

PD-ABN-971

Regional Natural Resources Management Project (RENARM)

Project Impact and Lessons Learned

Final M & E Report
Contract No. 596-0150-C-00-1132-00

September 1995



600 Water Street, S.W.
Washington, D.C. 20024
USA

202/484-7170
Fax: 202/488-0754

Contents

I.	USAID's regional strategy for natural resource management	1
II.	Impacts of the RENARM Project	2
	A. Natural resource status	2
	B. Natural resource policies and practices	4
	C. Knowledge, skills, and attitudes	5
	D. Institutions and change agents; networks and information sharing	6
	E. Systems and data	7
	F. Human resources	8
III.	Lessons learned	10
	A. Causes and approaches to deforestation	10
	B. Managing a regional project	10
	C. NGO collaboration and development	11
	D. Ecotourism	12

I. USAID's regional strategy for natural resource management

*"Throughout Central America, the overwhelming evidence is that pressures from growing populations and expanding economies are causing people and governments to overexploit the natural resources at their disposal in order to satisfy immediate daily needs, increase employment opportunities, increase current revenues, and avoid difficult political decisions... As a consequence, depletion rates of forests, soils, fisheries, and other crucial resources far exceed renewal rates, and secondary problems such as soil erosion, sedimentation of hydroelectric dams and coastal harbors, and water pollution have reached critical levels in many parts of the region." (Jeffrey Leonard, *Natural Resources and Economic Development in Central America*)*

These dramatic threats to Central America's natural wealth, and indeed, to its future potential for development, motivated USAID's 1989 strategy to guide regional and bilateral agendas in Central America. After identifying the chief constraints to sustainable development as policy, public and private institutions, cultural and social forces, and technology, the strategy document set out five priority areas for action:

- ◆ Sustainable agriculture
- ◆ Production from natural forests
- ◆ Management of wildlands and protection of biodiversity
- ◆ Management of critical watersheds
- ◆ Policy formulation, institutional strengthening, and environmental education

From this strategy, the RENARM Project developed to support bilateral environmental programs with a combination of regional institutional programs and direct technical support. In areas where problems cross international boundaries, and where pilot or generic interventions were needed, RENARM developed regional programs, in collaboration with country Missions.

As the RENARM project concludes six years of addressing these issues, there have been significant changes in environmental awareness at all levels, new legislation and new public sector institutions, more and more effective advocacy and project implementation by NGOs, and more legally declared protected areas. Still, environmental destruction continues unabated, driven by expansion of the agricultural frontier by small farmers hungry for land, continued logging and land clearing by pastoralists, and continued burning. The programs aimed at natural resource conservation have had significant impact, but not enough to mitigate the forces that cause the environmental crisis of Central America.

This report summarizes the key impacts of the RENARM Project, and the lessons that have been learned about environmental problems in Central America and the effectiveness of various strategies for confronting them. Many of these lessons have already been incorporated as principles in the design of other USAID projects in Central America and elsewhere.

RENARM was designed to be innovative and flexible, and to test and refine new approaches. Key among these were regionalism, involvement of regional institutions, NGOs and NGO consortia. Central themes included the establishment of regional wildlife corridors, linkages between protected areas, buffer-zone development, and environmental education; and regional action plans for forests and coastal zones. In the process of implementing RENARM, both USAID and the regional and international institutions developed knowledge, tools, and refinements in their approach to Central American natural resource issues. This installed capacity, together with many overlapping networks of professional contacts and information sharing, must be counted as one of RENARM's major impacts even though it is not directly measurable in terms of natural resource practices and status. RENARM's technical advisors, who assisted with bilateral projects as well as RENARM implementation, and bilateral Mission staff who participated in RENARM from the design phase onward, facilitated a sharing of information and technology that enriched both the regional and bilateral projects.

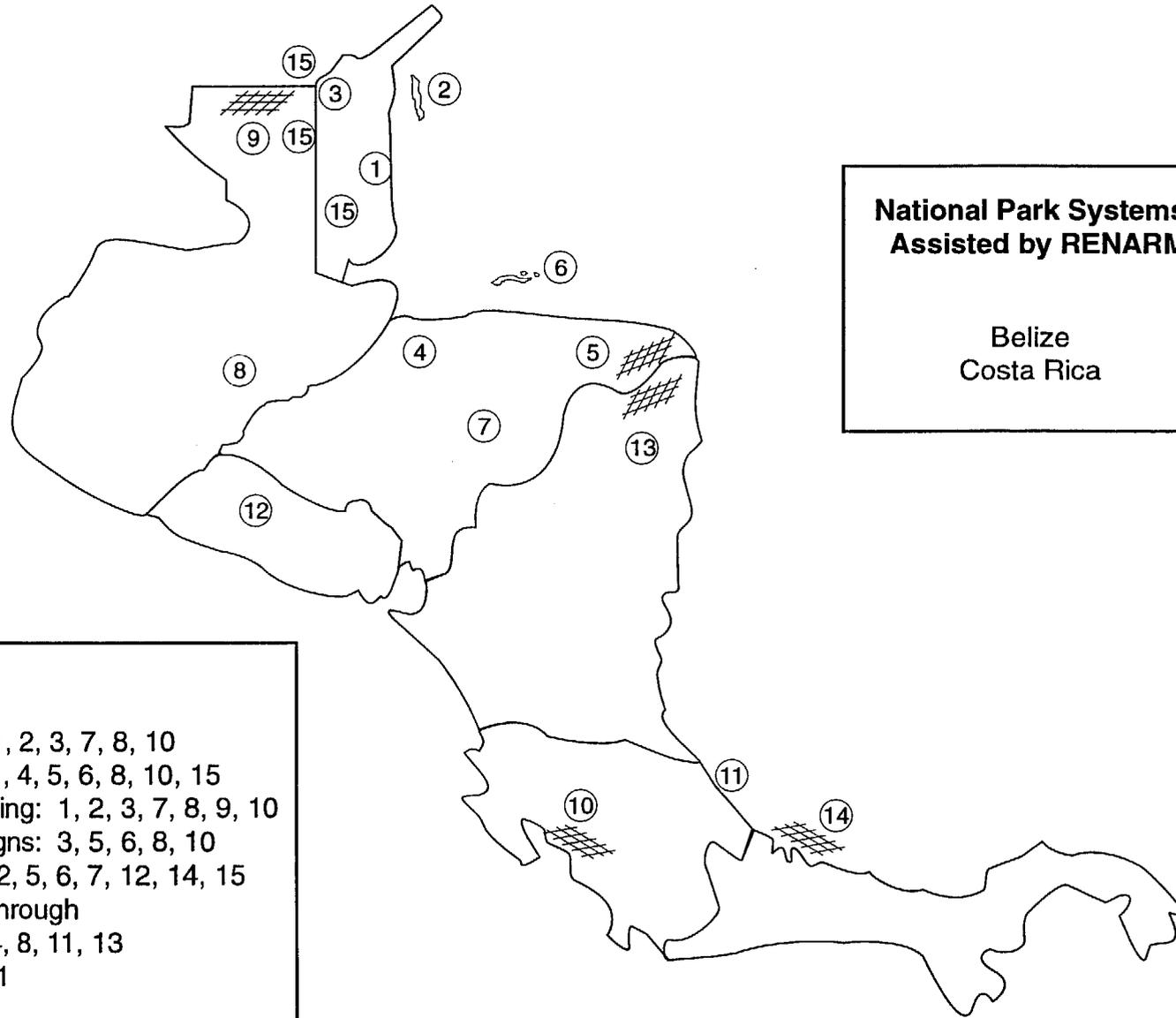
II. Impacts of the RENARM Project

RENARM's impacts are both direct and indirect, ephemeral and permanent. It is possible to count degrees conferred, farm fields where sustainable resource practices were adopted, hectares added to national park systems; however, these in sum still do not give a picture of a project whose major contribution may have been the experimental processes that developed new approaches to resource problems, and that, in their development, changed the policies and approaches of major actors in the region.

A. Natural resource status

National parks and reserves in Belize, Guatemala, Costa Rica, and Honduras have made progress along the scale from "no park" to "paper park" to real management. New parks were established, or existing protected areas extended to provide corridors and buffer zones, in Río Plátano, Honduras; Chiquibul and Vaca Forest, Belize; and Tortuguero, Costa Rica. Indigenous territories were recognized and mapped through such efforts as the "First Congress on Indian Lands." The Cultural Survival project worked with National Geographic on a special issue mapping indigenous lands throughout Central America. A Kuna "demarca" was established in the Bayano region of Panama. Indigenous reserves were also proposed as a result of the Mosquitia Indigenous Land Use conference.

Protected Areas Assisted by RENARM



**National Park Systems
Assisted by RENARM**

Belize
Costa Rica

LEGEND

Core Zone Protection: 1, 2, 3, 7, 8, 10
 Buffer Zone Activities: 1, 4, 5, 6, 8, 10, 15
 REAS/Inventories/Mapping: 1, 2, 3, 7, 8, 9, 10
 Env. Education Campaigns: 3, 5, 6, 8, 10
 Management Plans: 1, 2, 5, 6, 7, 12, 14, 15
 Declared or Expanded through
 RENARM Activities: 4, 8, 11, 13
 Infrastructure: 6, 8, 9, 11
 Legal Status: 3, 5, 15

Sources: Country Profiles
 SARS PACA & PP
 MIDTERM EVAL
 PERS. COMM.

There has been improvement in the condition of several important watersheds as a result of CATIE's watershed management program¹. The program succeeded in applying land use planning techniques and demonstrating successful agricultural and erosion control technology for sustainable hillside agriculture on five watersheds in four countries.² Including projects at the "microcuenca" level, about 15 management plans have been developed and implemented.

B. Natural resource policies and practices

Natural resource policies have changed substantially during RENARM's six years. The majority of the changes have been initiatives of Central American countries and their leaders, but RENARM and the organizations it has supported have played crucial or catalytic roles.

The Central American Commission on Environment and Development, founded by the Central American Presidents, has benefitted from RENARM support to its executive secretariat. CCAD has adopted an Agenda for Environment and Development and a regional agreement on toxic wastes. A Regional Biodiversity Treaty gives legal sanction to the biological corridor concept in the region. On October 12, 1994, the seven Central American Presidents signed the Alliance for Sustainable Development, a strategy to promote a regional development model which is sustainable in political, economic, social, cultural, and economic terms. The U.S. became a partner in the Alliance with the signing of the CONCAUSA agreement at the Hemispheric Summit in December 1994. The corresponding action plan sets out a detailed agenda for conservation, biodiversity, energy, environmental legislation, and sustainable economic development.

Central American nations have adopted a regional Tropical Forestry Action Plan, whose development was indirectly supported by RENARM through its support of CCAD. Forestry laws have been revised in El Salvador, Guatemala, Nicaragua, and Honduras. In Honduras, agriculture and environmental laws also were revised.

¹. Sources: CATIE/RENARM *Manejo de Cuencas Hidrográficas* work plan for 1995 and SARs; RENARM midterm evaluation.

². Rio Las Canas, El Salvador, where a hydroelectric project life may be extended; improved soil humidity and fertility in Rio Las Canas; San Marcos Ocotopeque, Honduras; Rio Purita, Costa Rica. Documentation of adoption and effects of sustainable practices in these areas can be found in "Analysis of Effects and Impacts, Rio Las Canas, El Salvador," by Jorge Faustino (CATIE Watersheds, September 1993), and "The Adoption of Practices: Rio Purita, Puriscal, Costa Rica by Clarissa Badilla and Choluteca, Honduras, by Julio C. Aguilar" (CATIE Watersheds, 1993).

Natural resource practices in the region have also changed, and while it is difficult to separate changes due to policy initiatives from those attributable to education and training, their overall impact is significant.

Park and buffer zone management: Rapid Ecological Assessments in four protected areas have given managers powerful new tools to understand baseline situations and assess impacts of management actions. Ecologically sustainable economic activities -- particularly sustainable agriculture techniques such as contouring and use of nitrogen-fixing plants -- have been promoted, and according to extension reports, adopted to varying degrees in the buffer zones of at least four parks. Management has been professionalized through training and the preparation and implementation of management plans.

Sustainable agriculture and forestry: The best data to indicate changes in resource-use practices at this point are indirect, but have been validated in the field to some extent by special studies and theses of project-supported graduate students. Farmers' interest in and adoption of multi-use tree cropping, for example, can be demonstrated by the fact that CATIE's tree crop network has 20,000 registered participants. In other components as well, both the size and level of activity of ongoing extension networks document interest in and adoption of recommended practices.

Integrated pest management and pesticide safety: In 1994, an evaluation team developed instruments for measuring impact of the "Safe Pesticide Use" program. Although the sample population was small, and focused on producers of corn, beans, and coffee, farmers and homemakers showed progress at learning the meaning of toxicity labels, the value and use of protective clothing, and where to store pesticides. The team also found evidence that behavior had changed as a result of the training.³ RENARM has strengthened a Central America-wide Plant Protection Network, encompassing some 100 institutional and 120 individual members, that will continue to disseminate IPM information and technology after the project ends.

C. Knowledge, skills, and attitudes

It is fair to say that environmental messages have reached millions of Central Americans, and hundreds of thousands in international audiences, and that environmental awareness in Central America today is higher than it has ever been before. How much of this is attributable to RENARM and its collaborating organizations would be difficult to analyze, as would the cause-effect link between information, attitudes, and natural resources behavior. Still, the audience data for RENARM's environmental messages are impressive: just as a few examples, 15,000 people were reached by a National Geographic photo-map supplement on

³. "Knowledge and Beliefs Regarding Agricultural Pesticides in Rural Guatemala," MSI special study by Roger Popper, PhD.

indigenous lands; distribution of 300,000 Honduran stamps on bio-control of insect pests; IPM information distributed in a regular section of a major Honduran newspaper reaching tens of thousands of readers; distribution of 30,000 pesticide information posters; establishment of visitor centers at three sites heavily used by tourists. The list is long; if simply expressed as a number of "contacts" it undoubtedly would be in the millions.

Although data at present is limited, the RENARM Project has taken steps to assure that future efforts will have better tools to monitor impacts, by developing instruments for monitoring change including data generated in Rapid Ecological Assessments, training in Environmental Impact Assessment, a draft "Methodology for Assessing the Management Status of Protected Areas," and PACA/CARE's use of household economics as a tool to evaluate the impact of policies on land use in rural areas.

D. Institutions and change agents; networks and information sharing

Much of RENARM's impact has been accomplished, and will continue to be felt after the project period, through the activities of research, education, advocacy, and extension organizations. Some of these were already in existence; others sprang up or were brought along as part of the project. Some were direct implementers of project activities; others benefitted from contacts, information, and indirect support. Institutional strengthening, and influences on the programs of educational institutions, will continue to have an impact in terms of the "stream" of future graduates qualified in relevant fields.

Although its impact cannot be precisely measured, it would be a mistake to underestimate the power of RENARM's impact in putting people and institutions in contact with each other, creating "home bases" and channels for the collection and sharing of information. Regional coordination organizations such as CCAD were strengthened, and some events, such as the Congresses on Indian Lands, created networks where none had existed before.

National level Commissions on Environment and Development have been established in all of the Central American countries, and their work has been supported by RENARM's policy component and CCAD.

Central American NGOs have acquired managerial, technical, and institutional strengths that will enable them to continue exercising influence beyond the life of the RENARM project. These range from skills in policy analysis and advocacy to ecological assessment and land management, to fundraising and administration. RENARM inputs of technical assistance, training, and hands-on experience in environmental policy and action have played a significant role in developing this vital private-sector community. Institutional strengthening has been both intensive (CATIE and Zamorano developed permanent graduate and postgraduate programs, extension networks, and information management systems; partner organizations in the PACA project participated in in-depth needs assessments and intensive

technical followup; the "reach" of many extension and education networks encompasses dozens if not hundreds of local organizations).

Some of the US PVOs' skills and practices were enhanced as a result of their experience in RENARM, with beneficial impacts that will extend beyond the life of RENARM and beyond Central America. CARE, for example, revised its normal method of direct implementation to one of working through local NGOs. The PACA operation became a test bed of this method of operation, which is now the preferred method of project implementation for other CARE activities. PACA/CARE in Costa Rica and Honduras developed institutional strengthening units and diagnostic tools for analyzing NGO management. These are significant steps in CARE's evolution in partnering, and now used to negotiate programs of NGO strengthening. They are, in many ways, a prototype for how a bilateral mission might structure a partner support unit.

A 1993 survey of Central American NGOs found that:

- ◆ RENARM stimulated the creation of a number of new, mostly community-based environmental NGOs, and promoted partnerships with international NGOs.
- ◆ For those NGOs participating in RENARM, organizational effectiveness was increased, although to widely varying degrees.
- ◆ The probable sustainability of these organizations could not be measured at that early juncture. Very few NGOs at that point felt capable of self-reliance.
- ◆ In a few cases, RENARM support has allowed NGOs already established in one or more geographic areas to initiate similar activities in new areas. In some cases this was a result of "adding to their agendas" in order to be part of the project.
- ◆ The universe of local NGOs assisted intensively is small, fewer than 20. These organizations almost universally felt frustration with the proportion of total project funds that actually reached them.⁴

E. Systems and data

Installed capacity to manage data and make it accessible can be seen in the University of Florida, in the PACA partners, and especially in CATIE.

CATIE has reorganized its watershed expertise into a land-use planning format. It has established a GIS network and using the methodology to facilitate planning. It has also assembled its forestry expertise into a regional management/demonstration program, and developed an outreach program to promote the utilization of methods and materials developed through MADELEÑA-3. CATIE's network for dissemination of multi-use trees was strengthened to include six governments and 25 NGOs, using an information management

⁴. "RENARM, USAID, and Central American NGOs: Voices from the Field," MSI special study by Joan M. Goodin, Myra Herdocia, and Nadia Gamboa Lemus.

system (MIRA) is kept up to date and regularly used to transfer information to project collaborators. In addition, a network of 33 documentation centers offers computerized bibliographic information on tree crops.

Through a PASA with the USEPA and FDA, establishing an EPA "Central American Program" that is likely to continue well beyond RENARM, CATIE has become a central information point for access to EPA pesticide databases, and can provide information via FAX, phone, and modem.

Rapid Ecological Assessments provided baseline data in and around protected areas in Costa Rica, Honduras, and Belize. Collaboration with other institutions, including the Missouri Botanical Garden and Organization for Tropical Studies, established ad hoc networks and consulting groups.

Information has also been made available through directories of information sources, data bases (PACA), maps (PACA, PP, CS), contact directory, school libraries, and extension program collections.

F. Human resources

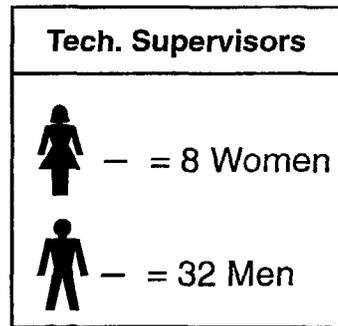
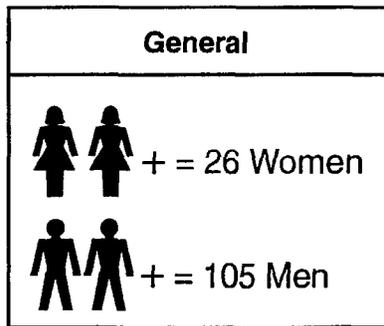
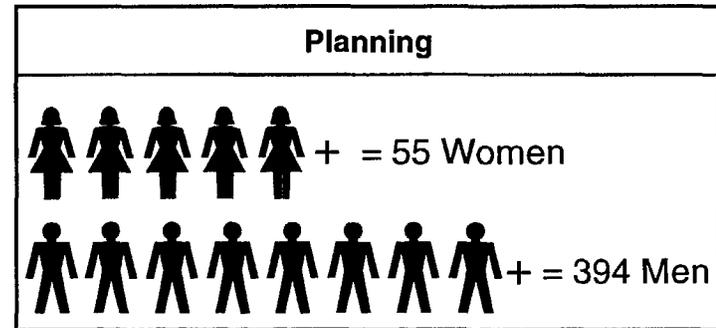
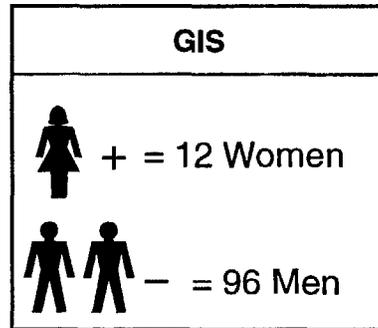
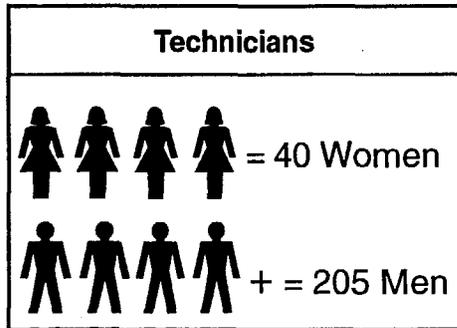
Across all the project's components (policy, biodiversity conservation and environmental education, sustainable agriculture and forestry), RENARM has prepared and supported Central Americans to generate, transfer, and apply the information and technology essential for the sustained use of natural resources in the region. This has been done through education and training programs focused on NGOs and individuals. 295 men and 75 women received fellowships for bachelors, masters, and PHD degrees, or year-long, intensive in-service training programs; and 10 research projects received grants.

More than 60,000 Central American extensionists, farmers, and agricultural and forestry trainers have received training through collaborating organizations, surpassing Life of Project targets by more than 300 percent. In addition, several thousand community leaders, extensionists, and teachers received training in buffer zone management and environmental education through the PACA project. Although this data is not precise due to gaps in data collection early in the project, analysis shows that 1,500 to 2,000 individuals received this training in each semester of the project's latter years.

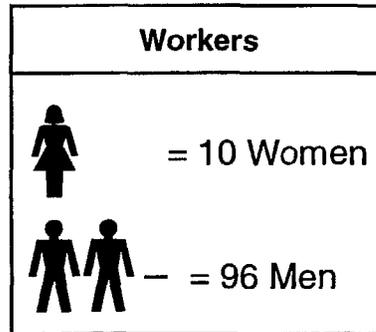
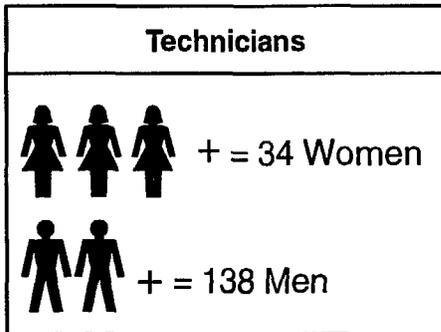
Many of the courses, training modules, and extension networks developed or strengthened through RENARM will continue to function. Demand for continued and repeat courses, even in a context of user-pays, is a good indicator of the value accorded these courses and the probability of adoption of recommended practices.

In-Service Training Sustainable Agriculture

Watershed

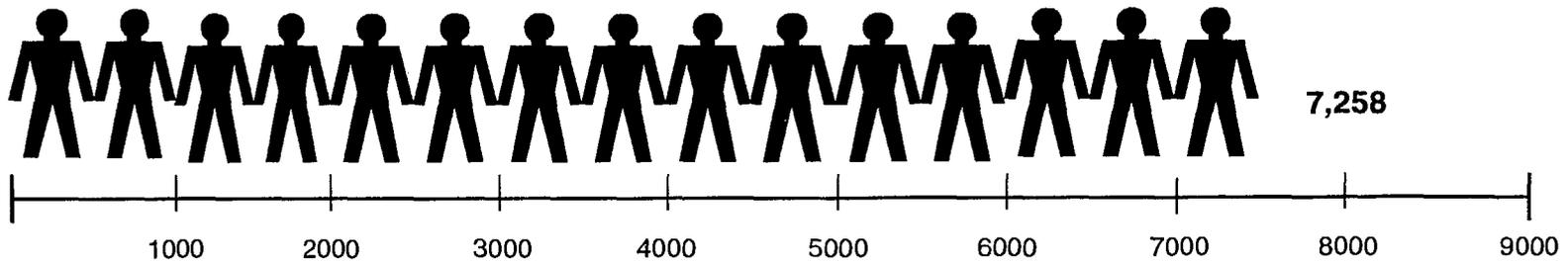
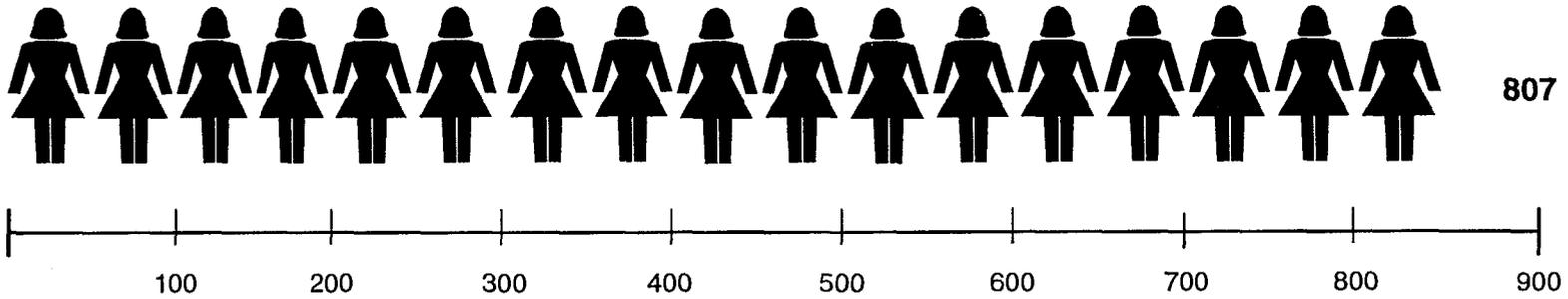


Natural Forest Management



In-Service Training Sustainable Agriculture

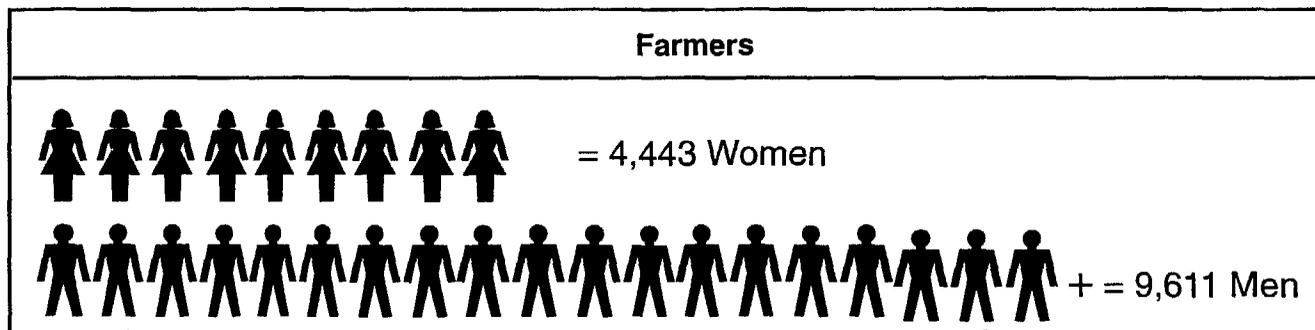
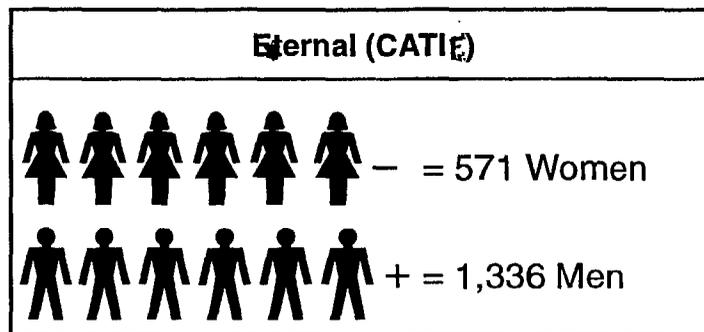
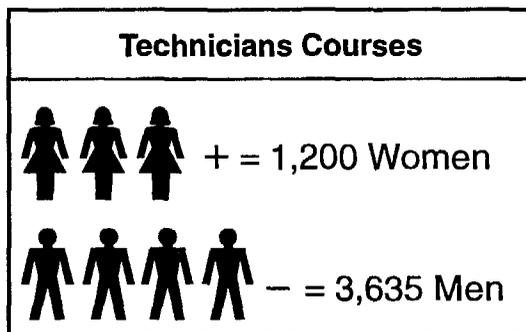
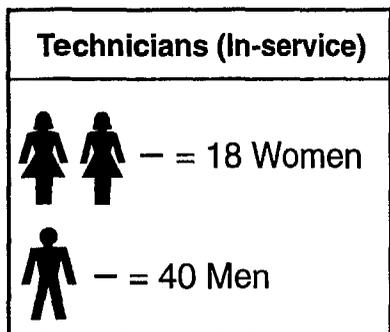
Tree Cropping (technicians & farmers)



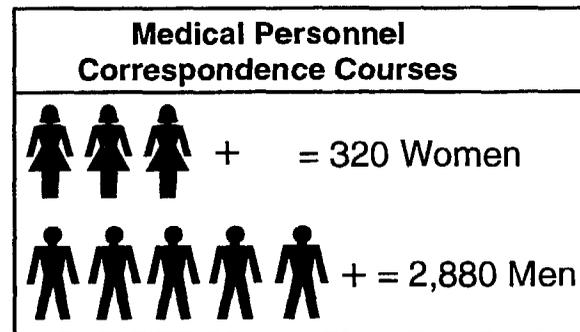
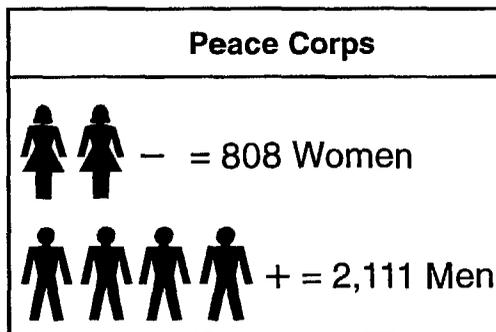
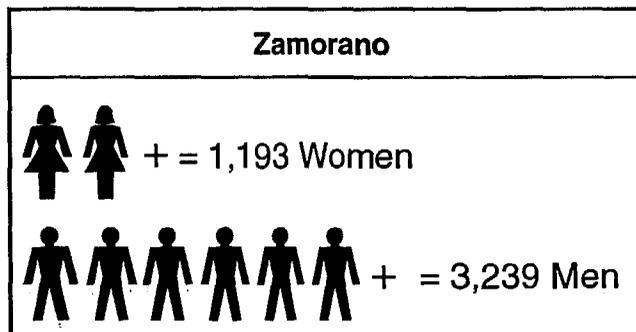
9/95

Plant Protection and Pesticide Management

IPM



Pest Management



26

III. Lessons learned

A. Causes and approaches to deforestation

RENARM's policy component brought about a profound change in USAID's understanding of the policy and legislative "drivers" of deforestation or conservation. After disappointing experiences with a normative, prescriptive approach (especially in relation to unintended consequences of prescribed legislation in Honduras), the policy component learned that it needed to systematically disaggregate the effects and interactions of various categories of policies, identify winners and losers, and use this understanding to help stakeholders gain influence in policy processes. "Without such a system, analysis is merely a weapon for whoever does it."

This point of view, epitomized in the Green Book analysis process, has already been influential in the design of several bilateral natural resources projects, most notably PROMESA in El Salvador.

Sustainable agriculture/buffer zone activities have shed light on household-level decision making (for example, the PACA/CARE diagnosis of community needs and perceptions in Sierra de las Minas). This focus on understanding and measuring changes in behavior and results at the household level has become a centerpiece of CARE's agriculture and natural resource programs worldwide.

B. Managing a regional project

The midterm evaluation found a lack of synergism among activities, limiting RENARM's overall impact, and recommended a tighter focus on common objectives in the follow-on project, and a strategy clearly demonstrating the role of each implementer: "Frequent, prolonged, and enforced interactions among management staff, among implementers and with the bilateral Missions are essential to effective communication. Such interactions do not occur naturally; they must be programmed." During the final year of the project, both implementers and USAID staff reported increased satisfaction with levels of communication and collaboration. The NGO consortia particularly appeared to "find their stride" in developing regional models of working.

The midterm evaluation made several additional recommendations about designing multi-national, multi-sectoral projects in the future: Focus biodiversity conservation on critical pristine or near-pristine sites, and direct sustainable use efforts toward ameliorating major threats to those sites. Concentrate policy efforts on mitigating specific threats to the defined areas. Assure that research is directly pertinent to problems identified.

Among the successful approaches to regional collaboration and coordination fostered by RENARM was the MAYAFOR buy-in, which established linkages and promoted partnerships among USAID Missions, PVOs, firms, and universities focusing on the Selva Maya region shared by Belize, Guatemala, and Mexico. By focusing on a common resource and key themes, the project provided focal points for networking among a broad array of institutions.

C. NGO collaboration and development

For its biodiversity/NGO component, RENARM aggressively sought out USNGOs to team together in the belief that by doing so it would be possible to accelerate development of a mixed conservation/development model, achieve a greater impact, and access the wide range of technical skills necessary to have success.

A study of these teaming efforts conducted in 1993 found that multi-NGO partnerships generally succeeded in tapping a broad range of skilled conservation and development professionals, but concluded that **whatever gains USAID hopes to achieve through promoting NGO consortia will only accrue if proper attention is paid to the management requirements of the consortium formed.** That is, the consortium itself becomes a new organization, and faces the same need to establish a vision, structure, and ways of doing business as any new organization. The time spent together in preparing bids proved insufficient to establish the partnership as an organization; the vision needed to be more clearly expressed in order to foment appropriate partnerships.⁵

RENARM taught USAID a considerable amount about working with NGOs in general. Most particularly, large organizations especially will generally continue with previously identified strategies (many local NGOs are actually ahead of international PVOs on targeting useful local interventions). Therefore, it is important early on to identify key needed interventions and NGOs already involved in that area, and to appreciate their counsel. Otherwise, there is a risk of useful activities that nevertheless do not hit key threats head-on. For example, although behavior may be effectively influenced at the household level by extension and demonstration of sustainable techniques, the threat from small-scale cultivators is not the most significant in some protected areas, and the political and economic influence of logging and large-scale ranching and farming may constrain the effectiveness of the PVO community in addressing threats.

The team that studied NGO interventions concluded with a strong recommendation that follow-on activity include a local NGO umbrella project which could provide a forum and access to information and project assistance, and possibly develop a safe haven for local NGO dialogue with local governments.

⁵. "Using Multi-NGO Consortia in Wildlands Projects: Lessons for RENARM," MSI special study by Mark Renzi, Leslie Lannon, and Hilary Lorraine.

D. Ecotourism

The National Ecotourism Councils established in Costa Rica, Honduras, and Guatemala by Paseo Pantera served more as laboratories for learning about what it would take to make ecotourism successful as a tool for conservation, than as models of successful promotion and coordination. The funding period was too short; it was impossible to determine whether they would have been successful if given a longer "head start." However, tourism remains one of the most promising potential sources of revenue for biodiversity conservation and sustainable development in Central America. Many of the lessons learned in RENARM's early experiments will continue to be useful.

The councils showed, above all else, that coordination and collaboration requires participation from a "critical mass" of key players, and that if those key players (ministries and chambers of tourism, operators associations, etc.) are not convinced that they have something to gain from participation, or see alternative ecotourism movements as a threat or challenge, they can effectively freeze out NGO and community interests from national fora and policy making. The Paseo Pantera ecotourism project also highlighted the different approaches to ecotourism -- on the one hand, a sort of "greening" of mass tourism to heavily visited sites, with a potential to produce significant revenue but also to do significant damage if not controlled, and on the other hand, a "community-based" vision of small-scale visitation as a tool for local sustainable development.⁶ The project showed that RENARM's most effective interventions in the former instance were in linking tourism planning and development with park management support. In the latter case, the MAYAFOR project highlighted necessary "next steps" for communities to succeed in ecotourism.

⁶. "The Paseo Pantera Ecotourism Project Component of RENARM," MSI special study by Ruth Norris.

Annex A. Reports and Publications Consulted (In addition to those cited)

Environmental and Natural Resource Management in Central America: A Strategy for AID Assistance. (1989)

DRAFT Probable Effects and Impacts of RENARM. MSI, April 9, 1993.

Country Profiles (Updated April 1994).

RENARM midterm external evaluation (July 1994)

Accomplishment by RENARM of Objectives from the Project Paper Logical Framework. (MSI, March 1994)

RENARM Project Paper.

Evaluation of the Environmental Education Component of PACA. December 1994.

PACA Semi-Annual Report, July-December 1994.

Wildlife Conservation Society and CCC. Close Out Plan. 1995.

MSI Special Studies and Reports: "RENARM and the USAID Bilateral Missions," "Technical report for the design and implementation of the M & E Activities of the Community Natural Resources Management Project."