research, protection, interpretation, training, environmental education, and administration). To promote sustainable development in nearby communities of colonists and Indians, the plan also includes education, agricultural extension, infrastructure, and health services programs. To gain the rapid support of local residents and leaders FES, WWF-US staff and CATIE consultants met frequently with local

representatives from the start of the project. Neighbors of the reserve were hired as wardens and laborers, most materials were purchased locally, and several important donations to the neighboring communities were made, such as the repair of a community school bus which galvanized local support. A well organized local opening ceremony for the reserve and an equally important ceremony in Bogota, the nation's capital, succeeded in obtaining both high-level and local support for the project.

Since 1983, a sizeable yet rustic project headquarters complex has been constructed, including housing for staff and visiting scientists, an environmental education center, and workshop. Appropriate technology, including solar lighting and fuel-efficient wood stoves and water heaters has been installed. Extension work and ecological research have been initiated, as well as a comprehensive environmental education campaign in local schools and communities. The professional staff have been able to do their jobs better due to their participation in CATIE wildlands management and administration training courses. Based on the recommendation, of a community development needs study, ecodevelopment activities are now underway, including agriculture and agroforestry extension and a number of pilot activities to improve health, sanitation, education and public works in the region. FES also promotes increased participation of government ministries and other non-governmental organizations to carry out integrated rural development activities in the project area.

La Planada is, of course, a very young project but to date has been very successful based on a well-designed partnership between a prestigious Colombian foundation and a U.S. conservation NGO, expert assistance in the crucial initial planning stages, early involvement of the local communities and key national figures, strong national and international financial support, and the selection and training of a small, highly motivated professional staff. La Planada can serve as a model, adapted to local environmental and social conditions, that should be tested elsewhere in Latin America. Many wildland conservation efforts are failing throughout the region due to lack of local support, inadequate efforts to stabilize land use and ownership around protected areas, inadequate budgets and management expertise, and a general failure to consider wildland conservation as an integral component of broad based rural development efforts.



THE KUNA WILDLANDS PROJECT, PANAMA

Throughout Latin America, and particularly Central America, indigenous cultures and tribal lands are under threat, due to population growth, inroads by landless peasants, and land speculation by non-Indians. The deculturalization of indigenous peoples has increased because of the opening of access roads to formerly remote areas, and discovery and/or increased value of renewable and non-renewable natural resources on Indian lands.

On the northeast coast of Panama, 30,000 Kuna Indians inhabit a 350,000 ha "comarca" (reserve) which they secured through a war for autonomy with the Panamanian government early in this century. The Kuna Comarca includes the San Blas archipelago of over 300 small islands, where most of the Kuna live, in addition to the adjacent narrow coastal plains and the steep San Blas Range of mountains rising up to 950m. The Comarca, called Kuna Yala by the Indians, has an annual rainfall ranging between 2.5m and 3.5m, and contains numerous marine, coastal, and upland ecosystems including many unique and endangered flora and fauna species.

The Kuna live in densely populated villages. For their livelihood, they fish, grow and sell coconuts, raise pigs and chickens, and farm coastal plains. Hunting and gathering of products from the forest play major roles in their subsistence lifestyles. A recent study of just one small part of the reserve identified seventy-two agroforestry combinations, utilizing forty-eight trees and sixteen crop plants (Beer, J. CATIE, pers. comm.). The Kuna use thirty-six species to build boats, thirty-two for fuelwood, forty species for home construction, and scores more for medicine, handicrafts, and utensils.

The Kuna are unique among Central America indigenous peoples because of their strong social cohesion, autonomy, education level, and self-reliance. In addition they successfully integrate economic and technical innovations into their culture. Although the Kuna reserve has been isolated traditionally from Panamanian society, the situation has changed due to the construction of a rural access road to the region in the 1970's, sponsored by U.S. AID. In just a few years non-Indian peasants practicing slash and burn agriculture have reached the limits of the reserve and have destroyed huge areas of adjacent forests.

The Kuna actively supported the road initially but later grew alarmed at the increasing threats it posed to the integrity of their land and culture. After the failure of a Kuna agricultural project which began in 1974, to demonstrate Kuna control along the reserve border, the Kunas sought advice on alternatives for conservation and management of their land. The Wildlands program of CATIE was enlisted for technical advice and suggested the creation of

a Kuna-managed 60,000ha forest park. Technical and financial support to hire staff and manage the area was obtained from CATIE, U.S AID, the Interamerican Foundation, the University of Panama, the World Wildlife Fund-US, the Tropical Science Center and the Smithsonian Tropical Research Institute.

The objectives of the forest park are to protect the boundaries of the Kuna reserve, to promote scientific research and natural history tourism to the area, to generate income for the Kuna, and to assert ownership and use of the Kuna reserve. A Kuna ranger force is now in place and a CATIE trained and advised Kuna planning team is now completing the management plan for the reserve, which will be proposed to UNESCO for inclusion in the international network of biosphere reserves. The project has the full support of the Kuna leadership and a large part of the financial support comes from Kuna organizations. CATIE is also providing technical advice to the Kuna on the improvement of traditional agroforestry systems in order to increase agriculture production and sales to distant markets via the new road.

COSTA RICAN NATIONAL PARK SYSTEM

Since its inception in 1970, Costa Rica's National Park System (CRNPS) has grown to become a model for small, ecologically diverse, tropical countries. The Park System now includes twenty-three protected areas (national parks, biological reserves and national monuments) encompassing over eight percent of the country's territory. Not all ecosystems are represented, yet the overall ecological coverage in the system is very high and includes coral reefs, oceanic islands, coastal mangroves and wetlands, seasonally dry Pacific slope forests, and moist to wet lowland, mid- altitude and high-altitude forests and paramo (MacFarland et al. 1983; Boza and Mendoza. 1981).

The park system is not, by any means perfect. Pressure on the parks by peasant farmers, loggers, poachers, archaeological site looters and miners is increasing. The Park Service staff has not increased in seven years, while the number of parks and total protected area have more than doubled. The Park Service operating budget has been greatly reduced, a series of sources of special revenue have been eliminated, and living conditions for field staff remain quite primitive.

The CRNPS is tackling its financial problems, however, through the private Costa Rican National Parks Foundation, established with strong support from the Park Service and conservation groups such as the Nature

Conservancy and WWF-US. It has raised several million dollars over the past few years for consolidating the park system. Its priorities include buying private holdings in existing parks; improving infrastructure and equipment; providing bonuses, scholarships and other incentives to park service employees; and establishing parks which represent those ecosystems not found in existing protected areas.

Unlike its counterparts in many other developing countries, the Costa Rica National Park System does not just exist on paper. In recent years, it has produced a veritable boom in ecological research: thousands of national and foreign researchers carry out long and short term studies in the parks, and many tropical biology university courses visit the parks as well. The fascinating plant and animal life of the parks also attract growing numbers of natural history tourists from North America and Europe, which provides increased foreign exchange earnings and business opportunities for tour operators, hotels, restaurants and artisans in a period of economic crisis in Costa Rica.

Now almost all sectors of the Costa Rican population recognize that the protected areas are vital to national development. The parks and reserves protect steep sloped, high rainfall fragile headwaters of streams that possess over 90% of the country's hydroelectricity generation and irrigation potential and a majority of its potable water surface sources and aquifer recharge areas. The protection of coastal wetlands is vital to sustain the country's fishing industry. Additional recognition of the importance of the parks is due to the fact that almost all of Costa Rica's natural forests outside protected areas are expected to be cut in just eight more years.

A combination of factors, including public and political support to the parks based on their proven economic importance; strong financial and technical support from the international conservation community; comprehensive training of staff at all levels; and strong leadership by a core of highly trained and motivated Costa Rican conservationists have enabled the Park Service to achieve so much in so little time.

Although not all of the above factors are present in other Latin American nations that are striving to emulate Costa Rica's example, many of the experiences of the Costa Rican National Park Service can be used as models for nearby countries.

OTHER SUCCESSFUL EXAMPLES OF THE WORLD CONSERVATION
STRATEGY IN ACTION IN CENTRAL AMERICA AND COLOMBIA

The four conservation projects reviewed in this paper are not the only "success stories" in Central America and Colombia, but rather indicate what is possible to achieve in spite of the major limitations confronting Latin American conservation professionals. A study to review the status of all conservation projects in Central America, determine general guidelines for project success, and complete detailed case studies of key pilot projects and the factors which have contributed to their failure or success, is now underway (Green, 1985). Examples of other successful conservation projects identified to date include the following:

The Cauca Valley Corporation, Colombia (CVC)

This agency, modeled after the Tennessee Valley Authority (TVA), provides one of the best examples of integrated watershed management on a large scale in Latin America, and also demonstrates the importance of the internalization of costs of production of hydroelectricity, potable and irrigation water. The CVC has implemented an ambitious resource conservation and land recovery program in the upper Cauca River Valley, an area of approximately two million hectares.

CVC's conservation measures, including reforestation of degraded watersheds, soil conservation practices, management of protected areas, and environmental education, are financed through land taxes levied on large landowners and a fixed percentage of the revenue derived from the corporation operated hydroelectric dams. The financial autonomy, apolitical charter, broad mandate and strong local support of the CVC have helped it to realize its objectives effectively.

The Gandoca-Manzanillo Ecodevelopment Project, Costa Rica

This project, spearheaded by local community councils and the New Alchemy Association of Costa Rica, includes a number of programs aimed at improving the land use and the standard of living of a 10,000 ha community which is located

along the southern Atlantic Coast of Costa Rica just north of the Panama border. Project activities include: community nurseries to produce perennial crops, fruit, firewood, and timber trees; aquaculture; environmental education; identification and legal designation of a national wildlife refuge in the project area; promotion of nature-based tourism; promotion of agroforestry; and programs to secure land titles for all families living in the area. Secure land tenure will prevent squatter invasions and enable local farmers to obtain access to financial credit which will encourage long-term investment in forest land management.

The Merenberg Forest Reserve and Foundation

The Merenberg Foundation is a group of concerned Colombians and foreigners promoting the conservation and management of Colombian's remaining tropical forests. The Foundation's programs and activities are implemented at the Merenberg Forest Reserve, which is located in the east-central Colombian Andes, between 2,000 and 2,500m above sea level.

The Merenberg Reserve was established in 1932 when a family of German immigrants homesteaded the now protected forest area. They cleared small pasture areas on nonerosive lands and left protective vegetation along the headwaters of streams. The owners of Merenberg have kept the forests and pastures productive for fifty years without deterioration of the resource. However, each year the conflicts between the German family and landless peasant farmers intensify over the use of the land and its resources.

The Merenberg Foundation was established in 1981 to help protect the forest reserve and resolve the conflicts between the owners and local residents. To address the problem, the Foundation initiated programs of seed collection and propagation of native and exotic species for use in reforestation, woodlots, agroforestry, and silvipastoral activities.

The Foundation's objectives are to manage the reserve to serve as a model conservation project and to educate the local residents to recognize and realize the potential of the forest to raise their own standard of living.

Non-Governmental Conservation Organizations (NGO's)

During the past few years the growth in number, size, and clout of non-governmental conservation groups has played an important role in conservation progress in Central America and Colombia. For example in Belize, the government has entrusted management of protected areas to the Belize Audubon Society (BAS). In Guatemala, the Conservation Studies Center of the University of San Carlos (CECON) has gained government support to manage a successful network of biological reserves called biotopes. These biotopes are among the best managed and protected wildland areas in Central America.

In Honduras, the Ecological Association (AHE) has promoted environmental education efforts and plays a pivotal role in efforts to improve the country's fledgling conservation programs. The Costa Rica Association for Nature Conservation (ASCONA) has led successful campaigns to create several key protected areas, fight pesticide abuse, and promote environmental reviews of potentially ecologically detrimental development projects.

In addition, the National Parks Foundations of Panama and Costa Rica and FES in Colombia are involved in channelling financial resources to conservation projects. All of these operations have benefited from the technical and financial support of bilateral aid agencies (particularly U.S. AID) and privately funded conservation groups such as WWF-US, the Nature Conservancy, the New York Zoological Society, the Audubon Alliance, the Wildwings Foundation, IUCN, and World Wildlife Fund-International.

IUCN's support to Integrating Conservation and Development

The International Union for Conservation of Nature and Natural Resources plays a key role through its assistance to government agencies and NGO's, in their efforts to integrate conservation objectives and activities within development projects to minimize possible environment degradation.

Through its Conservation for Development Center (CDC), IUCN is currently supporting projects in Central America including: environmental impact reviews for road and irrigation projects in Costa Rica and for pulp mills in Guatemala; seminars for government and non-government decision-makers in Honduras and Nicaragua to increase their understanding of how conservation programs contribute to sustainable development; and preparation of of conservation strategies for Belize and the Panamanian province of Bocas del Toro.

Biosphere Reserves and World Heritage Sites

Biosphere reserves are globally significant ecological areas managed for scientific investigation and monitoring, environmental education and training, protection of representative ecosystems, and pilot efforts to improve the inter-relationships between man and his environment, such as allowing indigenous communities to exist within all three Central American biosphere reserves. They are created through the framework provided by UNESCO's Man and the Biosphere Program. While Biosphere Reserve designation implies a management philosophy, World Heritage site designation indicates international recognition of the universal values of the most important natural and cultural heritage sites on earth, through the legal framework of the World Heritage Convention. The majority of the most important protected areas in Central America and Colombia are recognized through these programs. These areas include the Rio Platano Biosphere Reserve/World Heritage Site (BR/WHS), Honduras; Talamanca Range BR/WHS, Costa Rica; Tikal WHS, Guatemala; Andean Belt BR, Colombia; and Darien BR/WHS, Panama.

UNESCO's Man and the Biosphere Program and the World Heritage Convention provide important technical and financial assistance and training scholarships which enable responsible national agencies to improve the protection and management of these Biosphere Reserves and World Heritage sites. The recent U.S. pull-out of UNESCO and refusal to pay its annual contribution to the World Heritage Fund, not only reduces annual management budgets but also threatens the integrity of these protected areas.

Summary

In spite of the political instability, economic turmoil, civil strife, resource degradation and population growth in Central American and Colombia, successful conservation projects can be designed and implemented which can contribute to sustainable national development. There is a very important link between the current political and economic difficulties in the region and the degradation of its natural resources: any long term improvement in the overall political and economic situation will depend on greatly improved natural resource management. Emulation and expansion of the successful projects reviewed here would provide a step towards sustainable development in Central America and Colombia.

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