

Conservation International
Biodiversity Corridor Planning and Implementation Program (Corridor)
Cooperative Agreement No. LAG-A-00-99-00046-00

Interim Final Report
October 1, 1999 - September 30, 2004

I) Introduction

Over the last five years, Conservation International's GCP programs in Guyana, Philippines, and Enforcement Economics have caused significant changes that are helping to conserve biodiversity. The Guyana program led to indigenous communities promoting and participating in planning the country's first protected area. It also fostered laws that promote conservation and helped government staff and community members build skills needed for conservation management. The Philippines program catalyzed and led a participatory process that resulted in the creation of protected areas in two mountain provinces and one in the coastal zone in northern Philippines. This program also facilitated establishing multi-sectoral Local Coordinating Units in four provinces to plan and implement biodiversity corridors. The Enforcement Economics program completed a country-level Enforcement Economics analysis for each of the three sites. They, in turn, stimulated discussions within relevant agencies in the target countries of how to improve enforcement, using the program's analysis to focus on weaknesses in the enforcement chain. On the global front, we developed a broad coalition in support of our enforcement work and its findings.

Although we talk about building capacity and lessons learned, it is difficult to convey the significance of the learning that has occurred through these programs. When the GCP program began, there were no biodiversity corridors in the world. Thanks to this program, there are now many. Communities, academics, local to national governments, CI staff, our USAID and local NGO partners have all learned together how to make biodiversity corridors a reality. And many of these partners are sharing their knowledge with new groups to expand the base of informed corridor supporters.

These corridors hold the best chance to ensure that ecosystems remain genetically viable and healthy and can continue to provide the environmental services on which human societies depend. The corridors that came into being as a result of this program, and the improved understanding of how to ensure they are enforced, is the beginning. CI is committed to continuing to work in each of the corridors and to expanding the use of the successful enforcement economics model to ensure these corridors continue to function. This program has also reinforced our understanding that the success of any effort to conserve biodiversity depends on the people who live and interact with the ecosystems. We are therefore equally committed to ensure that the people who live with and affect these corridors continue to benefit from conserving their biodiversity.

The summaries below outline, for each program, some of the key conservation outcomes they achieved, unexpected constraints they met, and how they adapted their approach to accomplish their goals. Following the section on how the program evolved are highlights of the activities the program undertook to accomplish our outcomes.

We want to express our gratitude to USAID for enabling us to achieve the outcomes that we did in these three programs. USAID's funding was critical to enabling these successes and to preserving vital biodiversity in areas where it is rapidly disappearing. Together with USAID we were able to help local communities and national leaders collaborate to create refuges of biodiversity for generations to enjoy and benefit from.

II) Philippines

A) Evolution

Being a multi-year project implemented over 1.4 million hectares spanning three Administrative Regions and nine provinces, CI's strategies for implementing activities needed to adapt to meet the needs of the various stakeholders involved as well as the specific local and political conditions. Whether the activities involved data gathering, strategy development, management plan development, or any other activity supported by this project it needed to be done in a transparent and participatory manner. We continually adapted our implementation plans to the capacities of the stakeholders that we worked with. This need to work with local stakeholders so closely and of such varying capacities presented the project with one of its greatest challenges. We also needed to adapt our strategies to react to threats and opportunities that emerged.

Through participatory discussions with stakeholders, the objectives of the program implementation plan have been refined and reformulated to reflect our adaptive approach to conserve the Sierra Madre Biodiversity Corridor (SMBC). Through these changes, we presented a clearer understanding of CI's role as a facilitator of processes that depend upon a diverse array of stakeholders, and more accurately depict our intention to deliver targeted action at different spatial scales and address varying types and intensities of threats driven by an inter-related set of stakeholders' interactions and systemic conditions.

The corridor concept is relatively new in the Philippines and the establishment of protected areas under the National Integrated Protected Areas System (NIPAS) Law is occurring more as individualized or unconnected sites rather than in clusters. Therefore, we initially encountered difficulty in generating buy-in from various stakeholders in promoting the corridor concept for biodiversity conservation in the Philippines. CI strategically focused on stakeholder outreach and partnership building critical to build the awareness, understanding, and interest and generate support needed to develop a constituency. We also initiated gathering baseline information within the corridor and conducted a series of consultations with different local NGOs and the Department of Environment and Natural Resources (DENR) to generate reactions and insights that we utilized to develop the corridor design and implementation framework. Through this approach, we have gained positive results and the biodiversity corridor concept has been received with interest across not only the Sierra Madre region, but also nationally, as a viable conservation and resource planning approach.

Within the SMBC, a range of government agencies operating from the barangay (the smallest political unit in the Philippines) up to the national level are responsible for development planning, protected area planning, management, and other decisions that directly affect natural resource use and biodiversity within their respective jurisdictions. The Government of the Philippines' (GoP) process requires that each community / barangay complete natural resource management and development plans, which are consolidated and integrated at the municipal level, which in turn are

then consolidated and integrated at the provincial level. Management planning for protected areas is embedded within this process. The national development planning process devolves the authority to the local level, and the Regional Physical Framework Plan is meant to provide broad guidance to this “bottom-up” process. However admirable these intentions are, they assume a high degree of coordination and capacity among stakeholders, which are typically not in place. Conflicts become protracted struggles because of the absence of adequate information and the coherent, tested strategies required to make more informed and better quality decisions. We addressed these conflicts by providing conflicting stakeholders with objective, scientifically generated, spatially-referenced database information highlighting the conflicting land uses and threats to biodiversity and natural resources. There is also a lack of appropriate opportunities for development and environmental issues to be discussed and consensual transparent decisions to be made. Hence, CI and the major stakeholders worked to establish Local Coordinating Units (LCUs) for collective discussions, resolutions of conflicts, and integration of plans across sectors. The LCUs were critical to moving the process forward as they enabled the various stakeholders to examine and evaluate information in a structured and collective manner in order to ensure transparency and achieve resolution in a more timely fashion.

There are donors who significantly contributed in the pursuit of project objectives to complement USAID funds for projects being implemented by CI, EWW (Enterprise Works Worldwide), and Development Alternatives, Inc. (DAI). We have engaged Keidanren Nature Conservation Fund (KNCF)-RICOH Company to fund community reforestation and agro-forestry and biodiversity projects including awareness and capacity building of community in the Northern Sierra Madre Natural Park (NSNMP). The Dutch government provided significant funding support through Plan Philippines and WWF-Phils for the establishment and management of NSMNP as part of the core protected areas within the corridor. Also, we were able to increase our efforts in concentrating on protected area establishment and management through the Critical Ecosystem Partnership Fund (CEPF). We also secured Asian Development Bank (ADB) funds for the production of video materials for IEC activities in the corridor. Through CI facilitation, partners in SMBC were able to generate internal and external funding for projects that complement project activities within the corridor as stipulated in the approved corridor framework such as funds from UNDP, FPE, DGIS, BP Conservation, ITTO, GTZ and KFW.

B) Results

These experiences have taught us many lessons over the course of the project’s implementation. We know much more now about effective planning and implementation of corridor-scale conservation than we did at project inception. Corridor-scale conservation efforts require stakeholder coordination, development and strong support. Addressing this requirement can be very demanding and challenging and therefore must be appropriately budgeted. On the technical side, a functioning corridor requires conservation objectives at the regional scale to work and be successful at the site-level. Lastly, the society-at-large needs to recognize how a functioning corridor contributes to improving their lives for the corridor to survive and be successful.

Over the 5-year project period, recognizing and responding to the lessons and experiences in project implementation allowed us to effectively address some of our greatest challenges - the diverse range of stakeholder interests, complex institutional arrangements, overlapping institutional mandates, and competing economic interests. As a result, the major results of the project were:

- Built partnerships to support sustainability
- Supported establishment of a Regional Geographic Information Network (RGIN)

- Supported establishment of protected areas
- Co-conducted biological diversity assessment

Built Partnerships to Support Sustainability

To pull in all the stakeholders, we succeeded in facilitating the formal establishment of Local Coordinating Units (LCUs) in the four provinces of Cagayan, Nueva Vizcaya, Quirino and Aurora. An LCU is a multi-sectoral group that provides the venue for planning and discussions among stakeholders to further strengthen partnerships and collaboration in implementing projects and activities within the corridor. As a result of this mechanism the SMBC Design and Implementation Framework was developed and adopted by stakeholders and partners. This major decision is a result of our efforts to build alliances between government and civil society, and enhance institutional mechanism that support corridor conservation.

In order for our partners to be able to implement their responsibilities effectively, CI, through partnership with various government agencies and local NGOs, conducted trainings, seminars, and field visits to successful project sites to enhance the technical and institutional capacity of these multi-sectoral planning for a. Key participants were the DENR's Provincial Environment and Natural Resource Office (PENRO) and Provincial Planning and Development Offices (PPDO). The roles of these offices are critical in sustaining the LCU operation beyond the project. They are the core stakeholders in pursuing development and conservation efforts and are pivotal in organizing annual stakeholder conferences, which have become a regular forum for stakeholders to further strengthen collaboration and promote transparency. The major outputs of the conferences were: resolutions supporting the conservation and protection of the biodiversity of the Sierra Madre Biodiversity Corridor, adopting the Sierra Madre Biodiversity Corridor Design and Implementation Framework, implementation of a logging moratorium for the whole Province of Aurora, and a resolution strongly supporting a continued mining moratorium in the provinces of Nueva Vizcaya and Quirino.

CI also succeeded in mainstreaming conservation initiatives as an integral mechanism of sustainability by facilitating the efforts of the Cagayan Local Government Units (LGUs) in developing their provincial Environment Code. Among others, this code enables the local government units of Cagayan to localize environmental management and protection in the province by creating Municipal Environment and Natural Resource Offices (MENREO). This initiative will pave the way for increased direct participation of LGUs in natural resource management and environmental protection.

Supported Establishment of RGIN

CI in partnership with National Economic Development Authority (NEDA) facilitated the establishment of a Regional Geographic Information Network (RGIN) through the Region 2 Regional Development Council. The RGIN serves as the regional repository of all regional data and information through which these data/information are unified or standardized. As a result of the RGIN, priority conservation areas and other important habitats and community management units (CBFMA) within the corridor were incorporated into the Regional Physical Framework Plan of Region 2 and the Provincial Physical Framework Plan of Aurora. NEDA in partnership with CI and the Department of Agriculture and Bureau of Agricultural Research (DA-BAR) provided technical assistance on the Geographic Information System that successfully increased the capacity of RGIN members on spatial analysis and improved their ability to assess economic and ecological costs and benefits of development options.

Supported Establishment of Protected Areas

We have made major achievements in supporting the establishment of new and expanded Protected Areas in Peñablanca and Quirino. These actions connect the Northeastern Cagayan Protected Landscape and Seascape, Peñablanca Protected Landscape and Seascape to the Northern Sierra Madre Natural Park, Quirino Protected Landscape and Casecnan Protected Landscape covering a combined area of 1,014,412 hectares of land and coastal/marine habitat that is critical for biodiversity conservation and sustainable development. Obtaining legal designation of priority conservation areas under the NIPAS Act excludes future extractive economic activities. It also contributes to greater participation of local communities in the management and protection of the protected area through their representation in a Protected Area Management Board (PAMB).

Towards effective PA management, CI provided technical support and scientific data both in the development of Peñablanca Protected Landscape and Seascape management plan and the creation of Protected Area Management Board (PAMB). The management plan was developed through a bottom-up approach. We conducted community mapping and formulated a Community Resource Management and Development Plan as the basis for developing the PA Management Plan. Furthermore, CI provided technical and logistical support to the provincial government of Cagayan in formulating the Peñablanca Callao Caves Tourist Zone master plan, taking into account the PPLS management plan and municipal land use plans. Within the Quirino Protected Landscape, similar planning activities were conducted including a Forest Land Use Plan. All of these conservation-oriented activities were made possible as the result of the increased level of local awareness which generated interest among communities, NGOs and government agencies to actively participate.

Under the "Healthy People, Healthy Forests: Combining Reproductive Health with Biodiversity Protection for Effective Programming" Associate Award, we also partnered with DENR, NCIP and PROCESS Luzon in successfully implementing a project linking population and environment in Baggao, Cagayan. The LGU of Baggao provided additional funds and manpower in the implementation of a population, health and environment project that led to the increased delivery of reproductive health services and improved community-based forest management.

Co-Conducted Biological Diversity Assessments

To generate more scientific information for refining the corridor information system for planning and monitoring, CI, with the DENR and local communities, conducted biological surveys in several sites within the corridor. These surveys enhanced our knowledge and understanding of the diversity of flora and fauna within the Sierra Madre Biodiversity Corridor. Our studies confirmed the presence of unrecorded species, led to the discovery of new and potentially new species across the corridor, and reconfirmed the presence of IUCN and CITES-listed threatened species. With these results we were able to redefine our conservation priorities and focused our efforts on two main watersheds along the SMBC, namely the Peñablanca Protected Landscape and Seascape and the Quirino Protected Landscape. This also helped us establish sound management zones within the protected areas and Community Based Forest Management Areas (CBFMA). The surveys provided a tangible and direct link between priority conservation areas and sustainable development, which are where the government programs and projects are usually focused.

C) Conclusion

We have achieved major outcomes in the implementation of the SMBC project and will continue to build upon them. These areas are partnership building, expansion and creation of protected areas, enhanced management of protected areas and CBFM sites, and increased key stakeholder awareness.

Collaborating with various partners in implementing project activities garnered positive support from the stakeholders for biodiversity conservation. We shared information and resources, implemented activities collectively, and ensured transparency. This helped to address issues of conflicts, sectoralism, animosity, and misunderstanding among stakeholders in implementing conservation and development activities and thereby balancing the needs of both. We have provided critical scientific information that persuaded the local government units and agencies to enforce and support biodiversity conservation in the corridor.

We have made major advances supporting the designation of three additional protected areas within the corridor: the Northeastern Cagayan Protected Landscape and Seascape, Peñablanca Protected Landscape and Seascape, and Quirino Protected Landscape. We are still working on the preliminary steps for the expansion of Maria Aurora National Park. Complementing these advances in PPLS is the PAMB's recent approval of the PPLS Management Plan and PAMB Operations Manual. CI will continue working with stakeholders to obtain congressional action to fully establish the PPLS and QPL protected areas. This final step must be carried out to ensure funding support from the government under the annual appropriations act, thus helping provide sustainability.

The proclamation of the Northeastern Cagayan Protected Landscape and Seascape, the expansion of Maria Aurora National Park, and other conservation priority areas in the corridor through a presidential proclamation and/or congressional action will also be pursued. The opportunity for these actions exists due to the demonstrated interest of local stakeholders and the government, which resulted from a greater appreciation of the environmental services (watershed) and sustainable development. On the basis of the strategies outlined in the SMBC Design and Implementation Framework, we are initiating projects with the various partners with funding from various donors. We expect potential new partners to be doing the same as stipulated in the framework.

Given the recent information that the corridor project generated and accumulated, which includes new species of flora and fauna, we intend to capitalize on this information to generate public and institutional support for biodiversity conservation to build on our achievements in the corridor and share it with the conservation community using all possible venues. Institutional strengthening will occur through the continued support and capacity building of the LCUs and through the development and maintenance of the RGIN. Several corridor initiatives will continue through the ongoing support of other CI-led initiatives. Projects are also underway that will continue reforestation, agro-forestry, and biodiversity efforts funded through KNCF-RICOH. We also have continued funding from CEPF to support effective management of the expanded PPLS and newly created QPL.

Key stakeholders and CI have identified integrating watershed management concerns with biodiversity conservation as one of the region's next concerns. Therefore, we will be looking for additional funding for integrated watershed management to help sustain corridor interventions.

D) Products

POSTERS

1. Establishment and Expansion of Park Creates Nation's Largest Contiguous Protected Area
2. Filling in the Gaps: Biodiversity of the Sierra Madre Mountain Range
3. Penablanca Protected Landscape and Seascape
4. "We protect ourselves if we protected our forest" of Kalimudingan Falls in the Municipality of Baggao with text in English and Ilocano version
5. A case of Population and Environment Project Implementation: Baggao, Cagayan, Philippines

PUBLICATIONS

1. Identifying Potential Protected Areas in the Sierra Madre Mountain Range, Luzon Island Philippines. Building Lessons from the Field: Protected Area Management Experiences in Southeast Asia,
2. Saving the Hottest of the Hotspots: The Sierra Madre Biodiversity Corridor Strategy The Sierra Madre Mountain Range: Global Relevance, Local Reality
3. Wildlife Assemblage of the Sierra Madre Mountain Range
4. Palanan Forest Dynamics Plot, Philippines
5. A New Species of Vaccinium (Ericacea) from the Philippines

FIELD GUIDES, PRIMERS AND BOOKLETS

1. A one-page photo guide on "Endemic Birds of the Northern Sierra Madre Natural Park"
2. A booklet photo guide on plants entitle "Tree Flora of the 16-hectares Forest Dynamics Plot"
3. Biodiversity Primer for Science Schools in NSMNP both elementary and High School Level
4. Quirino Protected Landscape Booklet
5. Peñablanca Protected Landscape and Seascape Booklet

BROCHURES, FLYERS AND OTHER IEC MATERIALS

1. Sierra Madre De Cagayan Brochure
2. Palanan Forest Dynamics Plot Brochure
3. Quirino Protected Landscape flyer
4. Peñablanca Protected Landscape and Seascape flyer
5. Local Coordinating Units flyer
6. RARE Project flyer
7. Regional Geographic Information Network flyer
8. Caves flyer
9. Sierra Madre Biodiversity Corridor flyer
10. Sierra Madre de Cagayan flyer
11. Population and Environment Project flyer
12. Hornbill Mascot for the Pride Campaign in PPLS

MEDIA

1. *Magandang Gabi Bayan* featuring the Peñablanca Protected Landscape and Seascape
2. Earth Day Celebration- The Probe Team: featuring the Northern Sierra Madre Natural Park and the Palanan Forest Dynamics Plot and Agroforestry Projects in NSMNP
3. Cartoon Info Snips featuring Biodiversity funded by ADB

CD DATABASE

1. Peñablanca Protected landscape and Seascape Database. A CD-ROM featuring the biodiversity protected area and the different land use, maps and management plan of the PPLS.
2. Land Use Change Detection Map
3. SMBC Spatial Database

OPERATIONS MANUALS

1. Operations Manual for the Regional Information Network
2. PPLS PAMB Operations Manual

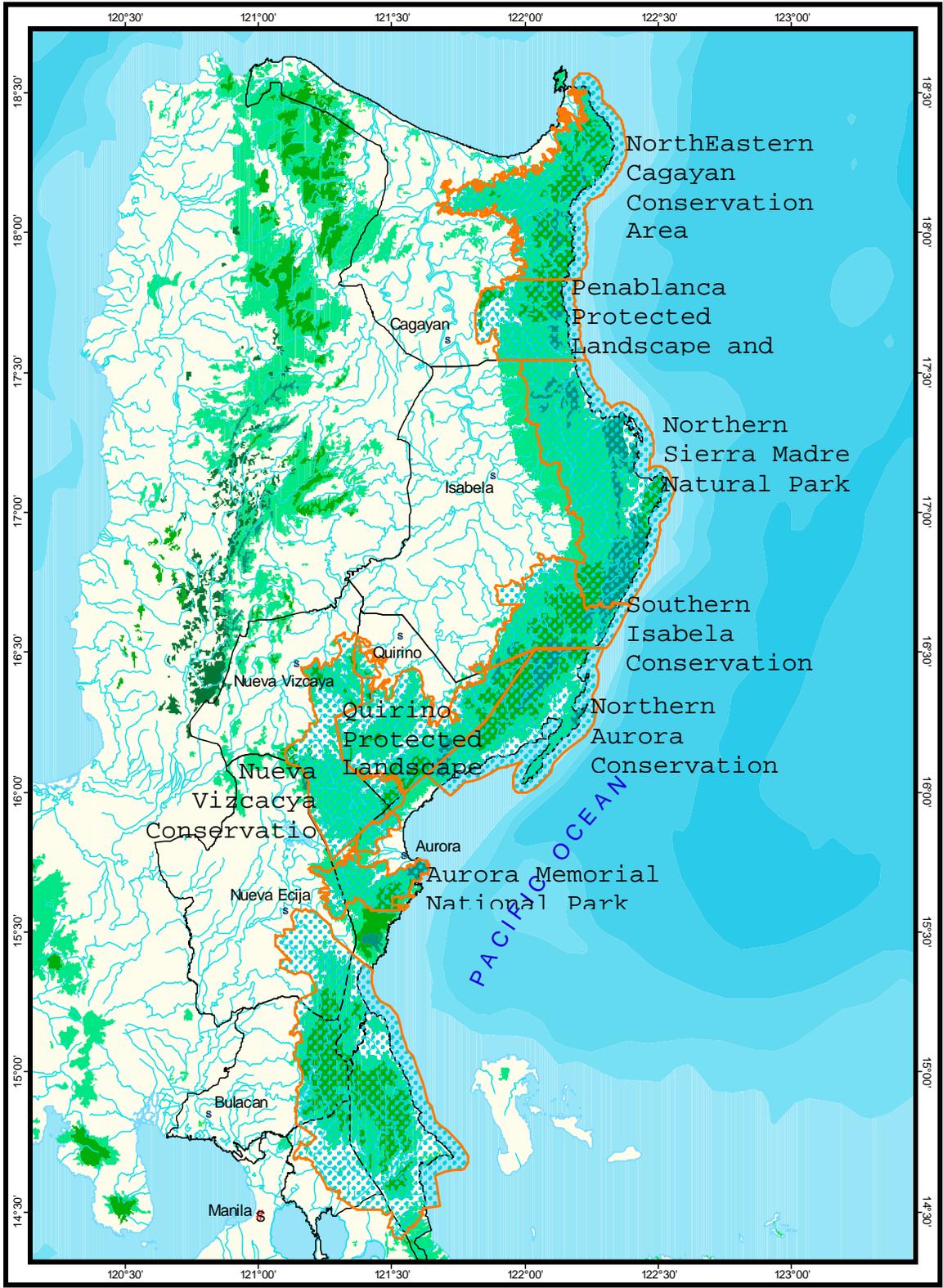
BIOLOGICAL SURVEY REPORT

1. Biodiversity of Sierra Madre Mountain Range: Cagayan, Quirino and Quezon Province

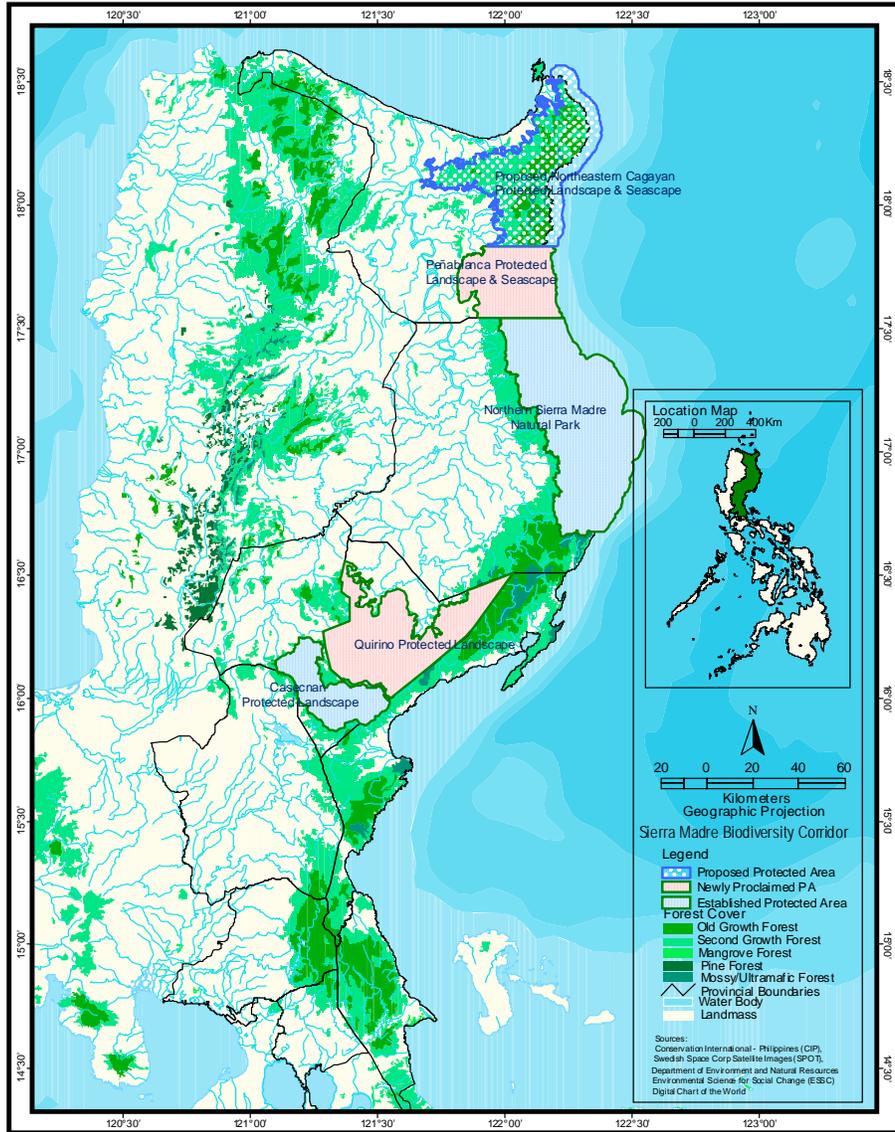
MAPS

1. 10 Year Vision Map of Sierra Madre Biodiversity Corridor
2. Region 02 Watershed Map
3. Location Map of Penablanca Protected Landscape, Seascape and Quirino Protected Landscape and Northeastern Cagayan Protected Landscape and Seascape

Ten-year (2000-2009) vision map for the Sierra Madre Biodiversity Corridor



Protected areas established in Sierra Madre Biodiversity Corridor

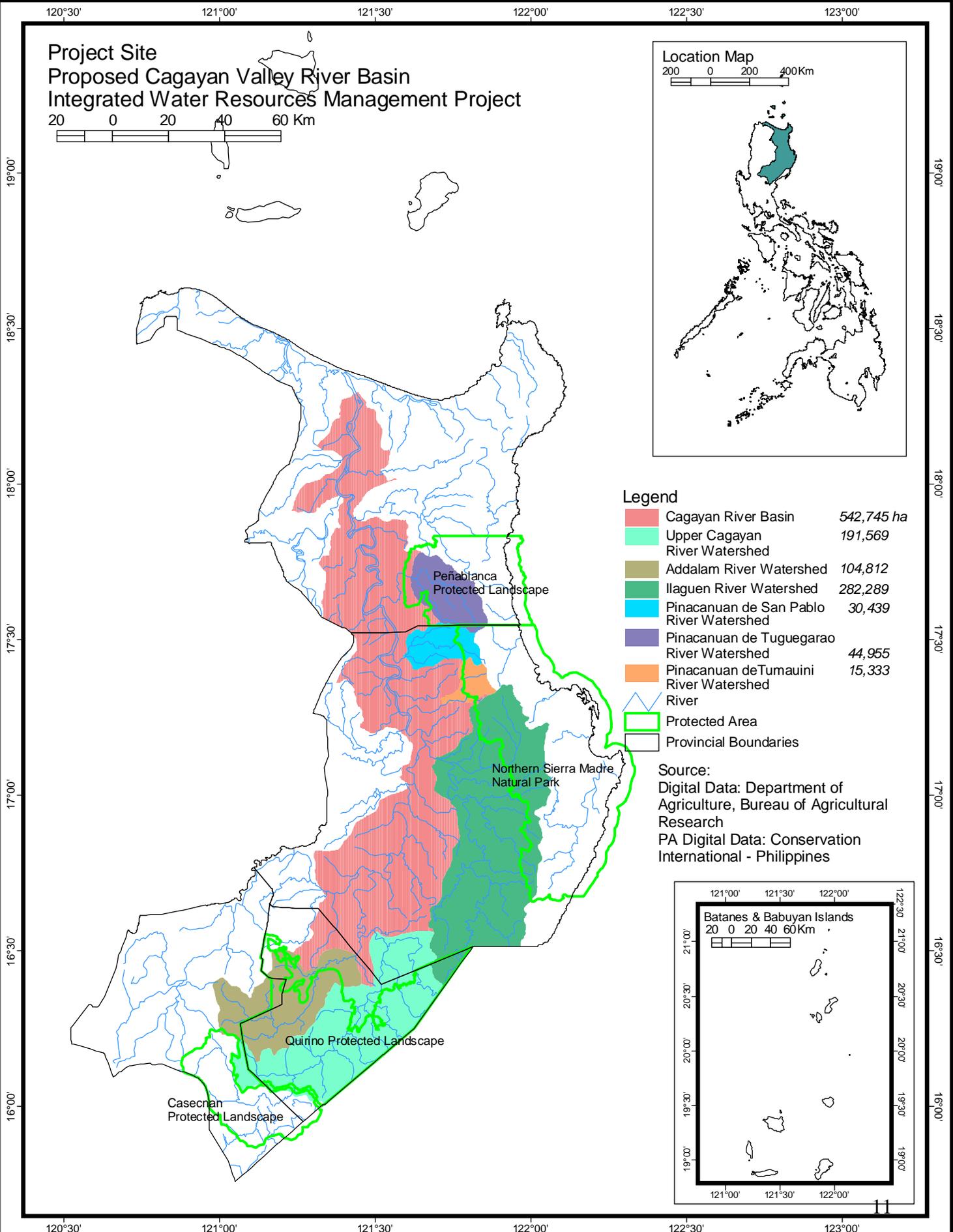
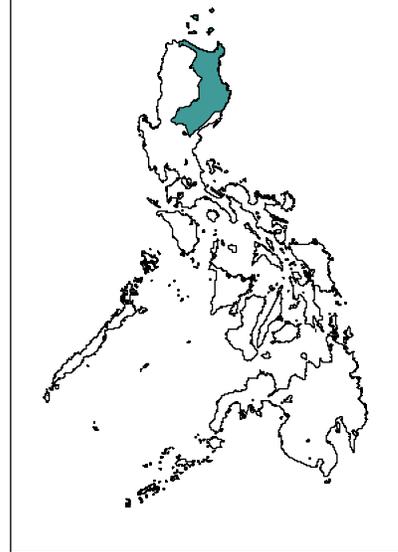


Project Site Proposed Cagayan Valley River Basin Integrated Water Resources Management Project

20 0 20 40 60 Km

Location Map

200 0 200 400 Km



Legend

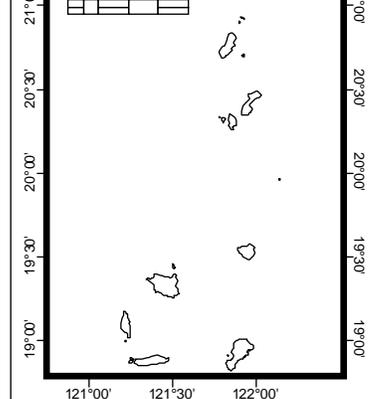
■	Cagayan River Basin	542,745 ha
■	Upper Cagayan River Watershed	191,569
■	Addalam River Watershed	104,812
■	Ilaguen River Watershed	282,289
■	Pinacuanan de San Pablo River Watershed	30,439
■	Pinacuanan de Tuguegarao River Watershed	44,955
■	Pinacuanan de Tumauni River Watershed	15,333
	River	
	Protected Area	
	Provincial Boundaries	

Source:

Digital Data: Department of Agriculture, Bureau of Agricultural Research
PA Digital Data: Conservation International - Philippines

Batanes & Babuyan Islands

20 0 20 40 60 Km



II) Guyana

A) Evolution

The goal of this program was to facilitate establishing a biodiversity corridor that will extend eastwards from the Kanuku Mountains to the New River Triangle area in southern Guyana. The project has been so successful that Guyana and the World Bank are using CI's work to guide the process towards the development of the proposed Kanuku Mountains Protected Area and a national protected area system. For the first time, indigenous peoples in southern Guyana and the government are collaborating to manage the natural resources on which the indigenous communities depend. When the project started, Guyana had no National Protected Area System (NPAS), the biological, socio-economic and other datasets were insufficient to fully convince the policy decision makers and stakeholders of the biological importance of the site for conservation. As a result, key and potential stakeholders were cautious and reluctant to support the protected area processes. The absence of sufficient data and a support framework proved to be the major challenges for the project. As the project progressed, conditions changed, our partners provided feedback, and we modified our methods to achieve the project goals. We accomplished many of the activities we initially planned, but we adjusted the means to accomplish them as conditions changed, including adding an objective.

The success of this project grew out of a patient, open, participatory approach of working with the indigenous people of the Kanuku Mountains. When the project began, the communities surrounding the Kanuku Mountains in southern Guyana had no experience of successfully working with outsiders to improve their lives and how they use their resources. Most of the stakeholders were very suspicious that protected areas would deprive them of their lands and access to resource use within the area. But the success of the project depended on support and participation of the indigenous peoples. CI engaged the stakeholders in a number of ways to develop this support. We discussed the benefits of establishing a protected area in the Kanuku Mountains, and presented data on the perceived threats to their culture and resources of the area. Engaging stakeholders at all levels (local, regional and national) we facilitated participation of a comprehensive range of stakeholders in all stages of project development.

CI engaged stakeholders to conduct Rapid Biological Assessment Programs (RAPs) in the Kanuku Mountains. We engaged the indigenous stakeholder communities of the Kanuku Mountains in 2002/2003 to collect and analyze data on socio-economic and resource-use parameters. These activities provided opportunities for the residents to articulate how they use their resources and to acquire the technical skills to participate in the protected area and corridor process. We incorporated the data into the corridor database and disseminated it to all stakeholders and policy decision-makers through our conservation education and awareness programs. Acquiring and sharing biological and other datasets was a main factor in gaining the buy-in of stakeholders. We ensured that their feedback was integrated into plans. This gave them a greater sense of security and eventually all eighteen stakeholder communities agreed to collaborate with the GOG and CI in this process.

Some groups were opposed to creating the corridor and they compounded the distrust of indigenous stakeholders by disseminating misinformation. This created confusion, muted rejection and led to the temporary withdrawal of the indigenous communities from the Kanuku Mountains Protected Area consultation process. CI hosted monthly meetings with members of these groups to exchange information and empower them to participate in developing the protected areas. In addition, we sought and received assistance from the Minister of Amerindian Affairs, representatives of the Environmental Protection Agency, Regional Democratic Councils – Region

Nine, and the North Rupununi District Development Board (NRDDB). Interventions and visits to communities, and at other fora in the region by staff from these agencies, explained our role and contributions to the protected areas process.

It became apparent early on that CI needed to demonstrate to the stakeholder communities that protected areas would improve their livelihoods. Thus, in the second year we added an objective to promote and develop community-based conservation enterprises. The first success was the balata artisan project in the Macushi village of Nappi. Residents of the community identified artisans and worked with CI to develop a balata craft enterprise that now produces products, trains artisans, and markets balata craft in Guyana and to international businesses. The Nappi Balata Artisans Group is now a financially self-sustaining enterprise with international sales, supporting 15 families directly and about 160 families indirectly. CI also collaborated with the GOG to assess the feasibility (i.e. an ecotourism Charette) of ecotourism development for the indigenous stakeholder communities of Guyana's hinterland, including the Rupununi Region. The assessment showed that ecotourism is a viable enterprise for the Rupununi Region and has great potential. CI intends to pursue the development of the sites recommended in the Charette report as ecotourism products for the communities contiguous to and within the proposed southern Guyana biodiversity corridor.

In 2002, CI secured the Upper Essequibo Conservation Concession (UECC) to the east of the Kanukus through a 30-year lease from the Guyana Forestry Commission (GFC). CI is paying the GOG to keep the trees intact rather than logging in an area of approximately 80,000ha of pristine rainforests. The long-term goal is to extend Kanuku Mountains Protected Area eastward. Implementing the UECC presented many legal challenges since there was no supporting legislation in the Forestry Act to implement it. CI combined persistent negotiations with consultations and awareness programs. As a result, the Forest Act and relevant regulations were revised to provide legal support to the UECC. After the conservation concession was granted, CI inventoried the commercial timber species to provide a more accurate estimate of the annual royalties and duties due to the Government. CI also implemented a voluntary community-development fund for the three indigenous stakeholder communities to honor our commitment to promote socio-economic development while achieving biodiversity conservation.

This program originally aimed to extend Kanuku Mountain corridor to the New River Triangle. To avoid controversies that arose out of a territorial claim to the New River Triangle, extending the Kanuku Mountains biodiversity corridor to Wai-Wai territory rather than to the New River Triangle was seen as a better option to pursue at this time. This change was also influenced by the Wai-Wai Indian's successful petition to the GOG for their indigenous lands to be protected.

Over the last five years, the southern Guyana Biodiversity Corridor Program has evolved into a success story in the making. USAID's financial support was critical to move this project from a state of inactivity and lack of support to its present position of improved stakeholder relationships and increased information. Additional financial support was received from the Guianas Centre for Biological Conservation (Guianas-CBC) and the Global Conservation Fund (GCF), as well as the UNDP and IUCN Netherlands.

B) Results

During this program in Guyana, CI focused on engaging stakeholders at all levels to garner their support and consensus on establishing corridor "anchor sites" (protected areas) in Guyana. Though the potential anchors have been identified, these sites are yet to be legally declared

protected areas mainly because of the absence of national protected area legislations. Nevertheless, to date, our major achievements include:

- Supported establishing the world's second conservation concession (the Upper Essequibo Conservation Concession);
- Supported capacity building of stakeholder communities of the Upper Essequibo Conservation Concession to implement its management plan;
- Successfully facilitated the transfer of a community-based conservation enterprise to a commercial enterprise;
- Initiated and sustained quality partnerships and alliances for project implementation;
- Engaged the Wai-Wai indigenous community to support establishing the first indigenous community owned conservation area in Guyana;
- Created a corridor database;
- Catalyzed changes in public opinion/attitude towards biodiversity conservation.

The world's second conservation concession established

In 2002, the GOG through the Guyana Forestry Commission (GFC) awarded CI 80,000ha of land in the Upper Essequibo to be managed as an exclusive Conservation Concession. This was a major achievement for conservation in Guyana as the country is heavily dependent upon the exploitation of its natural resources for national development. Achieving this milestone motivated the GOG to begin a process to amend the Forest Act to recognize forest conservation concessions and to promote them in the future. The conservation concession therefore demonstrated that there are markets for conservation. To reduce any potential negative socio-economic impacts due to the concession, \$10,000 was allocated to the three stakeholder communities in a Voluntary Community Investment Fund (VCIF). Since its creation, the UECC has been incorporated into the Southern Guyana Biodiversity Corridor and has been identified as an important site to incorporate into Guyana's protected areas system.

Capacity building provided for implementation of UECC management plan

Arising out of the Conservation Concession was the need to build capacity among the residents of the three stakeholder communities to participate in implementing the concession management plan. CI sponsored four candidates, all residents of the three stakeholder communities, for the Iwokrama Ranger Training Course. Upon graduation, all four were hired and contracted to implement the management plan that includes monitoring key plant and animal species, coordinating vigilance programs with other institutions and assisting the stakeholder communities to realize their vision for sustainable socio-economic development. This demonstrated CI's commitment to equip indigenous communities with skills necessary to effectively participate in managing protected areas and biodiversity corridors.

Promote developing community-based conservation enterprises

CI successfully facilitated the transfer of a community-based conservation enterprise to a commercial enterprise. With CI's assistance and guidance, the Nappi Balata Artisans Group is now an independent business entity capable of managing day-to-day business functions. Prior to this initiative, the bulletwood tree (*Manilkara bidentata*) was felled by residents of Nappi Village and other nearby areas for lumber while the moulding of craft pieces was only a pasttime using materials other than balata latex. The number of residents involved in craft production has increased by at least four-fold over the last two years and the group has had annual sales as high as USD 5,000. This project demonstrated to all stakeholders the economic benefits to be accrued from protected areas through non-destructive landuse practices

Initiated and sustained quality partnerships/alliances

In addition to the indigenous communities, CI established conservation alliances with the Guyana Environmental Protection Agency (EPA), Iwokrama Centre for Rainforest Conservation Development, Guyana Forestry Commission (GFC), Regional Democratic Councils – Region Nine, Ministry of Amerindian Affairs (MOAA), Private Sector Agencies, North Rupununi District Development Board (NRDDB), Radio Paiwomak of the North Rupununi Region, University of Guyana, Lands and Survey Department of the Government of Guyana, Guyana Office for Investment (Go-Invest), Guyana National Parks Commission (NPC), Guyana Teachers Association (GTA), Guyana Marine Turtle Conservation Society (GMTCS). In the international arena, our partners include the Darwin Initiative (DI) and The American Bird Conservancy (ABC). These partnerships were formal and/or informal. Formal alliances were sealed through signed Agreements, for example the MOU signed with Iwokrama to formalize collaboration for conservation management of the entire Rupununi Region. An example of our informal partnership was that with Radio Paiwomak, a community managed radio broadcast station, for collaboration to disseminate conservation messages through radio to the communities of the North Rupununi. CI's successes in bringing about the reported positive change in attitude and thinking towards biodiversity conservation – particularly the communities of Region Nine - would not have been possible without the alliances with, for example, the Regional Democratic Council of Region Nine. CI will continue to work with relevant partners in every stage of establishing the protected area and biodiversity corridor.

Created a corridor database

The results of the RAP and the CRE in the Kanuku Mountains and the timber inventory in the UECC were all documented and stored electronically to create a database of the corridor. With the use of GIS techniques these datasets were collated with other datasets (e.g. infrastructure, political) to produce spatially descriptive tools to guide management plans for the proposed protected areas and biodiversity corridor. These activities allowed community members to acquire the capacity required for their participation in planning and managing the future protected areas. The corridor database also helped to highlight the biological importance of the Kanukus and the need for conservation management. For example, results of the 2001 RAP Expedition showed that the Kanuku Mountains has the highest diversity of bats (Chiropterates) than any protected area in the world. Data from the community resource-use evaluations indicated that the greatest cause of environmental change around the Kanuku Mountains is the communities' dependence on the extraction of resources to enhance their income earnings.

WaiWai engaged to receive assistance to develop conservation management plans for their titled lands

The Wai-Wais requested CI's assistance and guidance to establish the first in-country community-owned Conservation Area in the Konashen District (their titled area). CI conducted policy analyses, consultations and awareness programs to enable the Wai-Wai community, the GOG, and other relevant stakeholders to participate in developing the community-owned Conservation Area. Follow up activities include collecting baseline biological and socio-economic data, and building the community's capacity to participate in all aspects of developing and implementing the conservation management plan.

Change in public opinion on biodiversity conservation achieved

The scaled-up conservation education awareness and outreach programs led to positive changes in the thinking and attitudes of the GOG, as well as national, regional and local stakeholders. CI's reputation contributed to the credibility of these programs. The conservation education awareness and outreach programs targeted audiences at the local, regional and national level. It included

developing tools, which facilitated education and training to ensure emergence of informed consensus from all stakeholders in the protected areas and corridor process. These tools included pamphlets, fliers, newsletters, billboards, videos tapes and fact sheets to disseminate information on the importance of biodiversity conservation and the benefits to be gained. The tools also allowed stakeholders to be kept informed on developments in the protected areas process in southern Guyana. We also used these tools in training seminars, environmental summer camps and workshops. Publishing conservation articles in the national print media and establishing the Jenman Conservation Education Centre in Georgetown complemented the information tools.

Other activities that contributed to the positive changes in public opinion were our participation in national and regional trade exhibition to promote biodiversity conservation and corridors at a national and international level, and the hosting of a Biodiversity Reporting Competition for national journalists. Positive changes in public opinion were expressed in newspaper articles, during community meetings and in some cases at the conclusion of training workshops. For instance, during one of the stakeholder community engagements in the Kanuku Mountains, Mr. Charles Rebeiro – Head Master of Katoka Primary School stood-up and acknowledged the work of CI, saying *“I am happy that Conservation International is working with the community and its school because I’ve observed a change in attitude of the children towards their environment. They are now eager to learn more about it and preserve it.”*

C) Conclusion

CI overcame significant public resistance and technical obstacles to catalyze and facilitate the first steps to creating Guyana’s first biodiversity corridor in the Kanuku Mountains of southern Guyana. Our approach focused mainly on preserving the functionality of biodiversity habitats and on respecting the human interactions with them. We sought and achieved an informed consensus to establish protected areas and biodiversity corridors. This grew out of developing sound scientific support for establishing a protected area in the Kanuku Mountains and promoting community-based conservation enterprises as alternatives to destructive forms of resource use. The absence of a support framework (e.g. absence of national legislations, lack of baseline data, limited understanding of the benefits of protected areas and apparent distrust by key stakeholders) provided enormous challenges to the project. In overcoming these challenges, CI used scientific and other data to convince policymakers and resource users the need to conserve biodiversity in southern Guyana. Disseminating data was complimented by legal analyses to establish protected areas. All of this was part of a stakeholder engagement strategy that involved a transparent and participatory approach combined with awareness programs, and in some cases strong negotiations. We consider improved stakeholder relationships at all levels to be our greatest accomplishment, especially since the project was initiated amidst the absence of supportive legal frameworks and the presence of key stakeholders who had initially demonstrated their reluctance to participate in the process.

The absence of necessary laws has still prevented Guyana from legally designating protected areas. However, CI has secured a moratorium on logging and mining concessions in the Kanuku Mountain region until the protected area can be declared. We also secured the pristine and biological-important Upper Essequibo Conservation Concession before it became subjected to developmental pressures. This was a direct result of successes in getting stakeholders to understand conservation issues, and to support and actively participate in the processes to develop protected areas, conservation concessions, and to work with the Government to amend regulations for conservation in forest management.

Stakeholders will be continuously engaged to sustain their interest in biodiversity conservation and to build their capacity for full participation in protected areas development and management, and sustainable natural resources management. As many other programs have found, we used (and continue to use) translators to ensure that villagers understand and can participate in the planning process.

Continued work towards sustainable resource management is also critical, as over-harvesting of biological resources has been identified as the greatest apparent threat to the integrity of the areas earmarked as potential anchors to the biodiversity corridor. We will continue to expand the corridor database and provide guidance to designing and developing management plans for protected areas. Since the livelihood of the key stakeholders is dependent upon the resources of the forest, CI will also continue to promote improved livelihoods through developing community-based sustainable conservation enterprises. Simultaneously, CI will continue to engage the GOG to develop the Protected Areas Act and to develop a terms sheet for the National Protected Areas Trust Fund.

CI is working to scale-up our successes under GCP by adapting our approach in other parts of Guyana with new partners. CI, the Iwokrama Rainforest Program and the North Rupununi Development Board (NRDDB) have identified the North Rupununi Wetlands as an additional site of conservation importance. The Rupununi Wetlands is approximately 22,000ha of seasonally flooded savannahs and rainforests sandwiched within a triangle that includes the proposed Kanuku Mountains Protected Area, the Upper Essequibo Conservation Concession, and the Iwokrama Reserve. The wetlands are therefore strategically located to enhance the biodiversity corridor vision for southern Guyana. During the rainy seasons the Rupununi River floods the savannahs and forested areas causing the creeks and lakes to intermix with the floodwaters of the Rio Branco in Brazil. This allows for the exchange of genetic materials and maintaining evolutionary and ecological processes between the Guianan and Amazonian Region. Similarly to other areas of the Rupununi Region, over-harvesting appears to be the major threat to the biodiversity of the wetlands. In addition to threat abatement and securing another important corridor anchor, the North Rupununi Wetlands is also an opportunity to develop more alliances for conservation actions in the entire Rupununi area.

The North Pakaraima Region, though not located in the southern parts of the Guyana, is another corridor region that is important for conservation. This mountainous region occupies approximately 14% of Guyana's land surface and is part of the Guiana Highlands that extend into neighbouring Brazil and Venezuela. Parts of Mount Roraima, which are renowned for many unique species and habitats, are located in this Region. Because of the strategic location of this potential corridor it will also provide an opportunity for a trans-boundary biodiversity corridor that extends to the Gran Sabana Reserve in Venezuela.

To ensure that there is continuous funding to support these conservation outcomes in southern Guyana, CI will implement a fundraising campaign. This will involve identifying and soliciting potential donors interested in conserving biodiversity and enhancing livelihoods. Additionally, once the Trust Fund becomes established, we expect that the annual interest will provide the required finances for long-term management of Guyana's National Protected Areas System.

D) Products

REPORTS

1. A Biodiversity Assessment of the Eastern Kanuku Mountains, Lower Kwitaro River, Guyana, 2002
2. Biodiversity of the Kanuku Mountains (RAP Booklet), 2002
3. Preliminary Socio-Economic Survey of Amerindian Communities in the KMts Area, 2000
4. Reports on national, regional and community consultations, 2004
5. Forest Inventory of the UECC, 2003
6. Social Impact Assessment for Establishment of the UECC, 2002
7. CRE in communities of the Kanuku Mountains, 2004

REPORT LAUNCHES

1. RAP Guyana 2001 Report, 2003
2. CRE Report, 2003

DIGITAL IMAGES AND DATA

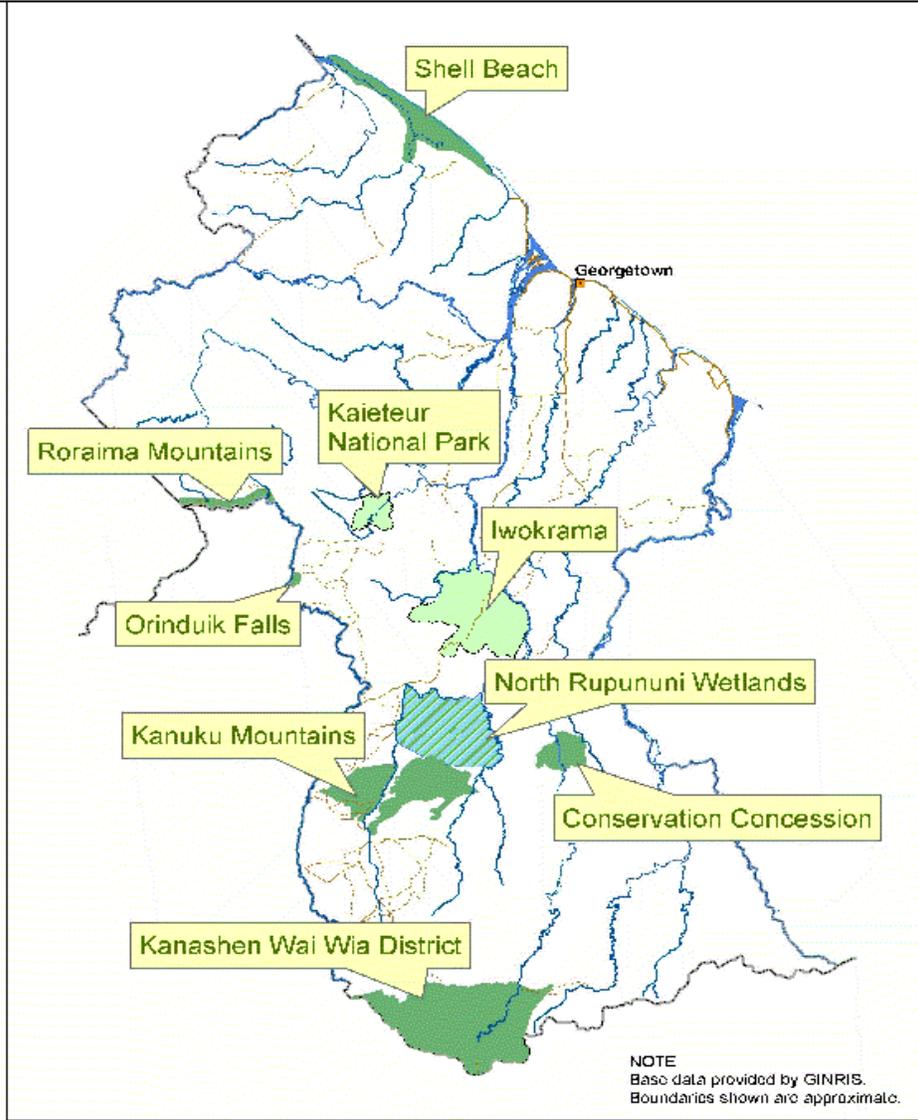
1. Digital database of Plant Specimen collected from Smithsonian Institute (SI), 2002
2. Digital copies of baseline land-cover data for the KMts/Rewa River area, 2000

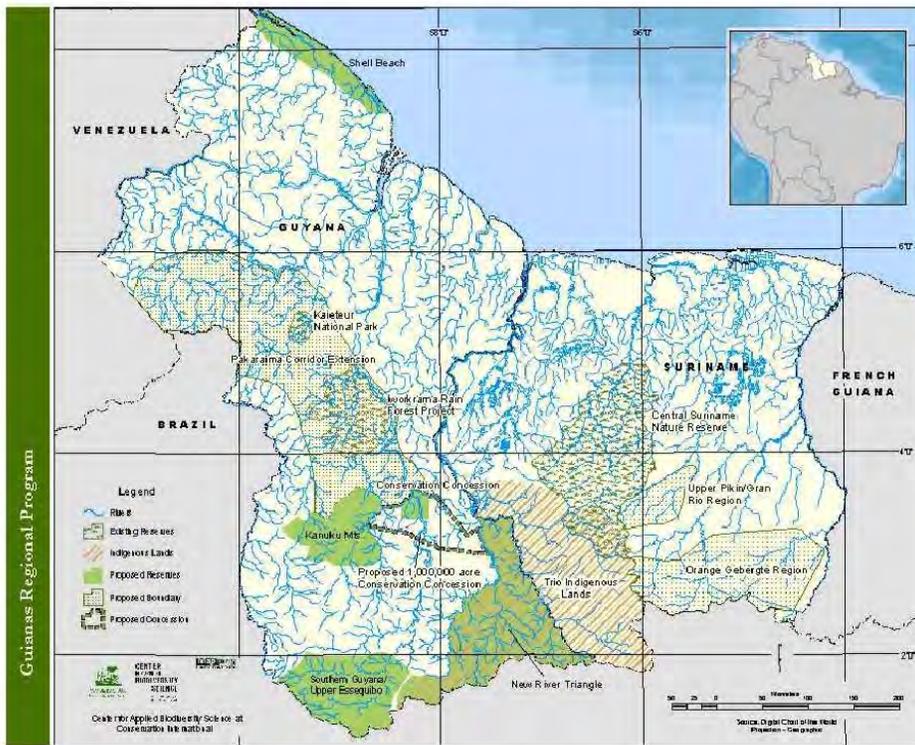
SEMINARS/WORKSHOPS/SUMMER CAMPS

1. Workshop for environmental journalists, 2000
2. Training workshop on bookkeeping, pricing and strategic planning for the Nappi Balata Artisans, 2000
3. CRE Training Workshops on environmental leadership and skills for conducting field surveys, 2002 and 2003
4. Workshop to reveal the results of the CRE to participating communities, 2003
5. Training workshop for school teachers on protected areas development, 2001
6. Workshop in Katoka Village on business relationship between communities, 2001
7. Environmental Summer Camps for children attending schools in Georgetown and Region Nine, 2000-2004
8. Biodiversity training workshop for Teachers at schools in Region Nine, FY01-04

POSTERS/BILL BOARDS/FLIERS/FACT SHEETS

1. Poster: "Kanuku Mountains – Protecting Guyana's living heritage", 2002
2. Poster: "Conservation Concession – an innovative mechanism for achieving biodiversity conservation in Guyana", 2004
3. CRE Poster, 2004
4. Kanuku News – A bi-monthly newsletter to update all stakeholders and the general public on CI's activities for biodiversity conservation, 2000-2004
5. Yearly Calendars, 2000-2004





III) Enforcement Economics

A) Evolution

In the three case study sites, we accomplished what we originally planned, with some adjustments. Our objective of using the enforcement economics methodology to precisely identify key systemic impediments to effective performance was achieved. We were also successful in using the results of our analysis to work collaboratively with government enforcement agencies and other key stakeholders on developing strategic action plans for strengthening performance. The changes we made over time were a product of, and subsequently contributed to, our learning from the project. Our work on the global front evolved differently than we had initially expected, but was very successful. By engaging with other groups working globally on strengthening environmental enforcement, we developed a broad coalition of support for our work and its findings. This exceeded our initial expectations, which anticipated a process more focused on disseminating information, rather than building consensus.

In the extension sites, our results were mixed. In all sites, we were successful in introducing government enforcement agencies to the enforcement economics model, rationale, and holistic vision. This had never been done before. We also built informal coalitions with government, donors and/or other NGO to support development of performance monitoring and adaptive management systems. In Indonesia, we were successful in getting such a system developed and adopted by the national enforcement agencies. In Brazil and Madagascar, however, unforeseen political events hampered our progress. Although we did make persistent efforts, in conjunction with local partners, to advance our work in these sites, those efforts were unsuccessful.

Selva Maya, Mexico

In the Selva Maya, we expected to focus our analysis on a judicial process, and to examine the issue of commercial-scale wildlife trade. However, upon beginning our work, we were unable to find court records of wildlife hunting and trade cases – we learned that this was because the local office of PROFEPA, the federal agency charged with enforcement of environmental laws, handles most wildlife hunting and trade cases internally in this region. So we altered our plans, instead analyzing the administrative process for handling wildlife trade and hunting cases. PROFEPA's decision to handle cases internally is linked to the second discovery we made – that the local office has no cases of commercial-scale wildlife hunting and trade, even though it is a major threat to biodiversity in the region. Instead, the records we found were all for cases of small-scale subsistence wildlife hunting. This was unfortunate, but we had to adapt our work to fit the data, and ended up examining the performance of the system in handling these subsistence cases.

Socializing the EE concept with local NGO partners and academia proved easier than getting PROFEPA fully engaged. In part, this was because by engaging with us, PROFEPA would have to help us through their data, which was sparse and disorganized. Given their limited staff in the region, they were hesitant to commit this type of effort, and perhaps a bit embarrassed about the quality of their records. But all the quantitative data we needed for the analysis was in that agency, so we were persistent in our attempts to engage them. We assured them that our own research assistants would go through the data, perhaps even helping PROFEPA to organize it in the process. Over many months, we were able to gain sufficient local PROFEPA support and input. While the delay influenced the timing of the project's completion, it did not derail the EE study.

Through the EE study, CI and partners successfully pinpointed key weaknesses in the enforcement system, and used the analysis to develop a strategic action plan for strengthening enforcement in the region. Unfortunately, CI match funding to explore cost-effective options for reducing incentives for illegal wildlife hunting and trade became unavailable in the second year of the project. Although we worked with partners to do a rough, low-cost assessment using existing information, the necessary data on wildlife trade did not exist in Mexico, and we had to cancel this activity. The delays in completing the EE study decreased the time available for development and execution of the training program recommended by our study. However, our partner TRAFFIC, in conjunction with PROFEPA and the CITES Scientific Authority, developed and executed a very successful pilot training program for PROFEPA investigators.

Papua, Indonesia

In Papua province, we planned to examine the judicial enforcement system for handling illegal logging cases. As we began profiling the enforcement system, we found that it was difficult to get consistent information from key informants about how illegal logging cases are processed. So we used a case study approach, analyzing a sample of illegal logging cases in detail, to profile the enforcement system. CI-Papua's close ties to both the military and provincial government enforcement agencies facilitated efforts to secure support for our work. CI collected and analyzed quantitative and qualitative data with government and other partners to develop an enforcement-strengthening strategic action plan. While we expected to only implement the training element of that plan by the end of Year 2 of the project, CI-Papua was able to advance beyond initial expectations by jointly developing a case-tracking system that was adopted by provincial enforcement authorities. As planned, CI also collaborated with the local Nature Conservation Agency (BKSDA) and the Papua Forestry Service to design and execute a training program for enforcement personnel. They trained forest rangers, forest civil investigators (FCIs), police, prosecutors, and judges from five regencies. Representatives from the armed forces also attended the training programs, which are important to ensuring that military personnel comply with logging and wildlife trade laws. With CI-CABS and CI-CBC match funding, CI-Papua conducted socioeconomic case studies in Mamberamo and the Raja Ampats. These studies recommended options for reducing incentives for illegal activities – through alternative employment in conservation activities, greater provincial planning, human resource development, increasing income from legal activities, and exploring ecotourism prospects.

Palawan, Philippines

In Palawan, we did not profile both the government and community (Tagbanua) enforcement systems as originally planned, and focused only on the government system. The Tagbanua keep no data or records on how cases are handled, so the enforcement economics model could not be applied. However, we engaged the Tagbanua Federation's leadership as an equal stakeholder in our analysis of the government system. Local communities and municipal leaders who had already worked with our partner ELAC on enforcement were supportive of the EE work from the outset. However, the local representatives of federal agencies responsible for enforcement in the region (including Coast Guard, Philippines National Police Maritime Unit) were not enthusiastic about working on this analysis – which was primarily a reflection of their disinterest in their environmental enforcement responsibilities overall. In spite of this, they were helpful in offering us the very sparse data they had, and participated in the workshops and interviews for this project. Given the strong interest of our other partners, particularly the community and local government representatives, their disinterest was not critical to the successful completion of the EE work in this site. In our participatory design workshop, we identified systemic weaknesses in collaboration with

these local government, NGO, civil society and federal government agency partners, and developed recommendations for overcoming them. We initially expected that our recommendations would focus on national government agencies, but given the low priority of environmental enforcement for those agencies, we decided that our strategic action plan needed to be broad and complement official enforcement efforts. While we did recommend working with federal enforcement agency staff and local Chiefs of Police to improve their performance, we also identified development of municipal level adjudication bodies and community detection/arrest capacity as a major priority for enforcement strengthening investments.

Other players also contributed to achieving our overall goal. Packard Foundation funds supported a Live Reef Fish Trade assessment, produced by CI. With CEPF funding, CI, partner ELAC and other relevant stakeholders from government, traditional and fishing communities and civil society also held a Calamianes Fisheries Summit to discuss alternatives to reduce the impetus for illegal fishing. Finally, ELAC developed a very successful training series, based on one of the recommendations of the strategic action plan. It included capacity building for community and official government detection agents, trainings for Police Chiefs acting as prosecutors, and legal clinics to help government agency personnel and prosecutors develop and file effective cases.

Additional Case Study Observations and Evolution

Early in the process, it occurred to us that having *least-cost* strategies should not necessarily be our primary objective, and that we should focus instead on developing *cost-effective* strategies for improving enforcement performance.

One key challenge that we faced in completing this work in all sites was the paucity and poor quality of enforcement data available. Data was housed in multiple agencies, was inconsistent, and often lacking. Overcoming this challenge required a strategy of patience and persistence. We collected as much data from official enforcement agencies as possible, and then filled in the blanks by talking to key contacts from government and partners, following individual cases, working closely with enforcement agency staff including prosecutors and court officials to get more complete data, and triangulating data collected from different sources.

Another challenge in each site was that enforcement agencies were reluctant to invest their own funds in enforcement-strengthening action plans. We hoped that since they were engaged in our analysis and in the process of identifying priorities for strengthening enforcement, they would be willing to invest their own resources in the strategic action plan we developed. The fact that they were not is likely because funds available for enforcement in all three sites are very limited, not even allowing for very thorough execution of their existing activities, much less new activities aimed at improving performance. However, we found that when outside technical assistance – in the form of expertise rather than money – was offered, these agencies were glad to participate in things like trainings to improve the technical capacity of enforcement personnel. Staff who attended the trainings in all sites expressed how important and useful they felt the trainings provided had been, and how interested they would be in receiving more regular training. We believe that the same applies to any of the recommendations we have made for strengthening improvement in these sites. These agencies do not have the funds needed to implement the massive changes that would be necessary for enforcement to be strengthened. However, when outside funds and expertise are available, we believe that key decisionmakers will be enthusiastic about working with NGO and other partners to mitigate key enforcement failings.

Global

Because it was difficult to garner media attention for designing a study or one in the process of being conducting, we focused on disseminating project information after site level analysis, strategic action plans, and a global lessons-learned document had been completed. Media coverage for the case studies was limited to Papua. Throughout the life of the project, our country program or partner staff in the field took advantage of ad-hoc opportunities to disseminate information on the EE work to local, regional, and international decisionmakers. Upon the completion of the synthesis, press packets were sent to various media outlets. CI's Enforcement Economics work was featured on the CGIAR's POLEX listserv in November 2004. Because promoting this technical work to traditional media outlets has been challenging, we targeted publications with the capacity to handle more technical material. A few of these outlets – including National Public Radio, the Wall Street Journal, and the Far Eastern Economic Review – are interested and currently reviewing the full project report. This targeted strategy seems to be helping us overcome the challenge we faced.

Our dissemination strategy did change a few times over the course of this project. We initially planned to share information on our project by participating in conferences and other events hosted by other groups. As our case studies progressed in the second year of the project, we decided to complement and expand our ongoing dissemination efforts by holding our own conference on enforcement. We felt that this would offer a forum to focus on the enforcement economics approach, the holistic framework we were trying to promote, and the results our work was generating. After discussions with partners including USAID, our field partners and other DC-based government agencies and NGOs during the second year of the project, we decided that using a conference to do more than just disseminate information might be a wiser strategy. If we were going to bring key technical people and decision makers together in that setting, accomplishing something more concrete than “information sharing” seemed more effective. This delayed when we would hold the conference. We began working with technical experts to develop consensus on a set of recommendations for strengthening enforcement that we could promote with decisionmakers.

As we proceeded, it became clear that (a) the best way to promote anything with decision makers would be to have a broad coalition of expert groups promoting the same strategy, (b) that building the necessary consensus would require extensive consultation in US-based, regional, and international forums, over more time than that remaining in this project, and (c) that the best means of conveying the enforcement-strengthening agenda to decision makers might not be a conference, but a manual/investment guide containing detailed guidelines for effectively strengthening enforcement. So we decided not to hold a conference, and to instead hold a series of technical meetings with key enforcement experts to begin building the type of consensus that could ultimately support the creation of a broad coalition of expert groups advocating for strategic investments in strengthening enforcement. This strategy was very well received by our partners, who engaged in the technical meetings with us, and are now enthusiastic about taking over the consensus-building and consultation process beyond the life of this project.

Extension Sites

At the outset of this project, our objective in the extension sites was modest – to introduce the enforcement economics approach and methodology to enforcement agencies and their partners in a handful of priority biodiversity areas in regional or national workshops.

As we approached year three, our plans for the extension sites became more ambitious. We had learned the importance of performance monitoring and adaptive management systems from our initial case study sites. So we decided to work towards getting these systems established and used by the national level enforcement agencies in Brazil, Indonesia, and Madagascar. Because of our strong relationships with donors, NGO partners and central enforcement agencies in these countries, and because of the government's expressed interest in this work, we believed that progress in these sites would be rapid. However, in Brazil and Madagascar, political events hampered our progress.

In Brazil, we adapted our strategy five times to overcome challenges we faced. Prior to year three (when work in the extension sites was initiated), CI and partner IESB had found opportunities to share the results of the EE work done in Southern Bahia from 2000-2003 (originally with support from USAID BiRD) with officials from IBAMA's office of enforcement and Directorate for the Atlantic Forest. They were impressed by our results, and we discussed with them the idea of working at the national level to develop and implement performance monitoring and adaptive management systems. In these early conversations, they were very supportive and encouraged us to work on this issue with them and the other national agencies involved in the enforcement chain. So this became our goal for year three work in this extension site.

First, CI and partner institute IESB sought to create a broader base of support for this effort by engaging Brazil's enforcement leadership directly. We held multiple formal meetings to present representatives from the Ministry of the Environment and IBAMA with the EE methodology and results, and produced detailed concept pieces and proposals for the work we hoped to do. When these leaders were slow to respond, we asked our US-based technical assistance partners (USFS, USEPA, USFWS, Dept of Justice, etc.) who also work with IBAMA to advocate for this work. Although we knew that the new government was experiencing internal problems, we hoped that the Brazilian enforcement agencies would feel more confident about pursuing this work if they knew there was a group of technical assistance agencies that supported it. For our US partners, we wrote concept pieces and proposals targeted at each agency, illustrating what we hoped their role in the actual work would be, and held bi-lateral and group meetings with these agencies to advance the effort. In spite of their enthusiasm for this project and willingness to provide their technical support for it upon implementation, they were uncomfortable pushing for it without a formal request from the Brazilian government. Third, we engaged the World Bank, a major donor to the forest sector in Brazil, asking them to advocate on our behalf with IBAMA. We also hoped that they might take enough interest in the work that they would allocate some funding to IBAMA and the other agencies to pursue it, which would make the project more appealing to those agencies. While they were also enthusiastic about the project, the Bank had no funding for work in this sector that had not already been allocated to the MMA and IBAMA, and had no control over how those agencies spent that money. Bank staff responsible for these loans to the Brazilian government agreed to convey their interest in this work to MMA and IBAMA staff, who would then have to make the final decision to proceed or not. Fourth, we renewed our efforts with IBAMA and the MMA. However, because of the continued high level of uncertainty in the government (it was not clear whether the Minister of the Environment, IBAMA's President and Chief of Enforcement would even remain in their positions) were unable to move forward effectively. This stalled our activities for a couple of months. Our final strategy was to engage other major bi-lateral donors to IBAMA (including GTZ, KFW, the EU) to help move this work forward with IBAMA. The bilateral donors informally committed to voicing their support for our project to IBAMA and the other enforcement agencies. At the same time, already near the close of USAID's fiscal year, IBAMA's enforcement head also agreed informally to work with us on designing and implementing such a system, if outside funding for doing so could be secured. That possibility is being pursued, beyond the life of this project. While much of the allocated budget was spent on the iterative efforts with

different audiences to progress in this work, the full budget allocated for this project was not. Remaining funds were redistributed to the global component of the project.

In Indonesia, by contrast, our investments in supporting Ministry of Forestry adoption of a case tracking system (CTS) were successful. Our investments in updating the CTS developed in Papua for use at the national level were fruitful. The Ministry of Forestry adopted both the CTS and other recommendations from our work in Papua. Our team worked throughout the year on building wider support for our national-level efforts, communicating our results and recommendations to a variety of influential Indonesian NGOs and institutions, and providing training and continued technical support to ministry staff as they incorporated information from their offices across Java into the CTS. We would like to have gotten even farther, incorporating data from other provinces and more agencies into the CTS, but government staff and resources available were limited. Nonetheless our efforts to develop and catalyze adoption of a performance monitoring system by the most important national-level environmental enforcement agency yielded outstanding results. The Ministry of Forestry continues to work on maintaining and building capacity for improving the CTS.

In Madagascar, where no USAID funds were invested, our work was curtailed by political complications at a very early stage. We began this work at the request of the Director General (DG) from the Ministry of Water and Forests. In field visits, we profiled the enforcement system, reviewed the country's relevant legislation, and got the support of the local heads of enforcement in Moramanga and Morondava (Menabe Corridor), which were meant to be the two sites where the performance monitoring and adaptive management system developed at the national level would be piloted. When the DG who had invited our work was fired, we made repeated efforts to engage his successor (directly and in conjunction with partners), but these efforts have been unsuccessful to date. The new DG has been slow to respond to CI's environmental reform priorities in Madagascar, including this project, and we were forced to cancel this national-level work. However, CI has continued its enforcement work at the level of the Menabe Corridor under GCP II, taking advantage of the local head of enforcement's support. Using the EE logic, CI and partner FANAMBY are working in Menabe with detection agents and prosecutors jointly to ensure that violators are detected and prosecuted.

B) Results

In the Selva Maya, the project:

- Established the first regional partnership on wildlife trade issues (Wildlife Hunting and Trade Initiative) with a broad range of government, academic, and civil society institutions, including PROFEPA, SEMARNAT, TRAFFIC, ECOSUR, UNAM, and PRONATURA.
- Completed an Enforcement Economics analysis, the first in the region to analyze the whole administrative process systematically and pinpoint critical weaknesses. This analysis has broadened the scope of discussions among multiple stakeholders (government, academia, civil society, donors) regarding causes of and solutions for weak enforcement. These partners have worked with CI to develop a strategic action plan for strengthening enforcement.
- Developed and executed a training program for PROFEPA, SEMARNAT and DGVS in collaboration with partner TRAFFIC; trained 10 enforcement agents.
- CI has introduced and facilitated a discussion between TRAFFIC and CEPF to secure funding for an expanded training program for enforcement agents, prosecutors and judges, based on pilot curriculum developed. These funds could help TRAFFIC and CI multiply the

effect of the pilot training, augmenting more enforcement personnel's ability to execute responsibilities effectively.

In Papua, the project:

- Built an informal coalition for enforcement strengthening with armed forces, police, and the Provincial Department of Forestry. Bringing these key agencies together to work on enforcement will ensure cooperation and understanding between them, generating greater efficiency.
- Completed an Enforcement Economics analysis, the first in the region to analyze the whole administrative process systematically and pinpoint critical weaknesses. This analysis has broadened the scope of discussions among multiple stakeholders (government, academia, civil society, donors) regarding causes of and solutions for weak enforcement. These partners have worked with CI to develop a strategic action plan for strengthening enforcement.
- Developed computerized case tracking system (CTS) that has been adopted by provincial forest authorities. Having case data in a managed form is critical to implementation of performance monitoring efforts.
- Trained 5 forest authority key technical staff in CTS use and management. This will ensure that this agency is able to utilize, operate, and adapt the system beyond the life of this project.
- Developed and executed a training program to strengthen performance of all enforcement agencies from 5 regencies in Papua. This will improve the enforcement performance of these personnel and of the overall system.
- Regency-level forest authorities have incorporated the training program curriculum into their regular capacity-building efforts for police, forest rangers, and judges. This guarantees that the impact of the training program will extend beyond our trainees and beyond the life of this project.

In Palawan, the project:

- Developed strong partnership between CI and Environmental Legal Assistance Center (ELAC) on enforcement themes. By working together on this project and combining our enforcement strengthening efforts, we have created a stronger voice for enforcement reform in the Calamianes.
- Completed an Enforcement Economics analysis, the first in the region to analyze the whole administrative process systematically and pinpoint critical weaknesses. This analysis has broadened the scope of discussions among multiple stakeholders (government, academia, civil society, donors) regarding causes of and solutions for weak enforcement. These partners have worked with CI to develop a strategic action plan for strengthening enforcement.
- Reached agreement with local representatives of national enforcement agencies, municipal governments, and communities regarding a strategy for strengthening enforcement by investing in community and municipal-level enforcement efforts. This innovative strategy for strengthening enforcement builds on the interest of LGUs and communities in taking charge of enforcing the borders and rules of their fisheries resources. Once developed, this alternative enforcement system will complement the current weak enforcement system.
- Legal clinics and training courses for community members, Coast Guard personnel, and Chiefs of Police acting as prosecutors, executed by ELAC. This activity has improved the capacity of these actors to effectively execute their enforcement responsibilities.

- Successful filings of illegal fishing cases by Coast Guard increased from zero in the preceding four-year period to twelve within six months of participating in training course and legal clinic. Successfully filed cases were put together in legal clinics.
- CI and ELAC are pursuing additional support for continuing work on training, passing municipal fisheries ordinances, establishing municipal-level adjudication bodies.

Globally, the project:

- Published EE case study results. Disseminated 600 copies of “Strengthening the Weakest Links: Strategies for Improving the Enforcement of Environmental Laws Globally.” Multiple audiences will learn about the EE methodology, be exposed to a more holistic perspective on enforcement, and learn from our lessons to develop more strategic plans for addressing weak enforcement.
- CI has been invited as an expert to participate in global discussions on strengthening environmental enforcement. CI has become a member of the IUCN’s Specialist Group on Conservation Enforcement, and has informally partnered with the International Network for Environmental Compliance and Enforcement (INECE) to produce detailed guidance for investments in strengthening enforcement. Our participation in these two major forums on enforcement ensures that our knowledge and lessons learned will be further incorporated into their global strategies, influencing their priorities.
- EE methodology disseminated by CI results in changes to the US Environmental Protection Agency’s (EPA) “Principles of Environmental Enforcement” course. This course is part of the technical assistance provided by the EPA to government enforcement agencies in developing countries globally.
- EE methodology disseminated by CI results in changes to INECE’s global training program for judges. INECE’s global network includes judges in many countries of high biodiversity importance.
- EE methodology disseminated by CI results in changes to CITES Secretariat’s training program for prosecutors. Prosecutors being trained in implementation of CITES will be presented with the EE logic and insights.
- Worked with enforcement experts from government, academia, NGOs and inter-governmental institutions to reach initial technical consensus on how to strengthen key aspects of enforcement systems. (Creating effective legal regimes for enforcement and developing enforcement monitoring and evaluation systems).
- Drafted skeleton outline for an enforcement strengthening investment guide to help donors effectively target their enforcement investments. IUCN Specialist Group on Conservation Enforcement and Environmental Law Institute, with input from State Department personnel, are planning to take the lead on further consultation for and drafting of the investment guide.

In the Extension Sites, the project:

- Exposed national-level enforcement agencies in Brazil, Indonesia, and Madagascar to EE methodology and the concept of implementing enforcement performance monitoring and adaptive management systems for the first time. Our approach has expanded their perspective on what it means to strengthen enforcement, making it more holistic.
- In Brazil, built support of US-based technical assistance agencies and major donors for implementation of performance monitoring and adaptive management systems. Once IBAMA officially commits to this effort and secures funds to finance the development of the performance monitoring system, those partners have committed to help in the design and application of the system.
- In Indonesia, case tracking system successfully adopted by Ministry of Forestry.

- In Madagascar, developed sound program for moving performance monitoring and adaptive management implementation plan forward in collaboration with government agencies and NGO partners. This plan can be quickly implemented as soon as the support of the new DG is won.

C) Conclusion

In retrospect, we believe this project was successful. We raised awareness of how important enforcement is to biodiversity conservation efforts. We illustrated the holistic nature of enforcement, which had not been done before. We provided quantitative evidence of how weak enforcement is in key biodiversity areas, pinpointing the greatest problems. In the case study sites, we generated strategic action plans for strengthening enforcement in collaboration with enforcement agencies. Globally, we made targeted recommendations for prioritizing investments in strengthening enforcement. Our work has produced a body of knowledge that did not exist in the conservation community previously. We are changing the way that conservationists think about enforcement, drawing them away from conventional wisdom and into solutions that are practical and cost-effective.

Achieving these outcomes has been a learning experience. As described, we faced challenges including poor data, lack of government cooperation, and political turmoil. Adaptive management played a very critical role in our project, but was not always effective. In some instances, this kept us from being as successful as we would have liked in some aspect of the work. Nonetheless, this project has made an important, and innovative, contribution.

CI's work has gained the attention and acclaim of various international organizations and US government, international and inter-governmental bodies including the IUCN, the World Bank, the CITES Secretariat, and the Organization for Economic Cooperation and Development OECD. Our fresh perspective has influenced the thinking and approach of these and other groups that have worked on environmental enforcement for many years. In case study sites, we have built partnerships with government enforcement agencies, donors and NGOs committed to implementing our jointly developed strategies for improving performance.

These relationships will support the sustainability of our results. Our partners, in case study sites and globally, are committed to continuing the training, awareness-raising, and implementation activities initiated under this project. Through our publication, we have provided guidance for how other organizations can engage in strengthening enforcement in new sites. We believe that the conservation impact of this project will increase substantially over time. As additional investments in strengthening enforcement are made, or as existing investments are targeted more wisely, enforcement performance in high-biodiversity areas will improve. The greater deterrent generated by well-functioning enforcement systems, combined with other efforts aimed at creating positive incentives for biodiversity conservation, will change the incentive structure of would-be violators.

In the future, we believe that USAID could play a significant role in improving the quality of environmental enforcement in biodiversity rich countries. We strongly encourage USAID to apply the holistic approach to enforcement that our work has developed to projects with enforcement components. USAID-funded conservation projects should consider including enforcement-strengthening components, using CI's lessons learned as a starting point for their own work. And now that the EE methodology has been proven to be an effective analytical framework for identifying systemic weaknesses and strategies for overcoming them, USAID could seek to educate its conservation partners in its use and application.

D) Products

PUBLICATIONS

1. "Strengthening the Weakest Links: Strategies for Improving the Enforcement of Environmental Laws Globally," 2004.

PRESENTATIONS

1. Presentation: At Forest Law and Governance (FLEG) East Asia Ministerial Conference, 2001
2. Presentation: At Yale ISTF Conference on Illegal Logging in the Tropics – the Ecology, Economics and Politics of Resource Misuse, 2001
3. Presentation: At USAID, for Forest Team, 2003
4. Presentation: At United States Forest Service's ITAP Seminar Program, 2003
5. Presentation: At USAID, for Democracy and Governance Program, 2003
6. Presentation: At President's Council on Environmental Quality, 2003
7. Presentation: OECD/INECE Conference on Environmental Enforcement Indicators, November 2000