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CONSERVATION INTERNATIONAL

**USAID "Biodiversity Corridor Planning and
Implementation Program" (Corridor)**

Cooperative Agreement No. LAG-A-00-99-00046-00

October 2001 FY02 Annual Implementation Plan

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**Conservation International
Biodiversity Corridor Planning and Implementation Program (Corridor)**

**October 1, 2001 Annual Implementation Plan
FY02: October 1, 2001 – September 30, 2002**

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Introduction

This document provides a detailed description of planned activities to be implemented in Year Three of Conservation International's (CI's) Corridor cooperative agreement for the FY02 period of October 1, 2001 – September 30, 2002 in Brazil, Guyana, and the Philippines. This document additionally provides a detailed description of planned activities to be implemented in Year One of the new activity entitled Enforcement Economics Project for the FY02 period of October 1, 2001 – September 30, 2002.

I) CI-Brazil

Introduction to the Pantanal/Cerrado Sites

Key Threats

The recent discussions related to the modernization of the Brazilian Forestry Code (1965) have raised heated issues regarding existing Legal Reserves and Permanent Protection Areas (RL & APP). These two legal obligations have been neglected by the rural communities as well as rarely enforced by the regional authorities. More recently the environmental sector led by the NGO community, brought to the forefront the need for a deep discussion between the agricultural sector and society, about the role of APP and RL as natural resource stock x biodiversity protection. It is clear for both sides that food and forest production are essential not only for the local well being but also for the country, as an important income. It is also clear to some extent that the value of biodiversity and ecosystem services for future generations is essential.

The way Brazil has stimulated agricultural production the last 50 years has led to massive disruption of landscapes significantly impoverishing some of our major ecosystems. To address such problems and avoid the continuing loss of biodiversity, society urgently needs to proactively search for answers that create equilibrium between ecological balance and production. The Corridor project is an attempt to answer issues such as: restoration of ecosystem connectivity and protection of biodiversity by allowing gene flow and evolution without losing the understanding of local economic driving forces that are playing the "Developmental" roles at the regional level, which may need to be readdressed "in the light" of the new "Sustainable Development Models" and landscape integrity. Legal reserves and Permanent Protected Areas are crucial to maintaining and restoring the ecosystem functions and the integrity of natural resources such as soil and potable waters, both essential to humans and the biodiversity. In FY02 the Corridor team will work with Cerrado landowners to restore legal and permanent protection areas, and also, where these are inexistent, work with local government and landowners to create new protected areas as a compensatory mean.

In this year's implementation plan, CI and Emas Foundation – the Corridor team - will be actively working with the main Brazilian organizations to address the main threat to the Cerrado and Pantanal regions – **deforestation** of riparian vegetation. Deforestation of Cerrado's riparian forests lead to massive **erosion** and consequent **siltation** of the Pantanal low plains. The Corridor team plans to address this main threat by:

1. mapping Cerrado's degraded areas, using videography and aerial photography and support EMBRAPA (Empresa Brasileira de Pesquisa Agropecuaria) in developing a monitoring system for controlling the large erosive processes in the Corridor's headwaters region.
2. working with EMBRAPA Solos to train technical staff in the Corridor's municipalities to plant native vegetation and restore the soil in degraded areas;
3. promoting agricultural best practice activities in the Cerrado and creating incentives for more landowners to join the Corridor's sustainable economic activities, such as: organic beef and honey;
4. designing and producing a video of the consequences of deforestation, erosion and siltation to biodiversity in the Corridor;
5. continuing to train volunteers on the impacts of uncontrolled fires which can impoverish the soil and destroys gallery forests.

The other main threat to the biodiversity of the region as a whole is the creation of the **Paraguay – Paraná waterway**. The implementation of this waterway to allow the transportation of agricultural goods in large barges implies the dredging and canalization of portions of the Paraguay watershed. The Corridor team AquaRAP expedition to the Northern portion of the Paraguay basin will provide more biological data to support the preservation of the Paraguay watershed.

The Corridor team will also assess the threat of **exotic/invasive species** in the Corridor area by promoting research on the introduced bee, feral pigs, fishes and exotic grasses. Threats to endangered species in the Corridor will continuous to be assessed through 4 fully equipped field research stations and support to researchers working with giant anteaters, giant river otter, hyacinth macaw and jaguars.

In addition to addressing all threats in the region, the Corridor team will work together to promote a large environmental education campaign involving all municipalities and partners. The campaign called "Friends of Nature" will allow kids to produce public awareness materials in all Corridor's municipalities about the importance of this biodiversity Corridor in the protection of biodiversity.

Financial Sustainability Activities and FY02 Co-financing

Since the beginning of the Cerrado-Pantanal Corridor program, the search for sustainable socioeconomic alternatives to create and maintain the integrity of the Corridor has been one of our main priorities. In this agricultural region, the Corridor team has already established partnerships with many landowners willing to be part of the Corridor by adopting sustainable economic activities, such as: organic beef, ecotourism, honey production or landowners who are simply protecting and maintaining riparian vegetation (Permanent Protected Areas) and as established by the Brazilian legislation - Legal Reserves.

The Cerrado-Pantanal Biodiversity Corridor program initiated with sole support of USAID has along the past two years conquered many partners and financial agencies. A summary of our main co-financers with their respective support is listed below:

a) **LEGAL Components:** The Instituto Sócio Ambiental (ISA), a Brasilia-based NGO, will help with the framework necessary to induce the Ministério Público to use the Corridor Project as a plan to recover Permanent Protected Areas (PPA) and Legal reserves (LR) in the target area. According to the new Forestry Code, producer's can compensate for non-existing LR by plotting these conservation figures in other more significant areas in terms of biodiversity and natural resources protection, and depending on the producer's capacity (short/medium/long term) in recovered areas. This process will free

areas that are not significant for biodiversity in the plateau, and create new strategic ones allowing better connectivity along the rivers reinforcing the biodiversity goals. The funds will be provided by the USAID budget.

(b) **SOIL & WATER CONSERVATION.** Ministry for the Environment and the State Secretary for the Environment and Tourism of Goiás State has established a partnership with the Emas Foundation to tackle soil and water conservation in the Cerrado Core nuclei. The results of this work will be the implementation of land use management plans for agriculture areas along the corridor that are based on conservations practices to protect soils and headwaters in the plateau, thus avoiding major threats such as: erosion and siltation. The budget is US\$ 160.000, for a three year period, the first of which will be completed in December 2001. FEMAS Foundation is negotiating an extension for five years with the Goiás Government agency.

(d) **AGRICULTURE BEST PRACTICES.** This component is a joint project with The Nature Conservancy - TNC, the Goiás Rural Agency and the Mineiros Grain Producer's Association - APGM, to implement best practices standard in crops production for the Cerrado plateau, considering production patterns versus soil & water conservation (chemical pollution included). This project started in the last July with a US\$ 120.000 three years budget.

(f) **CAPACITY BUILDING.** In a joint strategy with CI Cerrado, the Instituto Internacional para a Educação do Brasil - PADIS is assisting the design of a new operational model for the Emas Foundation which will enable them to face new challenges to work with multi-disciplinary projects, reinforcing this environment/community/agriculture producers expectations. This project will help with a US\$ 20.000 budget, in the form of trainings and technical consultancy offers to FEMAS capacity building agenda.

(g) **COMMUNITY CO-OPERATION:** The Municipal Government of Mineiros has donated a house and an area to serve as FEMAS headquarter. The APGM Grain producer's Association also donated a wooden house and an one ha area in the Emas National Park border (Jacuba River). These facilities will allow the Corridor Crew to cover the North part of the core nuclei research area. The estimation of these components reaches around US\$ 60.000.

(h) **CORRIDOR MAPPING:** A grant of US\$32,000 from GEF and US\$100,000 from CI's Tropical Wilderness protection Fund (TWPF) have been awarded to assist with the mapping of the whole Cerrado-Pantanal Corridor, as well as the existing fragments to design the best possible route for the Corridor.

(i) **PUBLIC AWARENESS:** GEF has also awarded a US\$16,000 grant for the productions of a video and printed materials to raise awareness of the population on the importance of the Cerrado-Pantanal Biodiversity Corridor.

(f) **RESEARCH:** Conservation International's partner Earthwatch Institute has received a 5 million dollar grant from Ford Motor Company Fund to finance Biodiversity research in the Corridor region. This partnership started in 2000 and will continue for the next 4 years.

(g) **ORGANIC BEEF:** Organic beef, or "ecobeef," is produced in a manner that is healthier for people and the environment. To become certified, farmers cannot destroy natural vegetation on their farms, grow nonnative vegetation, or use any agrochemicals. Additionally, they must raise cattle breeds that have adapted to local conditions and feed animals a diet produced according to the standards of organic agriculture. CI's certification project is part of a strategy to link protected areas, parks and organic farms in the Pantanal and the Cerrado biodiversity hotspot. This initiative is funded by USAID and Funbio (Fundo para Biodiversidade) with a budget of R\$130,000 (US\$50,000).

Brazil Activities

**Objective 1: (USAID FY02 Level of Effort: \$186,242; Match Level of Effort: \$57,525)
 Build Biodiversity Corridor planning and implementation support framework**

Activities:

1.1) Biodiversity corridor assessment completed (baseline legal, biological, economic and social assessments/data gathered) (Bodoquena, Emas National Park, Parque Natural do Pantanal, Parque Nacional do Pantanal, Parque Estadual das Nascentes do Taquari, Paraguayan Cerrado, Rio Apa, and potential core-nuclei/corridor area).

1.1.1 has been reformulated and is now represented in three new activities:

1.1.1) New Activity. Based on ToRs developed in FY01, at least 3 consultants will be hired to produce issue papers on agriculture (soy, corn, cotton), cattle ranching, dairy farming, and agricultural subsidies and financing in the Corridor. These issues papers will assess the financial incentive presented by each activity, and will be used in the process of developing alternative economic activities and potential compensatory mechanisms in the Corridor. These issues papers will be written by the consultants with guidance and oversight from CI-DC REP [Resource Economic Program] staff and the CI-Brasil economist.

Activity 1.1.1	
Benchmark/Output(s):	Issues papers will be written and compiled by the middle of FY02;
Months of implementation:	July 2002
Activity Lead:	Anita Akella
USAID FY02 Level of Effort (\$):	25,504
Other Match Funding Source (\$):	CI REP

1.1.2) New Activity. Technical focus group meetings on agriculture, cattle ranching, dairy farming and agricultural subsidies/credit in the Corridor will be held by the end of FY02. Experts on each topic, hailing from NGOs, academia, relevant government agencies, and the private sector will be invited to these meetings. These meetings will be organized and executed by the CI-Brasil Economist and relevant corridor staff, with guidance and oversight from CI-DC REP staff and Cerrado-Pantanal Corridor Directors. The objectives of these meetings will be to present and discuss results from issues papers/incentive analyses (1.1.1) and to bring relevant experts to consensus around these findings. Following the technical focus group meetings, final drafts of the issues papers will be written.

Activity 1.1.2	
Benchmark/Output(s):	final drafts of the issues papers written.
Months of implementation:	August 2002
Activity Lead:	Anita Akella
USAID FY02 Level of Effort (\$):	16,678
Other Match Funding Source (\$):	CI REP

1.1.3) New Activity. In FY01, CI Pantanal and partners planned an AquaRAP expedition to the upper Paraguay River basin. CI Pantanal will complete all travel, data collection and species identification activities to produce a preliminary report by the end of FY02. The information gathered during this AquaRAP expedition to take place between February 26 and March 12 2002, will support future actions for the implementation of the North-South Corridor and provide biological data to inform stakeholders on the impact of the Paraguay-Paraná waterway.

The delay of the expedition was caused by the new regulations established by the National Research Council regarding International Scientific Expeditions, which overruled our previous

permits. Since then CI and partners institutions in Mato Grosso decided to carry out a National Expedition using RAP standard procedures, supervised by Dr. Barry Chernoff from the Chicago Field Museum, and CI DC. Samples will be processed locally and the report will be organized in Brazil, using this opportunity for training Corridor Team and associate researchers, like PEQUI Foundation.

Activity 1.1.3	
Benchmark/Output(s):	Preliminary report by the end of FY02, 600 paper copies and 300 CD-ROM Expedition live-report available on the internet
Months of implementation:	September 2002.
Activity Lead:	Monica Harris
USAID FY02 Level of Effort (\$):	55,924
Other Funding Source (\$):	USAID Brazil 21,000
Other Match Funding Source (\$):	CBC

1.1.4) Land tenure information from the corridor will continue to be compiled from the records of governmental agencies such as INCRA (Instituto Nacional de Colonização e Reforma Agrária) and IDATERRA (Instituto da Terra de Mato Grosso do Sul). Field surveys will also be conducted by the Emas Foundation in the buffer zones of protected areas in the Cerrado. The information obtained will be entered in the corridor database. Information to be collected includes: land ownership, area, existence of permanent and legal reserves and others. This information will be used to 1) describe the current conservation status of properties, 2) assist landowners who currently do not have legal reserves to create joint legal reserves in areas of high biological importance, 3) to describe the current land use on properties within the Cerrado.

Activity 1.1.4	
Benchmark/Output(s):	Map of land use in the Cerrado buffer zone completed; Information from government agencies collected and entered in the database
Months of implementation:	May 2002
Activity Lead:	Mário Barroso, Renato Alves
USAID FY02 Level of Effort (\$):	14,508
Other Match Funding Source (\$):	

1.2) Integrated corridor information system designed and operational

1.2.1) As an ongoing activity, the corridor team and counterparts will continue to identify and compile available economic, social, biological and spatial data, as well as information on stakeholders. The database will be maintained and improved continuously by the in country Corridor Team. The database will be available on the internet. Since the beginning of this agreement, the Corridor team has compiled information on: fauna (613 species with 1740 occurrences), flora (1122 species), institutions (73 records), and bibliographies (68 records).

Activity 1.2.1	
Benchmark/Output(s):	Database structure improved and available on the internet. New information compiled and reported.
Months of implementation:	Continuous throughout the life of this agreement
Activity Lead:	Alexandre Dinnouti, Michel Akamine, Demerval Aparecido
Other Funding Source (\$):	USAID Brazil 9,000.00
USAID FY02 Level of Effort (\$):	5,208
Other Match Funding Source (\$):	CBC

1.3) Corridor learning system/adaptive management in place and operational

1.3.1) New activity. In order to assist the implementation of a pilot monitoring and evaluation program the corridor team will hold a technical meeting to establish a minimum protocol to collect biological information in the corridor. The protocol will assist the design of a monitoring system to measure the effectiveness of the corridor. The pilot monitoring system designed by the in country staff with partners will later be associated to CI-DC M & E plan being designed, which includes: 1. Participation by new technical staff in the use of corridor planning methodologies, to be held in '02 2. Participation of project implementation staff in a workshop on "project cycle" reporting.

Activity 1.3.1	
Benchmark/Output(s):	Technical meeting held; Protocol drafted.
Months of implementation:	July 2002
Activity Lead:	Reinaldo Lourival, Paulo Prado and Karl Morrison
USAID FY02 Level of Effort (\$):	4,700
Other Match Funding Source (\$):	CI-CABS.

1.3.2) New Activity. Corridor in-country staff will create partnership with universities and institutions to assist with the implementation of the draft monitoring plan as established during 1.3.1. All the biological data collected will be entered in the corridor database and also published as individual papers by researchers and partner institutions.

Activity 1.3.2	
Benchmark/Output(s):	Monitoring plan in place; Report of the biological data collected.
Months of implementation:	August – September 2002
Activity Lead:	Reinaldo Lourival, Paulo Gustavo, Mário Barroso
USAID FY02 Level of Effort (\$):	No cost
Other Funding Source (\$):	USAID Brazil
Other Match Funding Source (\$):	

1.4) Participatory planning and implementation framework and process established

1.4.1) New Activity. The Corridor team will identify and create partnerships with Universities, NGOs and other institutions active on the extreme portions of the Corridor to extend the area of the Cerrado – Pantanal Biodiversity Corridor and our actions through our partners. Pantanal staff will establish partners in the North-South Corridor region (map 1), particularly in Mato Grosso State. The perspective institutions are: the Federal University of Mato Grosso (UFMT), the State University of Mato Grosso (UNEMAT), Ecotrópica and ARCA. Cerrado staff will pursue partners in the Araguaia – Bananal Corridor (map 2). Possible institutions working in this Corridor are: Ministry of Environment (MMA), IBAMA and SEMARH. Corridor staff will help local capacity development and strengthen key partner institutions in the Corridor to carry out participatory biodiversity conservation planning and implementation within the proposed Corridor area, ensuring the effectiveness of our actions.

Activity 1.4.1	
Benchmark/Output(s):	Partnerships established; Common agenda established.
Months of implementation:	Partnerships will be pursued throughout FY02.
Activity Lead:	Mônica Harris & Mário Barroso.
USAID FY02 Level of Effort (\$):	No Costs
Other Funding Source (\$):	USAID Brazil

Other Match Funding Source (\$): CI – CBC, JICA.

1.4.2) As in FY01 the corridor team will conduct an annual corridor planning meeting, a week long review of FY02 activities and planning activities for FY03, organized by CI-Pantanal. This meeting will be held in Bonito and will result in an FY03 work plan in accompanying budget. As well as the work plan, the Corridor team will carry out a mid-project review to evaluate original technical project goals and objectives.

Activity 1.4.2	
Benchmark/Output(s):	FY03 work plan and accompanying budget; Review and planning meeting conducted in August 2002.
Months of implementation:	August 2002
Activity Lead:	CI Pantanal – Mônica Harris
USAID FY02 Level of Effort (\$):	14,413
Other Match Funding Source (\$):	

1.5) Corridor project team operational

1.5.1) **New Activity.** CI Pantanal will hire a database specialist to manage and maintain the Cerrado-Pantanal corridor database. The database specialist will interact with all corridor partners to oversee the standard protocol guaranteeing integrity of the information, and will furthermore ensure its availability on the Internet.

Activity 1.5.1	
Benchmark/Output(s):	Database specialist hired
Months of implementation:	January 2002
Activity Lead:	Monica Harris
USAID FY02 Level of Effort (\$):	No costs
Other Funding Source (\$):	USAID Brazil 9,000.00
Other Match Funding Source (\$):	

1.5.2) **New Activity.** The Corridor team will establish a new field support station at Chapadão do Céu municipality, strategically located near the Emas National Park. This station will assist the work and provide lodging to researchers and Corridor staff in the region of Costa Rica, Serranópolis, Chapadão do Céu and the Southeast portion of the Emas National Park. The Corridor team existing actions in this region are: the creation of a new protected area (Serranópolis) and the "Best Practice in Agriculture Projects" being developed in partnership with TNC, Embrapa and Goiás Rural Agency. This field station will be located in a rental house in town as to provide general communication access to researchers and staff. In addition to Chapadão do Céu Field Support Station, the Cerrado Corridor team are supporting the implementation of another Station in the Jacuba area and one in the Taquari Headwaters State Park with funds from Conservation International - Global Conservation Fund and local landowners.

Activity 1.5.2	
Benchmark/Output(s):	Field support station in Chapadão do Céu in place.
Months of implementation:	November 2001
Activity Lead:	Rosária Muller
USAID FY02 Level of Effort (\$):	13,032
Other Match Funding Source (\$):	CI - Global Conservation Fund, Emas Foundation, TNC, Embrapa.

1.5.3) **New Activity.** The Cerrado team of the Corridor will hire a communication expert to promote awareness products as decided during the Cerrado-Pantanal 4-P workshop to sensitize the general public and stakeholders to participate in the necessary conservation efforts to establish the corridor project along 32,000km2, considering the different social sectors and their livelihood. The

communication expert will implement a communication strategy designed to address specific conservation goals in the Corridor target areas.

Activity 1.5.3	
Benchmark/Output(s):	Communication expert hired; Communication strategy running.
Months of implementation:	By January
Activity Lead:	Rosária
USAID FY02 Level of Effort (\$):	12,400
Other Match Funding Source (\$):	CBC, TNC, SEMARH

1.6) Research long-term financial mechanisms

1.6.1) New Activity. In an effort to develop alternative economic activities in the Cerrado portion of the corridor, a study of the viability of apiculture will be conducted by a consultant from FIMES University. This study will examine the current extent and profitability of apiculture in the region outside the park, the potential for expansion, and market opportunities. To obtain these data, the consultant will visit all properties near the Emas National Park, collecting data on number of properties producing honey, type of bee management and vegetation utilized by the bees and whether the bees use the park area. As a complement to this study the Cerrado team and consultant will also investigate the interactions among apiculture, native bees and the environment within the core protected areas.

Activity 1.6.1	
Benchmark/Output(s):	Assessment of the economic and environmental viability of apiculture produced.
Months of implementation:	By August 2002
Activity Lead:	Mário Barroso
USAID FY02 Level of Effort (\$):	10,354
Other Match Funding Source (\$):	FNMA (12,500,00)

1.7) Awareness Program established

1.7.1) Continuing Activity. The corridor video that was produced in FY01 will be launched, in conjunction with environmental education materials, such as a folder and the Corridor popular texts, at the beginning of the school year in FY02. The decision to delay the launch of the video and other educational materials and information (see activity 2.7.1) was part of a strategy to optimize the impact of the environmental education campaign materials within the corridor. With the launching of the video and other education materials, we expect to make local population aware of the importance of the Cerrado-Pantanal Corridor in protecting Biodiversity.

Activity 1.7.1	
Benchmark/Output(s):	Video and other educational materials distributed to schools in the Pantanal and Cerrado.
Months of implementation:	March through July 2002
Activity Lead:	Mariza Silva
USAID FY02 Level of Effort (\$):	No Costs
Other Match Funding Source (\$):	GEF & EMBRAPA Solos

1.7.2) New Activity. The in country corridor team will organize and host a 4-P workshop with CI-DC Intercom, LCU and other partner institutions. The aim of this 4-P workshop is to develop an environmental awareness raising strategy to be applied throughout the corridor. The results of this 4-P workshop will be presented in the form of a strategy document. The 4-P workshop is a creative tool designed by CI's International Communication department to formulate a communication

strategy for a specific region, through a participatory process that will allow a communications effort or campaign to be customized. The name 4-P stands for problems, publics, products and plans and represents the four main themes addressed during the workshop.

Activity 1.7.2	
Benchmark/Output(s):	4-P workshop held at Fazenda Rio Negro; Corridor communication strategy defined.
Months of implementation:	By March 2002
Activity Lead:	CI Pantanal Communicator
USAID FY02 Level of Effort (\$):	7,471
Other Funding Source (\$):	USAID Brazil 6,025,00
Other Match Funding Source (\$):	CI – CBC

1.7.3) New Activity. The corridor team will produce awareness raising material as defined by the strategy developed during the 4-P workshop. The materials may include: audio material for a radio campaign, printed material such as posters, billboards and brochures, and web content to be distributed according to the results of the 4-P workshop. The public awareness campaign will explain the importance of the Cerrado-Pantanal corridor in the protection of biodiversity.

Activity 1.7.3	
Benchmark/Output(s):	Environmental awareness material produced and distributed.
Months of implementation:	June/July 2002
Activity Lead:	Pantanal Corridor Communicator & Cerrado Corridor Communicator
USAID FY02 Level of Effort (\$):	6,051
Other Funding Source (\$):	USAID - Brazil
Other Match Funding Source (\$):	CI – CBC

Objective 2: (USAID FY02 Level of Effort: \$162,924; Match Level of Effort: 199,225)
Protected areas created, strengthened and extended

Activities:

2.1) New protected areas (protected areas, private reserves, indigenous reserves/territories) are created

2.1.1) Ongoing Activity. CI Pantanal will continue to assist IBAMA¹ [Instituto Brasileiro do Meio Ambiente e dos Recursos Renováveis], SEMACT² (Secretaria de Estado do Meio Ambiente, Cultura e Turismo) and landowners in the creation of private reserves. Technical assistance is being provided by CI-Pantanal's GIS team, using satellite imagery, base maps and legal documents. These data provide characterization of the properties detailing the property's biological importance and their conservation status, so that private reserve status can be granted. Private reserves have been shown to be an effective mechanism for providing connectivity between core nuclei areas, ensuring genetic flow across the corridor.

Activity 2.1.1	
Benchmark/Output(s):	MOU signed with IBAMA – MS Number of properties assisted by CI GIS lab reported
Months of implementation:	Ongoing activity reported at the end of every FY
Activity Lead:	Samuel Leite
USAID FY02 Level of Effort (\$):	No Costs
Other Matching Funds (\$):	USAID –Brazil 7,000
Other Match Funding Source (\$):	

¹ Brazilian Environmental and Renewable Resources Institute

² State Secretary for the Environment, Culture and Tourism.

2.2) Protected area level infrastructure in place (park guards, posts, etc.)

2.3) Strengthen or extend existing protected areas

2.3.1) New Activity. In FY01 CI Cerrado will implement field stations in the core nuclei area of Emas National Park and Taquari Headwaters State Park. These facilities will provide field conditions to strengthen biological research and data collection. In the Emas N. Park part of the Cerrado nuclei, the Jacuba facility will allow the biological teams to cover northwest part of corridor. The Taquari State facility will provide support to the southwest part of the corridor, serving as a Headquarter base to extend the scientific work along the Taquari River, in the Coxim (MS) direction.

Activity 2.3.1	
Benchmark/Output(s):	Infra-structure implemented.
Months of implementation:	By January FY02
Activity Lead:	Nazareno Santos
USAID FY02 Level of Effort (\$):	No cost
Other Match Funding Source (\$):	GCF (25,000), Mineiros Municipal Government (2,000)

2.3.2) New Activity. Following the successful model of CI's Charette conducted and tested last year in the Pantanal, this five day activity will now be held in the Emas National Park in order to provide the park with a comprehensive ecotourism product that incorporates strategic planning, sustainable design and marketing opportunities. The result of the Charette will provide Ibama and the Emas Foundation with a series of draft designs and a strategic plan to enhance the park sustainability through tourism development.

Activity 2.3.2	
Benchmark/Output(s):	Draft designs; Attendance list.
Months of implementation:	May 2002
Activity Lead:	Mario Barroso
USAID FY02 Level of Effort (\$):	21,260
Other Match Funding Source (\$):	CI-CBC

2.4) Develop and implement management plans for new and existing protected areas

2.4.1) Continuing Activity. In FY01 CI Pantanal and IDATERRA started the process of land tenure and infrastructure assessment for the Rio Negro State Park. In spite of extensive flooding of the region at the time of ground surveys, assessments were completed in two of the three properties that will form the Park. CI Pantanal's support to the State Secretary for the Environment in developing the management plan will begin soon as the assessment of the third property is completed. CI's GIS team will provide the aerial photography necessary to complete the Management Plan. In addition to this technical support, CI's GCF will provide matching funds to be used for purchasing 50% of the 78,300 ha that will form the Park.

Activity 2.4.1	
Benchmark/Output(s):	Consultant to write Management Plan hired; Land acquisition process initiated.
Months of implementation:	By the end of FY02
Activity Lead:	Reinaldo Lourival.
USAID FY02 Level of Effort (\$):	No Costs
Other Match Funding Source (\$):	GCF, MS State Government.

2.4.2) New Activity. Emas Foundation has created a partnership with IBAMA-GO to implement the activities determined by the management plan designed by IBAMA for the Emas National Park. Activities predicted for FY02 will be: mapping and monitoring of exotic species, fire monitoring, mapping of the native vegetation, large mammal census and Park edge effect analysis. All the data gathered will be entered in the Corridor database and will be used to support the Park management committee decision-making process.

Activity 2.4.2	
Benchmark/Output(s):	Mapping completed and made available; Information gathered and entered in the database.
Months of implementation:	September 2002.
Activity Lead:	Mário Barroso
USAID FY02 Level of Effort (\$):	13,888
Other Match Funding Source (\$):	FNMA (84,000.00), CBC (10,000.00), Pro-Carnivoros Association (10,000.00), Fundação Boticário (5,000.00)

2.4.3) New Activity. Corridor staff and partners will provide technical, logistical and financial support to assist the creation and management of public and private protected areas in the North – South Corridor region. CI will also support the implementation of management plans in existing protected areas. Potential protected areas in the region to receive our support are: in the South – Parque Nacional da Serra da Bodoquena and surrounding private reserves; in the North – Pantanal National Park, Taiamã Ecological Station and nearby private reserves. Support actions include:

- Provide technical assistance and training in scientific activities needed to increase baseline data, develop and implement management plans;
- Promote studies to strengthen financial supporting mechanisms for private reserves;
- Promote and establish the need for new protected areas by providing technical information and justification as well as promoting policy decisions;
- Promote the importance of private reserves in preserving the integrity of the corridor and encourage landowners to set aside part of their lands as reserves; and,
- Strengthen public institutions that regulate privately held reserves by capacity-building regional staff and offering ongoing technical support.

Activity 2.4.3	
Benchmark/Output(s):	Management plan for protected areas started; Brazilian Private Protected Reserves Conference supported; Baseline data collected during AquaRAP expedition published.
Months of implementation:	August 2002
Activity Lead:	Reinaldo F.F. Lourival
USAID FY02 Level of Effort (\$):	No Costs
Other Match Funding Source (\$):	USAID – Brazil, CI – CBC, Ecopanta, Ecotrópica, CI-GCF

2.5) Capacity-building at the level of new and existing protected areas

2.5.1) Continuing Activity. In this activity, initiated in FY01, Emas Foundation will continue to support FIMES in improving and maintaining its herbarium and entomological collections. These collections will serve as reference for research carried out in the core nuclei of the Cerrado portion of the Corridor.

Activity 2.5.1	
Benchmark/Output(s):	Collections expanded
Months of implementation:	December 2001
Activity Lead:	Mario Barroso
USAID FY02 Level of Effort (\$):	4,414
Other Match Funding Source (\$):	CNPQ (2,000)

2.5.2) New Activity. Corridor team will assist in the creation and support of the Mato Grosso do Sul Private Reserve Land Owners Association. The Association will ensure support to the management and implementation of existing and new private protected areas. In addition, CI-Brazil is evaluating the creation of a matching fund directed to landowners to provide further economic assistance for existing private protected areas and incentives for the creation of new ones. Corridor team will continue to find incentives and support mechanisms for private reserves, as these are important tools to connect core nuclei areas throughout the landscape, protecting biodiversity and maintaining ecological processes.

Activity 2.5.2	
Benchmark/Output(s):	MS Private Reserve Land owners Association created and supported.
Months of implementation:	March 2002
Activity Lead:	Reinaldo Lourival and Mônica Harris
USAID FY02 Level of Effort (\$):	10,422
Other Match Funding Source (\$):	CI – CEPF, CI - CELB

2.5.3) New Activity. CI Pantanal will assist the creation of a formal educational program for adults at the Fazenda Rio Negro to teach the “pantaneiros” to read and write. In addition to basic education a series of practical courses on artificial insemination, leather crafts and tools, horticulture, in farm food products, machinery maintenance and operation, poultry farming, etc. During the first part of this activity the Pantanal team will focus on gathering information necessary to establish this school as well as look for partnerships to offer these courses periodically.

In order to make our public awareness and environmental education campaigns more effective it is important that the local population can read and write. This initiative aims to attend to a local problem in the Pantanal, which is the lack of basic education among the adult rural population. The Education Secretary of Aquidauana municipality, where Fazenda Rio Negro is located, will be our partners in implementing this adult training center.

Activity 2.5.3	
Benchmark/Output(s):	Information gathered and partnerships established.
Months of implementation:	By September 2002
Activity Lead:	Mariza Silva
USAID FY02 Level of Effort (\$):	No Costs
Other Match Funding Source (\$):	Moore Foundation, Aquidauana municipality.

2.6) Information gathering, integration and analysis for protected area creation and strengthening (new or targeted biological, social, legal and/or economic data)

2.6.1) New Activity. In an effort to assist the classification of the different types of vegetation in the Pantanal ecosystem, a week long-training will be offered to the GIS team by vegetation and remote sensing specialists. During this week a vegetation map protocol will be produced indicating the different vegetation types as well as existing fragments.

Activity 2.6.1	
Benchmark/Output(s):	Pantanal Corridor Vegetation Map protocol produced.
Months of implementation:	December 2002
Activity Lead:	Alexandre Dinnouti, Cláudia Arcangelo, Samuel Leite
USAID FY02 Level of Effort (\$):	No cost
Other Matching Funds (\$):	USAID – Brazil 8,850.00
Other Match Funding Source (\$):	CI – CBC

2.6.2) Continuing Activity. CI Pantanal will continue to support and host two training programs on biodiversity, wildlife conservation and population ecology studies on the Rio Negro farm. Two other research stations are involved in the training program through a partnership with EMBRAPA – Pantanal and UFMS. The purpose of these training programs is threefold: to build local capacity for field research, to stimulate short to long term research activities in the Pantanal, and to increase our knowledge about the biodiversity of the Rio Negro-Nhecolandia region. These courses are offered to graduate students in October and November, and will yield published reports of the short-term research projects undertaken by the students. These results will be incorporated in the corridor database to support some conservation actions.

Activity 2.6.2	
Benchmark/Output(s):	At least twenty students trained in field research techniques; Short term research project reports published.
Months of implementation:	October / November 2001
Activity Lead:	Reinaldo Lourival
USAID FY02 Level of Effort (\$):	26,152
Other Match Funding Source (\$):	CAPES, Smithsonian, UFMS, EMBRAPA.

2.6.3) Continuing activity. CI – Pantanal will continue to support 2 biodiversity researchers identified at the end of each of the training programs from activity 2.6.2. The researchers are selected by course tutors based on their performance and receive the opportunity to develop their research projects in the Rio Negro core nuclei of the corridor. Research projects will address the priority determined by the Scientific Advisory Committee created by CI and the Earthwatch Institute to supervise all research projects in the Pantanal portion of the Corridor.

Activity 2.6.3	
Benchmark/Output(s):	Research grant awarded at the end of each training; Final reports on research projects completed by the end of FY02.
Months of implementation:	September 2002.
Activity Lead:	Reinaldo Lourival
USAID FY02 Level of Effort (\$):	16,120
Other Match Funding Source (\$):	

2.6.4) Continuing Activity. CI Pantanal will continue the established partnership with the Earthwatch Institute, hosting another 12 groups of volunteer research assistants to work with the existing three PIs and five new ones, who will be carrying out research with demography and/or ecology of keystone species, like the giant river otters, otters, jaguars, bats and processes like frugivory. In addition to the regular volunteer groups, EWI will award a total of 50 fellowships for high school students, undergraduates, teachers, corporate staff and local tour guides. These fellowships will provide great opportunity for the awarded fellows to learn about biodiversity conservation and serve as multipliers of this information.

Activity 2.6.4	
Benchmark/Output(s):	12 groups of volunteer research assistants hosted at the Rio Negro research station; 50 fellowships awarded.
Months of implementation:	Throughout FY02
Activity Lead:	Reinaldo Lourival.
USAID FY02 Level of Effort (\$):	No Costs
Other Match Funding Source (\$):	Earthwatch Institute, CI-Brazil - Moore Family Foundation

2.6.5) New Activity. Corridor Team will develop as part of the Environmental Education campaign an innovative strategy to stimulate regional students to get involved with the corridor program. This initiative consists of triggering the scientific curiosity of kids to “discover and monitor” biological and

physicochemical parameters at different areas of the corridor. The "Kids RAP" will reproduce in a small scale CI's rapid assessment program, supervised by science teachers and researchers as part of high school student regular curricula. The focal areas for the development of the Kids RAP are the corridors private reserves (RPPN) and at the Cerrado on public protected areas, creating baseline data, and generating information for the Corridor database. Quality of scientific monitoring process will be assured by a standard protocol and equipment manipulated by the supervisors to evaluate the biodiversity importance of these areas. The first teachers that will be beneficiaries are the 5 selected in last year EWI fellowship program.

Activity 2.6.5	
Benchmark/Output(s):	Field Trips
Months of implementation:	Throughout FY02.
Activity Lead:	Mariza Silva
USAID FY02 Level of Effort (\$):	22,010
Other Match Funding Source (\$):	

2.7) Develop and implement awareness campaign for new or existing protected areas

2.7.1) Continuing Activity. The corridor environmental education and information material drafted and produced in FY01 will be launched, in conjunction with the video introducing the corridor concept, at the beginning of the school year in FY02. The decision to delay the launch of the materials was part of a strategy to optimize the impact of the environmental education campaign within the corridor (see activity 1.7.1). As initiated in FY01, the corridor team will hold a series of seminars in different municipalities of the corridor, named "Amigos da Natureza", where students and teachers will be presented with information, visual and printed materials on the corridor concept. In addition, a website will be created to allow students from different schools to access and exchange information about conservation issues throughout the corridor. The environmental education and information materials will also be distributed by partner institutions.

Activity 2.7.1	
Benchmark/Output(s):	At least 5 seminars held Material distributed.
Months of implementation:	By the end of FY02
Activity Lead:	Mariza Silva and Mário Barroso.
USAID FY02 Level of Effort (\$):	13,888
Other Match Funding Source (\$):	Earthwatch Institute

2.7.2) Continuing Activity. Following the success of the first group of 10 volunteer teachers awarded by the Earthwatch fellowships, a second series of environmental education and information materials about conservation issues will be designed in collaboration with students from the Cerrado and Pantanal regions. These materials will be produced by the corridor team in association with the next 10 volunteer teachers participating in this year's workshop.

Activity 2.7.2	
Benchmark/Output(s):	10 fellowships awarded to volunteer teachers; Workshop held; Materials designed and produced.
Months of implementation:	By the end of FY02
Activity Lead:	Mariza Silva and Mário Barroso.
USAID FY02 Level of Effort (\$):	22,370
Other Match Funding Source (\$):	Earthwatch Institute

2.7.3) Continuing Activity. As initiated in FY01 in the Pantanal region, the corridor team will expand the "Preservation of the Pantanal Watershed Campaign" to address major threats brought

about by deforestation and erosion/siltation to the entire corridor region. The first part of this activity will focus on gathering detailed information about the magnitude of these threats. In the second part of this activity, corridor communicators and educators will work with relevant corridor staff to develop an optimal strategy for dissemination of this information for awareness raising about soil conservation. Information about these threats will be compiled in partnership with EMBRAPA – Solos, the leading Brazilian research institution on these issues.

Activity 2.7.3	
Benchmark/Output(s):	Information on threats to soil conservation gathered and reported; Information dissemination strategy developed.
Months of implementation:	By July 2002
Activity Lead:	Mariza Silva and Mário Barroso.
USAID FY02 Level of Effort (\$):	No Costs
Other Matching Funds (\$):	USAID – BRAZIL – 1,800.00
Other Match Funding Source (\$):	EMBRAPA – Solos

2.7.4) Continuing Activity. Building on the progress made in previous years' campaign for fire control and the demand of local community members, CI Pantanal and local partners will continue efforts to train and equip volunteer fire brigades in and around core nuclei areas and the corridor's sustainable development target areas. In addition, the public awareness campaign launched in FY01 in the Pantanal region of the Corridor will be continued and expanded to all corridor.

Activity 2.7.4	
Benchmark/Output(s):	New volunteer brigades trained and equipped; Public awareness campaign launched and functioning.
Months of implementation:	From March to September 2002
Activity Lead:	Erika Guimarães, Mário Barroso
USAID FY02 Level of Effort (\$):	12,400
Other Match Funding Source (\$):	USAID Brazil – 43,575.00

Objective 3: (USAID FY02 Level of Effort: \$210,628; Match Level of Effort: \$167,190)
Core nuclei of protected areas established

Activities

3.1) Select and monitor the priority areas and connections within the nuclear area to best protect biodiversity

3.1.1) Continuing Activity. CI Pantanal will continue to build up on the research infra structure available at the Rio Negro research station core nuclei by creating and maintaining a herbarium, an entomological collection, and a biological exhibit collection. These collections will be available to all researchers and visitors as a tool to assist research and disseminate knowledge about the local biodiversity.

Activity 3.1.1	
Benchmark/Output(s):	Herbarium and entomological collections in place.
Months of implementation:	By July 2002
Activity Lead:	Mônica Harris
USAID FY02 Level of Effort (\$):	9,387
Other Match Funding Source (\$):	Earthwatch, UFMS, EMBRAPA

3.2) Promote environmentally compatible activities in connections within the nuclei

3.2.1) New Activity. Sustainable use of biodiversity can be an alternative to avoid reduction of natural population of game species. The need for diversity to avoid inbreeding is another value for

conservation of wild species. The tradition of hunting in the Cerrado portion of the corridor is leading wild population on forest fragments to local extinction, reducing the chances of success of the corridor effort. Recently opened for breeding and production native species such as peccaries, agoutis and capybaras, tapirs and rheas have already a market potential being exploited by some producers in the South of Brazil. Beginning the same effort at the corridor level, EMBRAPA-CPAP³ started some experiments at Mato Grosso do Sul. On the other extreme of the corridor route, neighboring producers of Emas National Park are establishing commercial breeding facilities trying to occupy a local open niche. Supported by the biological information generated by Pro- Carnivoros Association, the intention is to understand the impact of such initiatives, on local wildlife populations, develop a sustainability analysis that focus on the commercial and reintroduction potential of the native species.

Activity 3.2.1	
Benchmark/Output(s):	Business plan developed on a pilot project scale; Biological sustainability report.
Months of implementation:	By September 2002
Activity Lead:	Mário Barroso and Myriam Gomes
USAID FY02 Level of Effort (\$):	2,356
Other Match Funding Source (\$):	Pro Carnivoros Association (5,000.00), Land Owner (1,000.00), Emas Foundation.

3.2.2) New Activity. Cerrado-Pantanal corridor team with technical support of EMBRAPA SOLOS, will build local capacity in the Corridor area by offering a training program in soil conservation and production of native plant species in order to restore degraded areas and recover gallery forests along critical watersheds. This training program will be held in Mineiros – GO to 30 people from local farms, rural agencies, agriculture graduates and local Government.

Activity 3.2.2	
Benchmark/Output(s):	Training offered to 30 people in Mineiros.
Months of implementation:	March 2002.
Activity Lead:	Renato Alves
USAID FY02 Level of Effort (\$):	8,190
Other Match Funding Source (\$):	EMBRAPA – solos, MMA-SEMARH.

3.2.3) New Activity. The Pantanal corridor team will support the Federal University of the State of Mato Grosso do Sul project “UFMS vai à escola”. This project will attend the Corridor communities by offering a spectrum of activities provided by 17 different undergraduate courses like: medicine, engineering, biology, dentistry, etc. These undergraduates and their tutors will provide basic assistance to communities and disseminate information about biodiversity conservation through cultural activities such as plays, games, music and environmental handcraft activities like the confection of wicker baskets and leather goods. This project has attended over 20.000 people in Campo Grande city and CI proposes to provide the logistics to take this initiative to the Corridor municipalities.

Activity 3.2.3	
Benchmark/Output(s):	“UFMS vai a escola” project visiting Corridor municipalities.
Months of implementation:	Throughout FY02
Activity Lead:	Mariza Silva
USAID FY02 Level of Effort (\$):	14,682
Other Match Funding Source (\$):	UFMS and partners.

3.2.4) New Activity. CI – Cerrado will establish partnership with Cooperativa Mista Agropecuária do Vale do Araguaia (COMIVA). COMIVA is committed to improve cattle raising and dairy

³ Brazilian Agricultural Research Institute – Pantanal Agricultural Research Center.

production management in the Cerrado region and will now be working directly with the Corridor team to incorporate environmental best practices according to Brazil's Environmental law. CI Cerrado will offer capacity building courses to COMIVA's technical staff and develop an evaluation system able to identify environmental benefits at the property level.

Activity 3.2.4	
Benchmark/Output(s):	Partnerships established and capacity building course offered; Evaluation system developed and applied.
Months of implementation:	September 2002.
Activity Lead:	Renato Alves
USAID FY02 Level of Effort (\$):	6,411
Other Match Funding Source (\$):	COMIVA

3.2.5) Continuing Activity. As initiated in FY01, CI Pantanal will continue to promote apiculture activities in the Pantanal portion of the Corridor. Two more free training courses on honey production and a follow up course on honey processing and packaging will be held for local communities. As a complement to the promotion of apiculture CI Pantanal will launch a research program to examine the interactions among apiculture, native bees and the environment.

Activity 3.2.5	
Benchmark/Output(s):	Three trainings offered; Preliminary report produced.
Months of implementation:	September 2002
Activity Lead:	Reinaldo Lourival and Samuel Leite
USAID FY02 Level of Effort (\$):	37,746
Other Match Funding Source (\$):	SENAR

3.3) Engage core nuclei stakeholders for future corridor development (workshops, awareness building, promoting)

3.3.1) Continuing Activity. Continuing last years' partnership with TNC "Best practices in agriculture" project, the Cerrado corridor team will offer landowners a "land use tool kit" capable of avoiding environmental impacts and promoting soil, water and biodiversity conservation at the property level in the Cerrado core nuclei buffer zone. The tool kit concept will be the result of a technical analysis of collected parameters in the first year of the Fundação EMAS / TNC project.

Activity 3.3.1	
Benchmark/Output(s):	Land use tool kits disseminated.
Months of implementation:	By September 2002
Activity Lead:	Rosária Muller
USAID FY02 Level of Effort (\$):	6,374
Other Match Funding Source (\$):	Agência Rural, EMBRAPA, TNC (55,000.00)

3.3.2) Continuing Activity. As started in FY 01, CI will continue to support the long term sustainability of the Corridor by assisting the certification of environmentally sound farms to produce organically raised beef throughout the corridor. This activity has received great support from partners & National media and has catalyzed other environmentally sound cattle raising initiatives. The market research produced for CI-Brazil indicates that the demand for organic beef is substantial and will continue to expand. These results suggest that continued investments in organic beef production are likely to yield increased profits for farmers and significant conservation benefits. Building on the successes generated through USAID financing, CI Pantanal is exploring the possibility of establishing marketing agreements with major industry partners, which will create incentives for more cattle ranchers to join the organic beef certification initiative.

Activity 3.3.2	
Benchmark/Output(s):	The creation of the Brazilian Association of Organic Beef Producers; A veterinarian hired by the Association of Organic Beef Producers – Organic Connection and providing technical assistance to ranches.
Months of implementation:	September 2002
Activity Lead:	Reinaldo Lourival
USAID FY02 Level of Effort (\$):	58,429
Other Match Funding Source (\$):	Funbio, land owners.

3.4) Economic analysis and policy level work and/or analysis to identify land uses that meet conservation objectives at nuclei level

3.4.1) New Activity. The Corridor team will support a diagnosis program to evaluate sustainable economic practices for the Kadiweu Indigenous Community within the Southern core nuclei. The 560,000ha Kadiweu Indigencus reserve neighbors the 76,000 ha Bodoquena National Park, these two areas together form the potential greatest complex of protected areas in Mato Grosso do Sul. Despite the fact that indigenous land is not a formally protected area the role of its integrity in supporting Indigenous traditions is an important supporter to safeguard a portion of original southern Pantanal landscape. Communities like the Kadiweu, with its strong tradition on pottery and other cultural values must be supported as part of Pantanal's origin.

The corridor project intends to start a process that would understand the community needs to face future conservation challenges, surveying potential economic alternatives that would reduce the dependence of this nation, from a paternalistic external support, enhancing the sustainability of natural resource use, and integrating the community to the National Park conservation and tourism development agenda. The activities planned includes: health and education initiatives, small business development, fire prevention and tourism development.

Activity 3.4.1	
Benchmark/Output(s):	Survey developed and report written; Action plan designed.
Months of implementation:	September 2002
Activity Lead:	Erika Guimarães, Myriam Gomes
USAID FY02 Level of Effort (\$):	2,698
Other Funding Source (\$):	USAID Brazil
Other Match Funding Source (\$):	USAID – Brazil, CBC, FUNAI, SEMACT, IBAMA-MS, MS Fire Dept.

3.4.2) New Activity. CI-Cerrado and CI-Pantanal staff, in conjunction with CI-DC REP staff and CI-Brasil Economist will use findings of issues papers/incentive analyses (1.1.3) in the process of developing an implementation plan for FY03 – to strengthen strategic activity planning, develop long-term corridor financing mechanisms, and devise economic instruments to encourage sustainable land uses and conservation.

Activity 3.4.2	
Benchmark/Output(s):	Implementation plan for long-term corridor financing mechanisms.
Months of implementation:	September 2002.
Activity Lead:	Anita Akella
USAID FY02 Level of Effort (\$):	2,480
Other Match Funding Source (\$):	CI-REP

3.5) Awareness program designed and made operational

3.6) Select Indicator species and promote research on them for integration at the corridor level.

3.6.1) New Activity. In an effort to understand the impact of infectious agents in animal species currently being studied at Rio Negro Research Station, the corridor team will sign an MOU with Oswaldo Cruz Foundation (FioCruz) to analyze infectious and parasitic agents on domestic and wildlife species. Based on the results of the diagnosis carried out by FioCruz, corridor team and partners will develop a program to monitor the status and control potentially outbreaking infectious agents in key wildlife species along the most critical Corridor areas. Diseases have been pointed as a major extinction cause to wildlife on stress situation such as habitat fragmentation or the captivity. Corridors on the other hand have been pointed as facilitator on the dispersion process of some diseases, so the understanding of current status of those diseases are essential to the corridor performance analysis. Another important but neglected factor is the role of corridors as a tool to spread resistance genes between different meta-populations, which CI/FioCruz will address as a further step on this program.

Activity 3.6.1	
Benchmark/Output(s):	MOU signed; A Triage Laboratory equipped at Rio Negro; Research protocol ready and implemented.
Months of implementation:	By July 2002
Activity Lead:	Reinaldo Lourival and Heitor Herrera
USAID FY02 Level of Effort (\$):	No cost
Other Funding Source (\$):	USAID – Brazil (32,190.00)
Other Match Funding Source (\$):	FIOCRUZ, EMBRAPA, EWI

3.6.2) New Activity. CI Pantanal will support researchers in carrying out biodiversity analysis and mapping in the Pantanal, to understand distribution patterns of keystone species, such as anteaters, jaguars, giant river otters and hyacinth macaws, along the Corridor.

Activity 3.6.2	
Benchmark/Output(s):	Biodiversity analysis and mapping initiated
Months of implementation:	By September 2002
Activity Lead:	Reinaldo Lourival
USAID FY02 Level of Effort (\$):	No cost
Other Match Funding Source (\$):	\$59,000 CI - CBC

3.7) Information gathering, integration and analysis for core nuclei (new or targeted biological, social, legal and/or economic data)

3.7.1) New Activity. The Cerrado Corridor team will continue to stimulate scientific research in the Corridor to obtain specific biological information on the effectiveness of the Corridor as a tool to protect biodiversity in the Cerrado. The research projects to be selected will depend on the minimum biological protocol to be defined by Corridor team (1.3.1). All data gathered will be entered in the Corridor database.

Activity 3.7.1	
Benchmark/Output(s):	Information obtained to access Corridor effectiveness.
Months of implementation:	By September 2002.
Activity Lead:	Mário Barroso
USAID FY02 Level of Effort (\$):	61,876
Other Match Funding Source (\$):	CI – CBC (15,000.00)

Objective 4: (USAID FY02 Level of Effort: \$46,202; Match Level of Effort: \$32,200)
Biodiversity corridor of connected core nuclei established

Activities

4.1) Analyze biological, economic, and social data to identify priority areas for connection

4.1.1) New Activity. Corridor GIS technical team and the Federal University of Mato Grosso do Sul will hold a 4-day dialogue to review the methodologies in use, to support the decision-making process in the Cerrado-Pantanal Corridor. During this dialogue, landscape analysis, fragmentation and connectivity processes data gathered throughout the life of this agreement will be appraised by experts from São Paulo University (USP), Goeldi Museum and IBAMA. Using state of the art technology and methods, the corridor technical team intends to build upon the entire Corridor mapped information and analysis to identify priority routes for connection. In addition, this opportunity will be extended to MSc students in order to build local capacity.

Activity 4.1.1	
Benchmark/Output(s):	Dialogue held and information exchanged; Updated land use map; Improved scientific protocol for landscape analysis.
Months of implementation:	March 2002
Activity Lead:	Reinaldo Lourival, Mário Barroso, Alexandre Dinnouti.
USAID FY02 Level of Effort (\$):	11,110
Other Match Funding Source (\$):	CI – CBC

4.1.2) New Activity. Emas Foundation will conduct three viability studies to define the most appropriate category of protected area to be implemented at Serranópolis (GO), Araguaia Headwaters (GO-MT) and Rio do Peixe (MT) increasing connectivity within the Cerrado core nuclei buffer zones. The viability study will be accomplished with the assistance of satellite imagery, information from Corridor database and field surveys, including archeological sites data indicated on a specific map.

Activity 4.1.2	
Benchmark/Output(s):	Three viability studies completed.
Months of implementation:	By June 2002
Activity Lead:	Mario Barroso.
USAID FY02 Level of Effort (\$):	12,412
Other Match Funding Source (\$):	SEJA-Jatai; SEMARH

4.2) Design and promote policy interventions to alter economic decision-making environment across corridor

4.2.1) New Activity. The Cerrado Corridor team will promote a capacity building training for Federal, state, municipal government, district attorneys and land owners associations on the current Forestry Code. This course will be offered by the Instituto Socioambiental (ISA), Emas Foundation and CI – Cerrado. This leveling seminar will focus on the new flexibilities predicted for Legal reserve areas, including consortium private agreements in order to promote connectivity and safeguard natural resources and biodiversity flows.

Activity 4.2.1	
Benchmark/Output(s):	Seminar offered.
Months of implementation:	May 2002.
Activity Lead:	Paulo Gustavo Prado, Mário Barroso.
USAID FY02 Level of Effort (\$):	6,014

Other Match Funding Source (\$):	Pequi, ISA
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- 4.3) Define and monitor biological, social, and spatial indicators for change at the corridor level
- 4.4) Promote changes in legislation incompatible with corridor goals is completed
- 4.5) Develop market connections for alternative certified products/goods from the corridor
- 4.6) Information gathering, integration, and analysis for corridor activities (new or targeted biological, social, legal and/or economic data)

4.6.1) **New Activity.** Corridor team and partners will map the North – South Corridor areas with the use of satellite imagery and identify fragments with the aid of videography and aerial photography to provide a detailed view of the landscape and allow identification of fragments that may be critical for the connectivity of the Corridor. CI Pantanal in partnership with IBAMA, SEMACT and NGOs have already started compiling a list of all the existing protected and indigenous areas along the North – South Corridor. Biological information for the Northern Portion of the Corridor will be subsidized by the AquaRAP expedition.

Activity 4.6.1	
Benchmark/Output(s):	North – South Corridor mapped; areas of high biological diversity highlighted, existing private and public protected areas indicated.
Months of implementation:	July 2002.
Activity Lead:	Samuel Leite
USAID FY02 Level of Effort (\$):	No cost
Other Funding Source (\$):	USAID – Brazil (31,700.00)
Other Match Funding Source (\$):	CI – CBC, Ectrópica.

4.6.2) **New Activity.** Corridor staff will map the Araguaia headwaters, located in the Northeast of the Emas National Park. Information obtained from satellite imagery, videography and aerial photography will provide a detailed view of the landscape and allow identification of fragments that may be critical for the connectivity of the Cerrado Corridor core nuclei. The data produced will be used to create a map of Land use restrictions and agricultural best practices by Corridor staff in partnership with EMBRAPA and Goiás Federal University Institute for socio-environmental studies (IESA).

Activity 4.6.2	
Benchmark/Output(s):	Araguaia headwaters mapped; Land use and Agricultural best practices protocol accorded.
Months of implementation:	November 2001
Activity Lead:	Demerval Aparecido (Emas Foundation).
USAID FY02 Level of Effort (\$):	4,018
Other Match Funding Source (\$):	MMA / SEMARH (3,000.00)/ Mineiros grain producers (APGM) (500.00).

4.7) Awareness program designed and made operational at corridor level

4.7.1) **New Activity.** Research being carried out around protected areas has indicated the great numbers of wild animals run over on surrounding roads yearly, cause great impact on local population numbers, demonstrating the need for a large public awareness campaign on the issue. The campaign will consist of printed materials such as flyers and billboards as well as video material. The impact of the campaign will be measured by the ongoing research on the impact of road kills on wild animal populations. The Corridor team expects with this campaign to raise driver's awareness to the issue and ask them to be more careful, specially in certain portions of roads, where large numbers of animals are killed daily.

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

Activity 4.7.1	
Benchmark/Output(s):	Campaign launched and running. Road kills reduced in Corridor.
Months of implementation:	Throughout FY02.
Activity Lead:	Pantanal and Cerrado Communicators, Paula Costa.
USAID FY02 Level of Effort (\$):	12,648
Other Match Funding Source (\$):	USAID-Brazil, Pro-carnivoros association

II) CI-Guyana

Introduction to the Guyana Sites

The focus of CI-Guyana's activities is on the establishment of the Southern Guyana Corridor. Most of the work is therefore being done in Region Nine, one of the largest and most remote administrative regions in Guyana. The population density of Region Nine is very low, absolute poverty is widespread and migration is also high. The traditional culture of the region's three major indigenous populations; the Macushi, Wapishiana and Wai Wai; is also largely intact, and there are growing efforts to promote the conservation of some aspects of their traditional lifestyles. The biological resources of the region are also intact to a very large extent, although there are emerging threats as efforts are being made to improve the accessibility of the region.

CI has had a major break-through in gaining the confidence of the Government of Guyana when CI-Guyana was requested to perform the role of the Lead Agency in facilitating the establishment of a protected area in the vicinity of the Kanuku Mountains. The Kanuku Mountains is one of the core areas in the Southern Guyana Corridor being implemented by CI-Guyana. It is also one of the biologically richest parts of Guyana and is, perhaps, the primary site for the establishment of Guyana's next protected area.

CI-Guyana is also attempting to implement an innovative conservation mechanism in southern Guyana called a conservation concession. This will involve CI applying to the Government of Guyana for a standard logging concession, which, once granted, will be managed to achieve conservation objectives. A three-year exploratory lease has already been acquired for approximately 200,000 acres in southern Guyana and CI-Guyana will continue efforts to secure a long-term lease for the area.

Key Threats

Small-scale Gold Mining. Fueled by a steady demand for gold on the national and international markets, low income residents in Region Nine are currently engaging in small scale mining activities in various parts of the region. The use of mercury in the mining process results in water pollution. The implementation plan for the FY 2002 will result in the elaboration of a national strategy for conservation enterprise development in Guyana. It is expected that this would pave the way for a greater focus on alternative income generation activities in Region Nine that are more environmentally friendly. The establishment of a protected area in the vicinity of the Kanuku Mountains will also open up opportunities for conservation-based development in the future.

Large-scale Gold Mining. At least one large-scale gold mining operation is investigating the possibilities for mining in various parts of Region Nine. Actual mining has already started in at least one location. CI is currently attempting to clarify the exact spatial focus of the proposed mining activities and will attempt to implement measures to ensure there are no unnecessary or excessive environmental impacts.

Road Construction. A dry weather road exists between the regional capital, Lethem, and the national capital of Guyana, Georgetown. There are plans to bridge this road to connect to the trans-amazon road network in Brazil. This could lead to many economic opportunities being opened up in Region Nine. As these economic opportunities are pursued, it is expected that the overall pressure will be increased to utilise the various natural resources of Region Nine. CI-Guyana will continue to monitor this development and will take action to draw attention to emerging environmental challenges.

Timber Harvesting. Small scale timber harvesting is occurring in various parts of the Kanuku Mountains by residents. These activities are mobile and are being partially fuelled by the limited income generation opportunities in the region. Once Region Nine is connected to Brazil, it can be expected that there will be an increased pressure to harvest the timber resources of Region Nine to feed the expected increase in demand for construction materials in both Region Nine and neighbouring Brazil. CI-Guyana's environmental awareness and education programme will seek to alert residents of Region Nine to the

importance of using the biological resources of the region in a sustainable manner. The strategy for conservation enterprise development will also seek to clarify the opportunities for balancing resource utilization with environmental management.

Wildlife Trade Over-harvesting. Some amount of wildlife trade occurs in Region Nine. Although the extent of this trade has not been quantified as yet, it is known that the regulatory framework is not strong. It is also expected that increasing access to these areas will contribute to the over-harvesting of the resources. CI-Guyana's implementation plan for FY 2002 does not address this challenge directly. Nevertheless, policy initiatives will be taken by CI-Guyana to stimulate support for increased regulation of the wildlife trade in Guyana.

Overfishing and Overhunting in Communities. There are many anecdotal stories about the depletion of resources in the vicinity of various communities. This is reflected by the increasing difficulty local populations experience to harvest these resources. The increased traffic that is expected to pass through the region will also exert pressure on the food resources of the region. CI-Guyana's environmental education and awareness program is expected to enhance residents' understanding of the importance to utilize their resources in a sustainable manner.

Financial Sustainability Activities and FY02 Co-financing

Conservation International (CI) has created a Tropical Wilderness Protection Fund (TWPF) to finance the protection of large tracts of pristine tropical wilderness in the Guyana Shield, the Amazon Basin, the Congo Basin and the island of New Guinea. CI has secured an initial investment into the Fund of \$5 million from private donors. The TWPF is providing a total of \$271,038 to support the development of the Southern Guyana Corridor during FY 2002. CI's Healthy Community Initiative (HCI) is also providing \$56,600 to support the process of evaluating the resource use patterns in stakeholder communities. CI's Global Conservation Fund (GCF) is providing \$25,000 as match cost to develop new corridor initiatives in Guyana, as well as \$271,000 to support the development of an innovative conservation concession concept in southern Guyana. The Lecler Foundation is providing \$11,134 for activities to enhance national awareness of the importance of conserving biological diversity. CI's new Center for Biological Conservation (CBC) is also providing \$96,910 to enhance national and regional environmental awareness, as well as \$180,000 to support the establishment of the southern Guyana Corridor.

An overall total of \$839,682 is available to the Guyana Program as matching cost during the fiscal year 2002.

Guyana Activities

Objective 1: (USAID FY02 Level of Effort : \$117,340; Match Level of Effort : \$0)
Build biodiversity corridor planning and implementation support framework: In Guyana, we have determined that the first objective and its activities are critical first steps in the corridor process, in particular the gathering of baseline data, the establishment of a corridor information system and assembling the corridor project team.

Activities:

1.1) Biodiversity corridor assessment completed (baseline legal, biological, economic and social assessments/data gathered)

1.1.1) Continuing Activity. Attempts to negotiate a Memorandum of Understanding (MOU) with the University of Guyana have clarified that there is firstly a need for an MOU with the Government of Guyana. The Executive Director of CI-Guyana will seek to develop a comprehensive MOU between the Government of Guyana and CI-Guyana that will attempt to facilitate all aspects of collaboration between the two parties. This MOU will pave the way for CI-Guyana to execute further MOUs with specific state institutions in Guyana.

Activity 1.1.1	
Benchmark/Output(s):	MOU obtained by end June 2002.
Months of implementation:	1 Oct.2001 – 30 Jun. 2002
Activity Lead:	Executive Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

1.1.2) Continuing Activity. Databasing of Herbarium Specimens. A MOU will be pursued with the University of Guyana to facilitate the development of an electronic database of the specimens in the University's herbarium. The databasing efforts will focus on species that occur below the fourth parallel in Guyana. This MOU will be contingent on the execution of a broader MOU between CI-Guyana and the Government of Guyana (see activity 1.1.1). CI-Guyana will enhance the capacity of the University by providing a computer and funding six months of new staff time to complete the development of the database. It is hoped that agreement will be arrived at for both staff and computer to be assimilated into the University system. The database developed will be transferred into the corridor information system being developed by CI-Guyana.

Activity 1.1.2	
Benchmark/Output(s):	Herbarium specimens below the fourth parallel compiled by end September 2002.
Months of implementation:	October 2001 to September 2002.
Activity Lead:	Executive Director, CI-Guyana
USAID FY02 Level of Effort (\$):	6,944
Other Match Funding Source (\$):	0

1.1.3) Continuing Activity. Leanne Alonso, Director of CI's Rapid Assessment Programme, has already received some biological data from the Smithsonian Institution. The Director of the Rapid Assessment Programme will continue to access electronic data on specimens collected from below the fourth parallel in Guyana from the Smithsonian Institution's database. This data will also be transferred to the CI-Guyana office for integration into the corridor information system.

Activity 1.1.3	
Benchmark/Output(s):	Additional specimens available for integration into corridor information system.
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Leanne Alonso, Director, Rapid Assessment Program
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

1.1.4) New Activity. CI-Guyana will contract a consultant to oversee the implementation of a timber inventory in the area of the proposed conservation concession. This inventory will provide important data on the timber value of this proposed core corridor site and will be used to negotiate payments for the concession to the Government of Guyana.

Activity 1.1.4	
Benchmark/Output(s):	Inventory Report available by end June 2002
Months of implementation:	1 November 2001 to end May 2002
Activity Lead:	Corridor Coordinator, Bernard DeSouza
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 36,000

1.1.5) Continuing Activity. A detailed methodology to conduct a Community Resources Evaluation (CRE) will be finalized and the specific outputs to be produced at the end of the activity specified. The CRE will be implemented in the communities identified by RAG as being stakeholders for the

purpose of establishing the proposed Kanuku Mountains protected area. During the CRE, additional information will be provided to the communities to facilitate an informed consensus on the idea of the protected area. The opportunity will also be used to generate feedback and clarify issues arising during the discussions. The socio-economic and spatial data generated by this activity will be entered into the corridor information system being developed. During the CRE, the results of the exercise will be discussed with the participating communities to ensure the accuracy of its contents. The final report on the results of the CRE will be distributed among all stakeholders.

Activity 1.1.5	
Benchmark/Output(s):	Report on CRE available by end August 2002
Months of implementation:	1 October 2001 to end May 2002
Activity Lead:	Susan Stone, Programme Facilitator/Enterprise Specialist
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 82,559 Healthy Communities Initiative: 56,600

1.1.6) Continuing Activity. Daniel Juhn, CI Washington' GIS Manager, has drafted a vegetation map for the southern Guyana region. The GIS Manager will continue to work on the vegetation map. This map will be one of important inputs to the corridor information system being developed.

Activity 1.1.6	
Benchmark/Output(s):	Vegetation map available in Guyana by end January 2002
Months of implementation:	1 October 2001 to end January 2002
Activity Lead:	Daniel Juhn, CI Washington's GIS Manager
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

1.1.7) Continuing Activity. CI-Guyana's annual workplan will be reviewed and updated at the end of every quarter. The review at the end of the second quarter will be more in-depth and will involve the preparation of an updated workplan that could serve as a basis for activities during the next fiscal year. The experience with implementing the corridor approach and FY 02 results will be reviewed by the end of August 2002. A detailed workplan and budget will then be prepared for the next fiscal year.

Activity 1.1.7	
Benchmark/Output(s):	Updated workplan available by end of April 2002. Workplan and budget for FY 02 available by end August 2002.
Months of implementation:	Jan. 2002, April 2002, June 2002, Aug. 2002
Activity Lead:	CI-Guyana Corridor Coordinator, Bernard DeSouza
USAID FY02 Level of Effort (\$):	8,246
Other Match Funding Source (\$):	0

1.2) Integrated Corridor Information System designed and operational

1.2.1) Continuing Activity. Design of Guyana Corridor Information System Structure. The structure of the Guyana Corridor Information System (CIS) will be elaborated along with procedures for data documentation, storage and management. All existing data will be incorporated into the system. The standards of both CI Washington and the Guyana Integrated Natural Resources Information System (GINRIS) will be applicable to the database being developed. CI-Guyana's GIS Manager will receive a two-week training course during Fall 2001 in Washington DC to support the process of developing the corridor information system.

Activity 1.2.1	
Benchmark/Output(s):	Illustration of final structure available by December 2001.
Months of implementation:	October to December 2001.
Activity Lead:	CI-Guyana GIS Manager, Curtis Bernard
USAID FY02 Level of Effort (\$):	22,692
Other Match Funding Source (\$):	0

1.2.2) New Activity. Acquisition and Digitizing of Geographical Data. Data on the topography of the proposed conservation concession will be acquired and digitized. Data on the soils, geology and forest types of and mining and forestry concessions, state forest boundaries and administrative units within southern Guyana will be acquired through the establishment of a cooperative relationship with GINRIS.

Activity 1.2.2	
Benchmark/Output(s):	Digital data layers available by May 2002.
Months of implementation:	October, 2001 to May, 2002
Activity Lead:	CI-Guyana GIS Manager, Curtis Bernard
USAID FY02 Level of Effort (\$):	1,240
Other Match Funding Source (\$):	0

1.2.3) New Activity. Update of Geographic Data. Topographic data digitized in 1.2.2 will be checked for errors and updated to reflect the current situation on the ground. This process will involve the use of GPS and remote sensing technology.

Activity 1.2.3	
Benchmark/Output(s):	All data layers verified and corrected by September 2002.
Months of implementation:	June to September 2002
Activity Lead:	CI-Guyana GIS Manager, Curtis Bernard
USAID FY02 Level of Effort (\$):	2,728
Other Match Funding Source (\$):	0

1.2.4) New Activity. Input of Socio-economic and Community Resource Evaluation Data. Data produced by the preliminary socioeconomic studies will be added to the CIS.

Activity 1.2.4	
Benchmark/Output(s):	Data input completed by September 2002
Months of implementation:	February to September 2002
Activity Lead:	CI-Guyana GIS Manager, Curtis Bernard
USAID FY02 Level of Effort (\$):	620
Other Match Funding Source (\$):	0

1.2.5) New Activity. Map Production. Equipment and software will be bought to enhance the map production capability of CI-Guyana. Arcview 8.1 with Spatial Analyst and 3D Analysts extensions will be purchased. A 36" plotter along with necessary accessories and supplies will also be procured. A variety of maps will be produced to support CIG activities.

Activity 1.2.5	
Benchmark/Output(s):	Equipment and Software Available by January 2002
Months of implementation:	December 2001-September 2002
Activity Lead:	CI-Guyana GIS Manager, Curtis Bernard
USAID FY02 Level of Effort (\$):	2,728
Other Match Funding Source (\$):	0

1.2.6) New Activity. Training of Key CIG Staff in GIS and GPS Use. All key CIG staff will be trained in basic GIS and GPS use. This is to facilitate a better understanding of the technologies and their usefulness by the staff.

Activity 1.2.6	
Benchmark/Output(s):	All key staff trained by March 2002
Months of implementation:	January to March 2002
Activity Lead:	CI-Guyana GIS Manager, Curtis Bernard
USAID FY02 Level of Effort (\$):	1,240
Other Match Funding Source (\$):	0

1.3) Corridor learning system/adaptive management in place and operational

1.3.1) Continuing Activity. The Corridor Coordinator and Projects Manager of CI-Guyana have been trained in CI's Strategic Management Approach. Additional funding opportunities will be sought for the Director and Corridor Coordinator of CI-Guyana to receive further training in Washington DC in CI's project management approach and project cycle reporting. Funding will also be sought to attend a training course on corridor planning methodologies and adaptive management. These training are important to improve the effectiveness of planning and program implementation.

Activity 1.3.1	
Benchmark/Output(s):	Training benefits shared with Guyana Corridor Team
Months of implementation:	1 October 2001 to end June 2002
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	3,720
Other Match Funding Source (\$):	0

1.3.2) Continuing Activity. The draft monitoring and evaluation plan for CI-Guyana will be finalized and implemented. The corridor team will develop a summary of the issues arising and lessons learned while implementing the corridor approach to date. This will be one component of the corridor learning system. The opportunity of the quarterly meetings to update the workplan will also be used to identify the issues arising and lessons learnt to date.

Activity 1.3.2	
Benchmark/Output(s):	M&E plan finalized by end March 2002. Summary of issues/lessons available by end September 2002
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Bernard DeSouza, Corridor Coordinator, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

1.4) Participatory planning and implementation framework and process established

1.4.1) New Activity. CI-Guyana will nurture awareness and acceptance of the current framework for the establishment of the proposed Kanuku Mountains protected area among all stakeholders. Meetings of the National Advisory Committee for the proposed Kanuku Mountains protected area (NAC) and those of the Region Nine Advisory Group for the proposed Kanuku Mountains protected area (RAG) will be funded by CI-Guyana. CI-Guyana will also seek to ensure that the full range of stakeholders is represented in the framework developed. The meetings funded will be used to generate feedback on plans developed by CI-Guyana, to generate stakeholder support for the proposed protected area and to enhance the capacity of some of the stakeholders. The meetings will also provide a critical forum for building consensus on important issues.

Activity 1.4.1	
Benchmark/Output(s):	Reports on stakeholder meetings available.
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	35,960
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 8,000

1.4.2) New Activity. A stakeholder analysis will be conducted by CI-Guyana for the purpose of the proposed Kanuku Mountains protected area. A stakeholder management strategy will also be developed and implemented to ensure that there is broad support for the establishment of the proposed protected area in the Kanuku Mountains area.

Activity 1.4.2	
Benchmark/Output(s):	Report available by end November 2001
Months of implementation:	1 October 2001 to end November 2001
Activity Lead:	Joe Singh, Executive Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

1.4.3 New Activity. The corridor team will review and document the consultation process being followed for the proposed protected area in the Kanuku Mountains. The report produced will be one element of the monitoring and evaluation plan and will also provide inputs for the corridor learning system. This report will be disseminated among stakeholders and may be used to guide the establishment of other protected areas in Guyana.

Activity 1.4.3	
Benchmark/Output(s):	Report on the consultation process to date
Months of implementation:	1 October 2001 to end August 2002
Activity Lead:	Susan Stone, Programme Facilitator, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 7,200

1.4.4) Continuing Activity. CI-Guyana will collaborate with CI's Center for Environmental Leadership and Business (CELB) in WDC to coordinate meetings with the management of Vanessa Mining Co., a large mining concern operating in Region 9. The meetings will aim to clarify the specific spatial focus of the company for mining in the Kanuku Mountains area. CI-Guyana will also meet with the Guyana Geology and Mines Commission (GGMC) to clarify the status of mining in Region Nine. CI-Guyana will also have discussions with the Regional Advisory Group to clarify regional perspectives on mining and to monitor mining activities in the region.

Activity 1.4.4	
Benchmark/Output(s):	Reports on discussions
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Joe Singh, Executive Director, Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

1.4.5) New Activity. A Field Coordinator will be contracted to manage the logistics for consultation visits~ assessment and monitoring at the sub-regional level for the proposed conservation concession, since CI-Guyana has no personnel in that part of Region 9. In addition, a Coordinating Committee, comprising representatives of each of the stakeholder communities, will be organized in the sub-district to provide a local framework for consultations on the conservation concession. A Programme Facilitator will also be engaged to oversee the ongoing process of consultation with the three stakeholder communities.

Activity 1.4.5	
Benchmark/Output(s):	Personnel engaged by January 2002
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 19,600

1.4.6) Continuing Activity. A draft report on a Social Impact Assessment (SIA) of the proposed conservation concession has been submitted to CI-Guyana by a consultant (Dr Veronica Broomes). This report will be finalized by the consultant and discussed among the three stakeholders communities in Region 9 to generate consensus on its contents. The report on the Social Impact Assessment will be used to guide the Management Plan being formulated for the proposed concession in Region 9.

Activity 1.4.6	
Benchmark/Output(s):	Meetings and workshops held by December 2001
Months of implementation:	1 October 2001 to end December 2001
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 7,500

1.5) Corridor project team operational

1.5.1) Continuing Activity. CI-Guyana Corridor Manager and CI-DC's Agreement Management Team will oversee implementation of the corridor project. CI-Guyana will purchase a laptop computer to allow the Corridor Manager to improve project management and implementation while traveling. The Corridor Manager will continue to conduct site visits, oversee the development of progress reports, budgets and expenditures related to the corridor project. A Program Associate will also be contracted to support the Corridor team to implement its program of activities.

Activity 1.5.1	
Benchmark/Output(s):	Progress reports on project implementation
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Bernard DeSouza, Corridor Coordinator, CI-Guyana
USAID FY02 Level of Effort (\$):	31,222
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 12,000

1.6) Research long-term financial mechanisms

1.6.1) Continuing Activity. The analysis of the possible long-term financial mechanisms has been delayed until consensus emerges on the national framework for engaging stakeholders for conservation in Region 9. CI's Conservation Finance Specialist will conduct an analysis of long-term financial mechanisms for protected areas and conservation concessions once there is consensus on the national framework.

Activity 1.6.1	
Benchmark/Output(s):	Report with recommendations available by end September 2002.
Months of implementation:	January 2002 – September 2002
Activity Lead:	CI Washington's Conservation Finance Specialist
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 33,663

**Objective 2: (USAID FY02 Level of Effort : \$0 ; Match Level of Effort : \$358,619)
 Protected areas created, strengthened and extended**

Activities:

2.1) New protected areas (protected areas, private reserves, indigenous reserves/territories) are created

2.1.1) New Activity. An annual and medium term workplan will be developed by CI-Guyana corridor team and submitted to the Protected Area Secretariat (PAS). The purpose of this workplan is to inform the Protected Area Secretariat about the activities being implemented to facilitate the establishment of the proposed protected area in the vicinity of the Kanuku Mountains. The information in the workplan will provide a framework for reporting and monitoring progress towards the establishment of the proposed protected areas.

Activity 2.1.1	
Benchmark/Output(s):	Workplan submitted to PAS
Months of implementation:	1 October 2001 to end December 2001
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

2.1.2) Continuing Activity. A draft proposal was developed by CI-Guyana for the establishment of a protected area in the vicinity of the Kanuku Mountains. However, it has not been submitted to the Government of Guyana, since several critical stakeholders did not participate fully in its development. CI-Guyana will start the process of elaborating a formal draft proposal for the establishment of a protected area in the Kanuku Mountains. The biological, socio-cultural, spatial, economic and other baseline information being collected will guide the development of this proposal. Care will be taken to ensure the participation of all critical stakeholders in this initiative. A regional and national workshop will also be held to generate guidelines and feedback on the proposal from the public.

Activity 2.1.2	
Benchmark/Output(s):	Draft proposal available by end September 2002. Workshops held by September 2002.
Months of implementation:	June 2001 to end September 2002
Activity Lead:	Neville Waldron, Director,
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 14,035

2.1.3) New Activity. Once the management plan for the proposed conservation concession has been submitted to the Guyana Forestry Commission (GFC) (see activity 2.4.1), a negotiation team will be identified to negotiate the details of the payments to be made to the GFC for the concession rights. CI-Guyana will provide overall guidance to the negotiation team. Such negotiations are necessary, since financial assessments do not provide a sufficient guide to the payments to be made.

Activity 2.1.3	
Benchmark/Output(s):	Payment for concession agreed
Months of implementation:	January to end June 2002
Activity Lead:	Dick Rice
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 40,000

2.2) Protected area level infrastructure in place (park guards, posts, etc.)

2.2.1) New Activity. CI-Guyana will engage four persons from the stakeholder communities to the conservation concession to monitor the concession. The primary objective of monitoring is to ensure that the ecological integrity of the proposed concession area is not compromised. CI-Guyana will seek to have these monitoring officers to be sworn in as Rural Constables, thereby providing them with the legal authority to enforce measures to protect the integrity of the concession area. Adequate equipment will be provided to facilitate access and communication.

Activity 2.2.1	
Benchmark/Output(s):	Monitoring Officers engaged by January 2001
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 8,000

2.3) Strengthen or extend existing protected areas

2.3.1) New Activity. Once the Guyana Forestry Commission has accepted the management plan and a long-term concession allocated, CI-Guyana will have further meetings with the Guyana Forestry Commission to discuss the possibility for an expansion of the concession to the one million acres for which the initial application was made.

Activity 2.3.1	
Benchmark/Output(s):	Meetings held to discuss expansion of concession
Months of implementation:	1 January 2002 to end September 2002
Activity Lead:	Executive Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

2.4) Develop and implement management plans for new and existing protected areas

2.4.1) Continuing Activity. CI-Guyana, CI Washington's Chief Economist and relevant CI staff will finalize a management plan for the proposed conservation concession. The submission of this management plan to the Guyana Forestry Commission will allow negotiations on the payment for the concession to begin. The draft management plan will be discussed at a public meeting in Region Nine to solicit feedback at the regional level. A national workshop will also be organized to discuss the management plan at a national level before it is submitted to the Guyana Forestry Commission. There will also be ongoing efforts to consult with the stakeholder communities to receive feedback on the various initiatives being pursued by CI-Guyana to implement the proposed conservation concession.

Activity 2.4.1	
Benchmark/Output(s):	Management Plan submitted to GFC
Months of implementation:	December 2001
Activity Lead:	Richard Rice, Chief Economist
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 91,900

2.5) Capacity-building at the level of new and existing protected areas

2.5.1) New Activity. CI-Guyana will provide funding for four members of local communities to be trained as Forest Rangers by the Iwokrama International Center for Rain Forest Conservation and Development. This training is expected to last for 16 months and will provide a cadre of skilled

personnel to monitor the long-term conservation concession. It is also expected that potential Rangers will be selected from the three communities identified as primary stakeholders for the purpose of the conservation concession.

Activity 2.5.1	
Benchmark/Output(s):	Performance reports available
Months of implementation:	1 October 2001 to end September 2002
Activity Lead:	Neville Waldron
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Global Conservation Fund: 68,000

2.5.2) New Activity. CI-Guyana will host one regional workshop and one national workshop to enhance the capacity of stakeholders represented on the Regional Advisory Group for the proposed Kanuku Mountains protected area and the National Advisory Committee respectively. The regional workshop will aim at providing stakeholders' representatives with comprehensive information about the establishment and management of protected areas and will support other efforts to ensure that there is an informed consensus on the idea of a protected area in the vicinity of the Kanuku Mountains. The national workshop will also provide comprehensive information about the establishment and management protected areas. This will ensure that the advise provided to CI-Guyana during the process of facilitating the establishment of the proposed protected area is adequately informed.

Activity 2.5.2	
Benchmark/Output(s):	Workshops held by
Months of implementation:	January 2002 to end September 2002
Activity Lead:	Neville Waldron, Director, CI-Guyana
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 8,355

2.6) Information gathering, integration and analysis for protected area creation and strengthening (new or targeted biological, social, legal and/or economic data)

2.6.1) Continuing Activity. CI-Guyana implemented a Rapid Assessment Program (RAP) in the eastern Kanuku Mountains during September-October 2001. The results of this RAP will be analyzed and published. This report will be widely distributed among stakeholders in Guyana and will provide further biological justification for the establishment of a protected area in the vicinity of the Kanuku Mountains.

Activity 2.6.1	
Benchmark/Output(s):	RAP report available by end March 2002
Months of implementation:	1 October 2001 to end March 2002
Activity Lead:	Leanne Alonso, Director, RAP
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	0

2.7) Develop and implement awareness campaign for new or existing protected areas

2.7.1) New Activity. CI-Guyana Communications Manager will produce and distribute a newsletter for both regional and national audiences. One objective of this newsletter is to update stakeholders, members of the media, opinion leaders and school children on progress towards the establishment of the proposed protected area in the vicinity of the Kanuku Mountains. The newsletters will also be used to provide general information on conservation activities being implemented by CI-Guyana.

Activity 2.7.1	
Benchmark/Output(s):	Newsletters available for distribution
Months of implementation:	1 October 2001 to end September 2002.
Activity Lead:	Lennox Cornette, Communications Manager
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 22,000

2.7.2) Continuing Activity. Regional and National Summer Camps for Children. CI-Guyana will organize two annual summer camps for students at secondary schools, one to be held on the coast and the other in Region Nine. This will help to further spread awareness of the importance of biodiversity conservation among youths and would support CI-Guyana's national efforts in this direction. The regional camp is specifically geared to complement the consultation process for the establishment of the proposed protected area. This could be achieved by students taking home relevant messages to their parents that could influence a positive perception of the idea of establishing a protected area.

Activity 2.7.2	
Benchmark/Output(s):	Reports on camps available by end September 2002
Months of implementation:	July 2002 and August 2002
Activity Lead:	Lennox Cornette (national) & Patsy Fredericks (regional)
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 9,000 Tropical Wilderness Protection Fund: 9,000

2.7.3) Continuing activity. Biodiversity Reporting Award and training workshop. CI-Guyana will host another annual contest for a Biodiversity Reporting Award. The aim of this award is to provide incentives and recognize excellence in environmental journalism, thereby allowing CI-Guyana to demonstrate its support for sustained environmental coverage in the media. CI-Guyana will also collaborate with the International Center for Environmental Journalism to host a workshop to enhance the skills of environmental journalists in Guyana.

Activity 2.7.3	
Benchmark/Output(s):	Winning awards presented by September 2002
Months of implementation:	Feb.2002 – Sept. 2002
Activity Lead:	Lennox Cornette, Communications.
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 4,200

2.7.4) New activity. Produce 2002 calendars. CI-Guyana will collaborate with CI Washington DC to produce calendars for distribution to key stakeholders and to pictorially highlight aspects of CI-Guyana's activities. The calendars are expected to foster greater awareness of the importance of biodiversity conservation among stakeholders and to nurture positive perceptions and value for such biodiversity. By enhancing their level of awareness, it is expected that there could be a more positive attitude among stakeholders toward the discussions on the establishment of a protected area in Region 9.

Activity 2.7.4	
Benchmark/Output(s):	Calendar distributed by January 2002
Months of implementation:	October 2001 to December 2001
Activity Lead:	Lennox Cornette, Communications
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 4,000

2.7.5) New activity. Video Documentary on Kanuku Mountains. CI Washington's International Communication Department will prepare a documentary on the Kanuku Mountains area based on footage collected during the 2001 Rapid Assessment Program in the Kanuku Mountains. This will be a communication product depicting the rich biodiversity of the Mountains and why they should be conserved. It would be shown to regional stakeholders during the consultation process to generate greater support for the idea of establishing a protected area in the vicinity of the Kanuku Mountains. The documentary will also be shown on national television to foster national support for the establishment of the proposed protected area.

Activity 2.7.5	
Benchmark/Output(s):	Footage collected by end January 2002.
Months of implementation:	1 October 2001 to June 2002
Activity Lead:	International Communications
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 28,000

2.7.6) New activity. Develop a portable exhibit for Regional audience. CI-Guyana will develop a portable exhibit to nurture awareness among local communities around the Kanukus Mountains about the ecosystems, the associated biodiversity, the rationale for conserving biodiversity, and the role of CI-Guyana in facilitating informed consensus about the establishment of the proposed protected area

Activity 2.7.6	
Benchmark/Output(s):	Slide show available by December 31, 2001.
Months of implementation:	October 1- December 20, 2001
Activity Lead:	Lennox Cornette/Patsy Fredericks, Communications/Education
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Ledder Foundation: 3,500

2.7.7) New activity. CI-Guyana will produce four (4) promotional posters on the Kanuku Mountains and the Conservation Concession. These will be used for National and Regional distribution with the objective of bringing awareness of the proposed protected area project and the conservation concession. The posters will also aim to nurture greater awareness of the importance of biodiversity conservation and to foster a more positive attitude among stakeholders towards the idea of a protected area in the vicinity of the Kanuku Mountains.

Activity 2.7.7	
Benchmark/Output(s):	Posters completed by March 2002.
Months of implementation:	November 2001 to March 2002
Activity Lead:	Lennox Cornette, Communications
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 12,000

2.7.8) Continuing Activity. Produce Fact Sheets. CI-Guyana will produce six fact sheets on important conservation concepts and CI-Guyana's major conservation initiatives for distribution nationally and in Region Nine. These will be distributed during the consultation process for the proposed protected area in the Kanuku Mountains and at strategic regional and national forums.

Activity 2.7.8	
Benchmark/Output(s):	Fact Sheets produced by April 2002.
Months of implementation:	October 2001 – March 2002
Activity Lead:	Lennox Cornette, Communications
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 7,200

2.7.9) New Activity. CI-Guyana will produce several products (T-shirts, caps, bags, pens) and host a media tour to the project site to launch the Conservation Concession. This is designed to enhance regional and national awareness through the print and electronic media and to create awareness with images on products.

Activity 2.7.9	
Benchmark/Output(s):	Media event hosted by end September 2002
Months of implementation:	October 2001-Sept 2002.
Activity Lead:	Lennox Cornette, Communications
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Center for Biodiversity Conservation: 12,000 Ledder Foundation: 6,000

2.7.10) New Activity. CI-Guyana will participation in a major national trade and science exhibition in Georgetown (Guyexpo) to showcase CI's activities in Guyana to enhance awareness of biodiversity issues. This will be achieved by photographic displays, video shows, the use of fact sheets and a portable exhibit. Natural craft products highlighting the potential for conservation enterprise development will also be on display.

Activity 2.7.10	
Benchmark/Output(s):	Portable exhibit developed by June 2002.
Months of implementation:	October 2001-Sept 2002.
Activity Lead:	Lennox Cornette, Communications
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Ledder Foundation: 4,000

Objective 3: (USAID FY02 Level of Effort : \$12,400 ; Match Level of Effort : \$68,763)
Core nuclei of protected areas established

3.2) Promote environmentally compatible activities in corridor buffer zones

3.2.1) Continuing Activity. CI-Guyana Enterprise Expert has met with other organizations working to support enterprise development in Region 9. The Enterprise Expert will continue to liaise with these development agencies with the aim developing a mechanism for coordination and collaboration for enterprise development in Region Nine. The mechanism developed will also be used to elaborate a strategy to support enterprise development in Region Nine.

Activity 3.2.1	
Benchmark/Output(s):	Report on Mechanism developed
Months of implementation:	October 2001-September 2001
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 1,800

3.2.2) Continuing Activity. CI-Guyana Enterprise Specialist will continue to enhance the capacity of the Nappi Balata Artisan Group by providing weekly training in product development and business planning. Funding will also be provided for the Group to participate in a Trade Show in Ecuador during October 2001 and in New York in January 2002. This Trade Show/workshop will facilitate product development directly with retailers. CI-Guyana's Enterprise Coordinator will benefit from the enterprise training to be provided when possible.

Activity 3.2.2	
Benchmark/Output(s):	Evaluation report on capacity building results available by end

	September 2002
Months of implementation:	October 2001-September 2002
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 21,596

3.2.3) New Activity. CI-Guyana will host a two day training workshop for members of the Regional Advisory Committee for Mining, Forestry and the Environment of Region 9 to evaluate new business proposals. The workshop will aim to enhance the ability of the Committee to integrate environmental and development issues into the decision-making process.

Activity 3.2.3	
Benchmark/Output(s):	Training workshop conducted by end April 2002
Months of implementation:	April 2002
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	12,400
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 6,870

3.2.4) New Activity. A Conservation Enterprise Development Specialist will organize a workshop in Nappi to finalise a business plan for the Nappi Balata Artisan Group. The business plan will serve to provide a focused framework for the effective and independent management of the balata enterprise. The Group will also be trained to implement, monitor and evaluate the plan effectively.

Activity 3.2.4	
Benchmark/Output(s):	Business Plan developed and implementation strategy in place by end September 2002
Months of implementation:	November 2001-September 2002
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 15,096

3.2.5) New Activity. CI Washington's Enterprise Development Programme Assistant will travel to Guyana to develop a three-year marketing and promotion strategy in conjunction with the business management plan for the Balata Group. An appropriate export agent will be identified and contracted to support the implementation of the marketing strategy.

Activity 3.2.5	
Benchmark/Output(s):	Strategy developed by March 2002
Months of implementation:	November 2001-March 2002
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 5,000

3.2.6) New Activity. A consultant will be contracted to carry out a biological assessment of the sustainability of using the Bulletwood tree for balata craft development. The consultant will also provide recommendations on sustainable use levels. CI-Guyana's Executive Director will pursue discussions at a policy level to ensure that the current ban on the Bulletwood tree is not lifted in the foreseeable future.

Activity 3.2.6	
Benchmark/Output(s):	Consultant hired and report produced by end September 2002
Months of implementation:	April-September 2002
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0

Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 8,000
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3.2.7) New Activity. A resource center will be constructed in Nappi to improve the working conditions of the Nappi Balata Artisans Group. This center will be supplied with adequate equipment, including a computer and printer.

Activity 3.2.7	
Benchmark/Output(s):	Resource Center completed and equipped
Months of implementation:	October 2001-December 2001
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 8,000

3.2.8) A national strategy for enterprise development in Guyana will be elaborated by CI-Guyana's Enterprise Specialist in consultation with other stakeholders. This strategy will inform CI-Guyana's long-term efforts to support the development of conservation enterprises in Guyana.

Activity 3.2.8	
Benchmark/Output(s):	Strategy paper completed by March 2002
Months of implementation:	February 2002 to end March 2002
Activity Lead:	Susan Stone, Program Facilitator
USAID FY02 Level of Effort (\$):	0
Other Match Funding Source (\$):	Tropical Wilderness Protection Fund: 2,374

III) CI-Philippines

Introduction to the Philippines Sites

The Philippines is well documented as one of the "hottest of the biodiversity hotspots", areas of global biodiversity importance that are under extreme threat. Out of the 22% forest cover left, less than 3% or 800,000 hectares comprise the primary forest of which 50% or 400,000 hectares is found in the Sierra Madre mountain ranges (FMB-DENR, 1998; ESSC, 1999). These remnants of primary forests are currently surrounded by fragmented and severely degraded ecosystems of varying quality attributed mainly by human impacts and extractive and development activities such as logging, mining, infrastructure development and small-scale agriculture.

CI-Philippines and the Philippines' Department of Environment and Natural Resources, with significant support from the USAID Philippines Mission, conducted a National Biodiversity Conservation Priority Setting Workshop on December 2000 purposely to compile up-to-date information and facilitate consensus building on biodiversity priorities at the regional and national levels by researchers, academics, NGOs, government agencies, and other key stakeholders. Result of the workshop affirmed that the Sierra Madre Biodiversity Corridor still constitutes the largest contiguous remaining primary forests in the Philippines, deserving of increased regional, national and global attention. However, the major constraints for the effective conservation of the area are affected by gaps in knowledge due to limited information on the biological diversity of the area, limited appreciation of the current government natural resources management strategy, and poor enforcement of policies governing the natural resources.

The Sierra Madre Biodiversity Corridor contains approximately 1 million hectares of different types such as: dipterocarp forest, mossy forest, ultrabasic forest, and mangrove forest. The SMBC is characterized by rolling to rugged terrains with the highest elevation of 1844 meters above sea level, still thickly forested, that includes substantial portions of hinterlands still uncharted and unexplored scientifically. However, it is very surprising up to this point that only limited information is available on the biological diversity of the area despite of the reported presence of threatened endemic species like the Philippine Eagle, Philippine crocodile, among others.

The threats to the Sierra Madre Biodiversity Corridor are complex and interlinked by destructive resource utilization, development related activities and population pressure (from high rates of natural birth and immigration). These threats are compounded by the plan of the Philippine government to open economic growth centers in the region that will result in the opening of the industrial zones in nearby areas of the SMBC. There is a growing concern that these economic growth centers will be associated with the further destruction of the remaining forest areas of the SMBC that will ultimately result to habitat loss and other negative consequences. Thus, there is a need to establish a solid biodiversity conservation framework for the conservation of the Sierra Madre area, through the Sierra Madre Biodiversity Corridor.

Key Threats

The key threats that exert pressure on the biodiversity resources of the SMBC are summarized below. These threats were derived from a series of workshops conducted by CIP and SMBC staff and validated by the stakeholders during presentations of the SMBC framework. This analysis was reinforced by the data and inputs from various works being undertaken in the Sierra Madre corridor. The major threats that contribute significantly to the degradation of biodiversity in the Sierra Madre include the following; small-scale logging, small-scale agriculture, small-scale marine fishing, large-scale logging, mining, poor governance, road development, and industrial estate development. In June 2001, technical papers on the different threats were prepared and a technical focus group conference was conducted, the tentative results of which initially documents the extent of these threats at the Sierra Madre. Selected major threats were discussed and agreed with various stakeholders on their effects and impacts on biodiversity. The following section discusses in brief the basic features of these threats.

Small-scale logging operations in the Sierra Madre received the most attention from the government due to the Community-Based Forest Management approach as the flagship program for forest resources management in the country. Through out the corridor, the aggregate area of Community-Based Forest Management (CBFM) is about 423,000 hectares, of which 193,000 hectares are under Community-based Forest Management Agreements (CBFMA) and 230,000 hectares are under Certificates of Ancestral Domain Claim (CADC). It is projected that a lot more of areas will be released for these uses as the government pushes for community and/or people's organization participation. The current manner with which CBFM projects are operated reveals some grave issues of poor implementation, lack of financial capital as well as the danger of infusing the traditional culture of logging among CBFM project operators. Based on past experiences, these issues indeed predispose the recurrence of lapses that will contribute to the continuing degradation of forest resources eventually subverting the goals and objectives of the CBFM program. Considering the extent of CBFMA as well as CADC areas lining the western and eastern slopes of the Sierra Madre from Cagayan to Quezon provinces, the aggregate damage to biodiversity resources to occur will be great if these current weaknesses of implementation will not be addressed.

Small-scale agriculture is a major cause of the degradation of forest areas at very alarming rates. This activity is inseparable from unscrupulous commercial logging operations which allowed forest occupants inside many logged-over concessions to cover whatever damage resulting from over-cutting of areas and from poorly implemented logging activities. In 1989, the number of migrant households that occupied forestlands in the Cagayan Valley Region totaled about 25,000. Using 2.25 hectares as the average cultivated parcel for every household, the total area of cultivated forestlands was 56,250 hectares. Using a fallow of three years, each household at a time maintains 3 parcels of land to support basic family food requirements. This would indicate that in 1989, forest cultivators maintained over 150,000 hectares in the fragile slopes of Sierra Madre in the Region. The same happened in Aurora, Nueva Ecija, Bulacan and Quezon provinces. Poorly regulated, upland cultivation contributes heavily to degrading forestlands that leads to great biodiversity loss.

Small-scale marine fishing is predominant in the 550-km coastline of the Cagayan Valley Pacific seaboard from Sta. Ana, Cagayan to Gen. Nakar, Quezon. Estimates show that in Region 02 about 31,783 fisher folks engage in subsistence coastal fishing activities most of whom use destructive fishing methods such as dynamite fishing, cyanide poisoning, and unregulated fishing activities in the municipal waters. Most fishing waters in the Pacific side are traditional fishing grounds of the indigenous Agta or Dumagat. On the same Pacific Coast, the illegal fishing activities of Taiwanese fishermen are reported by local communities and this encroachment contributes to increasing competition for fishing grounds that would lead to over fishing in these areas. Effort to develop a coastal resource management strategies and programs would provide opportunities for arresting further damage to marine and fishery resources in these parts.

Large-scale logging operations had in the past contributed to severe degradation of forestlands through conversion of old-growth dipterocarp forests into logged over areas at an average rate of 21,536 hectares in Cagayan Valley. Also the residual dipterocarp forests is expanding at a rate of 13,692 hectares annually while brush-land area at 12,654 hectares. On the other hand, the mossy and pine forests are reduced at annual rates of 1,010 hectares and 253 hectares, respectively. Reports show the occurrence of illegal logging operations in the western side of the Sierra Madre corridor specifically at the slopes and buffer zone of the Northern Sierra Madre Natural Park. Confiscation records show substantial increase in the illegal cutting and felling of *Pterocarpus indicus* (Narra) wood as the demand for narra wood increased resulting from lucrative furniture trade in the province of Isabela. As of 1998, the remaining 2 concessions holding Timber License Agreements cover a total area of 678.75 sq km. This is in addition to the 2 existing Industrial Forest Management Agreements, and 1 Private Land Timber Permit in Isabela, Aurora and Quezon. While only 5 commercial logging concerns are currently operating in the Sierra Madre, there are indications of the occurrence of operational lapses as observed in the past which are causing great damage to the forestlands and biodiversity resources. General failure to adopt prescribed harvesting methods and poorly planned road construction and development further aggravate the rate of species loss in these concession areas.

Mining claims of various investment modes in the Sierra Madre cover an aggregate area of 811,541 hectares. At present there are 32 exploration permit applications to cover 333,989 hectares; 8 financial technical assistance agreements, 311,000 hectares; mineral production sharing agreements, 16,000 hectares; and sand and gravel, 352 hectares. These claims, which are shown to cover large areas on the ground, will constitute potential threats that may damage forestlands and biodiversity resources if their respective applications will be granted. Fortunately, many applications have already been withdrawn due to the absence of required legal documents to support final endorsement or approval of said applications. However, there are few mining agreements/permits granted which will start to kick off their respective operations. There is a continuing resistance from local communities considering the fact that approval of the said permits might have initially bypassed many basic procedural requirements such as the endorsement from the impact communities at the local level, politically motivated support provided by local government officials, among others.

In most cases, **poor governance** is identified to be a major factor adversely affecting the implementation of even the most technically viable projects. Community-based resource management projects such as those under CBFMAs and CADCs usually become vulnerable and suffer the most from revealed weaknesses and shortfalls of poor governance. The weak or even the lack of appropriate support systems provided for local government units has always been predisposed by selective devolution relative to the authorities, roles, responsibilities and functions granted by the Local Government Code. Incentives granted to local implementors of programs/projects have been assessed to have perverse effects that contradict the very purpose for which these incentives were created. To aggravate the situation, there exists a prevalence of poorly informed planners, decision makers and managers who most likely make poor decisions whenever alternative strategies or programs are presented for evaluation and approval. This condition even prevails at the regional planning and decision-making when major programs of government are presented for review and approval.

The number of proposed **road development** projects, which have potential impacts to the natural, and biodiversity resources of the Sierra Madre are many. The patterns of location show at least 4 roads crossing the backbone of the mountain range and at least 2 trans-highway traversing the long stretch of the Sierra Madre. While most of the roads will cut through already existing but abandoned logging roads, the potential threats that go with the development of these roads will be that of the expected in-migration of upland cultivators that will take advantage of the roads providing easy access and transportation facility. This opportunity will also promote the establishment of new settlements along road routes, thus increasing the pressure on adjacent biodiversity resources resulting from increased population in these new settlements.

Two **industrial estate development** projects each occupy the end sections of the Sierra Madre Corridor - the Cagayan Special Economic Zone in the north and about 100,000-hectares Pacific Coast City in the south. By the nature of intensive development activities to occur in these projects, there is widespread perception of very high threats that they contribute to biodiversity. This will be true however if they become fully developed economic zones when many locators invest in these zones. Further imminent threats of grave consequences to biodiversity and environment will occur when the economic zones become managed by groups who will pay lip service to conserve and protect the aforesaid resources. The most direct impact of these projects will be the dislocation of many local farming communities who will join the ranks of those who may be forced to invade open access areas in adjacent forestlands. This will have grave implications for the increasing pressure on the use of natural and biodiversity resources in the Sierra Madre.

How the FY02 Plan Address the Threats

As briefly discussed in the preceding section, the key threats identified for the Sierra Madre Corridor constitute the major land uses that commonly employ to address sector-oriented development strategies as means to pursue social and economic goals and objectives. Again, these uses include upland agriculture, large- and small-scale timber harvesting including timber poaching by water buffalo skidding

or stream rafting, mining, road development, industrial estate development, and small scale marine fishing. There is only one exception of institutional category that relates to institutional arrangements in governance perceived as grossly ineffective due to lack of the right information, objectivity, transparency as well as prevailing low awareness among the governed and those who govern. The presence of rebels who operate in some portions of the Sierra Madre Corridor is also perceived as a specific threat.

It is in the manner of planning, instituting and operating on the ground that these uses and/or arrangements, however, virtually occur as threats undermining the goals and objectives they intend to address in the first place. Key threats {or vital opportunities?}, the major uses and institutions so far identified are not unique to the Sierra Madre Corridor as they also prevail in all other corridors in the Philippines based on the initial report of the Corridor Priority Setting Workshop initiated by CIP in identifying priority corridors and threats therein. Unilaterally they rend at the heart of major conflicts whenever issues of development and conservation get tangled and deliberated by local, national, regional and global stakeholders of diverging purposes, vested interests and passions. Most key issues remain as such and conflicts drive protracted struggles because of the absence of right information required to make more informed and better quality decisions. There are only few appropriate bodies where stakeholders must settle differences with objectivity, transparency, non-exclusion and mutuality in order to arrive at consensus that benefits all or majority of the interest parties without great jeopardy to the welfare of other groups in the local or global community.

In order to address these threats effectively, approaches that integrate basic and comprehensive features should be carried out. Major actions should include the following: (1) securing the right information including mainstreaming ecosystem values to generate good database for an effective information system; (2) involving and empowering local government units and communities for consensus building that supports non-exclusive processes in planning, implementing and monitoring of development and/or conservation activities; (3) instituting appropriate and innovative incentives to encourage proper resource use and conservation, and removing perverse subsidies to discourage resource degrading activities; and (4) strengthening and/or expanding existing protected areas as well as creating new ones in high priority conservation sites.

FY02 implementation plan proposes to continue undertaking FY01 activities as regards the completion of collecting and analyzing biophysical, socioeconomic, ecological and even indigenous ethnological data/information in order to establish strong foundation. This will address the concern to get the right information in order to build the SBMC database and information system; to generate program strategies and methodologies; and to support more informed policy and decision-making. The main activities of FY02 plan include assessing biodiversity corridor, designing integrated information system, operationalizing adaptive management, putting in place the participatory planning and implementation framework, exploring and providing long-term financial mechanisms and formulating assertive advocacy and awareness raising program. These major activities intend to provide solutions to the prevailing gaps of the current management situation in the corridor where lack of data and information leads to planning and implementing land and resources uses (the threats) that degrade the environmental resources rather than sustain them. At least 32 activities of the FY02 plan will be undertaken with broad as well as specific effects and outcomes intended to provide complete and initial solutions (for new activities) to redress whatever perceived as adverse impacts of the key threats responsible for biodiversity loss and environmental degradation. Developing the frameworks for participatory program planning, financial mechanisms and awareness program will entail collaborative schemes with other stakeholders such as the DENR, LGUs at various levels, NGOs, academic institutions, private sector and other government agencies with mutual interests in the Sierra Madre. Long-term financial mechanisms and awareness programs for the CI-SMBC will be a long-running concern of CIP that go beyond the FY02 plan. Assistance from CI-WA Development Agency Relations will be sought to support fund-raising from foreign organizations abroad.

As new information and opportunities become available during the implementation period, CI-SMBC will employ dynamic adaptive process in order to ensure program refinement, enrichment, and more focused actions set to further arrest the adverse impacts of key threats to biodiversity and environment. CI-SMBC

will put special emphasis in carrying out assertive advocacy at the national, regional and municipal levels cognizant that this action has the most potent seed to influence all stakeholders to adopt environmental-friendly behavior and practices that will eventually lead to improving land and resource uses at the Sierra Madre. Planned for FY02 and to be facilitated by CI in collaboration with other agencies, the number of stakeholder consultations, workshops and conferences reflects the weight given to the importance of assertive advocacy as a means to influence and/or reform traditional as well as unproductive behaviors among the key stakeholders of the corridor.

Initial efforts to identify and establish corridor core areas are planned for FY02 planning period. The activities include establishing the framework for local coordinating units (LCUs) that will institutionalize collaborative mechanisms for planning, implementing and monitoring resource uses; integrating natural resource management strategies; and innovating on existing but successful local initiatives that address resource uses and conservation. Identified high priority areas for conservation will be the key prerequisite to choose core areas so that biological information must be generated and input for planning support. Moreover, strengthening activities at the corridor cores will be vital in that they will serve as anchors for connecting essential corridors from one core to adjacent cores. Various training in protected area management, organizational management, capability building for managerial skills, agroforestry and reforestation techniques, biodiversity monitoring systems, paralegal skills and financial management will be carried out and cater to Department of Environment and Natural Resources, Local Government Units, Peoples Organization and Non government Organization staff as may be appropriate. Consistent with subsidiary principles, allocation of roles/functions/authorities and responsibilities shall be properly shared to streamline the LCUs for purposes of operational effectiveness.

A continuing activity that proceeds beyond the FY02 period, corridor-strengthening activities will utilize whatever resource inputs shared by collaborating partners and stakeholders notwithstanding the limit set by whatever available information from the database and information system. Refinements of approaches, designs and methodologies to develop "best practices" will happen as information and insights will be generated from new collections of data through forthcoming FY periods. The latter will require intra- and inter-collaborative efforts with CI-WA Development Agency Relations, relevant development institutions as well as other key stakeholders currently working at the SMBC.

Establishment of the biodiversity corridors will be initiated during FY02 period only to the extent that the corridor nuclei shall have become stable anchors for holding corridor connections. Thus the activities in this respect shall principally involve planning and developing framework for connection, identifying the priority corridors, and organizing for appropriate institutional structures for connecting corridors. Region- and corridor-wide consultations and workshops for key stakeholders will be carried out to process the basic requirements for connecting biodiversity corridors.

On the other hand, the threat on marine resources is still not be directly addressed by the activities programmed under the FY02 implementation plan due to the current resource limitations. However, some partners working in the corridor like Plan International, Foundation for Philippine Environment through a local NGO, World Wildlife fund and the Aurora State College and Technology is currently implementing coastal resource management programs in some highly critical marine areas in the corridor. These on going marine programs is expected to be complemented by similar programs and projects to be proposed for funding under the Critical Ecosystem Partnership Fund when the fund facility become available.

Financial Sustainability Activities and FY02 Co-financing

For the coming fiscal year (FY02), CIP-SMBC will continuously exert effort to explore fund source opportunities to provide adequate financial support for program activities on top of CI current funding facilities. With the existence of other NGOs operating at the SMBC like Plan International, Foundation for Philippine Environment, NIPA Inc., etc, including local NGOs currently working within the corridor, CIP will take every opportunity to establish co-management schemes that will include sharing of fund and manpower resources in order to optimize resource use with the end view to achieve greater results. Similar collaborative and complementary arrangements will be established with government agencies,

such as; the Department of Environment and Natural Resources (use of the Integrated Protected Area Fund generated from Protected Areas and the eagle watch fund), Academic Institutions, Local Government Units both at Provincial and local levels (use of the 20% allocation targeted for environmental protection from the Internal Revenue Allocations) as well as People's Organization who will be asked to share manpower to provide technical expertise including research facilities and fund resources in implementing project activities that contribute to livelihood development and biodiversity conservation outcomes. Schemes will also be developed to encourage the private sector to engage in innovative entrepreneurship opportunities that sustainably use and conserve biodiversity while they ensure the protection of the environment.

CI-Philippines will also look into assertive advocacy to encourage Local Government Units at all levels to directly address natural and biodiversity resource problems via innovative funding mechanisms that will guarantee to plow back a significant portion of revenues generated from the extraction of natural resources. CI will also encourage local governments to craft laws and regulations that will tax destructive extraction and/or pollutive activities and later use the tax proceeds in supporting the implementation of biodiversity and natural resources management and conservation.

The Philippines Activities

**Objective 1: (USAID FY02 Level of Effort : \$192,726; Match Level of Effort : \$45,869)
 Build Biodiversity Corridor planning and implementation support framework**

Activities:

1.1) Biodiversity corridor assessment completed (baseline legal, biological, economic and social assessments/data gathered)

1.1.1) New Activity. CI-Philippines will secure and digitize new identified sets of analog maps such as; a) soil type and erosion map, b) maps of threatened species, c) demographic maps, and river maps from required government offices, Bureau of Soils, National Census and statistics, etc. to be included in the SMBC data base and information system. CI-Philippines will validate and update collected data with the Department of Environment and Natural Resources and other concerned agencies and provide them copy of the maps for their reference to refine their existing maps.

Activity 1.1.1	
Benchmark/Output(s):	Collected data sets are digitized and entered into the data base and information system by September 2002. Digitized maps validated and updated and copy provided to required agencies by Sept. 2002
Months of implementation:	October 2001-September 2002
Activity Lead:	Personnel: CI-P GIS staff-Oliver, Virgie , SMBC staff- Artem, Aloy, Mike, Star, Rachelle, Edward. Resources: Staff time, GIS/computer equipment and software purchase and use
USAID FY02 Level of Effort (\$):	US\$ 11,921
Other Match Funding Source (\$):	
Total budget	US\$ 11,921

1.1.2) New Activity. CI-Philippines will generate digital topographic maps of Sierra Madre to establish base maps for the Sierra Madre Biodiversity Corridor.

Activity 1.1.2	
Benchmark/Output(s):	Digital elevation model for SMBC completed by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: CI CABS Specialist-Daniel J., CIP GIS staff-Oliver and Virgie Resources: Staff time, GIS/computer software
USAID FY02 Level of Effort (\$):	US\$ 7,113
Other Match Funding Source (\$):	
Total budget	US\$ 7,113

1.1.3) New Activity. CI-Philippines' botanists together with CI CABS and FSD will conduct pilot participatory assessment of the spatial extent to which current livelihood management strategies exists in Palanan, Isabela.

Match will come from Ricoh Corporation to fund initial activities prior to conducting pilot assessment such as logistics preparations and securing local permits.

Activity 1.1.3	
Benchmark/Output(s):	Pilot resource use map generated by September 2002
Months of implementation:	January 2002 to July 2002
Activity Lead:	Personnel: CI CABS and FSD- Daniel J, Jim P., CI P- Leonard, Nestor, Oliver, Virgie Resources: Staff time, local and international travel, GIS/computer software and use
USAID FY02 Level of Effort (\$):	US\$ 7,820
Other Match Funding Source (\$):	US\$ 1,060
Total budget	US\$ 8,880

1.1.4) New Activity. CI-Philippines' botanists together with CI CABS and FSD will conduct pilot study to Ground truth of vegetation types existing within identified land use types at Palanan, Isabela.

Activity 1.1.4	
Benchmark/Output(s):	Vegetation profile of transect data completed and submitted by September 2002
Months of implementation:	July 2002 to September 2002
Activity Lead:	Personnel: CI DC- Daniel J. Jim P., CIP-Leonard, Nestor, Cesar, Eddie Resources: Staff time, International and local travel
USAID FY02 Level of Effort (\$):	US\$ 9,017
Other Match Funding Source (\$):	US\$ 520
Total budget	US\$ 9,537

1.1.5) Continuing Activity. CI-CABS will complete the processing of the acquired cloud-free satellite images and the gathered ground truth data to produce the vegetation map and land uses of SMBC to be integrated in the database and information system.

Activity 1.1.5	
Benchmark/Output(s):	Vegetation map completed by January 2002.
Months of implementation:	October 2001 to January 2002
Activity Lead:	Personnel: CI-CABS-Daniel J. and Leonard

	Resources: Staff time
USAID FY02 Level of Effort (\$):	US\$ 3,026
Other Match Funding Source (\$):	
Total budget	US\$ 3,026

1.1.6) New Activity. CI-CABS and CI-Philippines will develop forest cover change detection map of SMBC for monitoring of land use change and forest cover in the corridor. CI-CABS will provide training to CIP-GIS staff in change detection methodology in order to transfer the expertise at the local level as part of the institutionalization process.

Activity 1.1.6	
Benchmark/Output(s):	Forest detection map completed and CIP-GIS staff trained in change detection methodology by September '02
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: CI CABS- Daniel J., CIP GIS staff-Oliver, Virgie Resources: Staff time, GIS/computer software and use
USAID FY02 Level of Effort (\$):	US\$ 6,067
Other Match Funding Source (\$):	US\$ 5,600
Total budget	US\$11,667

1.1.7) Continuing Activity. CI CABS will complete the data processing of ground truth data in Palanan, Isabela covering representative forest types and land uses over the remaining forest and adjacent occupied lands for data base and monitoring of land use changes.

Activity 1.1.7	
Benchmark/Output(s):	Photography and videography processed by December 2001
Months of implementation:	October 2001 to December 2001
Activity Lead:	Personnel: CI CABS-Daniel J., Resources: Staff time,
USAID FY02 Level of Effort (\$):	US\$ 4,832
Other Match Funding Source (\$):	
Total budget	US\$ 4,832

1.1.8) Continuing Activity. CI Resource Economics Program and CI-P Resource Economist will complete integrated threat analysis of issue papers that have been completed: road development, mining, small scale and large scale logging, industrial estate development, small scale agriculture, governance, small scale fishing for Cagayan, Isabela, Quirino and Nueva Vizcaya . Will conduct Participatory Analysis of Conservation Economics workshops in Baggao-Gattaran, Cagayan core area and Palanan, Isabela core area.. Complete Rapid Assessment of Corridor Economics analysis in Aurora, Quezon, Rizal, Bulacan and Nueva Ecija.. Will rank the threats according to their current and potential effects and impacts on biodiversity loss through stakeholders workshop in order to generate the basis for a focus conduct of advocacy and awareness raising campaign.

The RACE activity was not completed due to geographic scale and the difficulty of running a corridor wide RACE methodology. There was a need to stratify the whole corridor into two regional sectors (Region 2-Cagayan, Isabela, Quirino and Nueva Vizcaya and Regions 3 & 4-Bulacan, Nueva Ecija, Rizal, Quezon and Aurora) that resulted in applying two sets of RACE activities.

Match funds will come from the Global Conservation Fund (formerly Tropical Wilderness Protection Fund). Funds will be used to complete the Rapid Assessment of Conservation Economics in core nuclei areas.

Activity 1.1.8	
Benchmark/Output(s):	Full RACE report submitted for review by September 2002.
Months of implementation:	October 2001 - September 2002
Activity Lead:	Personnel: CI FSD-Jim P., CI P-Luzon, Noela, Research Assistant Resources: Staff time, International and local travel, computer equipment and use
USAID FY02 Level of Effort (\$):	US \$ 4,477
Other Match Funding Source (\$):	US\$15,000
Total budget	US\$ 19,477

1.1.9) Continuing Activity. CI-Philippines' biologists will continue the identification of collected specimen from the 16 hectare Forest Dynamic Plot as input into the ongoing flora and fauna inventory in the Northern Sierra Madre Natural Park.

The identification of the almost 7,000 collected specimen only accomplished about 40% due to lack of available-experts-botanist (only Leonard Co, CI botanist doing the identification), difficulty of transporting the specimen from Palanan, Isabela to herbarium centers in Metro- Manila due to the stringent requirements of the bioprospecting law, and limited reference materials used (voucher specimen) for comparison during the identification.

Match funds will come from Ricoh Corporation. This will fund the completion of identification of specimens such as staff time, travel, field supplies.

Activity 1.1.9	
Benchmark/Output(s):	Floristic and faunistic list with available IUCN conservation status available for reference by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Leonard, Nestor, Forest Crew (Eddie Salazar and Cesar Orje) Aloy and Mike Resources: Staff time, local travel and computer equipment and use
USAID FY02 Level of Effort (\$):	US\$
Other Match Funding Source (\$):	US\$ 10,289
Total budget	US\$ 10,289

1.1.10) New Activity. CI-Philippines to conduct biological re-census of the 16 hectares Forest Dynamic plot in Palanan, Isabela for fine tuning of biological data collected and monitoring ecological changes in tree demography.

Match funds are from Ricoh Corporation and Siemens. These donors will partly fund the staff time, field supplies, travel

Activity 1.1.10	
Benchmark/Output(s):	Partial status report on re-census submitted by September 2002.
Months of implementation:	January 2002 to September 200
Activity Lead:	Personnel: Leonard, Nestor, Cesar, Eddie (Forest Crew),
USAID FY02 Level of Effort (\$):	US\$ 18,788
Other Match Funding Source (\$):	US\$ 7,375
Total budget	US\$ 26,163

1.1.11) New Activity. CI-Philippines with Department of Environment and Natural Resources will validate presence of flagship and threatened species like the Philippine eagle, Philippine crocodile, etc. in the whole stretch of Sierra Madre and map their corresponding habitat by field surveys and consultations with local communities. Provide technical assistance to the Department of

Environment and Natural Resources in conducting resource basic inventory of the core Protected Areas in Sierra Madre for baseline information and management plan preparation and planning.

Activity 1.1.11	
Benchmark/Output(s):	Dot Map and report on validated presence of identified flagship species and resource basic inventory report of the core protected areas completed by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Perry/Artem, Leonard, Nestor, Forest Crew, Aloy, Mike, Virgie
USAID FY02 Level of Effort (\$):	US\$ 8,342
Other Match Funding Source (\$):	
Total Budget	US\$ 8,342

1.1.12) New Activity. CI-Philippines will make catalog of the basic economic uses of plants from the 16 hectares forest dynamic plot in Palanan, Isabela for baseline information and reference of Northern Sierra Madre Natural Park for planning.

Match funds will come from Ricoh and Siemens to cover partly of staff time, supplies, travel, communication.

Activity 1.1.12	
Benchmark/Output(s):	Catalogue of basic economic uses of plants completed and available for use by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Leonard, Nestor, Forest Crew
USAID FY02 Level of Effort (\$):	US\$ 869
Other Match Funding Source (\$):	US\$ 1,940
Total budget	US\$ 2,809

1.1.13) Continuing Activity. CI-Philippines will continue acquisition of references on natural history, ethnography, etc. for the information center of the Northern Sierra Madre Natural Park in Palanan in order to share the biodiversity of NSMNP with other scientist and the general public.

Activity 1.1.13	
Benchmark/Output(s):	References acquired and made available at NSMNP center and field station at forest dynamics plot by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Leonard, Nestor Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$ 3,142
Other Match Funding Source (\$):	
Total budget	US\$ 3,142

1.2) Integrated corridor information system designed and operational

1.2.1) Continuing Activity. CI-Philippines will finalize the Memorandum of Agreement with Department of Environment and Natural Resources, which is now under review at the Department of Environment and Natural Resources. CI-Philippines will also continue to obtain Memorandum of Agreement with other institutions in the region like Government Republic of the Philippines-German Community Forestry Project in Quirino, Academic Institutions within the corridor for partnership and data sharing. The Memorandum of Agreement with the Department of Environment and Natural Resources was not completed last FY01 due to political situations in the country.

Activity 1.2.1	
Benchmark/Output(s):	Signed MOA with the DENR and other partner institutions by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Dario, Perry Artem, Aloy, Mike Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$ 8,588
Other Match Funding Source (\$):	
Total budget	US\$ 8,588

1.2.2) Continuing Activity. CI-CABS' GIS Department will continue to design and to operationalize the GIS database for the corridor information system. CABS will conduct training for CI-Philippines staff in corridor information system and database management.

Activity 1.2.2	
Benchmark/Output(s):	Data base designed and operationalize by June 2002 and CIP staff trained by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: CI-DC-Daniel J., GIS-Lab, CIP-Oliver, Virgie, Information Officer Resources: Staff time, international and local travel, GIS/computer equipment, software and use
USAID FY02 Level of Effort (\$):	2,670
Other Match Funding Source (\$):	
Total budget	2,670

1.3) Corridor learning system/adaptive management in place and operational

1.3.1) Continuing Activity. CI-Philippines' SMBC Program Manager and CI-Philippines' Regional Strategic Planning will finalize the monitoring and evaluation system for the Sierra Madre Biodiversity Corridor to be used as a management tool to adjust and adapt CI's interventions in the SMBC. CI-DC's Regional Strategic Planning will conduct training on strategic planning and project cycle management to be attended by the Corridor Program Managers. Date and venue will be announced later.

Activity 1.3.1	
Benchmark/Output(s):	SMBC monitoring and evaluation system finalized and strategic planning and project cycle management training conducted by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: CI DC, Flint H., Karl M., CIP Artem, Aloy, Mike
USAID FY02 Level of Effort (\$):	US\$ 34,154
Other Match Funding Source (\$):	
Total budget	US\$ 34,154

1.3.2) Continuing Activity. CI-Philippines SMBC Program Manager and Site Coordinators will attend the corridor learning system meeting to be held in the US in March 2002. This meeting will focus on sharing information and lessons learned across all corridors within CI. SMBC Program manager and CIP Finance Manager will also attend the USAID financial management training in Indonesia in November '01.

Match funds will be from Siemens to cover the partly cover the cost of travel and training fee for USAID Financial management training.

Activity 1.3.2	
Benchmark/Output(s):	CIP SMBC manager, finance manager and site coordinators attended the scheduled trainings and meetings by June 2002
Months of implementation:	November 2001 to June 2002
Activity Lead:	Personnel: Artem, Lina, Mike, Aloy. Resources: Staff time, International travel
USAID FY02 Level of Effort (\$):	
Other Match Funding Source (\$):	US\$ 2,600
Total fund	US\$ 2,600

1.3.3) Continuing Activity. In August, Year 3 of the project, CI-Philippines and CI -Washington Staff members will convene a Year 3 Review meeting and Year 4 Planning in the Philippines to review all activities and results and to determine the initial viability of the corridor concept and adapt the strategy and/or planned activities if necessary.

Activity 1.3.3	
Benchmark/Output(s):	Year 3 review and Year 4 planning conducted last week of August 2002 and Year 4 implementation plan developed and submitted to USAID by October 2002
Months of implementation:	August 2002
Activity Lead:	Personnel: DC/AP-Flint, CIP-Artem, Lina
USAID FY02 Level of Effort (\$):	US\$ 12,147
Other Match Funding Source (\$):	
Total budget	US\$ 12,147

1.4) Participatory planning and implementation framework and process established

1.4.1) New Activity. CI-Philippines will facilitate the review of the existing institutional arrangement at the provincial level for the purpose of streamlining, integrating efforts for planning, implementing and monitoring biodiversity conservation programs. This will establish the local coordinating units that will serve as mechanism to operationalize collaborative work with all Sierra Madre Biodiversity Corridor stakeholders.

Activity 1.4.1	
Benchmark/Output(s):	Functional local coordinating units in at least 3 priority provinces within the core nuclei created by September 2002.
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Artem, , Aloy, Mike, Estrella, Rachelle, Information Officer, Marine Specialist
USAID FY02 Level of Effort (\$):	US\$ 8,841
Other Match Funding Source (\$):	
Total budget	US\$ 8,841

1.4.2) Continuing Activity. CI-Philippines will continue the presentation of the Sierra Madre Biodiversity Corridor framework to the municipalities within the buffer zones of SMBC to generate their full support to the biodiversity conservation program. CI-Philippines will also provide or present SMBC updates and additional information to the Regional Development Councils, Regional Committee on Sustainable Development and Department of Environment and Natural Resources of Region 2, 3 and 4 for planning and information for review and evaluation of regional development programs and projects for endorsement and approval of government.

One of the purposes of presenting the SMBC corridor framework is to generate mass base support to the program. It was done already at the provincial level but we need to go down even at the community level particularly within the buffer zones because it is there where the treats lies. Our

outcome is the acceptance, full support and participation of all the stakeholders to the program particularly in biodiversity conservation. For the Regional Development Council and the Regional Committee on Sustainable Development, these are the institutions tasked by government to review and recommend programs and projects.

Activity 1.4.2	
Benchmark/Output(s):	At least 4 stakeholders consultations/presentations conducted at the end of September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Artem, Aloy, Mike, Marine specialist, Information Officer, Star, Rachelle
USAID FY02 Level of Effort (\$):	US\$ 6,047
Other Match Funding Source (\$):	
Total budget	US\$ 6,047

1.4.3) New Activity. CI-Philippines with partner Non Government Organizations will conduct trainers' training on community mapping for local Department of Environment and Natural Resources staff for Regions 2, 3 & 4 and Local Government Units representatives of Cagayan, Isabela, Quirino, Nueva Vizcaya, Nueva Ecija, Aurora, Rizal, Bulacan and Quezon for the preparation of Protected Area management plans. Likewise, will provide technical assistance to local government units, DENR and PAMB of the existing Protected Areas within Sierra Madre on the formulation of management plan and also facilitate review of community resource management framework of Community-based Forest Management projects of Department of Environment and Natural Resources.

Activity 1.4.3	
Benchmark/Output(s):	Conducted 2 trainers' training on community mapping (1 for Region 2 & 1 for Region 3&4) March 2002. Management plans of protected area within core nuclei formulated and CRMF reviewed by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Artem, Aloy, Mike, Star, Rachelle, Eduard, Information Officer, Virgie, Oliver
USAID FY02 Level of Effort (\$):	US\$ 6,923
Other Match Funding Source (\$):	
Total budget	US\$ 6,923

1.4.4) Continuing Activity. CI-Philippines will initiate annual meeting with DENR, partner NGOs and local government units for Region 2- Cagayan, Isabela, Quirino and Nueva Vizcaya and Region 3&4-Nueva Ecija, Bulacan, Aurora, Rizal and Quezon to review updates of environmental programs being implemented within the corridor. Plan integration will be done to identify areas of collaboration and complementation of activities in their respective projects to optimize project outputs.

Activity 1.4.4	
Benchmark/Output(s):	Annual meeting/consultation with partners conducted by August '02. Signed agreements and finalized action plans by respective groups by September 2002
Months of implementation:	August 2002 to September 2002
Activity Lead:	Personnel: Artem, , Aloy, Mike, Star, Eduard, Rachelle, Marine Specialist and Information Officer
USAID FY02 Level of Effort (\$):	US\$ 10,808
Other Match Funding Source (\$):	
Total budget	US\$ 10,808

1.5) Corridor project team operational

1.5.1) Continuing Activity. CI-Philippines will hire an Information officer. The hiring of this position is a priority as defined in our planning. The forest management specialist and coastal resource management specialist are the core positions we need as we are looking the SMBC beyond five years. These positions will provide full support for policy analysis, assessment of alternative intervention options towards achieving biodiversity goals and objectives, development of corridor strategies and development of proposed investment programs. These positions will be partly funded under the CEPF.

Activity 1.5.1	
Benchmark/Output(s):	Hired identified additional staff by March 2002.
Months of implementation:	October 01 to March 2002
Activity Lead:	Personnel: Artem, Dario, Lina Resources: Staff time
USAID FY02 Level of Effort (\$):	US\$ 744
Other Match Funding Source (\$):	
Total budget	US\$ 744

1.7) Awareness Program established

1.7.1) Continuing Activity. CI-Philippines will review and finalize the communication strategy in consultation with DC International Communication Department. Flint will coordinate with Intercom in finalizing the strategy to include the 4-Ps tool in the Sierra Madre Corridor communication strategy and to secure funds in implementing the strategy. CI-Philippines' information officer will continue the current information, education and communication awareness initiatives both at the national and corridor level to include the development of brochures for 16 hectares forest dynamic plot visitors, laminated one page field guides, improving signages, and script. Development of mobile photo exhibit of biological attributes of the 16 hectares plot and development of 15 minutes of video documentary film intended for the whole sierra madre audiences and visitors of the Northern Sierra Madre Natural Park.

Activity 1.7.1	
Benchmark/Output(s):	Communication strategy in placed by September 2002.
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Artem, Information Officer, Intercom, Flint Resources: Staff time, international and local travel
USAID FY02 Level of Effort (\$):	US\$,8,870
Other Match Funding Source (\$):	
Total budget	US\$8,870

1.7.2) Continuing Activity. CI-Philippines will conduct awareness campaign at both the national and corridor level by completing the PSAs to be aired on national television and local cable networks and by participating in the yearly special events of Department of Environment and Natural Resources and Department of Education Culture and Sports.

Match funds are from the Ricoh Corporation

Activity 1.7.2	
Benchmark/Output(s):	PSA completed and aired in national television and local cable networks and prepare information material by March 2002.
Months of implementation:	October 2001 to March 2002.
Activity Lead:	Personnel: Hired National IEC, information officer, Mike, Aloy, Artem Dario, Rachel, Star, Edward. Resources: Staff time and local

	travel
USAID FY02 Level of Effort (\$):	US\$7,519
Other Match Funding Source (\$):	US \$ 1,485
Total budget	US \$ 9,004

**Objective 2: (USAID FY02 Level of Effort : \$48356; Match Level of Effort : \$15,638)
Protected areas created, strengthened and extended**

Activities:

2.1) New protected areas (protected areas, private reserves, indigenous reserves/territories) are created

2.1.1) New Activity. CI-Philippines with the Department of Environment and Natural Resources will initiate the process of expanding and creating protected areas within core nuclei areas namely Penablanca Protected Landscape in Cagayan, Casecnan protected landscape in Nueva Vizcaya-Quirino-Aurora provinces, Aurora Memorial National Park in Aurora and Kanan Watershed in Quezon. The processes involved are the resource-based inventory, public consultation and hearing, protected area suitability assessment, data integration, mapping and delineation of the proposed expansion sites.

Activity 2.1.1	
Benchmark/Output(s):	DENR – Protected Areas and Wildlife Bureau drafted proclamation for the expansion and creation of protected areas within core nuclei by September 2002.
Months of implementation:	October 01 to September 2002
Activity Lead:	Personnel: Dario, Perry, Artem, Mike and Aloy Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$ 12,312
Other Match Funding Source (\$):	US\$ 2,205
Total budget	US\$ 14,517

2.2) Protected area level infrastructure in place (park guards, posts, etc.)

2.2.1) Continuing Activity. CI-Philippines will conduct at least 4 training sessions for the PAMB and park guards in existing protected areas, one in the western side of the northern sierra madre natural park, one in Aurora, one in Quezon, one in Casecnan. These trainings will include paralegal training for NSMNP park guards, ecology lectures for park guards and training of guards to conduct Information, Education and Communication (IEC) activities. IEC training will be provided in order to enrich park personnel's knowledge of biodiversity conservation issues and to train them in conducting awareness raising activities in the communities to which they are assigned.

The PAMB and park guards trainings conducted last year was only intended for the coastal municipalities (Maconacon, Divilacan and Palanan) of the Northern Sierra Madre Natural Park while these planned trainings will be conducted in the Western municipalities of NSMNP (Ilagan, San Mariano, Cabagan , Tumauni and San Pablo and the PAMB and park guards of other protected areas within the corridor particularly in Aurora Memorial Park, Casecnan Protected Landscape and Quezon watershed reservations.

Activity 2.2.1	
Benchmark/Output(s):	Conducted 3 training session for the PAMB and park guards as identified by September 2002.
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Mike, Aloy, Rachel, Estrella. Resources: Staff time , local travel
USAID FY02 Level of Effort (\$):	US\$ 11,885
Other Match Funding Source (\$):	US\$ 87
Total budget	US\$ 11,972

2.2.2) Continuing Activity. CI-Philippines will continue to provide in-kind support (supplies of materials for park patrol) to the office of the Protected Area Superintendent of Northern Sierra Madre Natural Park to strengthen effectiveness on park management and protection.

Match funds are from Ricoh Corporation to partly fund the staff time, supplies and travel.

Activity 2.2.2	
Benchmark/Output(s):	In-kind support identified and provided by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Aloy, Eduard Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$ 869
Other Match Funding Source (\$):	US\$ 1,967
Total budget	US\$ 2,836

2.3) Strengthen or extend existing protected areas

2.3.1) New Activity. CI-Philippines will facilitate the process of conducting organizational development training, protected area management training, paralegal training and conduct cross sites visits for the Protected Area Management Boards of the Penablanca Protected Landscape in Cagayan, Casecnan Protected Landscape in Nueva Vizcaya and Aurora Memorial Park in Aurora to build their abilities and develop their skills in discharging their functions as local policy making body of the park. The trainings will be conducted on sites but the cross visit is planned to be done in the Northern Sierra Madre Natural Park which is the most advance among the protected areas in corridor.

The trainings are intended to strengthen the capabilities of the Protected Area Management Board of Casecnan Protected Landscape, Aurora Memorial Park and Penablanca Protected Landscape (selected as core nuclei) because these are newly organized/created by the Department of Environment and Natural Resources. The DENR can not fully support the training needs because of lack of financial resources, however, they will be ask to provide counterparts, maybe the trainers which are available in the organization.. Since, the PAMB is the local policy making body under the National Integrated Protected Areas System Law, there is really a need to capacitate them to perform their functions. This is a critical institution in the corridor program.

Activity 2.3.1	
Benchmark/Output(s):	Report on trainings result submitted by September 2002.
Months of implementation:	October 2001 to September 2002.
Activity Lead:	Personnel: Mike, Aloy, Rachelle, Estrella, Eduard, information officer. Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$ 8,533
Other Match Funding Source (\$):	
Total budget	US\$ 8,533

2.3.2) New Activity. CI-Philippines will provide and facilitate technical training on agro forestry and reforestation for the Peoples Organization organized in Villa Robles and Centro West in Palanan to capacitate them effectively manage the reforestation and agro-forestry project. CIP will also facilitate conducting financial management training and organizational development training for Peoples Organizations(Pos) in Aurora, Quezon and Nueva Ecija, Nueva Viscaya and Cagayan to enable the tom discharge their functions for the effectively management of their respective projects.

The Peoples Organization or Pos are the local organization allowed by the government to manage secondary forest through the Community-Based Forest Management (CBFM) or Certificate of Ancestral Domain Claims (CADC). At present many CBFMs and CADCs were awarded to Peoples Organizations within the corridor, however, due to lack of resources of the DENR to provide the training needs of these Pos, they are asking Ci assistance for the conduct of the desired trainings to capacitate these Peoples Organizations to effectively manage their projects. CBFM and CADC are management options being carried out at the corridor, thus, our assistance is very important as part of achieving biodiversity goals and objectives.

Match funds are from Ricoh Corporation and Siemens to partly cover staff time, travel, supplies for trainings.

Activity 2.3.2	
Benchmark/Output(s):	Trainings conducted and reports submitted by September 2002.
Months of implementation:	October 2001 to September 2002.
Activity Lead:	Personnel: Mike, Aloy, Racelle, Estrella, Eduard, information officer. Resources Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$ 5,283
Other Match Funding Source (\$):	US\$ 4,238
Total budget	US\$ 9,521

2.4) Develop and implement management plans for new and existing protected areas

2.4.1) New Activity. CI-Philippines will prepare with the Department of Environment and Natural Resources, Local Government Units and Protected Area Management Board management plan for at least 2 existing Protected Areas (1 in Region 2-Cagayan and 1 in Region 3&4-Aurora) established in the corridor for the effective management and protection of the biodiversity of the parks. The plan will be prepared through a series of stakeholders workshops and consultations in the local communities covered by the project.

The Management plan is for the Park Administration particularly the Protected Area Superintendent. The plan is being prepared trough a series of workshops of all the stakeholders and consultations to be facilitated jointly by the institutions mentioned. Data analysis, integration and validation shall also be done by the group before the plan will be finally submitted to the DENR for approval.

Activity 2.4.1	
Benchmark/Output(s):	Draft management plans of two Protected Areas completed by end of September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Artem, Leonard, Luzon Mike, Aloy, Star, Rachel, Information Officer Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	US\$7,795
Other Match Funding Source (\$):	
Total budget	US\$7,795

2.5) Capacity-building at the level of new and existing protected areas

2.5.1) Refer to activity 2.3

2.6) Information gathering, integration and analysis for protected area creation and strengthening (new or targeted biological, social, legal and/or economic data)

2.6.1) Refer to objective 1 activities 1.7

2.7 Develop and implement awareness campaign for new or existing protected areas

2.7.1) Refer to objective 1 Activity 1.7

2.8) Promote restoration and environmentally compatible activities in protected areas

2.8.1) Continuing Activity. CI-Philippines will implement the rehabilitation and reforestation plan for the blue lagoon and the 16 hectares research plot in Palanan Isabela.

Match fund will come from Ricoh Corporation to partly cover the staff time, field supplies, and travel.

Activity 2.8.1	
Benchmark/Output(s):	Establish two nursery at Villa Robles and Centro West in Palanan and initial reforestation and agro forestry activities by September 2002 .
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Leonard, Nestor, Forest crew, Eduard, Aloy
USAID FY02 Level of Effort (\$):	US\$ 1,679
Other Match Funding Source (\$):	US\$ 7,141
Total budget	US\$ 8,820

Objective 3: (USAID FY02 Level of Effort : \$8,917; Match Level of Effort : \$0)
 Core nuclei of protected areas established

Activities:

3.1) Identify and monitor the priority areas and connections within the nuclear area to best protect biodiversity

3.1.1) Continuing Activity. CI-Philippines, CABS, FSD to conduct initial discussion through setting up of SMBC Working Group and communicating through emails on the indicators of connection success . Flint, Josh Phipps (IT) and Karl to set the SMBC Working Group by October 2002. This working group will discuss and address all issues related to SMBC.

Activity 3.1.1	
Benchmark/Output(s):	SMBC Working Group established and success indicators are identified by June 2002.
Months of implementation:	October 2001 to June 2002
Activity Lead:	Personnel: Artem, Leonard, Daniel, Karl, Jim, Flint, Dario Resources: Staff time
USAID FY02 Level of Effort (\$):	US\$ 5,242
Other Match Funding Source (\$):	
Total budget	US\$ 5,242

3.2) Promote environmentally compatible activities in connections in corridor buffer zones

3.2.1) New Activity. CI-Philippines will initiate consultation with appropriate people in CELB to be facilitated by Flint/Working Group to obtain information on best practices on mining, industry, logging. CI-Philippines to gather the existing best practices available.

Activity 3.2.1	
Benchmark/Output(s):	Obtained and prepared compilation of information on best practices on mining, industry and logging by September 2002
Months of implementation:	October 2001 to September 2002
Activity Lead:	Personnel: Artem, Flint/Working Group, Information Officer Resources: Staff time
USAID FY02 Level of Effort (\$):	US\$3,675
Other Match Funding Source (\$):	
Total budget	US\$ 3,675

3.4) Economic analysis and policy level work and/or analysis to identify land uses that meet conservation objectives at nuclei level

3.4.1) New Activity. CI-Philippines will assess the current enforcement systems in already identified hotspots areas and will work with the Department of Environment and Natural Resources, Non Government Organizations and other government agencies and present recommendations to the government to strengthen the enforcement of environmental laws in open access areas (outside existing management units, protected areas, Community-Based Forest Management, Certificate of Ancestral Domain Claims, etc.). Assessment will be done through a multi-sectoral workshops in Cagayan for Region 2 and Metro-Manila for Region 3 & 4.

Activity 3.4.1	
Benchmark/Output(s):	Assessment report submitted and advocacy work started by September 2002.
Months of implementation:	January 2002 to September 2002
Activity Lead:	Personnel: Jim, Noela, Luzon Resources: Staff time, local travel
USAID FY02 Level of Effort (\$):	
Other Match Funding Source (\$):	
Total budget	

3.5) Awareness program designed and made operational

3.5.1) Refer to activity 1.7

3.6) Select Indicator species and promote research on them for integration at the corridor level.

3.7) Information gathering, integration and analysis for core nuclei (new or targeted biological, social, legal and/or economic data)

3.7.1) Refer to activity 1.4

Objective 4:

Biodiversity corridor of connected core nuclei established

Activities:

4.1) Collect biological, economic, and social data to identify priority areas for connection, monitor corridor success and build local capacity

4.1.1) Refer to activities 1.1

IV) Enforcement Economics

Introduction

This implementation plan describes the activities to be carried out in Year 1 (FY02) of the Enforcement Economics project. An overview of the structure of the project is provided here, while details of the activities to be carried out at the global level and in each of the three case study sites are developed in the following sections (A. Selva Maya; B. Irian Jaya; C. Palawan; D. Global Level).

The project aims to a) improve enforcement performance in each of the three case study sites, and b) catalyze a global initiative to strengthen enforcement of natural resource management and protected area policies and regulations worldwide. The threat posed to conservation by poor enforcement and high levels of forest crime cannot be overstated. The illegal trade in wildlife has had an enormous impact on many endangered species, including high profile examples such as the New Guinea birds of paradise and tree kangaroos, Sumatran tiger, African rhino, and the Scarlet macaw of Mexico. Many more less-well-known species are also at significant risk. The role of illegal hunting and wildlife trade in undermining terrestrial conservation efforts has even introduced a new term into the conservation lexicon: "the empty forest syndrome". Equally important in many areas of the world are the continuing high levels of illegal logging within formally protected areas. Recent estimates place illegal logging as 73% of log production in Indonesia, 80% in Brazil and 50% in Cameroon. Within biodiversity hotspots where virtually all logging of old growth forests is illegal the figures are likely to be even higher. Much of this timber is illegal because it comes from over-harvesting or under-declaring of log production in logging concessions. However, significant illegal logging is also taking place inside protected areas and causing significant damage to conservation efforts. In the marine realm, the grouper species Napoleon wrasse has been depleted across almost all the coral triangle to meet demand for live reef fish in Asian restaurants. Destructive fishing practices are also destroying marine habitats and undermining entire ecosystems, as seen for the coral reefs of the Philippines.

This project will have significant positive biodiversity impacts, as effective enforcement regimes with credible threats of penalties will generate incentives against illegal hunting and trade in wildlife, logging and degradation of protected areas and their surroundings in biodiversity corridors. Areas of high biodiversity importance that are currently under threat in spite of the best efforts of conservation organizations, local communities, the private sector and governments will be more effectively protected. The results of this work will be disseminated worldwide throughout the lifetime of the project to raise awareness of enforcement economics and feasible high performance activities to strengthen the enforcement of protected areas and environmental regulations globally. A major global outreach effort will take place in Year 3 (FY04) when the results of the three case studies and lessons learned will be presented to senior government officials and key partners through the global launch of the project report. A parallel series of high profile workshops will be held in several priority biodiversity corridor areas to initiate enforcement-strengthening activities and reinforce the global outreach program.

The project structure is as follows:

Project Goal: to improve the performance of biodiversity corridors globally in conserving biodiversity.

Project Purpose: to broaden the use of enforcement economics and make effective the performance of enforcement of protected area and environmental regulations within priority biodiversity corridors worldwide.

Project Objectives:

1. Carry out enforcement economic analyses in three case study areas (see following Project Case Study Corridors sections) and work with local stakeholders and decision-makers to design, leverage financing and implement necessary improvements in the enforcement regimes.
2. Develop and implement regional and global communications strategies for the project to raise awareness of the enforcement economics approach, its impact in addressing environmental crimes and synthesize recommendations and lessons learned.
3. Carry out a series of workshops to introduce the enforcement economics approach into several additional priority biodiversity corridors worldwide⁴.
4. Launch final project report globally through a range of different communications media.

Objective 1 will be carried out in FY02 and FY03, Objective 2 throughout the project, and Objectives 3 and 4 in FY04.

Objective 1: (USAID FY02 Level of Effort :131,706; Match Level of Effort : \$92,840)

Carry out enforcement economic analyses (in three case study areas) and work with local stakeholders and decision-makers to design, leverage financing and implement necessary improvements in the enforcement regimes.

One major focus of the project in FY02 will be on the case study work captured under Objective 1. The REP and CPP will work with CI Country Program experts and local consultants in the fields of conservation, law, and economics to thoroughly describe the enforcement system of the country in question, determine weak links in the chain of enforcement and their root causes, and identify and evaluate potential low-cost improvement strategies. The following activities will be carried out for each case study site:

Activity 1.1) Profile enforcement system, illegal activities and threats to biodiversity, and secure support for the project from key stakeholders

Activity 1.1 should be completed within the first year of this project, FY02. Through this work, project team members and partners in each of the three sites will develop a clear understanding of the enforcement system and threats posed by illegal activities. Understanding the enforcement system includes describing the procedures that are used as an infractor's case passes through the various steps of the enforcement chain, profiling the district/state/federal government agencies and actors that are involved in each step of the enforcement chain, and identifying the interrelations and any jurisdictional overlaps or confusion between the different agencies involved in the enforcement chain. The threats posed by illegal activities will be captured through an assessment of the scale of illegal activities, the threat they pose to biodiversity conservation goals, the profits of selected illegal activities and a profile of the actors involved in illegal activities. These analyses will allow project team members to establish the parameters of the enforcement study in each site, develop a methodology for collection of quantitative and qualitative data necessary for the study, and identify key partners and decision makers within relevant government

⁴ E.g.: Those being implemented with support from USAID GCP and Missions, the Critical Ecosystems Partnership Fund, and other donors.

agencies. Purpose, objectives and methodology of the enforcement study will be shared – where politically feasible – with key partners in order to seek their input and support for the project.

Activity 1.2) Identify weaknesses in the enforcement system and develop least-cost investment strategy for addressing them

Work under Activity 1.2 will begin in FY02 and continue into the following year of the project when the Activity will be completed. Activity 1.2 is designed to: a) collect the data necessary to run the quantitative enforcement economics model, which will provide an indication of the overall deterrent value of the current enforcement regime and identify the weakest links in the chain of enforcement, b) assess the qualitative determinants of the quality of enforcement in order to gain an understanding of why weaknesses in the current system exist, and c) analyze the results of the quantitative modeling exercise and the qualitative assessment to develop recommendations for a least-cost investment strategy for strengthening the quality of enforcement. While the specifics of how and where data is collected will differ somewhat in each of the three sites, the analysis and outputs from each of the three sites will be similar, which should facilitate a comparison of results across all three sites. Data will be collected through a combination of techniques, including: primary data collection through surveys and semi-structured interviews, secondary data collection in government agencies charged with enforcement, and informal interviews with key staff in government agencies. The results of the enforcement economics analysis will be complemented by an assessment of potential barriers and barrier removal strategies to improve the performance of enforcement.

Activity 1.3) Identify cost-effective opportunities to reduce the incentives for illegal activities

Work under Activity 1.3 will start in FY02 and continue into FY03. Strengthening enforcement may not always be socially or politically feasible, nor may it be the cheapest or most effective way of reducing illegal activity. Rather it may be better to focus on activities that reduce the incentive for illegal activities. This outcome may occur when illegal activities are a key part of the livelihoods of subsistence economies, or of the very poor within society. In such cases work under this activity will seek the answers to key questions such as: why are these people reliant on illegal activity for subsistence, are natural resource management laws appropriate, to what extent are government policies to blame, and what sorts of alternative income generating activities can be implemented to modify the current situation? Reducing incentives may also be an effective way to reduce illegal activity by commercial actors. This activity will thus include an assessment of how incentives can be decreased by 1) improving the accuracy of price signals being transmitted through the market (e.g., by introducing certification schemes), 2) the availability of alternative economic activities that increase the opportunity cost of engaging in illegal activities, and 3) the existence or absence of compensation mechanisms (distinct from price signals) to reward people who are not engaging in illegal activities. Most of these options are already being addressed by ongoing funded activities that are part of CI's programs in the case study sites (details in relevant sections below). The questions and areas of analysis described above will be investigated for each major category of actor engaged in illegal activities. The majority of the work under this activity will therefore commence in FY03, following the profiling of these actors under Activity 1.1.

Activity 1.4) Influence key decision makers to implement least-cost investment strategies to improve quality of enforcement.

Critical case-study site stakeholders and decision-makers will be engaged as significant findings are made, or critical enforcement issues arise. However, the majority of the work under Activity 1.4 will be implemented in FY03, following the completion of Activities 1.2 and 1.3. In FY03, study results will be discussed in a participatory forum with USAID, key biodiversity corridor stakeholders and decision makers in each of the three sites. This forum will be used to secure a consensus on recommendations regarding improvements to the enforcement regime that will serve as the basis for working with relevant agency staff to secure financing for implementation of these activities. CI will carry out capacity-building / training workshops for enforcement agency staff involved in critical parts of the enforcement system, as agreed with decision-makers.

**Objective 2: (USAID FY02 Level of Effort : \$0; Match Level of Effort : \$15,000)
Develop and implement regional and global communications strategy for the project to raise awareness of the enforcement economics approach, its impact in addressing environmental crimes and synthesize recommendations and lessons learned.**

Another major focus of the project during FY02 will be to continue global outreach activities under Objective 2. These include developing more materials for public outreach describing enforcement issues, detailing examples of enforcement systems that have worked efficiently and why, explaining the enforcement economics approach, the objectives and results of this project, and the global biodiversity benefits of undertaking similar work elsewhere. The activities under Objective 2 are described in detail in Section D (Global) below, and include:

Activity 2.1) Develop regional and global communications strategy for the project

Activity 2.2) Place commentaries and reports on the project in regional and global media

Activity 2.3) Make presentations on the project in relevant regional and local conferences, workshops and other forums.

Financial sustainability activities and FY02 co-financing.

The case studies under Objective 1 are financially sustainable and co-financed over their lifetime (FY02 and FY03) because the enforcement economics project is an integral element of CI's biodiversity corridor programs in those sites and builds on existing activities with multi-year funding from CI and other donors (details for each case study are provided in the relevant sections below).

Co-financing for Objective 2 under FY02 is being provided by the Bank of America Foundation (BoAF), and further matching funds for FY03 and FY04 will be sought from BoAF and other donors (see Section D – Global, below). Co-financing for Objective 3 (to be carried out in FY04) is anticipated to come from existing funding sources for the selected biodiversity corridors. Co-financing for Objective 4 (to be carried out in FY04) is anticipated to come from CI. The Resource Economics Program is initiating contact with additional donors in order to expand the enforcement economics program beyond what is described in this implementation plan.

A. Selva Maya Case Study

The Mesoamerica Hotspot is the second richest global hotspot, due in part to its geographic position at the interface between two of the world's greatest biogeographic realms - the Nearctic of North America and the Neotropical of South and Central America and the Caribbean. The Selva Maya forms the northern part of the Mesoamerica Hotspot, occupying south-eastern Mexico, northern Guatemala, and Belize. The Selva Maya is a unique mosaic of tropical ecosystems resulting from hundreds of years of management by the ancient Mayans. Its biodiversity significance stems from the presence of two major classes of tropical ecosystems: montane tropical forests and lowland rainforests. These ecosystems incorporate populations of key endangered species, including the major remaining populations of Baird's tapir (*Tapirus bairdii*), the Scarlet macaw (*Ara macao cyanoptera*), the Ocellated turkey (*Agriocharis ocellata*), and a subspecies of the White-lipped peccary (*Tayassu pecari ringens*).

Wildlife biodiversity in the Selva Maya (including all the above-named species) is severely threatened by hunting for bushmeat and commercial trade. Mexico has an active internal trade in native wild parrots and other species. Mexican reptile and bird species are often exported illegally.

The underlying causes of wildlife hunting in the Selva Maya include:

- Intense demographic pressures from rapid population growth and migration are threatening protected areas and connectivity across the corridor. Approximately 10 million people currently live in the Selva Maya, and that population is expected to double by 2020.
- Over 50 percent of the inhabitants of this region live at or below the poverty line. This poverty leads to increased competition for available resources, resulting in unsustainable levels of resource extraction in activities such as logging, hunting, poaching, and collection of non-timber forest products.

The main focus of current conservation strategies in Selva Maya is on habitat conservation. However, hunting levels are giving rise to increasing concerns about the emergence of empty forests. To address this threat, there is an urgent need to develop a well-informed consensus-based strategy to address wildlife hunting. This enforcement study will provide information on the illegal hunting and trade of endangered species for trophies (e.g. jaguar, puma, ocelot, crocodiles) and live capture of endangered species for the international pet trade (e.g. scarlet macaw, yellow-headed amazon) to assist in the design and implementation of necessary improvements in the enforcement regime for commercially traded species. It will be complemented by a broader analysis of the stakeholder incentives which underpin illegal wildlife hunting and trade, and an assessment of potential opportunities for reducing these incentives.

Financial sustainability activities and FY02 co-financing.

Activities to address wildlife hunting are expected to form a key component of CI's strategy for Selva Maya. Co-financing for FY02 (FY03 and FY04) comes from CI-CABS funds allocated to the development of initiatives to address unsustainable wildlife hunting in forest corridors.

Objective 1:

Carry out enforcement economic analyses (in three case study areas) and work with local stakeholders and decision-makers to design, leverage financing and implement necessary improvements in the enforcement regimes.

Activities:

A.1.1) Profile enforcement system, illegal activities and threats to biodiversity, and secure support for the project from key stakeholders

There are three principal components to Activity A.1.1 to be completed in FY02:

- **Profile the current enforcement systems used by Government and by communities to address wildlife hunting and trade in protected endangered species.** The profile will include a description of the enforcement chain (such as detection, arrest, prosecution, conviction, and levying/collecting fines) by which wildlife hunting and trade infractions are enforced. An organogram will identify the roles and responsibilities of key state and federal government agencies responsible for enforcement at all points in the enforcement chain. The profile will be based on a review of existing information available through CI-Selva Maya Program, CABS and through meetings with key partners. This information will be used to a) develop a methodology for the enforcement study in Selva Maya, and b) identify key enforcement institutions with whom partnerships should be established to maximize efficacy of later implementation efforts.
- **Profile the illegal wildlife trade and assess the threat to endangered species and keystone species.** A profile of the illegal wildlife trade will be developed, drawing on available data regarding wildlife trade, species loss, and evidence of 'empty forest syndrome' in the Selva Maya. This will include an assessment of the threats associated with illegal hunting and trade of endangered and keystone species, and the scope for alleviating these threats through more effective enforcement of wildlife laws and regulations.

- **Socialize the project with key decision-makers and stakeholders and secure their input and support for the project.** Bilateral meetings will be held with key decision-makers and other potential partners (such as PROFEPA, CONAMP, Dirección de Vida Silvestre, TRAFFIC-Mexico, PRONATURA, Instituto de Historia Natural, Mesoamerican Program for Environmental Law) to facilitate data collection create an opportunity for these stakeholders to provide inputs into study design.

Activity A.1.1	
Benchmark/Output(s):	Profiles of enforcement system, wildlife hunting and trade, and bilateral meetings
Months of implementation:	October 2001 - April 2002
Activity Lead:	Charlotte Boyd
USAID FY02 Level of Effort (\$):	\$9,152
Other Match Funding Source (\$):	\$6,964 CABS funding for CABS inputs being negotiated

A.1.2) Identify weaknesses in the enforcement system and develop least-cost investment strategy for addressing them

There are three main components under Activity A.1.2 which will be initiated in FY02:

- **Review of legislation to document laws governing wildlife hunting and trade in the Selva Maya.** A consulting specialist in environmental law will conduct a gap assessment of existing reviews of relevant legislation and regulations, and CI will commission further analysis of legislation if necessary. This component will be initiated in FY02 and completed in FY03.
- **Collection and compilation of quantitative data on the government enforcement system.** The research team will collect secondary data, including detection data, confiscation records, arrest records, records of proceedings, and conviction records from government enforcement agencies such as PROFEPA and CONAMP. This data will be used to calculate the quantitative probabilities of detection, arrest, prosecution, conviction, being fined, and value of fines which will contribute to the determination of the value of the enforcement disincentive. This activity will continue into FY03.
- **Interview enforcement staff to gather further qualitative information on the determinants of weaknesses in the enforcement system.** The research team will arrange interviews with key staff in enforcement-related capacities in state and federal enforcement agencies, state and federal level judiciary, and other agencies as necessary, to gather qualitative information on the determinants of the quality of enforcement. This activity will continue into FY03.

Activity A.1.2	
Benchmark/Output(s):	Review of legislation, quantitative data collected and compiled, and interview reports
Months of implementation:	February - September 2002. (All three components to continue into FY03.)
Activity Lead:	Charlotte Boyd
USAID FY02 Level of Effort (\$):	\$12,748
Other Match Funding Source (\$):	\$6,600 CABS funding for review of legislation being negotiated

A.1.3) Identify cost-effective opportunities to reduce the incentives for illegal activities

There are three components under Activity A.1.3, of which two will be initiated in FY02:

- **Policy Analysis Matrix.** A policy analysis matrix will be designed to assess the appropriateness of the full range of potential initiatives for addressing wildlife hunting and trade, in terms of the type of threat and socio-economic conditions. Secondary data will be collected and incorporated, and findings summarized. This component will continue through FY03 and into FY04.
- **Market survey.** The research team will undertake a market survey, gathering data on networks, species, prices, volumes, seasonality and trends in wildlife trade to contribute to estimates of the probability of detection. This activity will continue into FY03.

Activity A.1.3	
Benchmark/Output(s):	Policy Analysis Matrix designed; market database designed and data collected and entered.
Months of implementation:	October 2001 - September 2002. (Both components to continue into FY03.)
Activity Lead:	Charlotte Boyd
USAID FY02 Level of Effort (\$):	\$10,401
Other Match Funding Source (\$):	\$6,964 CABS funding for Policy Analysis Matrix being negotiated. CABS funding to cover additional markets to be negotiated if necessary.

The remaining component of A.1.3 will be initiated and completed in FY03:

- **Local livelihoods analysis to identify opportunities for reducing hunters' incentives for illegal activities.**

A.1.4) Influence key decision makers to implement least-cost investment strategies to improve quality of enforcement.

There are four components under Activity A.1.4. While, the majority of the work under Activity A.1.4 will take place in FY03 and FY04, ongoing dialogue with decision-makers and partners will occur throughout the duration of the project in order to maintain their involvement in and commitment to the project, and to engage decision-makers in addressing urgent findings as they emerge.

- **Ongoing engagement with critical decision-makers to initiate improvement programs and activities as urgent problems in enforcement are revealed.** Bilateral meetings (see A.1.1) will be used to build partnerships/ alliances with staff within relevant government agencies. CI-Selva Maya will organize and facilitate a working meeting or workshop with key partners relevant in enforcement, to build consensus in support of study objectives and outputs, and provide channels for disseminating results to key decision makers. This workshop will designate an advisory committee incorporating key decision-makers and partners, which will enhance these stakeholders' involvement in the project and provide a mechanism for initiating improvement programs and activities as they emerge. This advisory committee will continue for the duration of the project.

Activity A.1.4	
Benchmark/Output(s):	Workshop proceedings, copies of advisory committee correspondence and advisory committee meeting reports.

Months of implementation:	May-September 2002. (To be continued into FY03.)
Activity Lead:	Ignacio March
USAID FY02 Level of Effort (\$):	\$11,601
Other Match Funding Source (\$):	\$7,312 CABS funding being negotiated to cover CABS inputs.

The other three components will be initiated and carried out in FY03 and FY04:

- ***Bilateral and multilateral discussions with enforcement agencies and other institutions to discuss findings and secure the necessary resources for strengthening enforcement.***
- ***Targeted outreach strategy focusing on policy-makers, conservation partners, and other stakeholder groups designed and implemented.***
- ***Policy Analysis Matrix workshop for decision-makers, partners and other stakeholders to reach consensus on initiatives to address wildlife hunting and trade.***

B. Irian Jaya Case Study

CI Indonesia's Irian Jaya Priority Setting Workshop in 1997 verified that Irian Jaya is one of earth's remaining tropical wilderness areas. CI trends assessments conclude that over the next two decades, industrial investment, infrastructure development, demographic pressure, and provincial income requirements will seriously degrade Papua's intact terrestrial and marine habitats, absent effective spatial planning and resource policy implementation, including effective enforcement of environmental laws.

At the Provincial and Regency level CI Irian Jaya is working on a number of fronts to strengthen spatial planning and policy implementation. The program includes a range of participatory analyses, advocacy, capacity assessments and capacity building activities. The enforcement economics work described here complements these activities, and strengthens efforts to support effective policy implementation. At the site level CI Irian Jaya is focusing on the Mamberamo watershed. At the moment the area is virtually pristine, with little logging, mining, or estate crop development. However, these potential threats may become significant if major infrastructure development plans by the central government go ahead. While the infrastructure plans have yet to proceed beyond vague ideas, CI Irian Jaya is working proactively with local NGO partners and the Mamberamo Adat Council to prepare alternative conservation-based development plans. The only significant current active threats to biodiversity are the trade in protected species and a limited amount of illegal logging in forest areas accessible by river from the coast.

The current enforcement system in Irian Jaya is changing under decentralization and the move towards Special Autonomy. At the current time detection of illegal wildlife capture in the forest, and illegal logging in protected areas is the responsibility of Forest Rangers (Jagawana) under the local Nature Conservation Agency (Balai Konservasi Sumber Daya Alam, BKSDA) reporting to the Ministry of Forestry. Detection of illegal logging outside protected areas is the responsibility of Jagawana in Regency and Provincial forestry departments (Dinas Kehutanan), reporting to the Regency Head and Governor respectively. In minor cases illegally captured animals may simply be released and equipment confiscated. In more serious cases the illegal activities are supposed to be reported to the police for arrests to take place. When arrests take place the police are supposed to bring the cases to the Attorney (Jaksa), who determines whether a prosecution will take place and prepares the case for prosecution. These cases are then heard in court with a judge presiding.

While the current system is complex and confusing, even to those within the enforcement agencies, and largely ineffective, the situation is may worsen as the systems are altered under decentralization. In the case of Irian Jaya, the focus of the enforcement economics project will not simply be on improving the current enforcement system, but in influencing the design of enforcement systems emerging under Special Autonomy, including official recognition and support for community level enforcement of both government and adat (traditional) rules and regulations.

Financial sustainability activities and FY02 co-financing.

The enforcement economics project is a fully integrated key component of CI's program and projects in Irian Jaya. It builds on existing funded conservation activities and uses work underway or planned in the broader conservation program to focus specifically on improving the performance of enforcement. The co-financing for FY02 (FY03 and FY04) comes from CI funds, primarily those being used to support Irian Jaya provincial level activities and the implementation of the Mamberamo Biodiversity Corridor under the development of a Center for Biodiversity Conservation for Melanesia.

Objective 1:

Carry out enforcement economic analyses (in three case study areas) and work with local stakeholders and decision-makers to design, leverage financing and implement necessary improvements in the enforcement regimes.

Activities:

B.1.1) Profile enforcement system, illegal activities and threats to biodiversity, and secure support for the project from key stakeholders

The four principal components to activity 1.1, to be completed in FY02, are:

- **Profile the current enforcement systems used by Government and by communities to address illegal logging and trade in protected endangered species.** The geographical scope of different actors in the enforcement systems varies from the Provincial level down to the local community level. The profile for community level, Regency (Kabupaten or District) and Provincial actors will be carried out within Mamberamo Basin, Jayapura Kabupaten and Irian Jaya Province respectively. The profile will include a review of enforcement legislation and traditional rules, descriptions of the actors responsible for different elements of enforcement and an assessment of their performance, and make a preliminary identification of key strengths and problem areas. The profile will document and analyze recent successes and failures in the enforcement of environmental legislation and identify lessons learned. The CI Irian Jaya Environmental Lawyer, together with a local expert, will carry out the profile of the government enforcement system. CI and local NGO partners (e.g., YALI) active in the Mamberamo Basin will carry out the community level profile.
- **Profile the illegal wildlife trade and assess the threat to protected endangered species.** The profile will include a Provincial level overview of the threat to protected endangered species from the illegal wildlife trade, to be based on existing information on the trade and known trends in protected species numbers. The profile will also include the identification and description of actors in the illegal wildlife trade. As in the case of the enforcement system, actors in the illegal wildlife trade vary in geographical scope and will be profiled at the appropriate level (Province, Jayapura Kabupaten and Mamberamo Basin). The profile will be based on existing secondary data, market surveys and interviews and will also include an assessment of financial and other incentives for each of the key actors in the illegal trade in wildlife. A local expert will carry out the profile of the illegal wildlife trade at the Provincial and Jauapura Kabupaten level. CI and local NGO partners (e.g., YALI) in the Mamberamo Basin will carry out the local level profile.
- **Profile illegal logging and assess the threat to protected areas and other high conservation value forests.** The profile of illegal logging will follow the same pattern as the profile for the illegal wildlife trade. The CI Indonesia Resource Economist, together with a local expert, will carry out the profile of illegal logging at the Provincial and Jauapura Kabupaten level. CI and NGO partners (e.g., YALI) active in the Mamberamo Basin will carry out the local level profile.
- **Socialize the project with key decision-makers and stakeholders and secure their input and support for the project.** Bi-lateral meetings will be held with the senior staff of enforcement agencies, other relevant government institutions, and NGOs with respect to Provincial level project activities. Bi-lateral meeting will also take place with the Mamberamo Adat Council regarding local-level activities within the Mamberamo Basin. These bi-lateral discussions will be carried out by CI Irian Jaya senior staff.

Activity B1.1	
Benchmark/Output(s):	Reports on enforcement system, illegal logging and wildlife trade, and bi-lateral meetings
Months of implementation:	November 2001 to September 2002
Activity Lead:	Suer Suryadi
USAID FY02 Level of Effort (\$):	\$18,600
Other Match Funding Source (\$):	\$11,000 (CI)

B.1.2) Identify weaknesses in the enforcement system and develop least-cost investment strategy for addressing them

There are five components under Activity 1.2, two of which are to be initiated in FY02:

- **Collection and compilation of quantitative data on the government enforcement system.** This data will be used to determine the rates of detection, arrest, prosecution, conviction, size of penalty and time take for processing of cases. The CI Irian Jaya Environmental Lawyer and same local expert who profiled the government enforcement system under Activity 1.1 will collect these data.
- **Interview enforcement agency staff to gather further qualitative information on the determinants of weaknesses in the enforcement system.** The CI Irian Jaya Environmental Lawyer and same local expert gathering the quantitative data will carry out these interviews, with CI staff present when required.

Activity B1.2	
Benchmark/Output(s):	Report on data gathered, and determinants of weaknesses in the government enforcement system
Months of implementation:	March 2002 to December 2002
Activity Lead:	Suer Suryadi
USAID FY02 Level of Effort (\$):	\$14,880
Other Match Funding Source (\$):	None

The final three components will be initiated and carried out in FY03:

- **Collect and compile quantitative information on all elements of the traditional enforcement system.** This information will be sought as part of a broader community engagement process being carried out in the Mamberamo Basin by CI and local NGO partners (e.g., YALI).
- **Carry out quantitative analysis to identify weak elements in the enforcement systems.**
- **Synthesize information from enforcement agency staff and local communities to identify least-cost strategies for strengthening weak elements in the enforcement systems.**

B.1.3) Identify cost-effective opportunities to reduce the incentives for illegal activities

There are three components under Activity 1.3, each focusing on a specific category of actors involved in the illegal trade in protected species or illegal logging. These broad categories, which will be detailed during FY02 following the profiling completed under Activity 1.1, are the harvesters / collectors, the traders, and the processors / exporters. While the majority of the work under Activity 1.3 will commence in FY03 (following the completion of Activity 1.1), community livelihood assessments will be carried out in FY02 and provide the basis for an assessment (to be done in FY03) of ways in which to reduce harvester / collector incentives for illegal activities.

Activity B1.3	
Benchmark/Output(s):	Report on community livelihoods
Months of implementation:	October 2001 to September 2002
Activity Lead:	Suer Suryadi
USAID FY02 Level of Effort (\$):	None
Other Match Funding Source (\$):	\$13,000 (CI)

B.1.4) Influence key decision makers to implement least-cost investment strategies to

improve quality of enforcement.

There are five components under Activity 1.4. While the majority of the work under Activity 1.4 will take place in FY03 (following the completion of Activities 1.2 and 1.3), one component of the work will be carried out during FY02, namely engaging decision-makers as urgent findings emerge from the project.

- Ongoing engagement with critical decision-makers to initiate improvement programs and activities as urgent problems in enforcement are revealed.*** In Irian Jaya several critical areas of weakness and potential solutions have already been identified. First, there is the need to develop a list of expert witnesses in illegal wildlife trade and logging and register them with the courts (to prevent cases being thrown out due to absence of expert witnesses). Second, CI is in the process of securing the services of an environmental lawyer to document detections of illegal activity by local communities and assist them in bringing these complaints to court. At the moment communities do not have access to the legal resources necessary for them to follow through and secure prosecutions when they detect illegal activities by outsiders. Third, the environmental lawyer will also be responsible for carrying out a negotiation with the Attorney's office, BKSDA and other relevant institutions to alter quality of evidence regulations that currently require confiscated wildlife to be held until cases come to court. Currently there is little capacity in the quarantine service to hold confiscated wildlife, and no resources with which to build capacity. Hence few wildlife are held, and few cases are brought to court. However, rather than seek to build capacity for holding wildlife, the preferred option is to seek other ways of meeting quality of evidence requirements rather than having wildlife held in captivity for often lengthy periods of time. Fourth, CI Irian Jaya senior staff have been engaged in a dialogue with local military commanders seeking to reduce the role of the military in the illegal collection and transport of protected species⁵. Fifth, CI has completed an assessment of the scale and equity of revenue collection and distribution from the logging sector. This report includes an assessment of the lost revenues due to illegal logging that will be used to elevate the illegal logging issue in relevant institutions in the Regencies and the Province.

Activity B1.4	
Benchmark/Output(s):	Reports on outcomes of decision-maker engagement
Months of implementation:	October 2001 to September 2002
Activity Lead:	Suer Suryadi
USAID FY02 Level of Effort (\$):	\$10,416
Other Match Funding Source (\$):	\$7,000 (CI)

The other four components will be initiated and carried out in FY03:

- Participatory design workshop to reach consensus on areas of weakness in enforcement and design solutions and/or changes to the enforcement system.***
- Legal working group to streamline procedures and develop legislation to introduce positive changes to the enforcement system.***

⁵ This dialogue has already lead to substantive results, including regular searches of Navy vessels and the confiscation of protected species that are then returned to the wild. These searches were carried out for the first time on August 27th-29th 2001, prior to the departure of Navy vessels, following discussions between CI Irian Jaya senior staff and the local Naval Commander.

- ***Bilateral and multilateral discussions with enforcement agencies and other institutions to secure the necessary resources for strengthening enforcement.***
- ***Carry out capacity-building / training workshops for enforcement agency staff involved in critical parts of the enforcement system, as agreed with decision-makers.***

C. Palawan Case Study

Northern Palawan's marine environment is particularly rich in biodiversity (CI, forthcoming). However, destructive fishing techniques, illegal trade in the live reef fish trade (LRFT), and weak enforcement systems threaten the marine diversity there. Cyanide fishing and dynamite blasting have resulted in the deterioration of critical coral reef habitat. Illegal trade of live fish species such as the Napoleon wrasse (*Cheilinus undulatus*) and the barramundi cod (*Cromileptes altivelis*) seriously threatens their survival. Many rural areas lack the necessary enforcement and legal infrastructure needed to successfully prosecute violations and reduce incentives to practice illegal activities.

CI is currently conducting a study that identifies and analyzes the economic incentives driving the LRFT. The study is identifying and analyzing the different sets of incentives for illegally trading and catching reef fishes that are sold in the LRFT. The study will analyze the incentives enjoyed by disaggregated sets of stakeholder groups. This analysis will be used as a benchmark for assessing the extent to which the incentives *not* to practice illegal activities in the live reef fish trade provide an effective deterrent under the current system. CI is also working with the Busuanga Municipal government to facilitate a community based marine protected area (MPA) zoning project. This community-based zoning effort is establishing a system of marine protected areas designed to increase fisheries stocks with expected biodiversity conservation spin-offs there. The project is designed to model a zoning approach towards MPA establishment system for the entire Calamianes region that is designed to increase fish populations and fishing incomes by closing community-designated areas off to various types of fishing. The enforcement economics study under the USAID project will analyze the extent to which cost effective enforcement components can strengthen these systems.

The current enforcement system is managed at the national, provincial, municipal, and local levels. The navy also patrols coastal waters. The national police force has a maritime task force that is assigned to enforce national forestry and fisheries laws at the provincial level. The Department of Environment and Natural Resources (DENR) also practices enforcement functions at the provincial and municipal levels. Provincial level and municipal government units also have task forces under the executive offices that are specifically tasked to enforce environmental laws. At the community level, civilian volunteers are trained and deputized to further strengthen the system. These local institutions are promoted by NGOs and by the more progressive local government units (LGUs). Some institutions are more effective than others at apprehending violators and some are flatly viewed as obstructions to justice. Apprehensions tend to more often take place at the community level. However, convictions are rarely yielded under the current court systems and communities that make apprehensions have to weigh the risks of doing so against the small chance that their actions will result in actual convictions.

Despite the existence of the above institutions, the enforcement systems in Northern Palawan have not significantly reduced the high incident of environmental loss due to illegal fishing practices for the following reasons:

1. Responsible law enforcement agencies lack the resources and capacity to cover their assigned areas and cannot provide an effective front-line deterrent to illegal activities
2. The judicial system lacks the manpower and infrastructure to prosecute and/or quickly resolve cases
3. Prosecutors lack familiarity with environmental laws and jurisprudence needed to successfully litigate cases
4. The system of checks and balance does not effectively inhibit abuses of the system
5. The penalty does not provide the disincentive required to deter illegal behavior
6. Arrests of foreign poachers are not prosecuted due to economic and defense security concerns

In Palawan the enforcement economics project will not only focus on improving the existing government enforcement system by analyzing the performance of national, provincial, municipal, and community-based enforcement systems. The overlapping responsibilities will be noted and the performance of each

of these institutions will be assessed for their cost effectiveness. The final evaluation will assess options for efficiently combining aspects of government and community-based enforcement systems as a key component of marine resources co-management systems.

Financial sustainability activities and FY02 co-financing.

The enforcement economics project is a fully integrated key component of CI's program and projects in Northern Palawan. It builds on existing funded conservation activities and uses work underway or planned in the broader conservation program to focus specifically on improving the performance of enforcement. The co-financing for FY02 comes from the Packard Foundation, which is funding the profile of the economic incentives driving illegal fishing practices in the LRFT, the project on establishing a network of MPAs in the Calamianes region, and the community product development project at Kayangan Lake.

Objective 1:

Carry out enforcement economic analyses (in three case study areas) and work with local stakeholders and decision-makers to design, leverage financing and implement necessary improvements in the enforcement regimes.

Activities:

C.1.1) Profile enforcement system, illegal activities and threats to biodiversity, and secure support for the project from key stakeholders

The three principal components to activity C.1.1, to be completed in FY02, are:

- **Profile the current enforcement systems used by Government and by communities to combat the use of illegal destructive fishing practices and illegal trade in fish⁶ in the life reef fish trade (LRFT).** The geographical scope of different actors in the enforcement systems varies from the international down to the local community level. The profile for community and municipal systems will be carried out in the Calamianes Region. The profile for the national and provincial systems will be carried out for Palawan Province. National and international enforcement systems will also be examined to identify international trade aspects of the LRFT. The profile will include a review of enforcement legislation and traditional rules, descriptions of the actors responsible for different elements of enforcement and an assessment of their performance, and make a preliminary identification of key strengths and problem areas. The profile will document and analyze recent successes and failures in the enforcement of environmental legislation and identify lessons learned. The Environmental Legal Assistance Center (ELAC) will profile the enforcement systems at the national level down to the local level. The CI REP Economist will profile international trade aspects of the LRFT.
- **Profile the illegal use of destructive fishing practices and illegal trade in fish in the LRFT and assess the threat to target species.** The profile will include an already underway overview of the threat to target fish species and coral reef habitats from the illegal use of

⁶ Illegal trade in fish in the LRFT refers to the sale of fish caught live using cyanide and to the sale of fish species banned from being shipped live. Groupers (Serranidae), with the exception of the barramundi cod (*Cromileptes altivelis*), are the only fish species that can be legally caught and sold live. The most highly targeted, illegally sold species are the Napoleon wrasse (*Cheilinus undulatus*) and the barramundi cod (*Cromileptes altivelis*). These species can be legally sold in local markets if they are dead.

cyanide and blast fishing, to be based on existing information on the trade, the use of destructive fishing practices and known trends in target species numbers and live coral cover. The profile will also include the identification and description of actors in the use of illegal fishing practices and illegal trade in fish within the LRFT. As in the case of the enforcement system, actors in the illegal LRFT vary in geographical scope and will be profiled at the Calamianes, provincial, national, and international market levels including various options that are being tried in Hong Kong to reduce demand for illegally caught grouper. The profile will be based on existing secondary data, market surveys and interviews and will also include an assessment of financial and other incentives for each of the key actors in the illegal LRFT. The CI-Philippines Resource Economist will carry out the analysis for the Calamianes, Palawan Province, and national levels. The CI-REP economist will carry out the profile and assessment at the international level. This overview is funded by the Packard Foundation.

- **Socialize the project with key decision-makers and stakeholders and secure their input and support for the project.** Bi-lateral meetings will be held with the senior staff of enforcement agencies, other relevant government institutions, and NGOs with respect to government level project activities. Bi-lateral meeting will also take place with members of the Tagbagwa community in Coron. These bi-lateral discussions will be carried out by CI Palawan senior staff.

Activity C.1.1	
Benchmark/Output(s):	Reports on enforcement system, illegal logging and wildlife trade, and bi-lateral meetings
Months of implementation:	November 2001 to September 2002
Activity Lead:	Noela Lasmarias
USAID FY02 Level of Effort (\$):	\$18,600
Other Match Funding Source (\$):	\$11,000 (Packard)

C.1.2) Identify weaknesses in the enforcement system and develop least-cost investment strategy for addressing them

There are five components under Activity 1.2, two of which are to be initiated in FY02:

- **Collection and compilation of quantitative data on the government enforcement system.** This data will be used to determine the rates of detection, arrest, prosecution, conviction, size of penalty and time take for processing of cases. ELAC, who will profile the government enforcement system under Activity C.1.1 will collect these data with CI staff present when required.
- **Interview enforcement agency staff to gather further qualitative information on the determinants of weaknesses in the enforcement system.** ELAC will carry out these interviews, with CI staff present when required.
- **Collect and compile quantitative information on all elements of the traditional enforcement system.** ELAC will carry out these interviews, with CI staff present when required.

Activity C.1.2	
Benchmark/Output(s):	Report on data gathered, and determinants of weaknesses in the government enforcement system
Months of implementation:	March 2002 to December 2002
Activity Lead:	Jim Peters
USAID FY02 Level of Effort (\$):	\$19,840
Other Match Funding Source (\$):	None

The final two components will be initiated and carried out in FY03:

- **Carry out quantitative analysis to identify weak elements in the enforcement systems.**
- **Synthesize information from enforcement agency staff and local communities to identify least-cost strategies for strengthening weak elements in the enforcement systems.**

C.1.3) Identify cost-effective opportunities to reduce the incentives for illegal activities

Activity C.1.3 will be conducted to determine community livelihood levels and to estimate the incentives for creating alternative sources of livelihoods. The livelihood assessment will be disaggregated to five categories, each focusing on a specific group of actors involved in illegal fishing practices and in the illegal trade in protected species. These broad categories, which will be detailed during FY02 following the profiling completed under Activity C.1.1, are the fishers themselves (which will be split into to three groups of native residents, permanent migrants, and seasonal migrants), the domestic traders, and the processors/exporters involved in the LRFT. While the majority of the work under Activity C.1.3 will commence in FY03 (following the completion of Activity 1.1), community livelihood assessments will be carried out in FY02 and provide the basis for an assessment (to be done in FY03) of ways in which to reduce local community fishers incentives for illegal activities.

Two types of livelihood alternatives will be examined:

1. increasing fisheries stocks and job opportunities in the dive tourism sector through marine protected area (MPA) establishment and
2. increasing the job opportunities through sustainable tourism development including resorts and auxiliary satellite businesses.

The study will examine the extent to which a combination of MPA establishment and tourism development will reduce migrant community incentives to carryout illegal fishing practices in the area when combined with the establishment of a stricter enforcement regime. Establishing MPAs can create alternative livelihood sources of short-term income (directly from dive tourism) and long-term income (increased commercially valuable fish populations/breeding stocks). Higher surveillance of protected areas will discourage migrant fishers (mostly responsible for illegal fishing) from carrying out illegal practices at or within site of MPAs. Establishment of tourism resorts will strengthen MPA establishment. Tourist resort development can provide another source of jobs, can be placed so that they displace migrant communities⁷, and can provide a source of funding and political support for the MPA design and implementation process.

Activity C.1.3	
Benchmark/Output(s):	Report on community livelihoods
Months of implementation:	October 2001 to September 2002
Activity Lead:	Jim Peters
USAID FY02 Level of Effort (\$):	None
Other Match Funding Source (\$):	\$13,000 (Packard Foundation)

C.1.4) Influence key decision makers to implement least-cost investment strategies to improve quality of enforcement.

⁷ Migrant community members are responsible for the vast majority of the illegal LRFTactivities that are currently practiced in the Calamianes.

There are five components under Activity C.1.4. While the majority of the work under Activity C.1.4 will take place in FY03 (following the completion of Activities C.1.2 and C.1.3), one component of the work will be carried out during FY02, namely engaging decision-makers as urgent findings emerge from the project.

- Ongoing engagement with critical decision-makers to initiate improvement programs and activities as urgent problems in enforcement are revealed.*** In Palawan several critical areas of weakness and potential solutions have already been identified. Enforcement has been identified as a key need to protect indigenous control over resources in Coron Island. CI-HCI (Healthy Communities Initiative) is currently facilitating community planning and implementation efforts toward meeting this goal. HCI will scope similar needs in other communities in the Calamianes Region, identify additional communities who ask for assistance, and facilitate the enforcement planning and implementation process there. CI will be working with the Palawan Council for Sustainable Development (PCSD) and four municipal governments to scale up the MPA zoning process to meet regional fisheries and biodiversity conservation management objectives. CI has already worked with local NGOs to facilitate an MPA establishment process in Busuanga municipality under Packard funding. Additional funding will be used to facilitate the same process in three additional municipalities. The Packard grant is also funding further with the DOT to outline the guidelines under which large scale tourism will be sustainably developed. CI further plans to partner with law enforcement agencies, key officials in the judicial branches (judges, prosecutors, and private lawyers) and private business associations to build consensus for this study and possibly secure material support. CI will also approach the International Marine Alliance to develop a cooperative relationship and to assess the international trade enforcement work in which they are currently engaged.

Activity C.1.4	
Benchmark/Output(s):	Reports on outcomes of decision-maker engagement
Months of implementation:	October 2001 to September 2002
Activity Lead:	Noela Lasmarias
USAID FY02 Level of Effort (\$):	\$5,468
Other Match Funding Source (\$):	\$5,000 (Packard Foundation); \$5,000 (CI-Healthy Communities Initiative)

The other four components will be initiated and carried out in FY03:

- Participatory design workshop to reach consensus on areas of weakness in enforcement and design solutions and/or changes to the enforcement system.***
- Legal working group to streamline procedures and develop legislation to introduce positive changes to the enforcement system.***
- Bilateral and multilateral discussions with enforcement agencies (government and traditional) and other institutions to secure the necessary resources for strengthening enforcement.***
- Strengthen and/or support ongoing ELAC efforts at providing capacity-building / training workshops for government and private enforcement agency staff and community members involved in critical parts of the enforcement system, as agreed with decision-makers.***

Global Level FY02 Activities

Objective 2:

Implement regional and global communications activities for the project to raise awareness of the enforcement economics approach, its impact in addressing environmental crimes and synthesize recommendations and lessons learned.

Activity 2.1: Develop regional and global communications strategy for the project

A regional and global communications strategy for the project will be developed, based on the identification of opportune times to reach key audiences through various media. Opportune times include those when the issue of illegal environmental activities and enforcement needs will be high, and when critical decisions are being made by key decision-makers at the regional and global level. The strategy will be developed by the REP, with the assistance of communications experts within CI.

Activity 2.1	
Benchmark/Output(s):	Communications strategy developed
Months of implementation:	October 2001 to December 2001
Activity Lead:	Jim Cannon
USAID FY02 Level of Effort (\$):	None
Other Match Funding Source (\$):	\$3,000 (Bank of America Foundation)

Activity 2.2: Place commentaries and reports on the project in regional and global media

Per the communications strategy, materials on the project will be placed in regional and global media.

Activity 2.2	
Benchmark/Output(s):	Communications strategy developed
Months of implementation:	October 2001 to September 2002
Activity Lead:	Jim Cannon
USAID FY02 Level of Effort (\$):	None
Other Match Funding Source (\$):	\$4,000 (Bank of America Foundation)

Activity 2.3: Make presentations on the project in relevant regional and local conferences, workshops and other forums⁸.

Activity 2.3	
Benchmark/Output(s):	Communications strategy developed
Months of implementation:	October 2001 to September 2002
Activity Lead:	Jim Cannon
USAID FY02 Level of Effort (\$):	None
Other Match Funding Source (\$):	\$8,000 (Bank of America Foundation)

⁸ Note for instance that - upon request - the enforcement economics project has already been presented by Jim Cannon at the Forest Law Enforcement and Governance East Asia Regional Ministerial Conference, Bali, September 2001. The conference was hosted by the World Bank and Government of Indonesia, and supported by the US Department of State and UK's DFID.