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CONSERVATION INTERNATIONAL

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

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

January 15, 2001 FY00 Annual Progress Report

A

Conservation International
1919 M Street NW, Suite 600
Washington, DC 20036

Biodiversity Corridor Planning and Implementation Program (Corridor)

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

January 23, 2001

Ms. Cynthia Gill
Biodiversity Specialist
Global Bureau, Environment Center
USAID
Ronald Reagan Bldg 3.08-151
1300 Pennsylvania Ave., NW
Washington, DC 20523-3800

Re: January 15, 2001 Annual Progress Report

Dear Cynthia,

Please find attached two copies of the January 15, 2001 Annual Progress Report for Conservation International's *Biodiversity Corridor Planning and Implementation Program (Corridor)* Cooperative agreement. This report covers the entire FY00 fiscal year time period with particular emphasis on the latter six-month period of April 1, 2000 through September 30, 2000 for activities completed under our cooperative agreement with USAID/Global Bureau, Cooperative Agreement No. LAG-A-00-99-00046-00.

I am submitting this report both in email format to you directly, as well as in hardcopy format via the US Postal Service. I look forward to answering any of your questions or providing more detailed information as requested. I can be reached at (202)912-1407 or via email at t.drake@conservation.org.

Best regards,

Theresa M. Vermeulen Drake
Manager, USAID Program Management

CC: E. Stoner, USAID/Brazil
C. Becker, USAID/Guyana
J. Bisson, USAID/Philippines
USAID/CDIE/DI

B

Conservation International
Biodiversity Corridor Planning and Implementation program (Corridor)

January 15' 2001 Annual Progress Report
FY00: October 1, 1999 – September 30, 2000

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

I. Summary of Activity Status and Progress

a. Introductory Paragraph.

This report covers the entire FY00 from October 1, 1999 through September 30, 2000 for activities completed under the USAID Biodiversity Corridor Planning and Implementation Program (Corridor) Cooperative Agreement. For FY00, obligated funding for the Corridor Cooperative Agreement supported activities in Brazil, Guyana, and the Philippines.

Under the USAID/Global Bureau Leader with Associates Global Conservation Program, CI is implementing biodiversity corridors in three priority areas: the Kanuku Mountains and New River Triangle region of southern Guyana, the Sierra Madre mountain range in the northern region of Luzon, Philippines, and the Cerrado/Pantanal region of south-western Brazil. The activities proposed for the three regions concentrate on the initial steps of corridor implementation over a two-to-five-year period.

This first year of implementation (FY00) for the USAID Corridor Cooperative Agreement was both exciting and challenging for Conservation International's three participating Biodiversity Corridors. Implementation this past year for all three of the Corridors (Brazilian Pantanal and Cerrado, the Guyana Shield, and the Philippine Sierra Madre) was focused on the following key initiatives: Capacity building in local offices and among local partners; the establishment of awareness programs; alliance building with local partners; research of long-term financial sustainability options; and, the compilation of critical knowledge through the gathering of baseline data and/or assessments on legal, biological, economic, and social issues (or factors).

Major challenges faced by the Brazil Corridor Team in FY00 included the following: The Mato Grosso Government's proposed Paraguay/Parana Waterway (Hidrovia); the State's licensing of the new port at Morrinhos; the fact that 99% of the Pantanal wetland belongs to private landowners who are increasingly pressured to adopt more intensified techniques for cattle production; and, the drastic drop in Brazil's beef prices which has reduced the competitiveness of Pantanal's cattle production when compared to the Cerrado's lower production costs. Major challenges faced by the Guyana Corridor Team in FY00 included the following: The constant threat of unsustainable exploitation through the granting of logging and mining concessions; increased pressures on the natural and cultural diversity of the Guyana Shield from ill-planned, unregulated development activities; and, the lack of revenue generated for the governments and local populations by the continued "auctioning off" of parts of their forests. Major challenges faced by the Phillipines Corridor Team in FY00 included the following: Road development plans crossing the Sierra Madre ranges; land conversion for agriculture, logging, mining, the development of special economic zones; and, the construction of dams for energy generation. These three CI biodiversity Corridor projects, however, remain very well-positioned to deal with these threats due to local presence, increased local capacity, strong and established partnerships, and the support of CI's Corridor Technical Team.

Please refer to the "highlights" section which immediately follows as well as the "Key Short and Long-Term Program Objectives for the Site" and "Summary of Progress for Site" under "II. Detailed Description of Site Progress," for a more detailed description of major accomplishments for this reporting period in each of the three Corridor Cooperative Agreement countries.

b. Highlights.

Brazil:

- Undoubtedly for the Brazil Program, the biggest highlight of the year has been the decree by the State Government of the State Park of the Pantanal of the Rio Negro. This Park has been established with matching funds from Conservation International and will be one of the main core areas in the Cerrado-Pantanal Corridor.

- CI Pantanal and partners have implemented five fire-fighting brigades instead of the three originally planned.

- CI Pantanal has released the Pantanal AquaRAP reports, which contains conservation measures for the area and a list of the aquatic fauna and flora for the corridor region.

- Brazil's President has decreed the creation of the first National Park in the State of Mato Grosso do Sul – the Bodoquena National Park. Conservation International has worked towards the creation of this 76,481ha Park by producing folders and informing the population on the importance of protecting this headwater area, which possess some of the last remains of Atlantic Forest in the country.

Guyana:

- Over the past year CI has made significant progress towards the creation of a conservation corridor that spans southern Guyana. Most importantly we were granted a 200,000 acres exploratory conservation concession in the Upper Essequibo Region of Guyana. The exploratory lease is for 3 years, during which time we will complete a management plan, social impact assessment, timber inventory, and begin negotiations for a long-term conservation concession. We are also hopeful that we will expand the size of the present concession to the 1 million acres originally requested.

- In the Kanuku Mountains, the Government of Guyana, through the Environmental Protection Agency (EPA) and National Biodiversity Action Plan, has designated CI as the lead organization in the process to develop a protected area in the Kanuku Mountains and to examine potential for other conservation areas in the southern region of the country.

- Further, CI is an active member of the newly established Protected Areas Secretariat, whose mandate is to develop the protected areas system in Guyana. We are the only NGO participant.

- At the regional level we have successfully completed an initial socioeconomic survey of all communities living in close proximity to the Kanuku Mountains, and have expanded our conservation enterprise program, hiring a full-time enterprise expert to live in Region Nine and work with the communities. The balata industry has increased over the past year and new products are continuously being developed and sold overseas.

Philippines:

- The hotspot and biodiversity corridor concepts were presented at the highest levels of government. CI made a presentation to the Office of the President of the Republic of the Philippines in November 1999, attended by President Joseph Ejercito Estrada and a number of Cabinet members. The result was the drafting of an Administrative Order to form a Presidential Commission for the Sierra Madre. However, further discussions indicates that the Office of the President is now preferred to create a Presidential Task Force for Sierra Madre instead of Presidential Commission as the former is easier to put in place.

- The biodiversity corridor concept has been received with interest across not only the Sierra Madre region, but also nationally, as a viable conservation and resource planning approach. CI developed and organized briefings and presentations targeted towards a wide range of stakeholders. At the national level, audiences included government agencies, NGOs and some private sectors while at the local level, local government units, local NGOs and Peoples Organization including NSMNP- Protected Area Management Board (PAMB) members were invited. The concept was even discussed during the Senate hearing on the proposed bill of the Northern Sierra Madre Natural Park. In addition to the presentations, other outreach and communications activities included the high visibility Hotspots book launching and photo exhibits in Metro Manila and Cebu, and a poster-making contest in five schools of the coastal municipalities of NSMNP. This contest was conducted as part of the nationwide information campaign on biodiversity conservation.

- Important partnerships have been successfully established between CI-Philippines and organizations such as the Foundation for Philippine Environment, the Technical Assistance Unit and PAMB of the NSMNP and Environmental Science for Social Change. Additionally, the MOA with the Department of Environment and Natural Resources for CI-Philippines' nationwide program is being negotiated. Furthermore, in support to the Park Superintendent Office (PaSu) and the PAMB on the protection of the park, capacity building assistance has been provided to the PAMB, PaSu and community volunteers.

- Despite inevitable political and bureaucratic challenges, CI-Philippines has accomplished a significant level of baseline information compilation. The data collected include socio-economic data/profiles of the provinces and municipalities covered by the corridor, land cover, land use plans, both the provincial and municipal, biological data and satellite imagery for the region.

c. Table of Activity Status.

Activity Number	Activity Title	Status*	Page number for more information
Brazil			
1.1.1	MOU with the State Secretary for the Environment being negotiated and signed	Completed	7
1.1.2	Corridor Launching Workshop in Campo Grande, Brazil	Completed	7
1.1.3	Identification and compilation of information on stakeholders	On-track	8
1.1.4	Review of compiled data	Delayed	10
1.1.5	Filling information gaps by collecting needed additional data on many areas	Mixed Performance	10
1.1.6	Integrate data from RAP (Guyra and CI) to help to identify areas for the corridor.	On-track	11
1.1.7	Land and Tenure analysis and initial analysis from data compiled.	Delayed	12
1.2.1	Purchase of computer equipment	Completed	13
1.2.2	Purchase of information system software (GIS, database)	Completed	13
1.5.1	Local Coordinating Unit (LCU) identified	Completed	13
1.6.1	Analysis of possibilities for long-term financial mechanisms for the corridor	On-track	14

1.7.1	Development of primary awareness tools	Delayed	14
2.2.1	Hiring of a Cerrado Coordinator to work in collaboration with the Emas Foundation	Completed	15
2.2.2	Support Improvements to the infrastructure of the Emas Foundation	Delayed	15
2.2.3	Hiring and Training of a Corridor Coordinator Assistant for the Pantanal,	Completed	17
2.2.4	Improvements to the CI Pantanal office infrastructure	Mixed Performance	17
2.6.1	Implementation of the Rio Negro Research Station	On-track	18
2.6.2	Hiring of GIS Data Manager	Completed	18
2.6.3	support landowners in the due process of creating Private Reserves.	On-track	19
3.2.1	Implementation of firebreaks and fire management activities	Completed	19
3.2.2	Hiring of a Coordinator to organize and implement fire management training and awareness	Completed	20
	Guyana		
1.1.1	Collect baseline data and sign MOU	Mixed Performance	22
1.1.2	Data entry into corridor information system	Completed	23
1.1.3	Assessment of existing biodiversity and protected areas legislation	Completed	24
1.1.4	Compile existing socioeconomic data on Kanuku Mountain communities	Completed	24
1.1.5	Conduct socioeconomic surveys and consultations with the indigenous communities	Completed	25
1.1.6	Update and/or verify data on officially designated Amerindian lands	Delayed	26
1.1.7	Update World Bank document and review existing indigenous land claims	Update of document cancelled, review of land claims delayed	27
1.1.8	Analyze national timber industry	Completed	27
1.1.9	Review meeting in Guyana	Completed	28
1.2.1	Hire and train GIS data manager	On-track	28
1.3.1	Develop guidelines for a Corridor Monitoring and Evaluation System	Completed	29
1.4.1	Hold meeting with Vanessa Mining officials to result in strategy	First meeting complete – follow-up on-track	29
1.4.2	Complete socioeconomic surveys and consultations with Kanuku Mountain communities	On-track	30
1.5.1	Identify corridor team	Completed	31
1.5.2	Hire and train corridor project manager	Completed	32
1.6.1	Conduct analysis of long-term financial mechanisms for protected areas and conservation concessions	Delayed until Jan. 2001	32

1.7.1	Design and Initiate phase 4 of the National Conservation Awareness Campaign and Environmental Education Program	Mixed Performance	33
2.1.1	Draft and submit to the Government of Guyana a preliminary plan for the Kanuku Mountain region protected area	Mixed Performance	34
2.1.2	Design protected area and submit formal vision plan for proposed Kanuku Mountain protected area to the Government of Guyana	Delayed	34
2.1.3	Complete and submit application for Essequibo region conservation concession to the Guyana Forestry Commission.	Completed	35
2.1.4	Negotiate and finalize the total area of conservation concession	Delayed	36
2.4.1	Draft Plan and submit to Guyana Forestry Commission	Delayed	36
2.6.1	Conduct analysis to determine the legal procedures for the establishment of Essequibo region conservation concession	Completed	37
2.7.1	Design and implement conservation awareness and environmental education campaign	Mixed Performance	37
3.2.1	Expand conservation enterprise projects in communities in the Kanuku Mountain region	On-track	38
Philippines			
1.1.1	Gather baseline landcover and vegetation data	Mixed performance	40
1.1.2	Political-economic Assessment of proposed corridor region	Mixed performance	41
1.1.3	Map and collect regional development plans	Mixed performance	42
1.1.4	Exploration of stakeholder incentives	Delayed	42
1.1.5	Gather and compile existing baseline biological data of Sierra Madre corridor	Delayed	43
1.2.1	GIS specialist designs and operationalizes the integrated corridor information system database	Mixed performance	44
1.2.2	Negotiate MOA with PAWB-DENR, NORDECO and ESSC for access to data	Delayed	45
1.3.1	Identify team members for M&E training and develop guidelines for M&E plan	Mixed Performance	46
1.3.2	Establish protocol for contributing to Outlook Corridor Public Folder	Completed	46

1.4.1	Present Corridor Concept to stakeholders through presentations and meetings	On-track	47
1.5.1	Formation of formal corridor project team	Completed	48
1.5.2	Address Corridor Project infrastructure needs	Completed	48
1.5.3	Re-establish on-site presence in the region	Completed	49
1.6.1	Explore debt-for-nature swap and other possible financial mechanisms for funding of the Corridor	On-track	49
1.7.1	Develop outreach strategy consisting of awareness and educational activities	Mixed performance	50
2.2.1	Strengthen enforcement capacity of NSMNP through creation of volunteer community forest guard program	Completed	51
2.2.2	Propose mechanisms for strengthening the PASu	Completed	52
2.3.1	Collect data on proposed roads, mining and logging in the NSMNP.	Delayed	52
2.5.1	Work with park authority to strengthen on-site protection and enforcement through capacity-building	Mixed performance	53
2.8.1	Develop pilot reforestation project concept	Completed	53

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

II. Detailed Description of Site Progress

Brazil

a. Key Short and Long-Term Program Objectives for the Site.

To connect areas of isolated vegetation to guarantee the genetic flow of species – this is the aim of Conservation International's biodiversity Corridor program. The concept of ecological corridors is to enhance the long-term survival probability of biological communities and their component species (CABS, 2000). In the attempt to safeguard the permanent movement of species between the Cerrado and the Pantanal, Conservation International has established a partnership with the Emas Foundation, an NGO with a long record of conservation activities in the Cerrado, more specifically in the Emas National Park. The proposed corridor will link the Emas National Park, along the rivers Taquari, Sucuriú and Jauru to the Pantanal, in an area of approximately 800km in extension. Some of the major achievements of this past fiscal year were the creation of one State Park partly financed by CI and one National Park, which will be some of the main core areas in the Cerrado-Pantanal corridor (See Attachments Brazil-1 and Brazil-2).

b. Summary of Progress for Site.

In the past year, CI-Pantanal has launched the corridor program by holding a local workshop attended by stakeholders and representatives of NGOs, universities, research institutions and the government. During this workshop several aspects of the corridor area like socioeconomics, conservation biology, protected areas and politics were discussed and based on the information gathered CI and the Emas Foundation have developed proposals for the implementation of the

Corridor. A Local Coordinating Unit containing representatives from several governmental and private institutions was also created to assist the corridor activities.

Another major activity started during this period was the Fire Prevention Campaign, which has trained 5 volunteer fire brigades to combat the spread of uncontrolled fires.
CI-Pantanal was instrumental in the creation of the State Park of the Rio Negro by the state government, an area with one of the highest populations of giant river otters and jaguars in the country. The creation of the state park and the private reserves established with CI's assistance account for over 100,000 ha of protected area in the most pristine portion of the Pantanal, which will be instrumental as one of the main core areas in the Cerrado-Pantanal Corridor.

Another main core area of the Corridor is the recently created Bodoquena National Park (please refer to map 1). This Park was decreed by the President in September 21st after much resistance from farmers in the region. CI has strongly campaigned with partners for the creation of this Park that protects some of the last remnants of Atlantic Forest in the country.

c. Activity Description.

Activity 1.1.1

CI Pantanal and the State Secretary for the Environment will sign a Memorandum of Understanding for collaboration in the establishment of the Corridor.

Progress to-Date:

- The Memorandum of Understanding was signed as part of the state's commemorations for the Environment Day in June of 2000. At the time of the signing of the MOU, the State Secretary also decreed the creation of the State Park of the Pantanal of Rio Negro—the first ever decreed park in the state of Mato Grosso do Sul (See Attachment Brazil-1).

Table of progress in meeting key benchmark:

Benchmark Number	Benchmark/Output	Status*
1.1.1	Facilitation of collaborative actions (such as compiling land tenure and other data, and establishment of private reserves), between CI and the Mato Grosso do Sul State in issues concerning Corridor planning and implementation in that state.	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, Delays, Shortfalls and Proposed Solutions:
Nothing to Report at this time

Activity 1.1.2

CI Pantanal and the State Secretary for the Environment, with support from the CI DC technical team, will organize and conduct a Workshop in Campo Grande to establish the local core group, analyze and revise the proposed Corridor design, and establish an initial plan for identifying and completing the legal, biological, socioeconomic, land use and land tenure assessments needed for the proposed biodiversity corridor.

Progress to-Date:

- The "First Dialogue for the Implementation of the Cerrado-Pantanal Biodiversity Corridor" workshop was held in Campo Grande in April 2000. It was organized in partnership with the State Secretary for the Environment and the Emas Foundation. Over 50 representatives from Universities, NGOs, Government,

research institutions and landowners attended the workshop.

- During the Workshop a Local Core Group composed of 17 people were created. The participants have also contributed to the identification of biological, socioeconomic and land use activities which will help the implementation of the corridor and have already been included as activities for FYO1, as: funding of research in the Pantanal and Cerrado, organic cattle, honey production, environmental education and the production of popular texts to raise public awareness.
- Conservation International, the State Secretary for the Environment) and the State Land Department have established a partnership and a plan to carry out land tenure assessments, this activity has been written in FY01 corridor implementation plan.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.2	CI Pantanal and the State Secretary for the Environment, with support from the CI DC technical team, will organize and conduct a Workshop in Campo Grande to establish the local core group, analyze and revise the proposed Corridor design, and establish an initial plan for identifying and completing the legal, biological, socioeconomic, land use and land tenure assessments needed for the proposed biodiversity corridor.	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.1.3:

The corridor team and counterparts will identify and compile available economic, social, biological and spatial data, as well as information on stakeholders, according to the plan developed in the workshop.

Progress to-Date:

A database specialist intern has been hired. Michel Moura Akamine is in the third year of computer engineering training and he has worked extensively with databases. In the past 3 months, he has created a friendly interface for the Cerrado-Pantanal database to assist the CI-Pantanal and Emas Foundation offices with the compilation of information in the corridor area. Demerval Gonçalves, an Emas Foundation technician, has successfully created an interface for GIS and database that will be used in spatial analysis of the corridor.

Most of the information currently entered has been gathered during the workshop, as for instance, flora and fauna references for the Cerrado and the Pantanal (see Table 1 below). Some of the other sources of information are listed in the table below.

TABLE 1

TOPIC	TYPE OF INFORMATION	SOURCES
Bibliography	Books, articles, projects	Workshop, scientists, universities and institutions
Tourism	Number of hotels/hostels per town, tourist attractions, cultural information, folkloric events, historic information, etc.	State Secretary for Tourism, small towns secretary for tourism, tourism graduate courses
Images	Photos, maps, satellite images	Various (The Emas Foundation have already started this process using ArcView).
Institutions	Name, activities in the corridor region, financial information, number of employees, voluntaries, infrastructure, etc.	Who's who in the Pantanal – work performed by TNC and CI-Pantanal with USAID financing.
Geographic Information	Towns, demography, hydrology, geology, topography, vegetation aspects, fauna biodiversity, georeference, etc.	State Secretary for Tourism, institutions, universities, Conservation plan for the Upper Paraguay Basin (PCBAP), CI's AquaRAP report.
Biologic Information	Registers and information on conservation status and biological aspects of 416 bird species and 36 mammal species from the corridor area.	CI's AquaRAP report, Earthwatch reports, Embrapa, Universities, scientific articles, scientific research encouraged by the Emas Foundation and CI Pantanal.
Burns	Number of hot spots per town per month, rainfall, number of voluntaries integrating fire brigades in the area, fire fighting equipments available, existence or not of fire breaks in some areas.	IBAMA (Brazilian Environmental Institute), INMET (National Institute of meteorology), CI – Pantanal records.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.3	The corridor team and counterparts will identify and compile available economic, social, biological and spatial data, as well as information on stakeholders, according to the plan developed in the workshop.	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

Although not much data has been entered, our field team has already gathered most of the data mentioned at the table above.

Activity 1.1.4:

Compiled data is reviewed. As more information becomes available (as a result of activity 1.1.3), the corridor team and coordinators will identify gaps in the corridor information, which will feed back into the plan (established in 1.1.2). The plan will be revisited to form the beginnings of a monitoring and evaluation (adaptive management) plan to be implemented for this project.

Progress to-Date:

The information is being compiled and entered in the database. However, there are extensive sources of information and before any comprehensive gap analysis can be done much of the data needs to be compiled. We expect to have much of the information entered in the database by July 2001.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.4	Compiled data is reviewed. As more information becomes available (as a result of activity 1.1.3), the corridor team and coordinators will identify gaps in the corridor information, which will feed back into the plan (established in 1.1.2). The plan will be revisited to form the beginnings of a monitoring and evaluation (adaptive management) plan to be implemented for this project.	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

Delays in entering the information were mainly due to the labor-intensive task of creating a database that can compile an array of information from two very different ecosystems. As this database needs to be similar for the Cerrado and the Pantanal, its creation depended on the meeting of both teams, which has added to the delay of the whole process. The lack of a reliable engine to identify the various sources of information means that the gathering of material depends exclusively on personal contact of CI and the Emas foundation with researchers, institutions and organizations which is a time consuming operation.

Activity 1.1.5

With the support of the State Secretary of the Environment of Mato Grosso do Sul and TerraSul (State Land Institute for Mato Grosso do Sul), CI Brazil, CI DC and collaborators (corridor team) will work on filling information gaps by collecting needed additional data on socioeconomics, partners and stakeholders, economics (including potential practices for long term financing of the corridor region), biological aspects, threats to corridor, land use and land tenure (aided by a RadarSat image of the region). CI DC team will provide technical assistance.

Progress to-date:

The strategy for collecting information on socioeconomics, partners and stakeholders, economics, land use and land tenure had to be changed, as TerraSul and the State Secretary for the Environment only possess very restricted data. The State Secretary for the Environment, TerraSul and Conservation International have established a partnership to gather the above information by visiting each property, starting with the ones surrounding the newly decreed State Park of the Rio Negro. The strategy for obtaining this information for the Pantanal and the Cerrado has been detailed in the Brazil Corridor Planning and Implementation program for FY01.

As for biological information, Conservation International's Rapid Assessment Program (RAP) have carried out overflights on the Rio Negro Basin and on the headwaters of the Taquari, Miranda and Aquidauana rivers to compare the conservation status of the sites previously assessed during the 1998 AquaRAP expedition to the Pantanal of Mato Grosso do Sul. The complete report covering the aquatic fauna and flora and threats for much of the corridor area has been released and two copies will be forwarded to USAID at a later date under separate cover. A CD has also been produced showing over 100 images, maps and giving information of the area's biodiversity.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.5	Additional data collected and compiled in the information system database	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

Only the biological information has been gathered. Information on socioeconomics, partners and stakeholders, economics (including potential practices for long term financing of the corridor region), land use and land tenure have not been gathered, as these have not been collected by any State and/or private organization.

Activity 1.1.6:

CI and its partner organization in Paraguay, Guyra, will integrate data from Rapid Assessment Projects and overflights, using satellite images (already acquired) to do land cover analyses and assess the degree of human alteration in the habitat in the region of Paraguayan Cerrado and APA river, to help identify priority areas for the corridor.

Progress to-Date:

- In October-November 1999, Guyra Paraguay (GP) -- an institution involved with conservation of the Cerrado, Pantanal and Atlantic Forest ecosystems in Paraguay -- hosted a biological survey of the Cerrado-Paraguay, involving scientists several different countries, including Paraguay, Argentina, Brazil, the U.S., and U.K. The results of this survey, funded by Bird life International, have been compiled in a draft report that has been distributed for public review.

- In November 1999, John Musinsky, Director of CI's Regional Analysis program at the Center for Applied Biodiversity Science (CABS) at CI, and Alberto Madroño, then Executive Director of GP, conducted a series of aerial photography and Videography surveys to correspond with the biological surveys covering different habitats in the Cerrado-Paraguay. Two Landsat-7 ETM+ satellite images were subsequently purchased, also corresponding to the same dates as the overflights. GP compared field data collected during biological surveys with the photography and Videography, and created training sites for use in performing a supervised/unsupervised classification of the satellite imagery. Fourteen vegetation/land cover types are currently being mapped in the study area. Once the vegetation mapping is complete, the data will be used to identify priorities for conservation within the Cerrado-Paraguay.

- Musinsky attended the Cerrado/Pantanal workshop as a representative of the CI biodiversity corridors technical team. Plans were drafted with CI-Brazil, EMBRAPA, and EMAS to produce landscape

- Ecological characterizations of the Rio Negro, Taquari, and EMAS corridor areas using satellite imagery and aerial Videography. Regional Analysis also hosted Frank Fragano, the new Executive Director of Guyra Paraguay (GP), to attend the workshop. Fragano presented GP's work in the Cerrado-Paraguay within the workshop forum. GP will continue to work with the Cerrado/Pantanal corridor team in an alliance whose goal is to coordinate activities between the two countries.

- In March 2000, the Regional Analysis program donated funds to Guyra Paraguay for the purchase of a fast PC-based workstation for GIS and image processing. Included in the donation was a copy of ArcView 3.1. In October 2000, Regional Analysis donated a copy of ERDAS Imagine 8.4 (via long-term loan) to GP for the purpose of assisting with land cover mapping.

- In October-November 2000, Musinsky conducted a 10-day training course in aerial photography, Videography, and image processing for an array of institutions from the Cerrado/Pantanal, Brazil. Also attending the workshop was Anibal Aguayo from Guyra Paraguay.

Benchmark Number	Benchmark/Output	Status*
1.1.6	CI and its partner organization in Paraguay, Guyra, will integrate data from Rapid Assessment Projects and overflights, using satellite images (already acquired) to do land cover analyses and assess the degree of human alteration in the habitat in the region of Paraguayan Cerrado and APA river, to help identify priority areas for the corridor.	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

There have been some delays in the processing of satellite imagery by CI-Washington since this component of the project is unfunded. However, a preliminary classification has been made of one of the two satellite images covering the study area, and a mosaic created using the aerial photography obtained during the overflights. Further image processing to refine the analysis will be made in conjunction with Anibal Aguayo from Guyra Paraguay.

CI is negotiating with GP to write a joint proposal to be presented to USAID-Paraguay, involving a group of Paraguayan institutions working in the Cerrado-Paraguay (i.e., GP, Altervida, and CI) to support further work in this area.

Activity 1.1.7

Team will begin Land Tenure analysis and initial analysis of data compiled (on 1.1.3 and 1.1.4), continuing into the following year. CI-DC team will provide technical assistance.

Progress to-date:

The land tenure analysis could not be started as the land tenure data was not gathered as per activity 1.1.5 above. Delays in that activity has delayed this next step.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.7	Land tenure analysis completed	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Delays in activity 1.1.5 have delayed this activity.

Activity 1.2.1:

During the first month of implementation, CI Pantanal will purchase computer equipment to improve office operations and to facilitate creation of corridor database.

Progress to-Date:

The CI–Pantanal office has acquired two computers, one printer, one plotter and one digitizing tablet. The latter was purchased using TWPF matching funds.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.2.1	Corridor Information system operational	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.2.2:

Simultaneously with acquiring computer hardware, CI Pantanal will purchase information system software (GIS, database) to support data management and remote sensing

Progress to-Date:

CI Pantanal has recently acquired ArcView 3.1 and Erdas Imagine 8.4 software.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.2.2	Corridor Information system operational	Completed

*Status may included activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.5.1:

CI Coordinators will identify key personnel and establish the Local Coordinating Unit (LCU), which will work, as an advisory council, in a concerted effort to develop, integrate and direct corridor related activities that will be conducted in the Cerrado and Pantanal regions. The LCU will be composed of 13 members: 12 stakeholders representatives of research institutions, universities, other NGOs, landowners and agriculture/cattle association; plus the State Secretary for the Environment of Mato Grosso do Sul.

Progress to-Date:

A Provisional Local Coordinating Unit was formed during the Corridor Launching Workshop.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.5.1	Local Coordinating Unit (LCU) established	Completed

*Status may included activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.6.1:

During the Workshop organized by CI Pantanal and the State Secretary for the Environment, possibilities for long-term financial mechanisms for the corridor will be analyzed. Some potential alternatives include: strengthening regional "green" tourism; providing land owners and local residents with sustainable economic practices and land uses; stimulate implementation of green taxes; develop market connections for alternative certified products/goods from the corridor.

Progress to-Date:

During the April workshop the socioeconomic group tackled possibilities for long-term financial mechanisms for the corridor region as for the instance: the decree of a green tax (ICMS Ecológico), rewarding municipalities that contain legally protected areas. Other alternatives raised during the workshop have been added in the Corridor FY01 Implementation plan:

- Eco beef production, which will benefit cattle producers in the Pantanal portion of the Corridor.
- Honey production
- Development of Sustainable tourism product during the Charette, which will take place in FY01.
- Help the implementation of new RPPNs (private reserves), which have tax exemption.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.6.1	Outline of potential financing mechanisms that meet corridor conservation objectives	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.7.1:

CI International Communication Department, using the image bank CI-Brazil has on both regions of Cerrado and Pantanal, and under the advice of technical team and local core group, will develop primary awareness tools (video, folders, etc) to make stakeholders (such as local residents, land owners, decision makers) advocates. The 5 minute video and other informational material will present to stakeholders the corridor (concept) is and its purpose for conservation of biodiversity and improvement of the quality of life of locals, and the role each person/institution has to play to make it happen, especially regarding establishment of RPPNs and land use planning and procedures.

Progress to-Date:

Haroldo Castro from CI's International Communication Department has traveled to the Pantanal to film and interview stakeholders. With support from CI-Pantanal and the Emas Foundation, he shot footage of the corridor area (overflights from Rio Negro to the Emas national Park), the fire fighting training at the Fazenda Rio Negro and interviewed stakeholders in the Pantanal and Cerrado region. The images are now being processed and the 5-minute video should be ready for release by September 2001.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.7.1	50 copies of Video and 5,000 copies of Folder describing the corridor concept and importance; increased stakeholder awareness	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 2.2.1:

CI-Brazil will hire a Cerrado Coordinator to work in collaboration with the Emas Foundation to conduct data survey, information needs, data collection, and other Corridor related activities around the Emas National Park, one of the most important headwater areas for the Pantanal.

Progress to-Date:

Mario Barroso has been hired as the Cerrado Coordinator.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.2.1	Coordinator in place	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 2.2.2:

During the first five months of the implementation process, CI-Brazil and the Cerrado Coordinator will support improvements for the infrastructure of Emas Foundation office. The Foundation will help strengthen the Emas National Park by providing financial and technical support for activities such as: 1) planting native seedlings for recuperation of gallery forest to address soil erosion in the Park; 2) monitor the use of pesticides in private properties around the Emas National Park, mostly soy producers, to reduce pollution of the Park's headwaters by agrochemicals; 3) provide tractor fuel for the upkeep of fire breakers to control fire entering the Park from outside; 4) support research on the role natural fires have on the Cerrado ecosystem (e.g., causes and consequences of natural vs. non-natural fires) to help elaborate a fire management plan for the Park.

Progress to-Date:

The Emas Foundation organized a July workshop for over 50 landowners in the Cerrado region to discuss the intricacies of implementing a number of private Reserves in the region surrounding the Emas National Park, adding Legal Reserve areas & Permanent reserve areas, in order to implement an environmentally balanced landscape in a form of corridor target-area. Based on the result of this workshop the Emas Foundation and partners have developed their planning and strategy for the next year.

The Emas Foundation has purchased two computers, a printer, a plotter and a digitizing tablet to provide technical support to their actions in the area. Some of this technical support is:

- Help landowners create private reserves
- Implement land use plans for the corridor area local farmers, considering the existing fauna and flora,
- Create a database with multidisciplinary information for the Cerrado region
- As a complement and in order to provide sustainability for the corridor-area those equipments will be used to provide necessary mapping to improve the land use in a more sustainable way.

Emas has hired and trained two technicians to work with GIS. Alexandre Dinnouti, CI Brazil computer manager, offered ArcView training to Demerval Gonçalves and Renato Moreira (Emas' technician). ArcView is already being used to compile the images for the Corridor Information System database. The Cerrado and Pantanal GIS technicians will now be trained by John Musinsky, from CI Washington to use Videography and Aerophotography techniques, a course offered by CI Pantanal in partnership with the State Secretary for the Environment in October 2000.

CI Brazil has purchased a vehicle (with matching funds) to be used by the Emas Foundation in order to accomplish the fieldwork.

The Emas Foundation has defined a strategy to implement the biodiversity corridor through a combination of three major combined focal points, decided through discussions with the local communities during the Emas Workshop:

1. Vegetation Cover (Legal Reserves & Permanent Reserves – These are defined by law and can be replanned according to the new Forestry code).
2. Water Protection
3. Soil erosion (the most important problem in the Cerrado portion of the corridor).

To deal with these three issues the common solution is the maintenance of proper land use and vegetation cover in order to stabilize water damage. In order to employ this strategy the Emas Foundation project to stabilize the erosion in a 40.000ha area surrounding the Emas National Park and at the same time provide a model of soil conservation for the area has been approved and is already being implemented.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.2.2	Emas Foundation Office set up and functional, increased capacity in the area of human resources, technology, transportation, communication, and others; Emas Foundation plays a stronger role in strengthening Emas National Park and in the establishment of corridor areas in the Cerrado	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
There has been a delay in the repairs planned for the Emas Foundation office, due to the late finalization of the sub-grant agreement.

Activity 2.2.3:

CI-Brazil will identify, hire and train Corridor Coordinator Assistant for the Pantanal, who will work closely with the technical team to compile existing data, collect new information as needed, and carry out other activities on the Pantanal region.

Progress to-Date:

Mônica Harris has been hired as the CI Corridor Coordinator Assistant for the Pantanal.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.2.3	Coordinator on staff	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 2.2.4:

During the first five months of implementation, the Pantanal Coordinator Assistant will work to improve the CI Pantanal office infrastructure. By strengthening the CI Pantanal office, we will increase our effectiveness in the region through activities such as: 1) providing technical collaboration to the State Secretary for Tourism to address unsustainable tourism in the region; 2) researching the feasibility of viable economic alternatives to land conversion to reduce deforestation in the Rio Negro region.

Progress to-Date:

Mônica Harris, the Pantanal Corridor Coordinator has worked to improve the office by purchasing necessary equipment like computers, scanners, printers, etc. and hiring the personnel to work in this project. The technical team now working with GIS will contribute to create private reserves by offering this service for free to any landowner interested and in this manner creating alternatives to reduce deforestation. The database being created will be available to all government sectors, including Tourism to help in the development of sustainable activities in the Corridor area. Unsustainable tourism will be addressed in FY01 in the Charette planned by CI-Pantanal with support from other CI technical team.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.2.4	Pantanal Office set up and functional, and transportation and operations enhanced; CI Pantanal plays a stronger role in facilitating corridor-related activities in the Rio Negro region.	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

Not all the activities foreseen were performed during FY00. The money available to purchase a car necessary for CI-Pantanal's office daily working could not be purchased. CI is still negotiating the purchase of a car, which may arrive in January 01st.

Activity 2.6.1:

CI Pantanal and the Earthwatch Institute will establish partnership to jointly implement the Rio Negro Research Station to collect (using Earthwatch's unique volunteer system) additional relevant (needs determined by the workshop and lack of available data) biological data for Rio Negro region, Natural Park, and other Corridor area.

Progress to-Date:

Apart from the January 2000 research excursion to the Rio Negro farm, Earthwatch's activities in partnership with CI at the Fazenda Rio Negro have developed in the past six months and 2 more teams of voluntary tourists have already been to the farm. Also, two more teams are already booked to visit the farm, one in October 2000 and one in February 2001. The Earthwatch Foundation has been awarded a large grant to enhance their activities in the Pantanal, which will undoubtedly bring innumerous benefits to CI's scientific work in the Pantanal and improve the existing research infrastructure at the farm. Attachment 2 shows some of the research carried out at Rio Negro Farm by the Earthwatch team to date.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.6.1	Rio Negro Research Station established, new data compiled in the information system database	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 2.6.2:

CI Pantanal will hire a GIS Data Manager to help produce maps of the Rio Negro region, (based on the RadarSat images and other available data) in order to produce legal reports and documents needed to establish areas as private reserves, such as accurate property surveillance and maps to facilitate land registration. CI-Brazil Computer Manager, Alexandre Dinnouti, will assist with the database design and with the establishment of the Satellite Imagery Management Service in the Pantanal office.

Progress to-Date:

Samuel Jorge Leite has been hired in September 2000 for the GIS data manager position. He has purchased satellite images for most of the Pantanal region, which he is currently classifying according to the existing vegetation, hydrology, soil types, geomorphology and geology. Once these are ready, they will be used to help us decide the best route for the corridor, i.e. making the most of all the different types of vegetation/habitats existing in the landscape between the Pantanal and Emas National Park. Samuel has also produced a map of the Rio Negro Farm, which is necessary in order to obtain the approval for the establishment of the Rio Negro Private reserve from the State Secretary for the Environment. This map production service will now be offered free of charge to all farmers interested in establishing private reserves. Figure 3 was created by the GIS data manager to illustrate some of the core nuclei areas in the proposed design of the Cerrado-Pantanal corridor.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.6.2	Map production, which will facilitate the establishment of Private Reserves by the end of the first (implementation) year.	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 2.6.3:

In collaboration with CI Pantanal, the State Secretary for the Environment (Mato Grosso do Sul) will support landowners in the due process of creating Private Reserves.

Progress to-Date:

The CI-Pantanal office has worked towards the creation of a private reserve at the Fazenda Rio Negro. This 7,000ha reserve awaits official finalization by the State Secretary for the Environment; once this is obtained CI will have established three legal private reserves in the Pantanal (See Attachment Brazil-4). The other two private reserves created with CI's assistance are: Santa Sophia and Fazendinha (See Attachment Brazil-3).

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.6.3	Legal process to register land as Private Reserve facilitated; three (3) Protected areas established in the Corridor region by the end of the first year	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 3.2.1:

Between March and September, CI Pantanal, together with the Land Owners Association of Rio Negro, will implement firebreaks and fire management activities to reduce uncontrolled fires in Private reserves around the Rio Negro Ranch.

Progress to-Date:

The CI Pantanal Fire Coordinator and partners have trained five voluntary fire brigades (See Attachment Brazil-5). The training consisted of:

- Procedures for employing controlled fires (IBAMA);
- Environmental Education (CI Pantanal and SEMA);
- Legislation regarding the use of fire and legal procedures (Environment Police);
- First Aid and techniques to prevent and control the spread of fires;

The Brigades were created in the following places:

- Bonito;
- Rio Negro;
- Miranda;
- Bandeirantes;
- Corumbá.

Firebreaks were implemented at the Fazenda Rio Negro; this training was given by the Campo Grande Fire fighter Department. Also, on this occasion, CI Pantanal employed a fire-fighting airplane during the training procedures. This is the first time that such an efficient fire-fighting tool is used for this type of procedure. The training was filmed by CI International Communication Department from Washington and will be part of the corridor video launched by Conservation International in Brazil.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
3.2.1	Fewer (smaller) forested areas burned, fire brakes established and public awareness campaign implemented	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 3.2.2:

Between March and September, with help from the local Fire Brigade, CI Pantanal will hire a Coordinator to organize and implement fire management training and awareness activities in order to control fires in the Bodoquena region, with a focus in the city of Bonito. Fire training and fire control activities include raising awareness of land owners and land workers about the dangers of unsupervised burns, teaching them how to effectively use firebreaks and other control mechanisms and promoting alternative practices which do not require burning.

Progress to-Date:

This year the fire coordinator has worked to implement fire brigades in many parts of the corridor area (refer to discussion of activity 3.2.1and Attachment Brazil-6).

In addition to offering training to land owners and tour guides, CI participated in a campaign headed by a local NGO (Ecoa) and partners (IBAMA, Fire fighting department, National Road Dept. and others) to raise awareness about uncontrolled fires started on roadsides. This campaign consisted of delivering flyers and stickers to passersby informing the general public of the ill effects of burns on the human health (See Attachments Brazil-7, Brazil-8 and Brazil-9).

CI Pantanal and the Catholic University of Mato Grosso do Sul, will work together to analyze the hot spots of this year and compare to last years in the regions where training was offered. The images will be purchased in December 2000, as the satellite photographs the region only at every 16 days and we are waiting for a clear image to work on. Once this is purchased, it is delivered within a month and we can then start the analysis with aid from our GIS Manager. Comparisons of this year and last year's image will be restricted since the satellite sensors collection of image has been updated to a more precise analysis, one that was not available last year. Additionally, the amount of rainfall observed in the current year, greatly exceeds last year's (20 years ago was the last time the state of Mato Grosso do Sul received so much rain)

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
3.2.2	Fire Coordinator at work, fewer (smaller) forested areas burned, public awareness campaign implemented, fire brigade trained and operational, tour operators and guides trained in fire fighting and controlled burns	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Guyana

a. Key Short and Long-Term Program Objectives for the Site.

CI's long-term strategic vision for the Guianas Region is to conserve a major tropical wilderness corridor that spans the southern portion of Guyana and Suriname and potentially connects to similar "corridors" throughout the Guayana Shield. In addition to this, there should be a high level of conservation awareness at all strata and sections of society as well as incentives to ensure a long-term commitment to conservation across the Guayana Shield.

The ecological, cultural and spiritual value of this major tropical wilderness area cannot be estimated. This area is over 90% intact, has a low human population pressure and its inaccessibility offers great opportunities for conservation. The Guayana Shield houses one of the last remaining tropical wilderness areas in the world and serves as one of the last places on Earth where indigenous people can maintain traditional lifestyles. Tropical wilderness areas stand as one of the world's last great undisturbed frontiers. The tragedy of their loss is that they are being opened up for development – by logging, mining and other development projects – with little regard for their inherent value to mankind and little understanding of the communities of species that make up these functioning ecosystems.

To our advantage we have a window of opportunity in which the opportunity cost of conservation is at an all time low. The current economic downturn in Asia resulted in a reduced demand for plywood and other timber products and downward pressure on international timber prices. For timber producing countries where there is little existing infrastructure and transport costs are high, logging pressure has been temporarily reduced and conservation is better able to compete in terms of simple financial payoff to governments. Thus, now is the time for large-scale conservation action.

By working directly in the region, and influencing the conservation work in other sites supported by other conservation groups, CI will promote the conservation of major tropical wilderness areas across the Guayana Shield. Already in the Suriname and Guyana, CI has built conservation commitment and involvement among local communities, decision-makers, the private sector, and the public at large. By working with these stakeholders, CI is working to develop local capacity, political and public will, and economic incentives to ensure long-term conservation of a major Guayana Shield Tropical Wilderness Area.

b. Summary of Progress for Site

CI has made significant progress through the USAID Corridor Cooperative Agreement towards the establishment of a conservation corridor that spans southern Guyana. Over the last year we were granted an exploratory lease for a conservation concession of 200,000 acres in one of the key areas critical to our Guyana corridor. In the upcoming year we hope to expand this area to the originally requested one million acres. Further, we have increased awareness of the biological importance of the Kanuku Mountain/Rewa River region at the international, national and community levels. We have received confirmation from the Government that they are committed to the development of a protected area in this region, and the GOG has requested CI to take the lead on making this protected area a reality.

The key to our success is the integration of indigenous people into the development of the protected area. CI's relationship with communities in the region is one of our strongest points both regionally, across the Guayana Shield, and nationally in Guyana. This year we have completed a socio-economic survey of 11 primary communities around the Kanuku Mountains. The information gathered during this survey was used to develop our initial consultation strategy in the region, and to develop environmental awareness and education programs. We have begun consultations in the region through existing leadership structures (including the Regional Administration and the Region Nine committee for monitoring forestry, mining and the environment) and are in the process of refining a strategy to conduct consultations and foster awareness, and even partnership, at the level of individual communities.

c. Activity Description

Activity 1.1.1

During Months 3-5 of the project, a hired biologist consultant will gather and compile the existing baseline biological data of the Eastern Kanuku Mountain/Rewa River Region. The current data is stored at the Smithsonian Institution Biodiversity Center in Guyana. CI-Guyana will sign a MOU with the Smithsonian to share all current and future data collected for the region. The data will be organized and stored in a format compatible with the integrated corridor information system (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

- The process of compiling the biological data on the corridor region has shown a mixed performance. A Memorandum of Understanding (MOU) has been executed between CI and the Smithsonian Institution to facilitate collaboration to gather and share the biological data critical to the corridor region in Guyana. The MOU allows for the Smithsonian Institution to provide a database of biological specimens below the 4th parallel in Guyana to CI. In addition, the Smithsonian Institution will access biological data on Guyana from the Royal Ontario Museum and provide these to CI. The MOU also provides for CI to facilitate the development of a plant database from collections made in Guyana by personnel from the University of Utrecht.

- Discussions have been ongoing between CI and the Smithsonian to follow up the provisions of the MOU. Nevertheless, access to the data that should have been provided by the Smithsonian Institution was delayed during the first year. However, in October 2000, CI received the first part of the database from the Smithsonian.

- CI has contacted the University of Utrecht, in the Netherlands, and it is expected that the data will be acquired by December 2000.

- In addition, CI is attempting to facilitate the development of a computerized database from plant specimens stored in the herbarium of the University of Guyana. Initial discussions to explore this possibility were favourable and a draft MOU has been submitted to the University during August 2000. However, the process of executing the MOU has been stalled due to the lack of timely feedback from the University.

Table of progress in meeting key benchmarks

Activity	Benchmark/Output	Status*
1.1.1	MOU signed and database of existing biological data available	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions

- Although there was an initial delay in accessing data from the Smithsonian, CI has recently received its first digital database from SI and will be accessing other important components of the database over the next two months. Further, CI recently signed a subcontract with a botanist, Julie Barcelona, who will work at the Smithsonian to database plant specimens below the 4th parallel in Guyana for inclusion in the corridor database.

- CI has made direct contact with the Vice-Chancellor of the University of Guyana to draw his attention to the potential benefits that could accrue to the University from the proposed collaboration with CI. He has expressed support for the principle of collaboration and it is expected that a MOU would be executed shortly between CI and the University of Guyana.

- In addition, it is expected that the Advisor to the President on Science, Technology and Environment would be briefed about the initiative to database the data in the herbarium of the University of Guyana. It is hoped that his influence can be exerted to precipitate the development of the database of information at the University.

- Discussions have also been initiated to develop a database of plant specimens in the herbarium of the Guyana Forestry Commission. This initiative promises to be fruitful and has been incorporated into the Implementation Plan for FY 01.

Activity 1.1.2

During Months 4-5 of the project, CI's GIS Specialist will compile the existing baseline landcover and vegetation data for the Eastern Kanuku Mountain/Rewa River Region. The data will be organized and stored in a format compatible with the integrated corridor information system (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

- Existing baseline data on the land-cover of the Kanuku Mountain-Rewa River region have been compiled and stored in a Geographic Information System for the corridor region by CI's Regional Analysis Programme.

- CI has signed a MOU with the Centre for the Study of Biological Diversity (CSBD), which provides for the CSBD to support the process of compiling relevant data for conservation planning in the corridor region of Guyana. Under this MOU the contour lines for the Kanuku Mountains area have been digitized by a Guyanese GIS specialist and his assistant and used by CI's Regional Analysis Programme in Washington to develop a digital elevation model (DEM).

- In the absence of good vegetation data for the corridor region in Guyana, CI has purchased recent Landsat images and these were used to develop a preliminary vegetation map.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.2	Landcover and vegetation data compiled by March 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Some of the data that the CSBD was expected to compile is in the domain of the Government of Guyana. Discussions have therefore been initiated with the Government with the aim of developing a mechanism for collaboration. Such collaboration may involve CI providing the data already compiled to the Government for integration into the Guyana Integrated Natural Resources Information System (GINRIS). It is hoped that the Government would provide access to some of the information already in the GINRIS that may be useful for conservation planning. These activities are therefore being pursued as a part of the work-plan for FY 01.

Activity 1.1.3

During Months 2-4 of the project, a Guyanese legal consultant will assess Guyana's existing biodiversity and protected areas legislation to determine the potential avenues for establishing a protected area under existing legislation. This information will be compiled into a formal report with recommendations (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

- An Australian lawyer with significant experience working in Guyana, John Scanlon, was hired to analyse the relevant legislation in Guyana and to determine the potential avenues for establishing a protected area . His report was completed in April 2000.

  On the basis of this analysis it was recommended that a new protected area in the vicinity of the Kanuku Mountains should be established through a Presidential decree, i.e., through the establishment of a new Act similar to that of the Kaieteur Act or the Iwokrama Rainforest Act.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.3	Legal Analysis complete, recommendations made by February 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The completion of this activity has now clarified that there is a need for information on the modalities for the establishment of Trust Funds and non-profit foundations in Guyana. A follow-up study of trust fund legislation will therefore be completed. This study will make recommendations for long-term financing of both protected areas and the conservation concession.

Activity 1.1.4

During Months 2-4 of the project a Guyanese anthropologist consultant will compile all existing socioeconomic data on Kanuku Mountain communities using existing research and published documents to identify information gaps to determine the informational and regional focus of spot socioeconomic surveys to be conducted (Kanuku Mountain Region).

Progress to-Date:

- Mr Gordon Forte was hired in December 1999 to assess the available socio-economic literature on the communities living in the vicinity of the Kanuku Mountains. The literature review he conducted revealed that there was little existing information on the communities and that the information available was outdated. On the basis of the information compiled, a socio-economic survey was designed to provide relevant data to guide the conservation planning efforts of CI. An interesting aspect of the design of the survey was that the communities themselves participated in drafting the questionnaires used.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.4	Data compiled by February 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 1.1.5

During Months 4-7 of the project, with oversight from CI-Washington's Resource Economics Program, the Guyanese anthropologist consultant and a team of indigenous representatives to be identified will conduct socioeconomic surveys and engage in consultations with the indigenous communities surrounding the Kanuku Mountains (Kanuku Mountain Region).

Progress to-Date:

- Mr Gordon Forte, a Guyanese, was contracted to conduct a baseline socio-economic survey of 11 Amerindian communities in the vicinity of the Kanuku Mountains. His work was supported by three other resource persons, as well as members of each community. Implemented during January – February 2000, the survey was done in three phases as follows:

    1. the preparatory phase – communities were briefed about the survey, and the design of data collection methods were finalized;
    2. the survey phase – here the data was actually collected during formal workshops and informal meetings; and
    3. the review phase – during which an attempt was made to verify the accuracy of the information gathered from the communities.

- The final report for the survey was completed in September 2000 (see Attachment Guyana-1). This report was distributed to the leaders of each of the communities surveyed during the celebrations to mark the culmination of Amerindian Heritage Month in September 2000 at St. Ignatius (Region Nine). At this event it was promised that additional copies of the socio-economic report would be distributed to communities that were not included in the survey.

- The implementation of the socio-economic survey was simultaneously a process of consulting with the communities, since the consultants had the responsibility of explaining the rationale for the survey, and therefore the idea of a protected area in the vicinity of the Kanuku Mountains was discussed to a limited extent.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.5	Data compiled by May 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Since the socio-economic survey is intended to guide CI's efforts to engage the communities in a meaningful partnership for the advancement of discussions on the idea of a protected area in the vicinity Kanuku Mountains, it meant that there was no direct contact between CI and most of the specific communities that were surveyed. This resulted in an information gap, which, in the context of negative perceptions associated with the term "protected area", meant that there was a general attitude of mistrust and suspicion regarding the motives of CI in the region. For example, many Amerindian communities do not hold 'full' title to the traditional lands that they are claiming from the

Government. Many are therefore fearful that the implementation of a protected area in the region could deprive them of their traditional land rights. The idea of a protected are in the Kanuku is therefore not fully accepted as yet and discussions on the subject have to be approached very carefully.

- CI's strategy to engage the communities is to follow the principles of transparency and equal partnership in advancing the process of establishing a protected area. Transparency will dictate that the Amerindian communities and stakeholder groups (Actors) be kept informed about the activities and plans of CI. The principle of equal partnership will require CI to approach the discussion about a protected area in a manner that clarifies that it is not a *fait accompli*. Such a strategy will require that the range of Actors become informed decision-makers, and this would be largely accomplished through CI's environmental education and awareness programs.

  The approach that CI will take to advance the discussions on the protected area was provided to regional leaders during a presentation that CI was invited to make in September 2000 on the occasion of Amerindian Heritage Month. CI also used this opportunity to inform and emphasise to the regional attendees that the establishment of a protected area in the vicinity of the Kanuku Mountains would not deprive Amerindians of their traditional land-use rights.

- The process of engaging the communities and Actors in Region Nine is likely to provide valuable lessons to CI. One of the lessons already learnt is that some of the communities with a stake in the establishment of a protected area in the vicinity of the Kanuku Mountains may have inadvertently been omitted from the just concluded preliminary socio-economic survey conducted in the area. CI is therefore in the process of clarifying the relevant communities that must be engaged in advancing discussion on the proposed protected area in the region.

Activity 1.1.6

During Months 2-4 of the project, CI-Washington's GIS Specialist will update and/or verify the existing digital data on officially designated Amerindian lands in Guyana using existing GIS software. The data will be organized and stored in a format compatible with the integrated corridor information system (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

The available data on the boundaries of Amerindian lands have been integrated into a GIS at the Centre for the Study of Biological Diversity in Guyana by GIS technician, Naseem Nasir. This information was gathered during 1995 as a part of the World Bank project to support the establishment of a National Protected Area System. However, the data is currently outdated since existing Amerindian communities have expanded leading to unresolved claims for larger areas of land. In addition, new communities have been established which have no legal titles to land.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.6	Data compiled by November 1999	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The question of Amerindian land boundaries is a very sensitive one in the political context of Guyana. It was not possible to update the existing maps on Amerindian land boundaries because the information required for this purpose was not readily accessible. Under the Implementation Plan for FY 01, it is proposed that discussion would be initiated with the Government of Guyana to facilitate access to the relevant information or maps.

Activity 1.1.7

During Months 1-4 of the project, the hired legal consultant will review and update the 1997 World Bank document, "Review of Land and Resource Rights in Guyana." The consultant will review the existing indigenous land claims in Guyana and compare them with the data on officially designated Amerindian lands and titled lands (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

- When CI staff reviewed the document to be updated, it was realized that there were no significant changes in the reality reflected in the document. This activity was therefore cancelled.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.7	Analysis completed by February 2000	Update of document cancelled, review of land claims delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- CI is currently seeking an appropriate legal specialist to carry out a review of outstanding Amerindian land claims. In view of the sensitivity of the matter, it is proving difficult to find an appropriate person.

Activity 1.1.8

In Month 4 of the project, CI-Washington's Conservation Economics team will perform an analysis of national timber industry to determine the economic viability of large-scale timber extraction in Guyana. (Upper Essequibo Region)

Progress to-Date:

- CI's economists have developed a financial model that estimates the cost and revenues of logging in Guyana. The model was used to extrapolate the financial viability of logging in the area of the proposed conservation concession in the south of Guyana. The results of this analysis show that commercial timber extraction in the area of the conservation concession would be highly unprofitable.

- These results, as well as the results of the upcoming timber inventory and social assessments, will be used to negotiate the level of payment for the proposed concession with the Government of Guyana. These negotiations will take place after the exploratory phase is complete and the management plan has been developed. Guyana Forestry Commission (GFC) economists have reviewed the timber industry model and the GFC has agreed that large-scale timber extraction is not a viable option for the concession area. CI is currently preparing a Forest Management Plan for the conservation concession and will contract local expertise to conduct a Social Impact Assessment (SIA).

- The financial model of the timber industry is also useful at a national scale and CI will continue to use it for planning future conservation efforts in Guyana.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.8	Analysis completed by January 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 1.1.9

During Year 1 of the project, CI-Guyana and CI-Washington staff members will convene a review meeting in Guyana 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 (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

During August 2000 CI-Guyana and CI-Washington Staff members met in Guyana to review the experience in project implementation to date. It was agreed that the idea of a Biodiversity Corridor in the south of Guyana was still viable, although many challenges still lie ahead. This opportunity was also used to develop a work-plan for the second year of the project. Several new activities emerged during this process, and one of these could potentially lead to a very close collaboration with the Government of Guyana to provide GIS support to the activities under the project. A budget was also developed for the Implementation Plan during this series of meetings.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.1.9	Meeting convened and activities developed for Year 2 of the project	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 1.2.1

In Months 1-4 of the project CI's Conservation Planner and GIS Data Manager will train a newly hired Guyana GIS data manager to design and operationalize the integrated corridor information system database. In Months 4-12 of the project, a newly hired Guyanese GIS data manager will begin entering corridor assessment data (biological, socioeconomic, legal, maps) into the corridor information system.

Progress to-Date:

- In February 2000, Daniel Juhn, a GIS analyst, was hired within the Regional Analysis program of CI. Daniel Juhn has conducted an initial vegetation classification for the Kanuku Mountains region and the conservation concession to the east. Aerial videographic data will be acquired for these areas by the Conservation Planner, John Musinsky, (Director, Regional Analysis) and Juhn, and used to refine the classification of the vegetation. John Musinsky has worked with Naseem Nasir of the Centre for the Study of Biological Diversity to compile GIS data for the corridor (see activity 1.1.2).

  Musinsky is working with Vineet Katariya on developing an Internet Map Server for distributing the GIS data with linked documents as part of the corridor information management system. Since it will require several months to set-up a more fully functional corridor information system, in the interim Theresa Drake has created a series of publicly accessible Outlook e-mail folders for storing documents related to the corridor project.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.2.1	Corridor information system operational by December 2000, Data being entered into corridor information system by January 2000	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- A fully functional information system will require a major upgrade to CI's Internet infrastructure. A more secure Internet system with a more robust firewall and Web database server will be put in place by CI's IT department during FY01, but they are waiting for the institution to complete its move to new offices by December 2000 before they purchase and install the new equipment. A long list of technical reasons has been provided for this delay. In the meantime, the corridor technical team will continue to work with the different in-country corridor staff from Guyana, Brazil, and the Philippines, to refine the design of the corridor information system, and share documents in a more traditional format (e-mail) until the information system is in place.

Activity 1.3.1

In Months 4-5 of the project, CI-Washington's Technical Team will develop guidelines for a Corridor Monitoring and Evaluation System (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

- The guidelines for the Guyana Corridor Monitoring and Evaluation System were developed by CI's Monitoring and Evaluation Department in FY00 and disseminated in a September, 2000 "Strategic Management Approach Training" in Whitefish, Montana. Bernard DeSouza and Sandy Griffith attended and have been able to bring the system back to the in-country office for implementation. Incorporation of the Monitoring and Evaluation System into CI-Guyana's day-to-day operations is a slow process and will be ongoing in FY01.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.3.1	Corridor guidelines developed and disseminated by February 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.4.1

In Month 1 of the project, CI's Vice President for Business and Policy will meet with Vanessa Mining officials to discuss the exploration claim in the Kanuku region and will develop a strategy for working with mining companies in the region. In Months 2-12, CI staff will continue to consult with corporate stakeholders (Kanuku Mountain Region).

Progress to-Date:

- A meeting was held in October 1999 with Vanessa Mining's representative, Marshall Mintz. During this meeting Vanessa noted that it had until October 2000 to apply for long-term mining leases. CI is in the process of contacting Vanessa's office in Canada and Guyana to discuss the locations of their long-term leases.

- Further, the community of Moco Moco in the Kanuku Mountains has signed an agreement with the Vanessa mining corporation to explore on their land. CI is presently researching the type of agreement and how it will impact biodiversity, water quality etc.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.4.1	Initial consultations begun by November 1999	First meeting complete, follow-up on-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Marshall Mintz, CI's main contact at Vanessa Mining Corporation has been replaced. CI is presently attempting to contact the corporation in Canada and rediscuss issues related to the environmental impact assessments and long-term mining leases. In the upcoming year we hope to develop a relationship with a new Vanessa representative.

Activity 1.4.2

In Months 4-12 of the project the hired Guyanese Anthropologist and the assembled team will undertake socioeconomic surveys and consultations with the communities surrounding the Kanuku Mountain region (Kanuku Mountain Region).

Progress to-Date:

- This activity is intended to facilitate the compilation of additional socio-economic data on the communities once the major socio-economic survey is completed. CI Guyana staff have identified several additional items of information required to ensure that an effective partnership is secured with the communities for the establishment of a protected area in the vicinity of the Kanuku Mountains. CI staff will take adequate measures to ensure that the required information is secured. Some of the information required include:

    * Further details on the social, economic and political organization of the communities of interest; and
    * Clarification of the values and preferences of the communities, especially regarding their broad vision for development.

- This activity is also aimed at maintaining a two-way flow of information between CI and the regional stakeholders (Actors) through continual dialogue. When data collection for the socio-economic survey was complete, a meeting was held in Region Nine with some of the critical Actors to ensure that the discussions on the establishment of a protected area in the region is advanced in an organized manner. This meeting was held in April 2000 and included representatives from Regional Administration, Captains and Councillors from the various communities in the immediate vicinity of the Kanuku Mountains, regional youth leaders, women leaders from the communities, other NGOs working in the region, etc. During this meeting it was agreed that there would be further consultations with individual villages as well as the Amerindian Touchaus Council.

- Since this meeting several important events have occurred to strengthen the process of engaging the communities. These are summarized below.

    1. A study tour of CI's operation in Suriname was facilitated during August 2000 (See attachment Guyana-2). The participants in this tour included the Touchaus of three villages in the vicinity of the Kanuku Mountains (Shulinab, Nappi, and Sand Creek) and a representative of the Regional Democratic Council. The participants from Region Nine were able to carry out a critical evaluation of CI's projects and our relationship with the Indigenous peoples of Kwamalasamutu in Suriname.

The assessment by the regional representatives proved to be favourable for CI as reflected in a subsequent briefing with various media houses.

2. CI Guyana is usually invited to make presentations on the activities being pursued in the region to a newly established committee to monitor forestry, mining and the environment. The benefit of this opportunity is that the committee includes several important Actors in the region, including the Chief of Chiefs of the Amerindian Touchaus Council. Moreover, the honourable Minister of Amerindian Affairs, Mr Francis Vibert DeSouza, chairs the committee. Two such presentations have already been made and they have afforded a valuable opportunity to explain CI's activities in Region Nine.

3. CI was also invited to make a presentation on its conservation activities in Region Nine as a part of the activities to mark the culmination of Amerindian Heritage Month during September 2000. The audience of this presentation included the vast majority of the important Actors in Region Nine. The presentation was very well received and very favourable feedback was received from the President of one of the more influential Amerindian interest groups, the Amerindian Peoples Association.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.4.2	Begin community consultations by May 2000	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- It has emerged that engagement of the communities in a process of meaningful participation to advance the establishment of a protected area is very crucial to the overall success of the project. CI Guyana staff will therefore lead the consultation process and other community dialogues over the upcoming year.

- Because of the need to proceed carefully, and at a pace determined primarily by the communities, CI has not reached the point of meeting directly with individual villages during the reporting period. However, a strategy has been developed to facilitate this and would be implemented under the activities for FY 01.

Activity 1.5.1

In Months 3-4, CI's Washington and Guyana staff will identify CI and partner representatives for the corridor team.

Progress to-Date:

- A corridor team for Guyana has been formed and includes all CI-Guyana staff and CI Biologist Leeanne Alonso, GIS expert John Musinksy, GIS expert Daniel Juhn; Resource Economist Richard Rice, Resource Economist Jim Cannon, Guyanese GIS expert Naseem Nasir, CI Conservation Awareness Expert Haroldo Castro, and CI M & E specialist Peter Kristensen.

- Other collaborators include the communities and community leaders from areas near the Kanuku Mountains, the Iwokrama Rainforest Project, the Smithsonian Institution, the Biodiversity Centre at the University of Guyana, the Regional Government in Region Nine of Guyana, and the Government of Guyana.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.5.1	Corridor team assembled by January 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 1.5.2

In Month 4 of the project, CI-Guyana will hire and train a corridor project manager responsible for coordinating all corridor-related activities in the field.

Progress to-Date:

A Project Manager for the Corridor, Philip DaSilva, was hired in January 2000. Unfortunately, Mr. DaSilva (Assistant Dean of the Faculty of Natural Sciences at the University of Guyana) was diagnosed with severe glaucoma soon after he was hired. Mr Bernard DeSouza, a Forest Economist, was subsequently contracted as the Corridor Project Manager.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.5.2	Manager hired by January 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.6.1

In months 4-12 of the project, CI's Conservation Finance Specialist will conduct an analysis of long-term financial mechanisms for protected areas and conservation concessions. A Guyanese legal consultant will review the current national legislation pertaining to trust funds in Guyana. The results will be compiled and recommendations made for potential financing mechanisms (Kanuku Mountain and Upper Essequibo Regions).

Progress to-Date:

- Although basic information on trust fund law in Guyana has been gathered under this project, the full analysis and recommendations will take place in FY01. The legal review was deliberately delayed until the exploratory lease was approved (we now have a 200,000 acre lease). Regarding the Kanukus, we are postponing a detailed study of the potential financial mechanisms until the communities are on board with the project.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.6.1	Conduct analysis of long-term financial mechanisms for protected areas and conservation concessions	Delayed until January 2001

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The analysis of long-term financial mechanism has been rescheduled for January 2001 or early February 2001.

Activity 1.7.1

In Months 2-12 of the project, CI's Senior Director for International Communications in conjunction with CI-Guyana's Communication and Education Coordinators will design and begin implementation of Phase 4 of the ongoing National Conservation Awareness Campaign and Environmental Education Program.

Progress to-Date:

- A conservation awareness work-plan and strategy was designed during February - March 2000 by CI Guyana's Communication Manager, Sandra Seeraj and CI Washington DC's Vice-president of INTERCOM and his staff. This strategy is designed to target audiences at both the regional and national levels.

The following were achieved during the implementation of the workplan:

- CI's Communication Manager, Sandra Seeraj, reinforced the relationship with the local media through a series of visits to local media establishments and courtesy calls on media managers. These activities were supported by regular telephone calls and e-mails, in addition to press releases, notes to editors and media handouts. In addition, a register of relevant information pertaining to local media houses and journalists was prepared.

- A biodiversity reporting award was launched. This contest was aimed to strengthen environmental reporting and coverage skills among Guyanese journalists. It was coordinated by CI Guyana's Communication Manager, Sandra Seeraj, CI Washington DC's Vice-president of INTERCOM and CI-Washington DC Media Manager. The awards were presented to the winners in September 2000.

- A workshop was organized for environmental journalists. This event was organized to stage the announcement of the winner of the Biodiversity Reporting Award and to help Guyanese journalists develop stronger environmental reporting skills. CI Guyana's Communication Manager, Sandra Seeraj, CI-Washington DC's Vice-president of INTERCOM and CI-Washington DC's Media Manager also coordinated this event, which was hosted in September 2000.

- Members of the media were informed about the signing of the documents for the Exploratory Lease and were invited to cover the event. Press kits were handed out at the signing ceremony. Television stations were given copies of a "best shots" video, featuring shots of Guyana's nature, to be used for their news items. CI Guyana's Communication Manager, Sandra Seeraj, and CI-Washington DC's INTERCOM staff prepared the video.

- An education work-plan for the national audience is presently being prepared and will be completed by December 2000.

- Documents for the resource center are presently being sourced and procurement is planned to commence by December 2000.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
1.7.1	Phase 4 designed by February 2000	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 2.1.1

In Months 3-4 of the project, CI-Guyana's Corridor team will use the relevant data collected in the initial corridor assessment to draft and submit a preliminary plan for the Kanuku Mountain region protected area to the Government of Guyana (Kanuku Mountain Region).

Progress to-Date:

- A preliminary work-plan to the Government of Guyana for the establishment of a Kanuku Mountain-Rewa River Watershed protected area has been completed. However, due to the present political difficulties surrounding Amerindian land tenure in Guyana, we have chosen not to submit the proposal until the consultation process with the communities are well advanced and formal discussions on the proposal have been initiated with communities that may be affected by the protected area. Communication with GOG officials, however, has been ongoing and verbal proposals for a Kanuku Mountain-Rewa River watershed trust fund and community development trust fund have been discussed.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
2.1.1	Plan drafted and submitted by February 2000	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Although the Government of Guyana has expressed interest in the establishment of a Kanuku Mountain protected area, and in a wider national system of protected areas, it is imperative that the communities which rely on the resources of the area participate fully in the design, development and management of the protected area. We have therefore withheld the formal proposal until proper consultation and input is obtained from the communities living in and around the Kanuku Mountain Rewa River watershed. At this time we cannot estimate when the area might be legally established as a protected area.

- A formal planning meeting will be held during FY 01 to engage all Actors in the region and agree the most important next steps that should be taken to advance the discussions on the establishment of a protected area in the area of the Kanuku Mountains.

Activity 2.1.2

In months 8-12 of the project, CI-Guyana's corridor team will collaborate with CI-Washington staff members to further analyse data and refine the protected area design. They will use this updated information to draft and submit a formal vision plan for the proposed Kanuku Mountain protected area to the Government of Guyana (Kanuku Mountain Region).

Progress to-Date:

- CI staff has started to analyse the biological and socio-economic data on the Kanuku Mountains. However, the elaboration of a detailed plan has been postponed until the indigenous communities and actors in the region have been fully engaged.

Table of progress in meeting key benchmarks

Activity	Benchmark/Output	Status*
2.1.2	Design protected area and submit formal vision plan for proposed Kanuku Mountain protected area to the Government of Guyana	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The input of the communities that will be affected by the proposed protected area is a critical to the successful establishment of a protected area. These communities have to be empowered to become informed decision-makers, primarily through the regional environmental education and awareness campaigns. CI will then elaborate a detailed plan for the establishment of a protected area in the Kanuku Mountains area, in partnership with an appropriate group representing the interests of the communities.

Activity 2.1.3

In Month 4 of the project, CI's Senior Resource Economist, a Resource Economist consultant, CI's Manager for the Tropical Wilderness Protection Fund and a Guyanese legal consultant will complete the application process for Essequibo region conservation concession and submit the application to the Guyana Forestry Commission. (Upper Essequibo Region)

Progress to-Date:

- An application for an exploratory lease in the upper Essequibo River region was completed in April 2000 by a team of resource economists led by Dr. Richard Rice of CI. The team included Jared Hardner, Dr. Ted Gullision and Aaron Bruner. The application for an exploratory lease was formally submitted by CI-Guyana to the Guyana Forestry Commission in May 2000.

- In June 2000, CI Guyana staff met with Georgetown based Actors (including political parties, Amerindian interest groups and other lobbying groups) to inform them about the idea of the conservation concession. The idea of the conservation concession was also discussed with various Amerindian leaders in Region Nine. All Actors present at CI Guyana's presentation during Amerindian Heritage Month in St. Ignatius were also informed about the conservation concession being planned.

- In June 2000, the Government of Guyana met and Cabinet voted to grant an exploratory lease to CI. However, there was some debate on the appropriate timing for the signing of the exploratory lease. In addition, while the application was made for approximately 1,000,000 acres, only some 200,000 acres was actually granted as an exploratory lease.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
2.1.3	Application completed and submitted by January 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- There have not been any delays in completing the application for an exploratory lease to the Government of Guyana. However, given busy schedules of the authorities authorized to sign the lease, the actual signing of the lease was delayed on several occasions.

- CI also intends to formulate a strategy that would aim to achieve an expansion of the area of the exploratory lease to the 1,000,000 acres originally requested.

Activity 2.1.4

In Months 5-6 of the project, CI's Senior Resource Economist, a Resource Economist Consultant, CI's Manager for the Tropical Wilderness Protection Fund and CI-Guyana staff will negotiate and finalize the total area of conservation concession through formal and informal discussions with the Guyana Forestry Commission (Upper Essequibo Region).

Progress to-Date:

- Numerous formal and informal discussions have taken place with the President of Guyana, the Guyana Forestry Commission, the Advisor to the President on Environment, Navin Chandarpal, and CI Washington and CI Guyana staff. CI's Guyanese legal advisor, Mr. Khemraj Ramjattam, has taken the lead in the negotiations. The area for which an exploratory permit was sought was one million acres (405,000 hectares) of State Forest in the upper Essequibo watershed. However, the exploratory lease was only allocated for some 200,000 acres. CI is therefore examining the possibility for having this area expanded to encompass the 1,000,000 acres originally requested in the application.

  The exploratory lease is located to the south of all existing timber concessions and is bordered by the Rewa River to the west and the New River to the east. Along the northeastern boundary, it is bordered by an exploratory mining concession held by the Vannessa Mining Company. The area encompasses land in two administrative regions: Region Six (East Berbice-Courentyne) and Region Nine (Upper Takutu-Upper Essequibo).

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
2.1.4	Negotiations finalized by March 2000	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- As mentioned, CI is still interested in having a conservation concession of 1,000,000 acres. CI therefore plans to approach the GOG with another proposal for the full 1,000,000 acres originally applied for during the process of negotiating long-term fees for the conservation concession, and in the development of the management plan.

Activity 2.4.1

In month 10 of the project, CI's Senior Resource Economist, a Resource Economist Consultant, CI's Manager for the Tropical Wilderness Protection Fund, a Guyanese Forestry Consultant and the CI-Guyana Manager will draft and submit a management plan for the Essequibo region conservation concession. The management plan will include a timber inventory and economic timber valuation for the Essequibo concession region (Upper Essequibo Region).

Progress to-Date:

- A draft management plan is being developed and should be complete by April 2001. The management plan has been delayed because additional data is required to verify the accuracy of the preliminary vegetation map developed from the analysis of satellite images. A timber inventory (Scheduled to begin in January 2001) as well as social assessments and consultations with communities living nearest the area are also required.

- Consideration is being given to preparing the management plan for the one million acres originally envisaged, so that the process would not have to be repeated in the event that efforts to expand the current exploratory lease are successful.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
2.4.1	Draft Plan and submit to Guyana Forestry Commission	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- A videographic survey is scheduled to be implemented during FY 01. This will provide the additional data required to complete an accurate vegetation map and contribute to the completion of the management plan. A baseline timber inventory is also being scheduled for early 2001 in collaboration with the Iwokrama Rainforest Programme.

- The videographic survey plus the social impact assessments and consultations (planned for FY01) will also help clarify the whether there are any Amerindian communities in the vicinity of the exploratory lease.

Activity 2.6.1

In Months 1-4 of the project, hired U.S. and Guyanese legal consultants will conduct an analysis to determine the legal procedures for the establishment of Essequibo region conservation concession. (Upper Essequibo Region)

Progress to-Date:

- Mr. Khemraj Ramjattan was hired in December 1999 as CI's attorney and legal advisor for the development and negotiation of the conservation concession. Since this time Mr. Ramjattan has led CI through the process of applying for the exploratory lease to the Guyana Forestry Commission and has assisted us in negotiating with the Government of Guyana for the lease.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
2.6.1	Analysis completed by February 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 2.7.1

In Months 4-12 of the project, CI's Senior Director for International Communications in conjunction with CI-Guyana's Communication and Education Coordinators will design and implement a conservation awareness and environmental education campaign for the communities within the Kanuku Mountain region (Kanuku Mountain Region).

Progress to-Date:

- The education and awareness strategies have been reviewed. It is now clear that a baseline survey is necessary to measure the impact of the education and awareness programmes over time. This has become necessary because the preliminary socio-economic survey does not yield as much information as is necessary.

Awareness
A regional environmental awareness work-plan has been completed. Under the work-plan, annual calendars for 2001 and biodiversity posters will be produced. The 2001 calendars will be available for

distribution by January 2001, while the biodiversity posters are expected to be completed for distribution by April 2001.

Education
An environmental education work-plan for Region Nine has been developed. The implementation of this work-plan will commence in 2001 following national and regional elections.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
2.7.1	Campaign developed and implementation begun by April 2000	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time

Activity 3.2.1

Expand conservation enterprise projects in communities around the Kanuku Mountain region.

Progress to-Date:

- In July 2000, Eco-enterprise expert, Susan Stone, was hired and is currently living in Nappi Village, in Region Nine, for at least one year. The process of identifying the training needs for the existing Balata crafting project in Nappi village has already started. Meetings were held with the Balata Crafters Group and the three women's crafting groups to assess the existing level of knowledge and the required focus for business training. The first training session in pricing and bookkeeping was conducted with the women's groups by the end of September 2000. A strategic planning session was also held with the Balata Crafters Group and business training is currently being provided to 22 balata artisans.

- The foundation has been laid for the expansion of enterprise development into other communities in the region through contacts made with village leaders and other agency actors working in enterprise development in the region. Discussions have also started to expand basic business training to the regional center in Lethem. This would benefit the existing and potential entrepreneurs in the region.

Table of progress in meeting key benchmarks:

Activity	Benchmark/Output	Status*
3.2.1	Training provided to at least 18 artisans in marketing, business administration and accounting	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- This project was initially delayed until an appropriate person was found. The activities are now on-track. In addition to providing business training, the possibility of using the internet to market directly from the region will be explored.

The Philippines

a. Key Short and Long-Term Program Objectives for the Site.

The Department of Environment and Natural Resources data show that this area contains approximately 400,000 hectares out of the estimated 870,000 hectares old growth forest remaining in the Philippines and encompasses about 50% of Philippines biodiversity.

The Sierra Madre Biodiversity Corridor project aims to connect the Northern Sierra Madre Natural Park (NSMNP) in Isabela to the ecologically related forest remnants in Cagayan, Quirino, Aurora, and Quezon provinces with possible expansion to the forest areas of the provinces of Nueva Vizcaya, Nueva Ecija, Bulacan and Rizal which were found to be additionally important and strategic to biodiversity conservation. This project seeks also to include biodiversity as a value in the development planning process in the region.

The first stage of the project (year 1) focused mainly on consultations, partnership building, orientations promoting the corridor concept with various stakeholders both at the national and local level and the gathering of baseline information within the corridor to include available biological data, socio-economic data/profiles of the provinces covering the area, land cover maps and land use plans for planning purposes and establishment of data base or information system for the corridor. The existing data will provide an overview of the current status of the whole corridor that is useful in planning appropriate management interventions and identifying research gaps.

Strategically, the Northern Sierra Madre Natural Park is considered by the project to serve as the core nuclei in establishing the Sierra Madre BiodiversityCorridor (SMBC). The park is the most advanced among the established protected areas in the area. In support, the project provides technical as well as financial assistance to the Park Superintendent office and the Protected Area Management Board to further strengthen their capabilities in project management and biodiversity conservation. As a result, the Northern Sierra Madre Natural Park Protected Area Management Board endorsed the corridor project and pledged their full support in the implementation.

In keeping with the approach of ensuring stakeholder total participation, CI will continuously work with key partners and major stakeholders to develop local capacity to ensure long-term conservation of the Sierra Madre Biodiversity Corridor. This can be done through the establishment of local coordinating units in every province covered by the corridor. The main function of the local coordinating unit is to coordinated project activities at the local level as well as serve as a conduit to support groups providing assistance within their area of coverage.

b. Summary of Progress for Site.

Throughout FY00, CI-Philippines strategically focused on the stakeholder outreach and relationship development critical to build the awareness, understanding, interest and support needed to develop a constituency for the Sierra Madre Biodiversity Corridor SMBC Program. Activities included consultations, coordination, and networking with the different stakeholders such as Local Governments Units, Government Agencies, Peoples Organizations and Non-Government Organizations currently working in the corridor area. The SMBC concept was presented, generally received with interest, and discussed with a wide array of government agencies such as the Department of Environment and Natural Resources, National Economic Development Authority, Local Government Units both at the Provincial and Municipal levels, NGOs and other institutions to generate their support to the project.

Another major activity completed during FY00 was successful partnership building with other NGOs and institutions agreed upon complementary implementation of conservation activities in the corridor area. Results of this effort include the MOA established with Foundation for Philippine Environment (FPE), Environmental Science for Social Change (ESSC) (in draft), and the support generated from the Local Government Units, Technical Assistance Units and Protected Area Management Board of NSMNP. In support of the Park Superintendent of NSMNP, a paralegal training was conducted for 50 members of the community volunteer Bantay Kalikasan Brigade and a number of DENR-PASu staff in Palanan. To further

support the forest protection activities in NSMNP, CI-Philippines provided hand held radios for DENR-PASu staff and BKB groups to facilitate field communications, coordination, monitoring, reporting and documentation of illegal activities in the Park.

CI-Philippines accomplished considerable data gathering and compilation during FY00. This baseline data/information for the establishment of a corridor database and information system will be used to support analyses for planning future management interventions, and for monitoring. The baseline data includes biological data, socio-economic profiles of the provinces covering the corridor area, land cover maps, land use plans and regional, provincial and municipal development plans. The data initially gathered are being compiled at CI-Philippines' GIS unit. The majority of biological data available particularly on plants were generated from the Northern Sierra Madre Natural Park.

c. Activity Description.

Activity 1.1.1

CI-P will compile the existing baseline landcover and vegetation data for the Sierra Madre region. In particular, existing land use records from various line agencies (DENR,DA,LGUs,Logging,mining firms etc) in populated areas inside NSMNP (Palanan, Divilacan)

Progress to-Date:

This activity is still in progress, however approximately 70% of the land cover data has been collected. Data gathered includes land use maps of the Provinces of Cagayan, Isabela, Quirino, Aurora and Quezon, maps of tenurial instruments issued, maps of protected areas, forest reserves and watershed reservations. All the data collected are being compiled and digitized by CI-Philippines GIS unit. Collection of the remaining land cover data, specifically land use maps of the Provinces of Aurora, Quezon and the proposed expansion areas in the provinces of Nueva Vizcaya, Nueva Ecija, Bulacan and Rizal will continue and is expected to be completed by the June of 2001 or the middle of USAID FY01.

- Local government units of the five provinces, Cagayan, Quirino, Isabela, Aurora and Quezon both at the provincial and municipal levels provided available information including land use maps, socio-economic profiles, development plans and maps of mining permits and applications for compilation (see Attachment Philippines-1).

- Initial baseline information specifically on biological resources, social, economic and political economic data of the provinces of Cagayan, Isabela, Quirino, Aurora and Quezon has been gathered by the SMBC team and being compiled at the CI Philippines GIS unit. This data will be used as secondary information for the Rapid Assessment of Corridor Economics (RACE) to be conducted in year 2 of the project and for planning future actions to be implemented in the corridor area (see Attachment Philippines-2).

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.1.1	Local mapping, institutions contacted and initial land-cover data compiled by CI staff by September 2000.	Mixed Performance
1.1.1.2	Baseline information for Land-use change analysis compiled by September 2000.	Mixed Performance
1.1.1.3	Ground truthing carried out in TLA areas and logging road in Dinapigue, Isabela by June 2000.	Cancelled (activity now being done in another area-San Mariano

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The ground truthing planned to be conducted in the Municipality of Dinapigue, Isabela was cancelled due to a rebel insurgency incursion in the area. However, the same activity was conducted in the western region of the NSMNP, in San Mariano, Isabela from June 19 to July 5, 2000. This area is also considered critical, similar to Dinapigue, because of timber poaching activities by local communities. The planned ground truthing inDinapigue, Isabela will be covered by aerial videography to be conducted in FY01.

Activity 1.1.2

CI will conduct an initial assessment of the political economy of the proposed corridor region, spanning municipality and LGU levels as well as the national level. This assessment will be implemented through a consultancy, with outreach and discussion among a number of stakeholders. On a more detailed level, assessments will be conducted looking at the political economy and forces affecting the protected area within barangays of core areas, and will also include an analysis of land-tenure rights.

Progress to-Date:

The SMBC team began the consultations and informal briefings with the different stakeholders such as the Local Government Units of the 5 provinces, both at the provincial and municipal levels, NGOs and Government agencies. Parallel activity of the SMBC team during consultations, is the initial assessment of the political economy and collection of secondary data of the provinces of Isabela, Cagayan, Quirino, Aurora and Quezon. The team also attended legislative sessions of the Local Government Units both at the provincial and municipal level of the provinces and municipalities covered by the corridor to conduct briefings/orientations about the Sierra Madre Biodiversity program.

- CI-P conducted one consultative meeting with each of the following: stakeholders of Cagayan (compose of Peoples Organization, and NGOs), Local Government Units of the five provinces and the Technical Assistance Unit and Protected Area Management Board of Northern Sierra Madre Natural Park. Part of the consultation/briefing is the presentation of the corridor concept in order to gain support from these sectors (see Attachment Philippines-3)

- The threat assessment for the corridor area has been completed, however, the assessment of the land tenure rights is still on going. (see Attachment Philippines-4).

- Mapping of the political economy within the corridor area will be continued in FY01, subsumed under the Rapid Assessment of the Corridor Economics (RACE). The list of local government units within the Northern Sierra Madre Natural Park has been compiled (see Attachment Philippines-5).

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.2.1	Political economy mapped by Sept 2000	Mixed Performance
1.1.2.2	Detailed assessment of core areas completed by August 2000	Mixed Performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The completion of the political economy and core areas assessment was delayed due to challenges in hiring appropriate staff willing to travel in the region. However together with the RACE activities in FY01, these assessments are expected to move forward as planned.

Activity 1.1.3

Regional development plans, including both planned and projected infrastructure, will be collected and mapped through networking and working with relevant government agencies.

Progress to-Date:

CI-Philippines has completed the collection of the major Regional Development Plans and Infrastructure Development plans for the corridor region. CI-Philippines continues to closely track progress of area roads construction, particularly those proposed to transverse the Sierra Madre range, and the proposed development of the two Industrial Economic Zones. CI-Philippines has been engaged in policy advocacy against these developments. The data collected is being geo-referenced and formatted at the CI-Philippines GIS unit in preparation for the data analysis (See Attachment Philippines-6)

- CI-Philippines collected the Regional Development Plan (1999-2004) and Tourism Master Plan of Region 2 from National Economic Development Authority and Department of Tourism. The plans include the proposed major road development in the Sierra Madre (road traversing the mountain ranges of Isabela towards the Northern Sierra Madre Natural Park) and other investment projects of the government. Other plans collected were the development plans of the Cagayan Special Economic Zone and the Pacific Coast City in Quezon.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.3.1	Detailed assessment of core areas completed by August 2000.	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The collection of data has been completed, however, all information generated are still being processed at CI-Philippines' GIS Unit.

Activity 1.1.4

Exploration of stakeholder incentives will be done, based on information collection and discussion with key stakeholders within NGOs, local government, regional and national offices of DENR, and the business community. In addition, opportunities to address these incentives will be explored, and concepts for challenging destructive enterprise/Industries, such as conflicts over land use claims and mining, through exploring deal-making opportunities at NSMNP and corridor levels developed. Hold discussions with DENR and relevant agencies.

Progress to-Date:

To date, CI-Philippines has conducted consultations with key stakeholders, and generated available data/information for the exploration of stakeholders' incentives as trade off for the protection of biodiversity. Data generated were land use plans and maps of areas covered by Timber License Agreement, Mining, Community Based Forest Management, Certificate of Ancestral Domain Claim and other management units. The data collected will be used in RACE activities assessing the appropriate incentives or management interventions applicable in specific areas.

- The consultations/assessment was conducted in the Province of Cagayan during the stakeholders meeting facilitated by Cagayan Valley Partners in Peoples Development (CAVAPPED) and in the Northern Sierra Madre Natural Park during the Protected Area Management Board enbanc meeting. The result of the consultations is the formulation of a project proposal for a proposed reforestation and agro-forestry project and the establishment of a community-based project in Cagayan by the Foundation for Philippine Environment.

- CI-Washington Resource Economist Jim Cannon visited the Philippines last August 2000 to participate in the finalization of the position terms of reference, and final employment screening of the resource economist and consultant positions. His visit was also utilized for productive discussions on the Rapid Assessment of Corridor Economics (RACE) design and how specifically it would be implemented for the SMBC program.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.4.1	Stakeholder incentives explored and initial strategies developed by September 2000	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The completion of this activity was delayed due to challenges in hiring appropriately qualified staff either in or willing to travel in the region. However, this activity are expected to move forward within the RACE activities in FY01.

Activity 1.1.5

CI-P will gather and compile the existing baseline biological data of the Sierra Madre corridor area to establish the most up-to-date state of knowledge of the region. CI-P will have discussions and work toward agreements with other institutions to share all current and future data collected for the region. The data will be used to assess significant data gaps in important information additionally needed. Plot data will be analyzed to establish regions of uniqueness and representativeness of both flora and fauna.

Progress to-Date:

To date, about 70% of the baseline biological data collected has been compiled. Most of the biological data were taken from PLAN International, and Department of Environment and Natural Resources. Other available data particularly on vertebrates was gathered from the forest areas of Aurora and Quezon by CI and the University of the Philippines.

- The data sharing partnership with Plan International is being finalized to facilitate access of their data sets on biological information from the Northern Sierra Madre Natural Park.

- A listing of all data on vertebrates within the proposed corridor has been encoded in excel format.

- Map distribution of trees within the 8 hectare plot (part of the 16 hectares) has been acquired from the Center for Tropical Forest Science (CTFS), CI's former partner in NSMNP. Topographic mapping for the 16-hectare biodiversity monitoring plot has been done. The incorporation of these data to the topographic map has been initiated (see Attachment Philippines-7)

  Leonardo Co, CI-Philippines Botanist, and the PLAN International Botanist have already began the identification of the species collected from the 16 hectares plot and in the 1 hectare biodiversity monitoring plots in four forest types (beach forest, mangrove forest, ultrabasic forest and wetland forest) established in Palanan and Divilacan, Isabela.

- Encoding of baseline biological data for birds is in progress, and data sharing is still being discussed with Haribon-Birdlife Philippines to determine future collaborative research work on flora and fauna.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.1.5.1	Existing biological data compiled, including CI-P botanist gathering information on the Forest Dynamics plot and incorporate data from Plan International 1 hectare plots, by September 2000.	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Identification of plant specimens collected from the 16 hectare plot and the four 1 hectare plots by Plan International is affected by Executive Order 247 due to the restrictions of bringing the specimen in herbarium centers to facilitate the identification.

- The collection of information/specimen in the 16 hectares dynamic plot has been stalled due to the expiration of the gratuitous permit required under E.O 247, however, the DENR and the PAMB of the NSMNP is now trying their best to secure the desired permit for the continuation of the establishment of the dynamic plot.

- Awaiting additional information compiled for and generated during the National Biodiversity Conservation Priority Setting Workshop (NBCPSW, December 2000) will also be utilized in SMBC.

Activity 1.2.1

CI will hire a GIS specialist as information system manager to design and operationalize the integrated corridor information system database, work closely with ESSC, CI's Regional Analysis and Conservation Planning Departments.

Progress to-Date:

Oliver Coroza, Ph.D. was brought on in February 2000 as CI-Philippines GIS/IT manager. He immediately started working on the design of the corridor information system. However, given that appropriate sections of the database system devised for the NBCPSW will be used for this system, we are waiting for the latter's completion. Discussions with the ESSC has been on-going for a possible partnership in the spatial analysis of the SMBC area. CI-P and ESSC are already working together for the data and mapping requirements of the National Biodiversity Conservation Priority Setting Workshop.

- A meta-database of maps and sources has been compiled. This will be refined and updated over time with the technical assistance of CI Washington Regional Analysis Dept. Daniel Juhn of CI-WA Regional Analysis Dept. visited the country last September to provide assistance to the GIS unit and discuss the mapping needs and corridor information development support.

- The GIS technician is currently digitizing all acquired maps from government agencies and other sources.

- Some GIS software has been purchased and set up at CI office in Manila. The GIS unit is currently manned by the GIS/IT manager and the GIS technician.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.2.1.1	GIS specialist hired and trained. MOA with ESSC signed by April 2000.	Mixed performance
1.2.1.2	Hardware and software purchased by March 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The partnership being negotiated with ESSC is still under discussion, thus, digitizing of all the maps collected is still being done by the CI's GIS unit. However, because of the volume of maps already available for digitizing, GIS unit is now trying to look for an alternative options to facilitate the digitizing.

- Processing of data is also affected by lack of GIS equipments such as scanner or map plotters, however, with the incoming partnership with the ESSC who has the mapping capability, the problem will be resolved.

Activity 1.2.2

CI-P will negotiate a MOA with PAWB-DENR, NORDECO and ESSC for access of data from these agencies particularly in the proposed Sierra Madre Corridor. (covered under 1.5.3)

Progress to-Date:

CI-P is currently negotiating a number of MOAs including with the Department of Environment and Natural Resources to cover the entire CI-Philippines biodiversity program. A global Memorandum of agreement for the CI-Philippines and Department of Environment and Natural Resources will be pursued instead of negotiating a MOA for individual projects due to the recent policy change of the DENR to centralize the MOA issuance. Data has been made available in some form by other agencies without need for a MOA.

- The MOA with the Foundation for Philippine Environment (FPE) for partnership in the implementation of biodiversity projects in Cagayan corridor is being revised to include the First Philippine Conservation Incorporated (FPCI). The MOA with Environmental Science for Social Change for collaboration in mapping activities for SMBC project is still under discussion (see Attachment Philippines-8 and Attachment Philippines-9) .

- Biological data available from PLAN International, NORDECO and other agencies has been collected for integration into the SMBC information system.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.2.2.1	Data access acquired by September 2000	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The process of centralized issuance of MOAs by the DENR is very difficult, thus, CI Philippines has decided to negotiate for a global MOA covering all programs and projects. For ESSC and other partners, further discussions are still being pursued.

Activity 1.3.1

CI-P will identify focal persons from Palawan, Sierra Madre and Manila office to attend the M&E workshop and training in January 2000. This will form as part of the Corridor Technical team that will develop guidelines for a Corridor-wide Monitoring and Evaluation System.

Progress to-Date:

The M&E training of core staff was done but the preparation of the M&E system is still under process. Two CI Philippines staff, Mariano Roy M. Duya , Sierra Madre Coordinator and Indira Sandilya, Communications Specialist attended the Monitoring and Evaluation workshop conducted by CI Washington. The training focused on CI's Project Cycle Management to include articulating strategies, assembling project portfolios, setting up monitoring and evaluation plans, and conducting adaptive management.

- CI-P M&E trained technical team is continuously in touch with CI-Washington M&E staff for the development of the M&E system for SMBC.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.3.1.1	M&E draft plan with indicators for project performance developed by June 2000.	Mixed Performance
1.3.1.2	M&E focal staff person identified and trained by January 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- The formulation of the M&E system for SMBC is still in progress as the Program Manager for SMBC is newly on board to the project. However, the M&E technical staff has discussed the process of formulating the M&E plan and it is fully expected to be completed in FY01.

Activity 1.3.2

CI-P information moderator or program manager and M & E focal staff will establish a protocol to contribute to the Philippine section of Outlook Public Folder and be able to utilize effectively information on corridor experience in Guyana and Brazil as part of CI Biodiversity Corridor Agreement management process.

Progress to-Date:

CI-Washington USAID Program Management has already established an Outlook Public Folder for the Corridor Project. Currently, documents are being filtered to the CI-Washington Asia Pacific Staff and copied into the Outlook folders for use by other country programs involved in the Corridor Project, as well as all of CI's programs as a reference to the entire project.

- The Program manager served as the information moderator for the SMBC program and is assisted by the Site Coordinators.

Table of progress in meeting key benchmarks:

Bench mark Number	Benchmark/Output	Status*
1.3.2.1	Philippine section of Outlook Public Folder populated with information on Sierra Madre project by May 2000	On-track
1.3.2.2	Information moderator identified for CI-P's contribution to Outlook Public Folder by March 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.4.1

The Corridors team will undertake a series of presentations/meetings at the local, regional and national level to present the corridor concepts to stakeholders within local communities, NGOs, the government and business sectors, to gain support to the proposed corridor and identify potential members of Local Coordinating Unit (LCU).

Progress to-Date:

CI-Philippines has generated considerable stakeholder interest in participating in the SMBC program, or in developing similar approaches in other regions. A series of presentations of the corridor concept have been conducted at the national and local levels. As observed, people are more and more becoming aware of the current situation of the environment and the importance of biodiversity conservation as manifested by their response during presentations. CI-Philippines has also started to identify local coordinating units in the corridor area. The formation of Local Coordinating Units in other provinces covered by the corridor will be patterned after the Technical Assistance Unit of the Northern Sierra Madre Natural Park as it was found to be operational. A list of possible members for the LCUs in Cagayan and Quirino has been drawn up and we are in the process of formal formation.

- At the national level, CI Philippines conducted the corridor presentation to the office of the President of the Republic of the Philippines. The same presentations were made in Manila and Cebu during the high visibility Hotspots book launch and photo exhibitions. The corridor concept was also discussed during the Senate public hearing on the proposed bill of the Northern Sierra Madre Natural Park.

- At the local level, the corridor concept was presented to the Technical Assistance Unit (the group presently coordinating all project activities of Northern Sierra Madre Natural Park), at the Protected Area Management Board-Northern Sierra Madre Natural Park Enbanc meeting, and during the local stakeholders meeting in Cagayan (see Attachment-Philippines-10).

- At the regional level, it was presented during the Foundation for Philippine Environment (FPE) Regional Consultations and FPE-Mindanao Consultation. This resulted in the adoption of the corridor concept by FPE and Philippine Eagle Foundation in Mindanao using the Philippine Eagle as the keystone species for the corridor.

- Formation of a Local Coordinating Unit was initially discussed for the province of Cagayan and Quirino during the stakeholders meeting and consultation with the LGUs. Potential members have been identified for the formal formation as the next series of activities in the SMBC project. For Isabela, a Technical Assistance Unit was already formed for the NSMNP. CI-Philippines was accepted and recognized as official member of the group. The TAU regularly meets every month before the Executive Committee (EXECOM) meeting of the Protected Area Management Board.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.4.1.1	Potential members of LCU (Local Coordinating Unit) identified by September 2000	Mixed performance
1.4.1.2	Sierra Madre stakeholders engaged in dialogue.	On-track
1.4.1.3	National constituency of advocates for corridor concept (e.g., NGOs, corporate sector, government) identified and engaged in dialogue.	Mixed performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.5.1

CI-P will hire a Project Manager, Resource Economist, GIS specialist and consultant to form a formal corridor project team and ensure that individual staff agree and commit to Sierra Madre Corridor Workplan.

Progress to-Date:

Artemio Antolin has been hired as Program Manager of the project Effective September 1, 2000. The following remaining positions were also filled: the GIS specialist, a GIS technician, community organizer and additional site coordinator. The local economist position should be filled shortly as the selection for the position has been completed.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.5.1.1	Relevant CI staff team hired by March/April 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.5.2

Corridor project equipment will be purchased (computer hardware & software, GPS, Radio, phone-lines and field equipment).

Progress to-Date:

Most of the equipment for the SMBC operation has been purchased. CI-Philippines purchased laptop computers for the program manager and site coordinators and desktop computers for SMBC office in Tuguegarao and sub-office in Palanan. Hand held Radios for CI Field Staff and Bantay Kalikasan Brigades have been purchased but we are still waiting for the license for use in the field. This equipment will considerably facilitate improved communication and coordination between the Department of Environment and Natural Resources staff, Bantay Kalikasan Brigade Volunteers and LGUs.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.5.2.1	Equipment purchased by March 2000.	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.5.3

CI will re-establish an on-site presence in the region to accommodate CI-P staff (possibly shared with partners) and facilitate communications and management of the project implementation.

Progress to-Date:

CI-Philippines initially shared space with the CPPAP-NIPA office, however, toward the end of the fiscal year, the SMBC office was established. This office serves as a satellite office of CI to facilitate implementation of SMBC activities in the region (Cagayan, Isabela and Quirino province). Another sub-office is being constructed in Palanan inside the NSMNP compound to serve as the official station of the Community Organizer and Forest Crew who are working closely with the other major players of the park (this is supported by match funding).

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.5.3.1	Contribute to joint communications post for Nordeco, CPPAP and CI in the region	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- There is also a need to establish CI's presence in Aurora and Quezon considering the geographic location of these provinces. The Site Coordinator for this area is currently based in Manila, thus, his presence is not continuous. Based on experience, under the Philippine condition, ground based presence has proven a major factor in project acceptance and support by local stakeholders. Additional staff are therefore proposed to be recruited in FY01 to be deployed in the field.

Activity 1.6.1

CI-P Director and CI-Washington Conservation Finance Director will explore Debt-for-Nature Swap opportunities and assess this mechanism as a possible source of financing for the Sierra Madre Biodiversity Corridor.

Progress to-Date:

CI-Philippines has presented the corridor concept to various institutions including the private sector and the executive branch of the government in order to generate support for biodiversity conservation efforts. Presentations was made to to gain their support to the project. CI-P Country Director presented the corridor concept to two cabinet members, Secretary Edgardo Espiritu of Finance and Secretary Felipe Medalla of National Economic Development Authority. The present Administration is now in the process of discussion for Debt-for-Nature Swap mechanism to support biodiversity conservation.

CI-P is also continuing discussions on the protection of the NSMNP under the Tropical Forest Protection Act. Persons of contact are:

- Donna Gasgonia: Presidential Assistant on Poverty Alleviation
- Charles Barber: Foundation for Philippine Environment Board Member
- Catalina Jensen: USAID Philippine Mission
- Mike Yates: USAID Philippine Mission
- John McAward: Consultant USAID Philippines

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.6.1.1	Position Sierra Madre Biodiversity Corridor vis-à-vis US Tropical Forest Protection Act by September 2000	On-track

*Status may included activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 1.7.1

CI-P communications specialist will develop an outreach strategy for the biodiversity corridor, based upon a review of compiled information of awareness programs and strategies undertaken to date, or currently, by other agencies. In addition, CI-P will develop informational education communications (IEC) materials to increase awareness of the corridor project objectives and activities on the local, regional and national levels. These materials will be geared towards local communities to generate interest in the program, as well as decision-makers in order to bring about changes in policy. Local level outreach is designed to build a local stakeholder interest and buy-in and to leverage these local constituencies engagement in influencing policy and decision-making.

Progress to-Date:

The formulation of an outreach program for awareness campaign is in progress. Initial consultations for the national campaign have begun and preparations are underway. This campaign will be a multi-partner effort. However, this is a considerable effort requiring the assistance of other partners. As a part of the process, a perception survey was conducted to generate appropriate information needed in the formulation of the strategy. CI-Philippines has already developed information materials for the awareness raising activities. The awareness raising activities includes:

- CNN International, with active support and participation of CI Philippines, produced and aired an episode on the Sierra Madre recently. This footage is also available on the CNN website, including quotes from CI-P staff. (see Corridors first bi-annual report, March 2000).

- CI produced and distributed 3,000 calendars for the year 2000, promoting conservation of the Sierra Madre. Another 2,000 copies have been distributed within the Park, and are in wide use by stakeholders. (This activity was covered by other funding).

- A poster making contest was held in the Northern Sierra Madre Natural Park. The competition was participated by 5 High Schools inside the park. This activity was sponsored by RICOH Inc., Japan. The winning posters were displayed in the NSMNP center in Palanan for a period of two weeks. Efforts are now being undertaken to feature the winners' posters in the calendar for 2001. (This activity was covered by match funding).

- CI has collated baseline information in five barangays, by conducting both qualitative and quantitative assessments on the Knowledge, Attitude and Practice (KAP) of the community and Park officials towards biodiversity conservation. A report has been completed (See Attachment Philippines-11).

- Ecology Lecture manuals are being developed for the Bantay Kalikasan Brigade (BKB). This will enhance their capability in carrying out Information Education Campaign (IEC) in their own barangays.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
1.7.1.1	Awareness program and IEC materials developed and displayed in IPAS meeting hall in Palanan by April 2000	Mixed Performance
1.7.1.2	Effective participation into IEC plan of Interagency Group provided	On-track

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Information Education Campaign materials (educational) that were to be displayed at the NSMNP center, have been postponed to the end of the calendar year.

Activity 2.2.1

CI-P will help strengthen enforcement capacity of NSMNP through the creation of a volunteer community forest guard program in Barangay Sapinit, Dicambangan, Dicaruyan in Divilacan and Villa Robles-Bisag and Didadunganin Palanan. The program will be created through a series of consultations, planning and appropriate negotiations with the communities involved.

Progress to-Date:

Formation of Bantay Kalikasan Brigades in the target barangays has been completed. The Local Government Units within the Northern Sierra Madre Natural Park endorsed the formation of the Bantay Kalikasan Brigade through Sanguniang Bayan Resolution. Hand held radios for the community volunteers have been purchased, but are awaiting distribution through DENR for receipt of appropriate license. All 50 members of these Bantay Kalikasan Groups in Palanan received deputization papers during their paralegal training, and now ready to perform their respective functions. The deputization of Bantay Kalikasan Brigade volunteers is important for them to officially and effectively execute their duties and responsibilities particularly in the monitoring of illegal activities and apprehension of perpetrators. Bantay Kalikasan Brigades are now actively involved in forest protection activities particularly on monitoring extractive activities in their respective barangays. A similar paralegal training will be conducted next year for the Bantay Kalikasan Brigade in Divilacan and Maconacon. (see Attachment Philippines-12, and Attachment Philippines-13)

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.2.1.1	Agreements with environmental committees of barangay, PASu and CFG in place by September 2000	Completed
2.2.1.2	Equipment provided for community forest guards	Completed
2.2.1.3	Operation of community forest guards.	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- CI-Philippines' Community Organizer is working the Protected Area Superintendent and National Integrated Protected Areas, Inc. (NIPA, Inc.) to facilitate the gathering of the deputization requirements of the Bantay Kalikasan Brigades in Divilacan and Maconacon.

Activity 2.2.2

CI will propose mechanisms for strengthening the effectiveness of the PASu and explore avenues to provide support for Protected Area Superintendent (PASu) in NSMNP including providing budgetary support outside DENR budget structure.

Progress to-Date:

CI has been and will always be supportive to the Park Superintendent. The Inter-Agency Coordinating Group and now Technical Assistance Unit, of which CI is a member, provides technical assistance to the Park Superintendent and his staff including the Bantay Kalikasan Brigade and the Protected Area Management Board. Aside from technical assistance, CI also facilitates regular holding of the PAMB meetings.

- The Park Superintendent has requested CI-Philippines technical assistance in various activities within the park (see Attachment Philippines-14). These activities were based on the draft 5-year implementation for the NSMNP Management Plan.
- CI conducted training of the Bantay Kalikasan Brigade Volunteers and will continue to assist in the capability building in FY01.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.2.2.1	Mechanism for strengthening the effectiveness of the PASu developed by September 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

Activity 2.3.1

CI-P corridor staff and partners will collect data on proposed roads, logging and mining in NSMNP. CI-P and CI-Washington Resource Economists will work in close partnership to develop arguments and alternative land-use strategies for advocating with decision-makers. In addition, information based on other CI experiences will be incorporated into the strategy.

Progress to-Date:

An Environmental Impact Assessment (EIA) and an Environmental Impact Statement (EIS) of logging companies currently operating within the vicinity of NSMNP have been acquired. Likewise, Exploration Permit Application (EPA), Mineral Production Sharing Agreement (MPSA) and Financial Technical Assistance Agreement (FTAA) have also been acquired for the provinces of Cagayan, Isabela, Quirino, and Nueva Vizcaya in digital form and converted to files readable in Arc View. These documents will be useful in the RACE activities to be conducted in FY01.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.3.1.1	Data gathered and mapped and proposed strategies developed by September 2000	Delayed
2.3.1.2	Information gathered from other CI experiences: e.g., Bolivia, Brazil, Guatemala by March 2000	Delayed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:

- Gathering of complete data on the proposed roads traversing the Sierra Madre is still in the process of discussion with the National Economic Development Authority (NEDA) and the Department of Public Works and Highways (DPWH). These agencies are the primary proponents of the road development project.

- The arguments and the alternative land-use strategies for advocating with decision-makers is still to be developed, but is expected to be the major outputs generated from the RACE activities in FY01.

Activity 2.5.1

CI-P corridor staff will work with the Park authority to strengthen on-site protection and enforcement infrastructure of NSMNP by conducting capacity training (concepts of biodiversity, legal aspects etc.) of community forest guards. (ref. 2.2.1)

Progress to-Date:

Please refer to activity 2.2.1 for a complete update of this associated activity.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.5.1.1	Consultation, planning and negotiation initiated for the establishment of community forest guards in selected barangays in Palanan and Divilacan by August 2000.	Mixed performance

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Please refer to activity 2.2.1 for related information.

Activity 2.8.1

CI-P will develop a concept on rehabilitation and reforestation at "blue lagoon" aquifer in Villa Robles and assess the viability of the activity within the park.

Progress to-Date:

A reforestation and agro-forestry support proposal has been formulated and submitted to RICOH Japan Inc. for evaluation for possible funding (See Attachment Philippines-15). The communities within the vicinities of the blue lagoon are full participants in proposed project. In this way the sense of ownership will be cultivated to ensure the project protection including the adjacent forest areas.

Table of progress in meeting key benchmarks:

Benchmark Number	Benchmark/Output	Status*
2.8.1.1	Concept developed for pilot reforestation project at 'Blue Lagoon' aquifer, Villa Robles, by April 2000	Completed

*Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Problems, delays, shortfalls and proposed solutions:
Nothing to report at this time.

III. Other Appendices

Attachments for each of the three Corridor Cooperative Agreement countries follow.

Corredor ecológico ligará MS a GO

De acordo com a Conservation International, o corredor terá extensão, em linha reta, de cerca de 300 km

WALDEMAR GONÇALVES JR.

Uma equipe de ambientalistas e pesquisadores está mapeando milhares de hectares entre o Parque Nacional das Emas, em Goiás, e os parques Nacional do Pantanal e Estadual do Rio Negro, em Mato Grosso do Sul. O objetivo do trabalho é estabelecer um corredor ecológico entre o cerrado e a planície pantaneira com uma extensão, em linha reta, de cerca de 300 quilômetros.

O mapeamento está sendo coordenado pela Organização Não-Governamental (ONG) Conservation International em parceria com a secretaria estadual de Meio Ambiente (Sema) e Fundação Emas, com financiamento da agência norte-americana de desenvolvimento internacional (USAID). Em cerca de um ano foram coletados dados de pelo menos 200 mil hectares na região do Parque Nacional das Emas e 300 mil hectares na região do rio Negro.

Reinaldo Lourival, coordenador para o Pantanal da Conservation International, explica que a implantação dos corredores ecológicos foi um dos compromissos firmados pelo governo brasileiro na Eco-92. A medida, comenta, é uma forma de evitar que espécies de animais e plantas permaneçam isolados em áreas de preservação, o que pode ocasionar perdas genéticas e prejuízos ambientais, econômicos e sociais incalculáveis.

Entre o cerrado e o Pantanal, conta Reinaldo Lourival, existe uma interdependência natural, ou seja, várias espécies ocorrem nos dois ecossistemas. Com a devastação promovida pelo homem, essa ligação pode ter sido afetada e precisa ser recomposta, mantida e preservada, avalia o ambientalista.

Com o mapeamento, que compõe a primeira etapa do projeto de implantação do chamado corredor cerrado-Pantanal, os pesquisadores esperam ter a composição exata de toda a área que liga o planalto à planície pantaneira. A partir daí, comenta Reinaldo Lourival, será possível definir qual a rota do futuro corredor, levando em consideração, entre outras coisas, características do terreno, como leito de rios, cadeias de montanhas, remanescentes de mata nativa, vetores de desenvolvimento – cidades, estradas, ferrovias – ou trajetórias naturais de migração.

Em seguida, pesquisadores e ambientalistas poderão definir ações de recuperação de áreas degradas e criação de reservas legais, por exemplo. Para que este trabalho se concretize, ele espera contar com o apoio de sindicatos rurais, ONGs, universidades e, principalmente, da comunidade como um todo.

"É fundamental termos o apoio da sociedade, porque este trabalho é de educação ambiental também, precisamos reavaliar os conceitos de desenvolvimento", indica Reinaldo Lourival. Em diversas propriedades rurais, por exemplo, poderá haver necessidade de readequação de reservas legais, além de buscar soluções de problemas como o assoreamento dos rios, completa.

O projeto de implantação do corredor ecológico é um dos únicos no mundo e não tem data prevista para terminar. A primeira etapa deverá ser concluída em até 18 meses, em seguida, a Conservation International deverá sair em busca de novos parceiros para dar continuidade à iniciativa.

Pesquisadores observam imagem aérea coletada sobre a região pantaneira

Para coletar imagens e compará-las aos dados registrados por satélite, os pesquisadores estão contando com o auxílio da Polícia Militar Ambiental (PMA). Todo o trabalho aéreo é feito a bordo do Tremendão, o avião utilizado pela corporação no Pantanal.

Reinaldo Lourival explica que, paralelo ao mapeamento, outras pesquisas estão sendo desenvolvidas por entidades e instituições que colaboram com o projeto. Os trabalhos, explica, pretendem revelar qual a importância das rotas de migração para as mais variadas espécies dos dois ecossistemas, sendo que essas informações serão analisadas em conjunto com os dados mapeados para se chegar ao melhor trajeto a ser definido.

Attachment Brazil-1: Newspaper article explaining the purpose of the corridor project developed BY CI and the Emas Foundation with support from USAID.

JORNAL DO BRASIL
FUNDADO EM 9 DE ABRIL DE 1891

Ciência

Corredor servirá para ligar biomas

Interligar áreas de vegetação isoladas para garantir o fluxo de espécies. Este é o objetivo do Projeto Corredores Ecológicos, uma iniciativa da ONG Conservation International, em parceria com o Ministério e as secretarias estaduais do Meio Ambiente. Com sete corredores já delineados na Amazônia (cinco) e na Mata Atlântica (dois), a ONG se prepara para implantar mais um corredor, ligando os biomas Cerrado e Pantanal.

A proposta de criação do novo corredor, que vai do Parque Nacional das Emas (GO) ao Parque Nacional do Pantanal (MT), será apresentada no Encontro Internacional de Integração Técnico-científica para o Desenvolvimento Sustentável do Cerrado e Pantanal, que começou sábado e vai até depois de amanhã, no Colégio Santa Teresa, em Corumbá.

O conceito de corredor ecológico inaugura uma nova estratégia de conservação, substituindo ações locais e isoladas por iniciativas regionais. "Ao isolar áreas de vegetação, impedimos que a fauna e a flora circulem pelos ecossistemas, o que contribui para a perda da biodiversidade", diz Reinaldo Lourival, coordenador para o Pantanal da Conservation International.

Via – A idéia é assegurar uma via de circulação permanente para as espécies, permitindo o fluxo gênico entre os biomas. "É isso que possibilita a evolução. Quanto maior a variedade das espécies, mais facilmente elas se adaptam às diferentes situações. Caso contrário, uma doença é capaz de le-

em 1998, com cientistas de diferentes especialidades, que apontaram 87 áreas prioritárias para conservação no Cerrado e no Pantanal. Financiado pela Usaid, a ONG está fazendo um levantamento destes pontos para identificar vazios de vegetação que deverão ser reflorestados para garantir a continuidade do corredor.

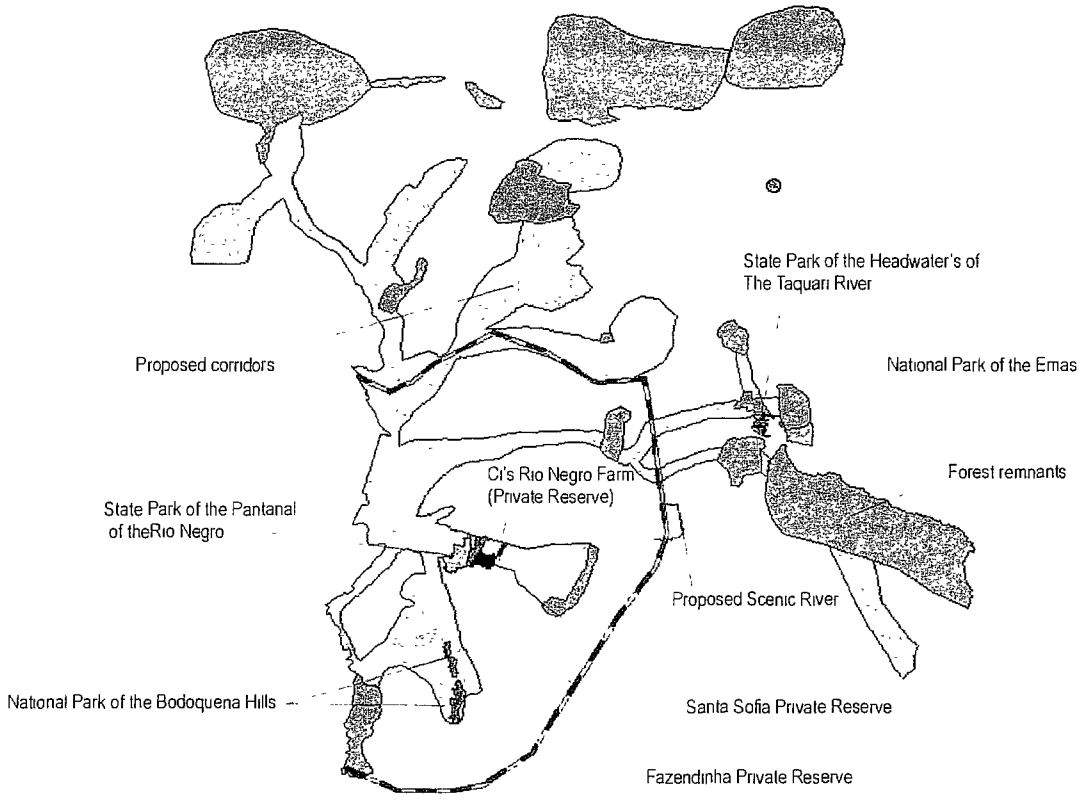
Além disso, a ONG vem identificando propriedades rurais localizadas nos 700 km de extensão do corredor ecológico para tentar convencer os fazendeiros a criarem suas próprias reservas. O proprietário não vai deixar de criar gado ou abrir mão de suas plantações. Ele só precisa demarcar uma área onde serão permitidas apenas atividades de desenvolvimento sustentável, como estudos científicos e ecoturismo. Em troca, as fazendas ficam isentas de pagamento do Imposto Territorial Rural (ITR), independente do tamanho da reserva.

Lei – Reinaldo também está tentando fazer cumprir a lei que obriga os donos de terra a manterem 20% da propriedade com vegetação nativa. "A maioria nem sabe que a lei existe", diz. Para evitar perdas de produção com a redução da área de cultivo ou de pastagem para se adequar à legislação, o biólogo está propondo que os fazendeiros adquiram áreas de tamanho equivalente a 20% de suas propriedades dentro do corredor ecológico. Os fazendeiros passariam a ser responsáveis pelas unidades de preservação, arcando com os custos de sua conservação.

O projeto da Conservation Internacional prevê ainda o fer-

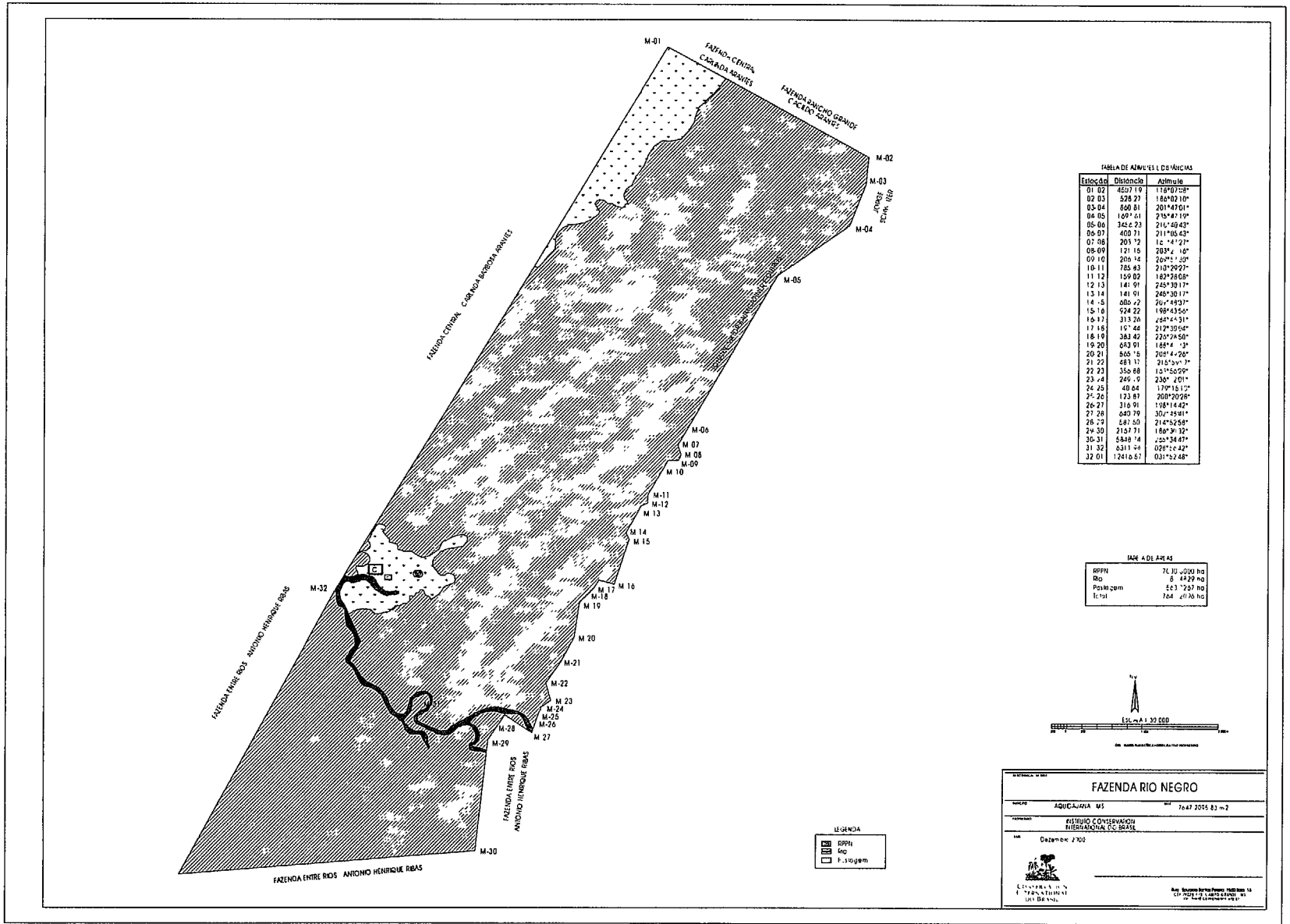
Attachment Brazil-2 Newspaper clipping about the corridor program.

Attachment Brazil-3

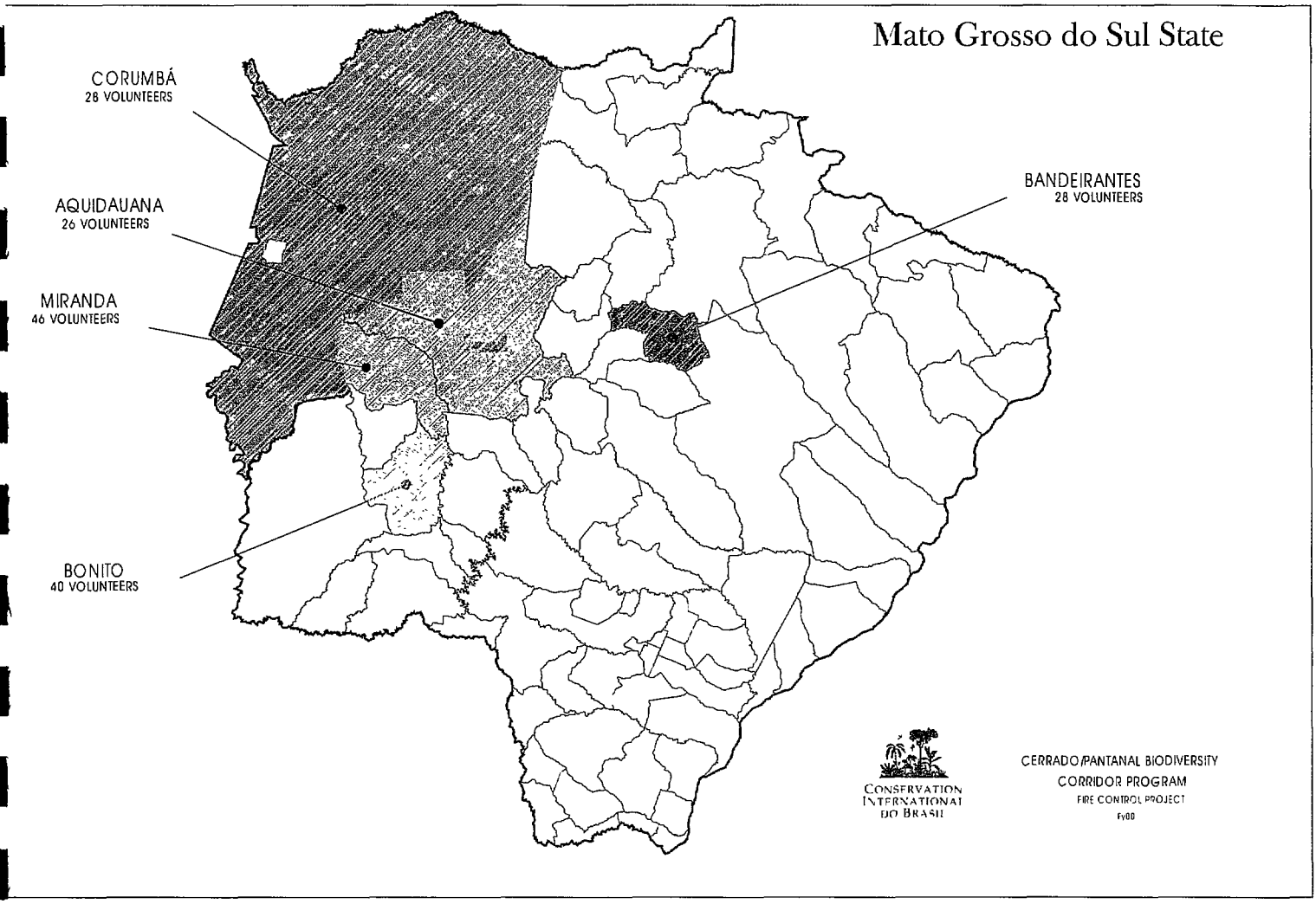


Attachment Brazil-3: Proposed Corridor areas and core nuclei.

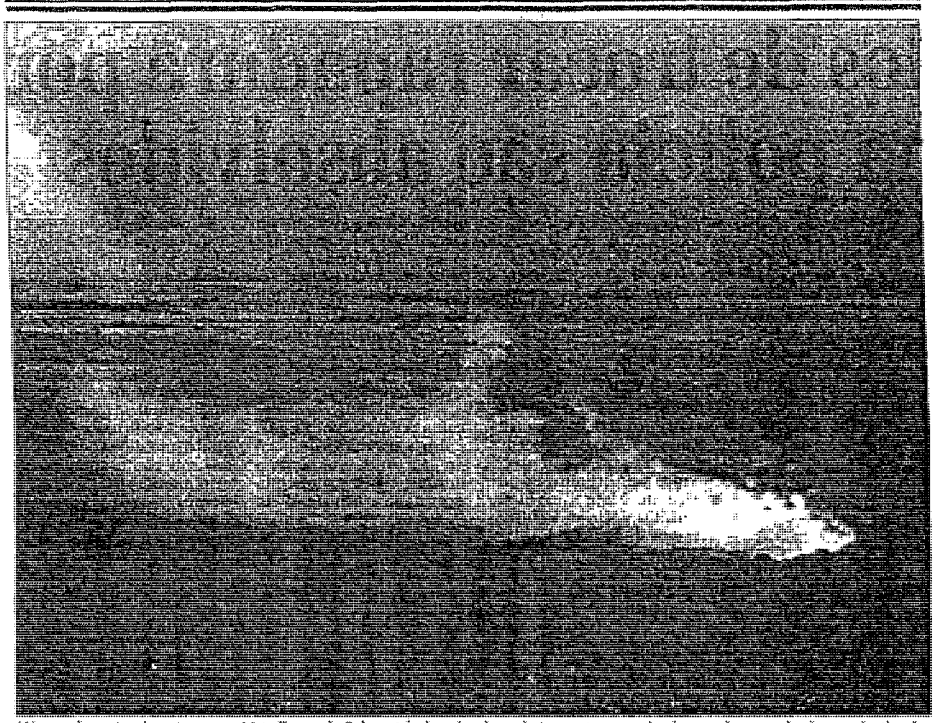
Attachment Brazil-4



Attachment Brazil-4: Fazenda Rio Negro Private Reserve. The striped area indicates the private reserve.



Attachment Brazil-5: Map of the State of Mato Grosso do Sul indicating the towns where fire brigades were created by CI and partners.



Número de queimadas este ano em Mato Grosso do Sul vem sendo reduzido gradativamente, graças às chuvas e à campanha de conscientização

Índice de queimadas cai 90% em agosto no Estado

De 4,4 mil focos de calor registrados em 1999, este ficou reduzido a 400, segundo Ibama

O número de focos de calor em agosto em Mato Grosso do Sul reduziu em 90,1% em relação ao mesmo mês do ano passado. Um dos fatores que contribuíram, aliado às chuvas com maior intensidade, foi o envolvimento de alguns segmentos ao Prevfogo até então resistentes, como os produtores rurais e entidades ambientalistas.

No ano passado, foram registrados no Estado 12.678 focos de queimadas e incêndios, atingindo 600 mil hectares no cerrado e no Pantanal. O encontro internacional sobre as duas regiões, a ser promovido em Corumbá pela UCDB, de 2 a 6 de setembro, discutirá a prevenção e o controle do fogo.

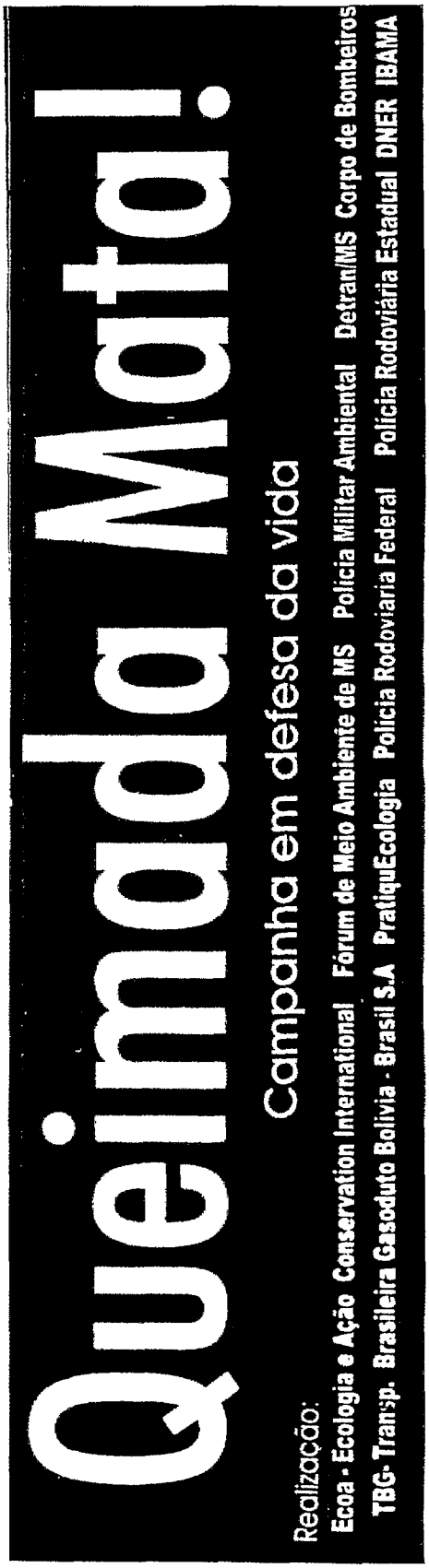
Até o dia 28 deste mês foram registrados 434 focos, contra 4,4 mil no mesmo período de 1999. Nos últimos oito meses, com base em informações do Inpe (Instituto Nacional de Pesquisas Espaciais), ocorreram 1.583 casos de queimadas, número inferior ao período de janeiro a julho do ano passado, quando ocorreram 1.659 focos.

As regiões com maior incidência de queimadas em agosto de 1999 foram: Aquidauana (46 focos), Corumbá (41) e Porto Murtinho (34). O Inmet (Instituto Nacional de Meteorologia) previu que as queimadas e incêndios este ano seriam superiores a 1999 na região norte de Mato Grosso do Sul e no Pantanal. Contudo, segundo dados do Prevfogo, esta possibilidade está descartada porque as condições climáticas não são favoráveis à propagação.

Apoio – "A chuva é o melhor bombeiro, e tem chovido nestas regiões", disse o coordenador do Prevfogo/Ibama, Márcio Yule Ferreira. A redução dos focos em relação ao ano passado, segundo ele, deve-se, também, a uma maior articulação entre os órgãos públicos e entidades que integram o programa. "Os comitês passaram a discutir fogo diariamente e entidades como a Famasul estão nos apoiando".

Os comitês municipais já funcionam nas cidades de Campo Grande, Miranda, Bonito e Bodoquena. Um quinto está em formação em Chapadão do Sul. O Prevfogo hoje conta com 13 brigadas e mais de 430 voluntários. O programa pretende solicitar o apoio das empresas de transporte interestadual, para que os motoristas comuniquem os focos que observarem em áreas próximas das estradas.

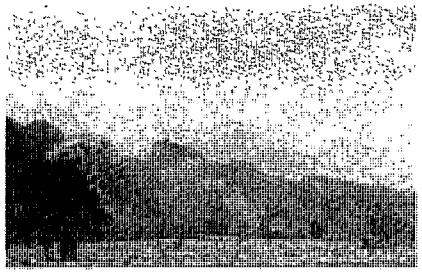
Attachment Brazil-6: Newspaper clipping showing huge reductions in the number of hot spots in the areas where fire brigades were created.



Attachment Brazil-7: Sticker distributed by CI and partners during the campaign to raise awareness about uncontrolled fires started on roadsides.

Attachment Brazil-8

Não Queime. Preserve a Vida.



A maioria dos incêndios e queimadas registrados por satélite tem origem nas margens das rodovias. Em Mato Grosso do Sul o número de queimadas de janeiro a junho de 2000 atingiu o alarmante índice de 989 foco;.

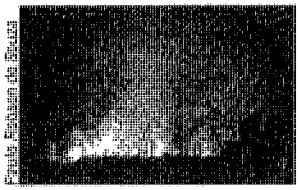
As queimadas nas rodovias trazem graves conseqüências à população e ao meio ambiente;
A fumaça provocada pelos incêndios dificulta a visibilidade dos motoristas, podendo causar acidentes com vítimas fatais;

Queimar florestas, pastagens e vegetação na beira de estradas coloca em risco fiações elétricas, o funcionamento de aeroportos, a vida de animais e da população;

Além disso, o grande numero de queimadas é uma das principais causas da poluição atmosférica, de graves problemas respiratórios e de saúde pública em geral;.

A legislação prevê prisão e multa para quem provocar queimadas ou incêndios florestais.

Queimada é crime contra a vida!



Corpo de Bombeiros / MS

IBAMA

Atenção

- Não atire cigarros ou fósforos acesos nas margens das rodovias;
- Não faça queimadas próximo a rede elétrica;
- Não solte balões;
- Não coloque fogo em áreas de pastagens secas na beira das estradas;
- Não acenda fogueiras. Se tiver que acender uma, escolha um local seguro e apague-a totalmente ao sair;
- Produtor rural: utilize formas alternativas de manejo de pastagens, evite queimar;
- Não coloque fogo em terrenos baldios;
- Apague pequenos focos de incêndio próximos à florestas e pastagens ou à beira das rodovias, mesmo que não pareça perigoso;
- Se a queimada for pequena, você pode apagar com terra ou água;
- Se avistar fumaça suspeita ligue [redacted] o di[redacted] qu[redacted]das.[redacted]

Preliminary Socio-Economic Survey of Amerindian Communities in The Kanuku Mountains Area

Gordon Forte

September 2000

Output of workshops held there

January 24 to February 12, 2000

moderated by

Gordon Forte
Juliet Solomon
Ravi Cummings
Dhanmattie Sohai

Acknowledgements

This consultancy report reproduces information collected in participatory workshops in eleven villages of the Central and South Central Rupununi Savannahs, commissioned by Conservation International Guyana. True authorship of the work belongs primarily to the villagers who gave their time and their minds to a collaborative effort to document their concerns and many aspects of their daily lives. Their names are listed, in alphabetical order in tribute to the egalitarian nature of their society, in an appendix. Others unnamed made contributions in meal preparation and accommodations. All who made the survey teams welcome in their communities, and smoothed the conduct of the field phase of this work, are owed the appreciation and gratitude of the consultant and of the sponsors of the entire activity.

Appreciation is also due to officials of the Region 9 Administration for essential support of the project, and to several non-Amerindian Rupununi residents who gave valuable local knowledge and advice, which assisted effective communication between collaborators of different cultural backgrounds.

The consultant is grateful for the dedicated work of Ravi Cummings, Juliet Solomon and Dhanmattie Sohai in the survey fieldwork and reporting. The assistance of Laurice Franklin, Field Coordinator of CIG, was most welcome. Ravi Cummings redrew the maps which were made by the workshop groups. The area map was redrawn by Gordon Forte from a Region 9 map made by Maurice Phillips of Lethem. The patience, understanding and guidance of Neville Waldron, head of Conservation International Guyana, has been essential to the project, from conceptualization to reporting, and is here thankfully acknowledged.

The consultant is solely responsible for the accuracy of all information represented in this report. All errors of fact or omission are due to the consultant, and all interpretations, views and opinions expressed are those of the consultant and not those of Conservation International Guyana.

Contents

1. Introduction

This report is part of the output of a contract between Conservation International Guyana and a private consultant to carry out a survey of socio-economic conditions of the indigenous populations in the vicinity of the Kanuku Mountains, where Conservation International is preparing to initiate discussions with public participation in establishing a Protected Area. The contract is reproduced as Appendix 1 of this document. It specified outputs not only in hard data usable by CI in their work on Protected Area proposals but also in helping the local populations become willing and ready to make a contribution to CI's proposals.

In defining the scope of the contract, CI officers, Neville Waldron and Lisa Famolare, had a series of communications with the consultant, Gordon Forte, in which a synthesis was reached between the expressed needs of the organisation and the perspective of the consultant. After the contract was agreed, the field phase produced feedback which caused an evolution in the scope of the objectives and had to be incorporated into the methodology and the way the project was conducted and presented. The express rationale upon which the activity came to be based is best summarised in an excerpt from a memo from the consultant to the head of CI Guyana dated February 28, 2000 on the subject of the process employed in the project:

> The approach we used in the workshops was as follows:
>
> 1. The Government of Guyana has asked CI to help in preparing a plan for the establishment of a Protected Area in the Kanuku Mountains.
> 2. CI is an NGO with membership of people who are concerned with the effects of deforestation on the common future of the entire human population. CI collects money internationally to use in protecting forests from destruction, by gaining and using knowledge of how nature works.
> 3. A Protected Area is essentially but a set of rules about who can go into the area and what they can do there. The Government has to bring any new rules to Parliament so they are part of national law.
> 4. CI agreed to help the GoG, but insisted that the people whose lives might be affected by new rules over the Kanuku area had to be involved in making and implementing the rules. This is because regulations over the use of the Kanukus can only succeed if they make use of Makushi and Wapishana knowledge.
> 5. CI will therefore help the people who live in the vicinity of the Kanukus to make their contribution to a set of rules which will best ensure that the forests there do not turn into wasteland in the future.
> 6. CI, working through CI Guyana, have chosen to start this process by sending us to collect basic information about the people who live near the Kanukus, so everyone will know about these communities and why they should be involved in the Protected Area process.
> 7. At the same time, some of the questions we are asking about the communities are intended to encourage the people of these villages to think about their situation, particularly regarding resource use in the Kanuku Mountains, so they can make carefully considered inputs into the new rules which have to be prepared.
> 8. The basic information collected about the villages may be shared with Government agencies and other organisations which are interested in the situation of Amerindian communities, for the sake of development projects among other purposes.
> 9. We have started by asking the village leaders to organise two-day workshops of a full cross-section of each community plus their elected leaders. We prepared a discussion guide to help us get the hard facts which CI and other agencies like to have, but came prepared to hear discussions on any issues affecting the communities. Our overall interest is to learn how the Kanuku area people feel about their situation and how they would like to see it improved through the introduction of new rules over resource use in the Kanuku Mountains.

This report presents data gathered in the fieldwork according to the original terms of the study.

2. Literature Review

The first item of the consultancy contract, to conduct a literature review and identify the information needing to be collected, was reported in a memo on the subject dated 24 November 1999 from Gordon Forte to Neville Waldron of CI, reproduced here:

> I have done a literature review on socio-economic aspects of natural resource use, traditional, current and potential, in the area envisaged for a Kanuku Protected Area.
>
> The documents consulted include:
>
> *Report of the Amerindian Lands Commission*, 1969.
>
> Amerindian Act, Chap. 29:01, *Laws of Guyana*, as amended 1976.
>
> *Guyanese Amerindian Populations in the 1980s*. Amerindian Research Unit, 1989.
>
> *The Material Culture of the Wapishana People of the South Rupununi Savannahs in 1989*. Amerindian Research Unit, 1992.
>
> *A Biological Assessment of the Kanuku Mountain Region of Southwestern Guyana*. Conservation International, July 1993.
>
> *Preparatory Study for the Creation of a Protected Area in the Kanuku Mountains Region of Guyana*. Final Report. Agriconsulting SpA (EC consultants), August 1993.
>
> *Baseline Information on Amerindian Communities in Region 9*. Report produced for GOIP by ARU, September 1994.
>
> From all I can find in the literature, and based on proximity to the Kanuku mountains, I would suggest we have to deal with ten main population centres:
>
> Nappi (with Parishara, Hiowa), est. pop. 1000
> Moco Moco est. pop. 380
> Kumu, est. pop. 280
> St Ignatius, est. pop. 480
> Parikwarunau, est. pop. 150
> Shulinab, est. pop. 520
> Sand Creek, est. pop. 840
> Rupunau (inc. Kataleriwau), est. pop. 220.
>
> (These population figures are taken from unpublished updates to the ARU's data in 1998 and 1999.)
>
> At this stage I have excluded Potarinau, farther west than Shulinab, Katoonarib, southwest of Sand Creek, and Shea, southeast of Rupunau, because I have the impression that their people relate little to the mountains, but this can be checked on a short visit.
>
> From the literature review I have identified what hard data exists on these communities. It is very little and all dated. The 1994 publication of social information does not give details of natural resource use, whereas the 1993 publications which describe the biodiversity contain very little mention of the anthropic factor. The existing literature, in short, will be useful to the project now proposed only for limited diachronic cross-checking of new data that will be gathered in the year 2000.
>
> For your ultimate purpose I have sketched out a summary of socio-economic data which needs to be considered, to show among other things:

Central settlement — location & communication
Satellite settlements — location & communication
Population & age breakdown, No. of households
Extent and nature of land title
Land area in use — location & communication
Land availability & resource classification
Administration, leadership, Admin infrastructure
Education infrastructure
Health infrastructure, water supply and infrastructure
Skills base/human resource potential
Persistence and strength of traditional culture
Gender participation in community activity
Farming — what, how, when and where
Fishing — what, how, when and where
Hunting & trapping — what, how, when and where
Gathering — what, how, when and where;
Craft production & marketing
Mining — how, when and where
Migrant labour — what, when and where
Other economic activity — what, when and where
Subsistence vs market activity

This indicative list may of course be added to as your project planning matures, to reveal the current situation regarding natural resource use in and surrounding the Kanukus.

The new data can be used in two main ways. First it can be collated in the form of a Geographic Information System in which, agglomerated with similar data from other hinterland communities, it can be shared among several agencies and institutions with related interests. Selective dissemination can help raise awareness in the wider community of the desirability of a PAS in this and other regions. Secondly it will be fed back to the villages concerned, to be used as a focussing tool in the process of self-analysis which its very collection in and by the communities will have started. It is the expectation of the project now proposed that that reflexive process will lead to a truly indigenous view in favour of the establishment of a Protected Area in the resource area.

3. Methodology

The workshops which produced the information reported herein were preceded by a preliminary or reconnaissance trip undertaken in the final week of 1999. The consultant and an assistant visited in sequence all ten villages included in the original project design, (see list in Literature Review) plus the regional centre in Lethem and then one other village, Yupukari, which local advice deemed essential to the study. The Touchau and other leaders of each village were contacted and requested to organise a two-day workshop to be funded and facilitated by consultant teams on a predetermined schedule. Complete agreement was secured in all the villages and the schedule had only to be amended to include the additional village, and to switch dates between two other villages for protocol reasons. The consultant's trip report, with the schedule of workshops as thus amended, is reproduced in Appendix 3 to this report.

The discussion guide prepared for the survey workshops is reproduced as Appendix 5 of this document, and it is used somewhat loosely to guide the format of this report itself. As anticipated, discussions in the workshops ranged outside the heads of the discussion guide. This was allowed and encouraged because it enabled the facilitators to gain insights into many of the preoccupations of the indigenous population, and accelerated an understanding of the social and psychosocial background against which the development of Protected Area will have to take place.

A central feature of this background is the heightened political consciousness of Amerindians in this among other parts of Guyana. The indigenous people with whom we worked in this project are, in their local communities, in their elected leadership and in their regional democratic structures, insistent on their right to be consulted in any changes which may affect them. They are all particularly sensitive to issues of land tenure and land use, and aware that they hold the power to promote or retard the progress of outsider initiatives over their physical domain. The people whom we met had not waited for us to "encourage the people of these villages to think about their situation" (as stated in our approach to the workshops) but had already been in enough introspection to have formed strong views on land use which they insist they must contribute to any proposals for Protected Areas.

A large part of our survey discussions therefore centred on the process by which CI could gain access to the views of this population, and by which CI would assist them in formulating proposals. We thus became involved in the ongoing evolution of representational structures in the region, and were invited to take part in regional discussions by indigenous leaders on environmental monitoring and education. To a significant extent the project grew in scope, from gathering information for use by authorities outside the field, to assisting the design of consultative processes to facilitate Amerindian participation in high-level planning for their future land use. It also received warning that Amerindians will similarly insist in their involvement in implementation, operation and evaluation of any systems finally approved. A lot of our time in the field, and in subsequent contacts with the indigenous leadership, was spent in reassuring them that CI shared their ideals for self-determination of native peoples everywhere, and respected the institutions which exist or are in formation in Region 9 for giving voice and effect to those ideals.

All workshops took place on schedule and met with qualified success. They took the form of focus group sessions structured by use of a discussion guide prepared with the same headings mentioned above, contexted by introductory explanations on the CI side and by opening remarks on the participants' side. They achieved very frank discussions on the state of development in the villages, the priorities of the villagers for future actions and conditions, and an identification of existing problems and preferred solutions. Such discussions could not be forced into as quantitative a mode as would have produced a more formally structured output from the exercise. The headings of the discussion guide were all visited, but the information gained was more illustrative of themes of participants' concern than filling up lists of answers to

predetermined questions. As a result reporting the workshops became more a matter of understanding, reflecting and analysis than simply tabulating factual responses. This has to affect an evaluation of success in providing the hard data required for CI's purposes.

Other qualifications to the success of the workshops are as follows. First, not all the data specified in the discussion guide could be recorded because (a) some of it represented family or personal information that villagers were unwilling to confide to strangers; (b) in several instances hours had to be spent (in one village fully half the workshop time) overcoming strongly expressed opposition to the very idea of a Protected Area, which left insufficient time for systematic data collection; and (c) even in the most cooperative communities two days was not enough time to answer all the questions in detail. Second, as mentioned earlier, we found on the ground that all the participants had already formed views not only on the subject of conservation but on their right to voice those views and have them influence the provisions of any schemes to affect land use. This drew the discussions into the role of CI in preparing such schemes, and the provisions CI had in mind for taking local views into account — an area which we could not yet have fully discussed with CI. In short, the focus of the workshops shifted in the event from simple data-gathering to preliminary discussions on the Protected Area planning process and on the Amerindians' part in that process.

The same shift occurred in our relations with the Region 9 administration. The elected leadership of the whole region have firm policies and aspirations for the involvement of Amerindians in all decisions which will affect their future, and they are conscious of the sensitivity of land use issues among the grassroots. We therefore had to make opportunities to explain CI's intentions in a way that secured official support for our work, indeed our very presence, in the Region. Because such large issues are at stake, land rights being at the very centre of Amerindian concerns, we could not hope to gain immediately wholehearted enthusiasm for the Protected Area cause or CI's leadership in it. However we managed to begin a cordial dialogue with these key figures which stands a chance of winning official approval, without which the local communities will never give the necessary cooperation and collaboration to CI's work in regard to a Protected Area in the Kanukus.

The Operations Plan (see Appendix 2) contained in the contract called for a return visit to the same villages to present for participants' review a draft report on the workshop results, and all participants were notified of that intended visit. Although the envisaged report had not been drafted by the time scheduled for the review trip, it was judged necessary to fulfil the commitment to the village leadership, for the sake of credibility and to clear up certain gaps in the information. In addition the team had broached in the workshops the desirability of the formation of a new representative body comprising these same villages, and preparations for a meeting in which that could be discussed had advanced with the regional administration to a point where a CI visit could promote the desired result. Accordingly the consultant made the trip as scheduled in the Operations Plan, revisiting all eleven workshop sites plus three additional villages which had been recommended for inclusion in the consultation process to which CI had committed.

The review trip succeeded in clearing up a number of factual points left over from the workshops, and also met expectations regarding preparations for a conference in Lethem which could lead to the formation of a sub-regional association of village councils to, among other things, facilitate CI's PA consultations. That meeting took place on April 18 and its results and their implications were the subject of a detailed correspondence between the consultant and CI. That correspondence details how the methodology of the project was shifted by events from a data-gathering exercise to a concern with process and strategy for facilitating the progress of the larger CI project towards a Kanuku Protected Area.

The primary original objective of the survey project, to report on socio-economic conditions in this area, is now addressed by this document.

4. Community Analyses

4.1 YUPUKARI

Access

Yupukari Mission is close to the Rupununi River about 6 miles south of Karanambo. Main access is by a trail running roughly NW from a point on the Lethem highway near Manari. This trail is intersected by a good road running from Meritizeiro to the Hunt Oil drilling site near Fly Hill, which provides faster access than the old trail from Lethem. About 3 miles SW of the intersection the trail passes the old site of Marakanata, from where there is a trail through Mountain Point to Parishara, thence to Nappi and Lethem. From Marakanata there is also a dry season trail coming out on the highway only 4 miles from Pirara. There is a network of trails, more or less passable depending on the season, northward to Karanambo or through savannahs and bush islands to Cashwir, Kwaimatta and Massara.

A couple of miles by walking trail on the other side of the Rupununi River is the small settlement of Capybara, which with those of Sambora and Simoni comprise the Simoni River Settlements. The latter two are reached by canoe. Katoka is a larger settlement, with its own church, school and health post, which grew up around the Anglican Church's cattle ranch, by the mouth of the Katoka Creek a little upriver of Yupukari. Access to Katoka is by boat.

Other significant satellites are Quatata, on the Marakanata trail and Kaicumbay, on the Kaicumbay creek further south, with Fly Hill on a small trail between them. On the other side of the Kaicumbay Creek is the tiny cluster of Burruwetta. Yupukari also administers a few scattered homes at the Marakanata road intersection, at Little 7 and Crystal Spring Ranches near the drilling site, and at Tuba Creek, just into the mountains, where people are beginning to settle near their farm sites. This remote site, some 17 miles from the Mission, is the closest to the Kanukus.

Population Structure

The population of the whole area breaks down as follows:

	Households	Persons
Yupukari Mission	97	470
Katoka	98	429
Simoni Settlements	29	132
Quatata	22	108
Kaicumbay	30	68
Burruwetta	5	16
Fly Hill	12	84
Scattered	9	50
Total	302	1357

Age breakdown was not available due to recent death of CHW, and absence of Katoka CHW who is filling in. This information will be available once the CHW situation settles. Almost all persons are Makushi.

Extent and Status of Land Title

The Yupukari Reservation defined in the Amerindian Act is a rectangular block of 50.75 square miles centered on the Rupununi River from a point just below the Mission. This means it takes in Capybara and Sambora but (probably) not Simoni and certainly none of the other satellites. Much of this village's land is therefore occupied by what is technically squatting on State lands. Several requests had been made, over the years since the reservation was scheduled in law in 1976, for an extension to the legal reservation. In 1998 the government sent surveyors to demarcate the legal reservation in order to give the village formal title on paper to the area defined by law. The village refused to allow the surveyors on the land to mark the boundaries of the 1976 award. They took the position that they were no longer requesting extension but demanding recognition of the full extent of their ancestral land, and they would not accept title to less.

As in many other areas, Yupukari has been assured that the government would never attempt to displace Amerindians from State land they occupy or use for subsistence, even (especially in the present dispensation) by awarding concessions for resource exploitation by non-Amerindians. However village leaders feel it is important to keep their demands alive for formal recognition of the land they need in excess of that scheduled in the law.

Land use

Yupukari and associated settlements are probably now using sites spread over close to 150 square miles for homesteading and farming, with a range somewhat greater for fishing, hunting and gathering. Although a greater part of their total range would be uncultivable savannah, swamp or mountainside, it is still important to recognise contiguous occupation for purposes of access and low-yield hunting and gathering.

The satellite communities tend to be located nearer to their farm grounds. Indeed this is how new settlements are formed, by conversion of temporary farm shelters over time into permanent dwellings to save crop transport. With the further passage of time the farm grounds recede from the dwellings and the process repeats with population growth. Farms are best located on high ground which is not flooded in the rainy season, usually near a watercourse which extends the growth period into the dry season. Yupukari's land is to a large extent undulating, which makes farm location less subject to wet/dry season considerations, and more determined by higher fertility of alluvial soils. Accordingly the farms in this area tend to be close to creek tributaries of the Rupununi River, those of the older satellites along the Awarakuri and Kaicumbay Creeks.

Riverbank farms can of course be reached in season by boat, which allows fishing opportunities combined with farm visits. Smaller creeks which are not so good for fishing or boat transport still support bush which can be cleared for farms, and the communication there is by bullock carts and bicycles on savannah trails. This is the tendency high up the Kaicumbay Creek, where the farm expansion has recently run into lands occupied or earmarked by Parishara people. The name of the area now at issue (it would be imprecise to say in dispute, given the very civilized nature of negotiations now in progress), Letterwood Creek, gives rise to the suspicion that what is at stake is rather more than farming land. Certainly the location is much closer to the Nappi reservation than to Yupukari, in an area which appears to have been used for hunting and gathering, and for cutting building materials, by both groups for a number of years.

The actual farming land in this area is relatively good: once virgin bush is cleared it will yield for two years, then require fallow for only three or years before it can be replanted. Yupukari people have farm grounds in state lands as far upriver as Hiari Creek, sufficient for many years' use by the current population. They consider their natural range to end at the Mapari River, leaving a buffer zone to Crab Creek,

which is held to be the northern end of the Sand Creek farm grounds on the banks of the Rupununi and its tributaries.

Much of the area currently under use is still under heavy forest, which yields materials for building and essential crafts. Yupukari people are aware that in the distant future, if the extensive farming land available north of the Kanukus comes under pressure of their expanded population, there will still be the option of using flat fertile patches within the mountains themselves.

This relatively favourable land situation assumes the Amerindians will not be disturbed in their use of what is legally unalienated state land, and that resource extraction concessions will not be granted where there is any possibility of interfering with Amerindian communities' present or likely future land use. To guarantee this security of tenure, Amerindians see a real need for documentary title to land they currently use and will use in the present and foreseeable future, beginning with regularisation of de facto occupation, for which there is ample precedent except, notably, in Amerindian areas. Once currently occupied land is secured by title, villages like Yupukari would make a case for additions to the reservations to provide for future generations as far as can reasonably be foreseen.

Administration

The Village Council is elected biennially, by custom along lines of representation of the constituent areas as follows:

Yupukari Mission	4
Katoka	3
Kaicumbay	3
Quatata	2
Simoni Settlements	2
Fly Hill	1

The Touchau is separately elected at the same time as the Council, and has always been from the Mission. Council meetings have not always been regular and official activities seem to depend very much on the energy of the Touchau. Villagers appear to be quite gentle in their expectations of the leadership: apparently the recent replacement of the Touchau was regarded as a rather strong measure.

A lot of influence is held by the more educated members of the community, many of whom are in salaried employment. The leadership list would therefore include:

Headmasters — 3, for Yupukari, Katoka, Kaicumbay
Teachers — 7 in Yupukari, 4 in Katoka, 1 in Kaicumbay
Community Health Workers — 4, for Capybara, Kaicumbay, Katoka, Yupukari
Malaria Field Assistant — covering the whole area
Microscopists — 2
Anglican Priest
Christian Brethren Pastors — 2
Anglican Catechists — 4
Sports Club leaders
Sewing Group leaders — 3
Rural Constables— 2, former Touchaus
Women's Group leaders inc Mothers Union

Administrative infrastructure is indicative of the relative prosperity of this village, relative to others in the area. There is no Village Office, but a market building, a sports ground. and a sewing centre. There are two Radio transceivers, one at the Yupukari Headmaster's house, one at the Katoka Health Centre. The village owns 3 Outboard motors, 2 in Katoka, 1 in Yupukari, and 1 canoe. One deep well is sited in the Mission centre, with a hand pump recently replacing the broken windmill.

Education

Three school buildings, in Yupukari, Katoka and Kaicumbay, each house both primary and nursery schools except Kaicumbay, which does not have a nursery school but a student hostel, now used as Health Centre. Yupukari is regarded as having one of the better schools in the Rupununi, due no doubt to the long association with the Anglican mission but also to the long presence of a well-trained and dedicated couple in the Headmaster and Senior Mistress.

Yupukari Primary

Staff comprises: 1 HM (CPCE trained), 1 Snr Mistress (CPCE trained), 4 Assistants, 1 with CXC, 3 with SSPE.

	Boys	Girls	Total
Prep A (5-6 yrs)	15	17	32
Prep B (6-7 yrs)	22	16	38
Prim 1 (7-8 yrs)	18	12	30
Prim 2 (8-9 yrs)	21	12	33
Prim 3 (9-10 yrs)	13	8	21
Prim 4 (10-11 yrs)	8	12	20
Form 1 (11-12 yrs)	4	9	13
Form 2 (12-13 yrs)	4	5	9
Form 3 (13-14 yrs)	6	3	9
Form 4 (14-15 yrs)	2	4	6
Total on Roll	113	98	211

Yupukari Nursery

Staff : 1 Teacher in charge, 1 Assistant.

	Boys	Girls	Total
Year One (3-4 yrs)	16	13	29
Year Two (4-5 yrs)	8	10	18
Total on Roll	24	23	47

Katoka Primary

Staff: 1 HM (CPCE trained), 2 Assistants (SSPE). Total on Roll 160 children.

Katoka Nursery

Staff: 1 Teacher in charge, 1 Assistant. Total on Roll 160 children.

Kaicumbay Primary

Staff: 1 HM (CPCE trained), 1 Assistant (SSPE). Total on Roll 54 children.

Health

There are Health Posts in Yupukari, Katoka, Kaicumbay. A fourth is being built in Capybara. There are four Community Health Workers (CHWs), one just appointed to replace the one that died late last year in Yupukari. A Malaria Field Assistant is stationed in Yupukari, with microscopes and Microscopists in Yupukari and Katoka.

The Malaria official is very experienced, and his election as Touchau in early March indicate that he is personally quite influential, but 1999 totals of 369 reported cases of p. vivax,. 9 p. falciparum, or 27 percent infection, may suggest otherwise. The very dry month of January 2000 reported 29 p. vivax cases, 9 p. falciparum. It seems most of these cases were recurring, due to a failure to finish the course of treatment, or reinfection at endemic areas in upriver farm grounds. The most dangerous areas are Tuba and Salipenta Hill at the mountain foot.

Health concerns are typical of similar communities: water-borne diarrheal complaints in the rainy season, upper respiratory tract infections also seasonal, no malnutrition.

Water supply

Yupukari Mission relies on one very deep well whose windmill has been difficult to keep going, maybe because of the depth. and finally broke down terminally in January 2000. By mid-February the Region 9 administration replaced it with a hand pump. There are also in the village two of the infamous Blackhawk tube wells with hand pumps, which have never given water. The alternative to the deep well is fetching water by bucket from the Rupununi River nearly half a mile from most houses in Yupukari Mission.

Katoka households share several shallow wells. Kaicumbay uses its creek until it dries up in the rainy season, then falls back on shallow wells. Quatata and the smaller settlements use water holes or shallow wells. In the rainy season there is plenty of rainwater to be collected, but perhaps because not all households can afford ample storage containers the incidence of water-borne diseases goes up sharply, related no doubt to unwise siting of pit latrines.

Human resources

A brief survey revealed the following skills present in the village:

CHW	4
Piaiman	very few
Herbalist	very few
Microscopist	2
Malaria Evaluator	1
Trained Teacher	3
Untrained Teacher	12
Carpenters	6
Masons	5
Adobe maker	all
Brick maker	5
Chainsaw operator	4
Driver/Mechanics	2
Outboard operator	a few
Balata Bleeders	many
Canoe maker	a few
Seamstress	many
Cotton weaver	many
Basketworker	many

Leatherworker	some
Hunters	many
Fishers	all
Farmers	all

Persistence and Strength of Traditional Culture

Almost everyone in the Yupukari area uses the Makushi language for everyday communication. Church services (Anglican) are carried on in Makushi, and the old stories are being told to the children. It is no longer the practice to discourage the use of Makushi in school. Traditional songs of Parishara and Tukui are still known by older people in the village, and some efforts have been made to teach them to the children. There are still a very few piaimen who are still consulted for "bush medicine", and belief and practice are still strong in taleng and bina. Many of the old taboos on dietary or other behaviour are still observed at all age levels, and of course the practice of communal work, maiyu, is a vital and reliable source of voluntary labour for village projects.

However it will take much more effort than is currently being expended to save traditional culture from assimilation. Although some hymns have been translated, very few people can read, and even fewer write, Makushi. Native handicraft is not systematically taught to younger folk. A whole branch of traditional knowledge, ethnomedicine, will be diminished when the few remaining piaimen die, for they have no known apprentices. A great deal of the traditional knowledge through which Makushi people are able to function as Makushi farmers, fishers, hunters and gatherers is being disregarded by the younger generations, who prefer job employment in non-traditional occupations. There is an uncomfortable awareness that the Makushi are in danger of losing their distinctiveness; it is not certain that the traditional culture can rally successfully against the tendency towards the mainstream Guyanese culture.

Gender Participation in Community Activity

Traditional sexist attitudes are gradually giving way as women are encouraged to take a greater part in community projects, village governance and even family decision-making. Most of the outside agencies sponsoring development projects have in the last decade stipulated women's participation. One of the most impactful interventions in Amerindian communities, Community Based Rehabilitation, targeted women as care-givers and change agents in ways which have enhanced recognition of women's role and contribution. Even the gender division of labour is breaking down as both sexes are prepared to try new forms of partnership. Yupukari is not yet at the stage reached in other communities where positions on the Village Council are reserved for women, but the more dynamic individuals are elected without regard for gender. It appears to be accepted that growing gender equity is a part of the modernisation process, accepted with little resistance but indeed with general approval in the community.

4.2 NAPPI

Access

The Amerindian village of Nappi officially includes the settlements of Parishara and Hiowa, which do not have their own Touchaus. However, since they are separately nucleated a few miles from Nappi, have separate health posts with their own Community Health Workers, their own schools (though Hiowa's had up to July 2000 no teachers), churches and other facilities, the latter have long been accepted as separate villages in all but bureaucratic recognition. For the purposes of this series of workshops, for example, we were advised by local and regional leaders alike to treat the three settlements as three independent villages.

Nappi itself is about 15 miles almost due east of Lethem, most directly reached by 22 miles of trail from Lethem, crossing the savannah from the main Lethem-Kurupukari road just north of Manari Bridge. The majority of homes lie within half a mile of the centre at 3° 24.706'N, 59° 34.992'W. From Nappi centre a road runs west about 3 miles to Hiowa, and another north-east to Parishara. The Parishara road goes through Mountain Point and Marakanata toward Yupukari, with access to the main road at several points.

Because Nappi is relatively compact it cannot truly be said to have satellite settlements; even the long-established homestead areas named Jakaré and Bahamas, north off the Lethem trail, can be regarded as sections of the village. About a dozen families have their homes close to or actually in the forest beyond the main settlement area, which reduces their travelling time to farm; they relate directly to the central village in terms of services. Internal communication within the entire community is by well-made roads suitable for bullock carts and allowing very fast travel by bicycle.

Population

Age Group	*Male*	*Female*	*Total*
<1 yr	16	9	25
1-4 yrs	41	29	70
5-14 yrs	100	97	197
15-19 yrs	30	24	54
20-44 yrs	75	64	139
45-64 yrs	34	27	61
≥ 65 yrs	7	5	12
Total	303	255	558

There are 92 households, including those close to farmlands, almost all Makushi.

Extent and Status of Land Title

The Nappi Reservation covers 85 square miles, including the settlements of Parishara and Hiowa, and communal ownership is legally vested in the Village Council which administers the officially recognised village. There is a dispute over the boundaries surveyed with a view to providing written title.

Because the majority of the reservation land is open savannah, much of it swampy in the rainy season, Nappi villagers have had in recent years to extend their farm lands outside the official boundary along the Nappi Creek. Since 1986 applications have been made for an extension into a defined area of some 15 square miles on the eastern boundary. Finally when surveyors came in 1998 for the Government's demarcation exercise, they redrew the eastern boundary along the Torobaru creek. However since Nappi refused to accept the demarcation, some 10 per cent of their farms (and over 90 per cent of Parishara villagers'

farms) remain in what is officially state land. Nappi farmers occupy both banks of the Nappi Creek, while Parishara farmers occupy both sides of the Maipaima Creek, a few miles east.

Land use

Nappi families had 92 active farms actually planted at the time of the workshop, probably a total area about 200 acres in production, spread out over five or six square miles of forest.

There are cart trails between the homes and the farms, with reasonably good access in the dry season for carts and bicycles carrying loads. The trip from home to farm takes between 20 minutes, to the closest farms, and 3 hours, to the furthest, with the majority of farms under 2 hours away. In the rainy season a lot of the ground turns swampy and the need to use trails on higher ground causes longer farm journeys.

Other land uses such as fishing, hunting and gathering range over a much wider area than the reservation. There are some common-use areas in State Land which contribute to the subsistence and economic activity of Nappi as well as other settlements. These include the lower slopes of the Kanuku mountains, where both timber and NTFPs are gathered, dry savannah where deer, turtles and birds are hunted, seasonal and non-seasonal savannah ponds which are fished at different times of the year, and the Nappi and other creeks as far as their confluences with the Pirara River. These areas are reached by a network of walking trails from all the nucleated settlements.

Nappi villagers, at least in talking to outsiders, make an uneasy distinction between land available within their reservation, which they claim is already inadequate to support their population, and State Land which is unoccupied and unclaimed by other communities and so available for expansion now and in the future. They will agree that simple beneficial occupation of State Land is unlikely to be challenged by the authorities, even though regularisation of squatting situations will probably be mired indefinitely in bureaucracy. However they feel no security of tenure in such annexations, and there is always the possibility that the central government could unilaterally grant to outsiders various kinds of rights, over land which is not officially defined and titled to Amerindians, which would curtail the various uses available. For this and other reasons there is a fervent wish to extend the formally titled land area to provide for their growing population over at least the foreseeable future.

The land which Nappi would see as available to extend their reservation is State Land to the north of their existing holding, including to the east some lower slopes of the Kanukus, even as far as the Rupununi River, bounded on the west by the line of the Nappi Creek northward, roughly to where it joins the Pirara River. The resource classification and use potential of this land would correspond to that of the existing reservation. Availability in this sense is, in Nappi eyes, only theoretical as it depends upon the agreement of a central government whose land policy Amerindians find far from encouraging. Furthermore it is also subject to the desired administrative separation of Parishara as well as the emerging demands of Kaicumbay villagers over some of the State Land adjacent to the reservation, in response to which the Nappi Council retreated its claim from the Letterwood Creek back to Torobaru (Mora) Creek.

Nappi villagers saw no point in discussing with us the resource classification and potential of the land available to their use, since, whatever the land can do, it is all the land they can get. Makushi people have learned over thousands of years to make the best use of land available to them, and barring the discovery of minerals — to which they have no legal rights anyway — they know as well as anyone how to classify such resources as they are allowed to use. Furthermore the classifications they would apply would be more relevant to their custom than to other convention.

Administration

Nappi Council is elected in three blocs as follows:

For Nappi:

Andrew Demetrio	Touchau
Michael Abraham	(Teacher)
Leo Da Silva	
Stephen Fredericks	(CHW)
Jordan Joseph	

For Parishara:

Zumeiro Nasciemento	Senior Councillor
Eunice Albert	
Newton Allan	
Allan Joseph	
Philip Stephen	

For Hiowa:

Mary Evans	Senior Councillor
Christopher Bell	
William Francis	
Alexander Leonard	(CHW)
Diane Leonard	

Other individuals in the village exert influence on decisions affecting the whole community. There appears to be a practice of active consultation among a stratum of acknowledged leaders.

There is no Village Office. A Guest House was built a year agoand is mostly used by CI visitors. CI also supplied a radio transceiver, sited at the Health Centre. There is a market building and a sports ground. The Craft Museum building fell down a few years after it was opened.

Education

Nappi Primary

Staff: 1 HM (CPCE trained), 1 Snr Master (CPCE trained), 4 trained, 2 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	15	18	33
Prep B (6-7 yrs)	24	17	41
Prim 1 (7-8 yrs)	8	19	27
Prim 2 (8-9 yrs)	18	15	33
Prim 3 (9-10 yrs)	16	10	26
Prim 4 (10-11 yrs)	12	8	20
Form 1 (11-12 yrs)	13	12	25
Form 2 (12-13 yrs)	17	3	20
Form 3 (13-14 yrs)	7	9	16
Form 4 (14-15 yrs)	7	4	11
Total on Roll	137	115	252

Nappi Nursery

Staff: 1 Teacher in charge, 2 Assistants.

	Boys	Girls	Total
Year One (3-4 yrs)	16	23	39
Year Two (4-5 yrs)	10	12	22
Total on Roll	24	23	47

It should be noted that both Nappi schools accomodates children from both Nappi and Hiowa, though fewer Hiowa children of nursery age are sent to school. If and when teachers can be found for the new school at Hiowa, overcrowding in Nappi Primary will be reduced by some 30 per cent.

Health

There is a Health Post with CHW, trained also as microcopist. According to the CHW there are few health problems.

Water supply

A deep well with a windmill was provided some years ago by the government. For reasons unexplained it was sited in a valley where the wind never blows strongly. At the time of the workshop, volunteer labour from the village had nearly completed a hand-dug well on the hill near the school, and the windmill is to be moved there, to take advantage of stronger winds. This well is expected to solve the water supply problem in the school and also serve about 15 nearby households.

Few homes in Nappi have their own well; clusters of households share a number of shallow wells or waterholes. Since the houses are built on high ground and the waterholes are downslope, fetching water uphill consumes much time. Only a few households seem to collect rainwater: even the CI guest house, which has an aluminium roof, had no gutters and no storage tank until recently.

Skills base/human resource potential

The workshop disclosed the following skills in the village:

CHW	1
Piaiman	none
Herbalist	few
Microcopist	1
Malaria Evaluator	1
Trained Teacher	4
Untrained Teacher	5
Hunter	all men
Fisher	all persons
Carpenter	2
Joiner	1
Mason	none
Adobe maker	most men
Brick maker	none
Chainsaw operator	several
Pitsaw operator	several
Plumber	none
Painter	none

Canoe maker	none
Seamstress	several
Cotton spinner	few
Cotton weaver	few
Basketworker	many
Leatherworker	several
Potter	none
Balata bleeder	many
Balata modeller	about a dozen

Persistence and Strength of Traditional Culture

Workshop participants were glad to give their views on the gradual dying out of the culture passed down from their ancestors. There are still a lot of distinctive Makushi knowledge of traditional medicine, and the teacher in charge of the nursery school claims to teach popular local medicines to his pupils. Musical entertainment from outside the region, especially Brazilian music, is very prevalent; of course no tapes are available of Makushi music. Many persons, even children, do know old Makushi songs, and the language is still very strong in the village. A few elderly folk sing Alleluia, to the approving fascination of their neighbours. There seems to be a growing interest in the Alleluia religion as a link with a past which is being forgotten. The Catholic leaders encourage the singing of Alleluia hymns even in their church. The Catholics conduct services in a mixture of Makushi and English, and Nappi people would like more prayers to be translated into their own tongue. There is some hope of the language being taught in the schools, if written materials can be provided.

This interest in maintaining their own language is the strongest indication that Nappi folk are receptive to efforts to retain and revive Makushi culture. Whether the initiative will arise from within this village is another matter, but there is definitely a renewed interest in Makushi traditions, perhaps out of a growing unease about the standing of Makushi people in an uncertain future.

Gender Participation in Community Activity

Women in Nappi are prominent in positions of influence and responsibility. There is an easy acceptance of gender equality even though a division of labour still exists on rational grounds.

4.3 PARISHARA

Access

Although the settlements of Parishara and Hiowa are officially included in the Amerindian village of Nappi, they are considered as separately nucleated villages for most purposes except external relations. The membership of Nappi Village Council is made up of three blocs of members elected to represent the three settlements, and over the past year requests have been made to the Lethem administration to allow Parishara to have its own Council and Touchau.

The centre of Parishara is about 4 miles north of Nappi centre, on a good trail branching north-east from near Nappi on the Lethem-Nappi trail. The majority of homes lie on either side of the trail, centred within a half-mile of the sports ground and market building at 3° 27.843'N, 59° 33.388'W. The Nappi-Parishara trail extends through Mountain Point to intersect the old Yupukari trail which runs from the main Lethem-Kurupukari road, about 4.5 miles south of Pirara, westerly through Marakanata.

Parishara residents travel to their farms, almost all near to the Maipaima creek, by bullock cart, bicycle and foot. There is a good network of trails for fetching farm produce. Travel outside the village is mostly to Nappi, only 15 minutes by bicycle.

Population Structure

Age Group	*Male*	*Female*	*Total*
< 1 yr	6	3	9
1-4 yrs	37	30	67
5-14 yrs	49	53	102
15-19 yrs	16	26	42
20-44 yrs	51	42	93
45-64 yrs	9	6	15
≥ 65 yrs	7	8	15
	175	168	343

There are 56 households including one isolated about a mile east at Pywagada. Practically all families are Makushi.

Extent and Status of land title

Parishara is officially part of Nappi, q.v.

Land use

The 56 houses of Parishara are built on an area of savannah about one square mile in extent. Residents claimed to have about 100 acres under cultivation at the time of the workshop, covering a few square miles of forest. Cart trails link homes and farms.

Remarks on land use under Nappi apply. There are few distinctions applying to Parishara, of which their access to a tract of State Land along Letterwood Creek is worth mentioning. Parishara residents claim that on entering this area with a view to cutting farms they have lately encountered farmers from Kaicumbay with similar intent. Negotiations were said to be in progress with the leadership of Yupukari, under which Kaicumbay is administered, over use of this area. The suspicion arises that what is at stake is not just agricultural land but the valuable resource after which the creek is named. Village leaders will not, of course, discuss openly with outsiders a matter concerning squatting or worse on State Land, even or especially in an area which has been requested as an extension to the Nappi reservation. However they

will take action to safeguard their interests, as when they forestalled the squatting of a Lethem entrepreneur on state land near the reservation.

Administration

Councillors representing Parishara on the Nappi Council are:

Zumeiro Nasciemento (Senior Councillor)
Eunice Albert
Newton Allan
Allan Joseph
Philip Stephen

These councillors were directly elected to represent their settlement, indicating their actual contribution the local community. There are other individuals of considerable influence by virtue of their occupation or their personality. Examples are Jean Buckley, teacher, Sylvia Nasciemento, CHW, Edna King, wife of a nearby rancher, and Steve Buckley, farmer.

Education

Parishara Primary

Staff: 1 HM (CPCE trained), 1 trained, 2 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	5	8	13
Prep B (6-7 yrs)	9	7	16
Prim 1 (7-8 yrs)	7	6	13
Prim 2 (8-9 yrs)	6	4	10
Prim 3 (9-10 yrs)	5	6	11
Prim 4 (10-11 yrs)	4	5	9
Form 1 (11-12 yrs)	4	2	6
Form 2 (12-13 yrs)	3	5	8
Form 3 (13-14 yrs)	0	8	8
Form 4 (14-15 yrs)	7	9	16
Total on Roll	50	60	110

Health

Parishara has a new concrete Health Post, staffed by a CHW.

Water supply

The health post and school have water tanks, filled by roof gutters at the health post and by a deep well at the school. All households rely on shallow wells.

Human Resources

The workshop enumerated the following skills in the Village:

CHW	1
Piaiman	none
Herbalist	few
Microcopist	none

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Malaria Evaluator	none
Trained Teacher	1
Untrained Teacher	4
Hunter	most men
Fisher	all persons
Carpenter	8
Joiner	5
Mason	2
Adobe maker	most men
Brick maker	none
Chainsaw operator	6
Pitsaw operator	several
Plumber	none
Painter	none
Canoe maker	none
Seamstress	some
Cotton spinner	few
Cotton weaver	few
Basketworker	about half the adults
Leatherworker	3
Potter	none
Balata bleeder	many

Persistence and Strength of Traditional Culture

Participants claimed that traditional culture in Parishara is not alive and well. They believe the younger generation are ashamed of their heritage. The people of Parishara, they said, know that their culture is dying and they regret it. The Makushi language is still used in most homes, but an increasing number of younger folk cannot communicate in their native tongue. Participants believe that the language needs to be revived, and think it will be a bad thing if the children do not learn it. There was support for an idea to organise lessons in spoken Makushi, but without outside intervention, particularly instruction in transliteration for written Makushi, it is doubtful how far this can go in practice.

At the same time participants are able to recount many proofs of persistence of Makushi culture, in areas from ethnomedicine to diet and farming, fishing and hunting practices. No doubt the concern for loss of tradition is a reaction to the rapid changes in power relations with non-Makushi as villagers come ever more in contact with representatives of the dominant culture. At any rate the leaders of Parishara, by their own account, are ready for a cultural revival movement.

Gender participation in Community Activity

This is not an issue in this village; there seemed no distinction by gender in power structures, formal and informal, throughout the community.

4.4 HIOWA

Access to Central Settlement

Although Hiowa is officially a part of the Amerindian village of Nappi, for the purposes of this project a separate workshop was held in each of the three settlements. Hiowa does consider itself a distinct community, though closely related to, and dependent in many ways, on Nappi. It is separated by location, layout and land use from Nappi and Parishara, which both relate to the Nappi and Maipaima Creeks, while Hiowa uses that part of the reservation between Nappi village and the Hiowa Creek.

From Nappi village centre a good trail runs west to Hiowa's sports ground, near a cluster of homes comprising Section 1. A quarter mile further west the new school sits on its own hill, opposite the Section 2 cluster. Another quarter mile west the church and health post, at 3° 23.528'N, 59° 36.969'W, are within a quarter mile of the western end of Section 3. That end of Hiowa is close to the Hiowa Creek, subject to swampiness in the rainy season, which restricts access over trails which do exist from there to Moco Moco in the direction of Lethem. Communication within the village and to Nappi is mostly by bicycle and bullock cart.

Population Structure

Age Group	*Male*	*Female*	*Total*
< 1 yr	12	6	18
1-4 yrs	24	26	50
5-14 yrs	50	39	89
15-19 yrs	15	14	29
20-44 yrs	51	36	87
45-64 yrs	12	10	22
≥ 65 yrs	3	4	7
	167	135	302

Hiowa totals 48 households, all Makushi.

Extent and Status of Land Title

Hiowa is officially part of Nappi, q.v.

Land Use

Hiowa's households are more spread out than those in Nappi or Parishara, in three groups of houses called Sections One, Two and Three respectively. Homes are built on a series of little hills separated by swampy land, which makes communication between them, and with the church and health post, more time-consuming. The farms are located in forest fringing the Kanuku Mountains along the southern boundary. A total of about 120 acres is claimed as actually under crops at any one time, which in the slash and burn style on mountain fringes means the farmland is spread over some three square miles. Cart trails facilitate fetching agricultural produce.

Hiowa residents, while not yet affected by an actual shortage, express a worry over the long-term availability of land to support their population as it grows in the future. Only a small proportion of Makushi territory is under forest and usable for farming. The forest is also important for building materials and NTFPs but there is some fear of physical danger in going up the mountains, which are anyway outside the reservation.

Other remarks on land use in Nappi apply here, complicated in the case of Hiowa by the fact that the section of the Kanukus closest to their farms is actually part of the Moco Moco reservation, and the apprehension that mining or even prospecting there might affect water quality in the streams which feed Hiowa farmlands.

Administration, leadership

Councillors representing Parishara on the Nappi Council are:

Mary Evans	(Senior Councillor)
Christopher Bell	
William Francis	
Alexander Leonard	(CHW)
Diane Leonard	

Since councillors in each bloc are directly elected to represent their settlement, council membership reflects actual local leadership.

Education

A new school was built by a SIMAP contractor from Lethem and dedicated by the President of Guyana in late 1999. It is a fine, spacious concrete building with rainwater tanks fed from the roof, new school furniture but alas no teachers. Promises of course have been made to enable the school to enter into use from September this year, saving Hiowa's children a long walk to school in Nappi. Parents agree it makes more sense for two teachers to commute from Nappi than for 80-odd Hiowa children to commute to Nappi, but given that most of the teachers in Nappi handle more than one age group, it will take some planning to work out successful transfers, and more than that to get the agreement of the authorities.

Health

The Health Post is in a somewhat isolated location near the Catholic church. The CHW, keen and hardworking, trained as a microcopist, claimed no serious community health problems.

Water supply

All households rely on shallow wells or waterholes. Those close to the Hiowa creek use it for all water supplies.

Human Resources

The workshop disclosed the following skills in the village:

CHW	1
Piaiman	none
Herbalist	none
Microcopist	1 (CHW)
Malaria Evaluator	none
Trained Teacher	none
Untrained Teacher	none
Hunter	most men
Fisher	all persons
Carpenter	most men
Joiner	none

Mason	10
Adobe maker	all men
Brick maker	none
Chainsaw operator	4
Pitsaw operator	1
Plumber	none
Painter	none
Canoe maker	none
Seamstress	4
Cotton spinner	most women
Cotton weaver	most women
Basketworker	all men
Leatherworker	few
Potter	none

Persistence and Strength of Traditional Culture

The group of Hiowa villagers who took part in the workshop seemed a little bewildered at the suggestion that their culture was in danger. They appeared confident in their Makushi identity in the moment, functioning in ways that suit them and maintaining their identity in adaptiveness. Their reaction was a reminder that all cultures are constantly evolving, and that increasing availability of non-traditional options is an opportunity for any group to choose adaptations which promote the future strength of the community. It was an interesting lesson that tradition for tradition's sake is not necessarily constructive, but still reassuring that all of Hiowa still speak their own language, remain firmly attached to the land as a source of livelihood, and make use of all the special knowledge passed down the generations, while remaining open to change.

Gender Participation in Community Activity

Many of the most important members of this community are women. In social situations we observed comfortable gender relations, apparently on a tacit basis of "separate but equal."

4.5 MOCO MOCO

Access to Central settlement

The Amerindian village of Moco Moco is on the main road from Lethem to the Moco Moco Hydroelectric plant. Between the village and the hydro site lies the land settlement scheme, where about a dozen coastlander families have farms and homesteads on the banks of the Moco Moco Creek.

The centre of Moco Moco Village, the school, church and health post, are at 3° 19.758'N, 59°40.433'W, just off the main road about 10 miles south-east of Lethem. This is a fast new road with lots of traffic; Lethem is an easy 20 minutes' drive away, or an hour by bicycle.

A few Moco Moco families are settled in an area to the south-east called Cuba, which is also claimed as the north-western extremity of Kumu. When the boundary between the two reservations, running along the foot of the Kanuku range, was demarcated by government surveyors in 1998 the village of St Ignatius, in whose reservation Kumu falls, refused to accept the survey. Moco Moco leaders took part in the demarcation and subsequently accepted formal title, which they say includes Cuba. The issue is not strongly pursued and the families there appear to relate more closely to Kumu, perhaps because of the shorter distance to the school, church and health post.

Population Structure

Age Group	*Male*	*Female*	*Total*
< 1 yr	5	10	15
1-4 yrs	25	36	61
5-14 yrs	65	55	120
15-19 yrs	11	11	22
20-44 yrs	56	46	102
45-64 yrs	20	23	43
≥ 65 yrs	7	3	10
Total	189	184	373

There are 66 households, almost all Makushi.

Extent and Status of Land Title

The Moco Moco reservation of about 80 square miles includes large acreages of open savannah, some suitable for grazing cattle, but also a significant depth of the Kanuku Mountains. The area was surveyed in 1998 and in 1999 the village accepted communal title to the official demarcation.

Land Use

Moco Moco villagers farm in the forested foothills of the Kanuku range closest to Lethem. The reservation covers a portion of the mountains from the source of the Nappi River along the watershed of the Moco Moco to the source of the Matapee Creek. From these mountains Moco Moco people extract commercial timber as well as their own building and handicraft materials. These forests are also hunting grounds and the creeks are fished.

There is a network of walking trails to the farms. Proximity to Lethem offers an opportunity to sell surplus provisions to a cash market, but in competition with the farmers of the Moco Moco Land Settlement Scheme nearby. The settlers' farms are all close to the main road, which gives them an advantage over the Makushi villagers who have to fetch their produce at least a few miles from their farms.

There is a good reserve of land suitable for traditional farming for the forseeable future. Fertile sites among the hills have only the drawback of distance from the homesteads. However the fishery is already depleted and the village is anxious to find ways to increase the availability of fish, which is basic to the Macushi diet.

The village has been persuaded to allow a Canadian minerals firm, Vannessa Ventures, to carry out prospecting in the mountains in their reservation, in return for the promise of jobs in the physical operations, and cash inputs into communal facilities. The operation, and the cash payments, are to commence as soon as Vannessa secures a prospecting licence for the area.

Administration

The following were elected to the Village Council on March 18, 2000:

Thomas George	Ronnie Cassiano
Rita Torquato	Elfrieda Charles
Leo Pish	Andrew Anderson
William Ramsarran	Laybrotie Augustine

In the absence of a Village Office, meetings are held in the Health Post. There is a market building and a sports ground with two pavilions.

Education infrastructure

The primary school building and teacher's house are both new concrete structures. The old school building isused as industrial arts workshop.

Moco Moco Primary

Staff: 1 HM (CPCE trained), 5 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	14	13	27
Prep B (6-7 yrs)	5	11	16
Prim 1 (7-8 yrs)	7	9	16
Prim 2 (8-9 yrs)	4	8	12
Prim 3 (9-10 yrs)	9	6	15
Prim 4 (10-11 yrs)	10	4	14
Form 1 (11-12 yrs)	13	3	16
Form 2 (12-13 yrs)	4	8	12
Form 3 (13-14 yrs)	2	3	5
Form 4 (14-15 yrs)	10	3	13
Total on Roll	78	68	146

Moco Moco Nursery

Staff: 1 Teacher, untrained.

	Boys	Girls	Total
Year One (3-4 yrs)	5	8	13
Year Two (4-5 yrs)	5	11	16
Total on Roll	10	19	29

Health

There is a new Health Post with a very dynamic CHW, who was elected Touchau this year. The Health Post is equipped with a microscope, and the CHW acts as microscopist. The Health Post has two plastic rainwater tanks filled by roof gutters.

Water supply

A deep well with windmill, water tanks and standpipes serve the school and headmaster's house. Most households have water holes, and half the population uses the Moco Moco Creek.

Human Resources

CHW	1
Piaiman	none
Herbalist	none
Microcopist	none
Malaria Evaluator	none
Trained Teacher	1
Untrained Teacher	6
Hunter	8
Fisher	10
Carpenter	10
Adobe maker	20
Brick maker	none
Chainsaw operator	4
Pitsaw operator	several
Canoe maker	none
Seamstress	3
Cotton spinner	few
Cotton weaver	few
Basketworker	half the adults
Leatherworker	few
Potter	1

Persistence and Strength ofTtraditional Culture

Although the natural endowment of Moco Moco's reservation would seem to offer them some material advantages, these villagers appear deprived and dispirited, and far from confident in their Makushi identity. Perhaps the frequent contact with Lethem and a society considered more advanced depresses the attitude toward Makushi strengths. Perhaps their history of exploitation at the bottom of the totem pole has eroded initiative and inculcated a dependence on external assistance. The attitude we encountered was a pervasive consciousness of present poverty, and a search for free opportunities for material benefit, with a willingness to adopt whatever cultural consequences might be involved.

Moco Moco people continue in their daily subsistence to use traditional knowledge and skills in agriculture, fishing , hunting and gathering, without considering that knowledge as derived from a cultural heritage. They appear to depend on tradition because better cannot be done until they can achieve modernization, which can only happen through outsiders' intervention. In this they are not unusual among Guyanese Amerindians, and they are probably not lost to the possibility of cultural revival, if it is presented as a popular trend which they can join at low cost.

Gender Participation in Community Activity

Women leaders appear to be most prominent in the Church organisation. At the time of the workshop, two of the seven councillors, the Primary Headteacher and the Nursery teacher were female. There are some dynamic women in village activities, but Moco Moco is not very consciously progressive in this respect.

4.6 ST IGNATIUS

Access to Central Settlement

The housing area of St Ignatius is separated from Lethem by the Moco Moco Creek. In the dry season vehicles forded the stream , while a simple wooden bridge has served pedestrians and cyclists. A high trestle bridge completed in early 2000 can take all kinds of traffic at any time of year, although the earthen approaches have proved susceptible to high floods. The main road to the south savannahs, crossing the Moco Moco Creek higher up and passing by the north end of the village, provides reliable access to St Ignatius in any weather.

Good vehicle roads lead from the village across the main road toward the Kanukus, providing fast access to Kumu and Quarrie settlements and most of the way to St Ignatius farmlands. Kumu is about five miles and Quarrie about eight miles from the centre of St Ignatius.

Population Structure

An age breakdown of the population of St Ignatius was given at the workshop:

Age Group	*Male*	*Female*	*Total*
< 1 yr	6	3	9
1-4 yrs	38	34	72
5-14 yrs	99	76	175
15-44 yrs	126	127	253
45-60 yrs	48	40	88
≥ 60 yrs	10	7	17
Total	327	287	614

It is unclear whether these figures include the students of the regional secondary school, with an enrolment of 353 students aged 12 to 16 years out of a total number elsewhere reported for the village of 682, of whom 345 were male and 337 female. To determine the local component of the affected cohorts would entail an analysis of the home village of each student, the number of students living with relatives in St Ignatius or parts of Lethem, and whether students resident in St Ignatius in term-time were reported in the populations of the other villages studied.

The satellite settlement of Quarrie was reported separately, as follows:

Age Group	*Male*	*Female*	*Total*
< 1 yr	3	2	5
1-4 yrs	18	23	41
5-14 yrs	25	27	52
15-19 yrs	17	18	35
20-44 yrs	11	12	23
≥ 45 yrs	10	8	18
Total	84	90	174

Quarrie is evidently dominated by newer settlement of younger families who moved from the main village of St Ignatius to be closer to the farmlands. There are 139 households in St Ignatius proper, 39 in Quarrie.

Extent and Status of Land Title

The communal title vested in St Ignatius village, including Kumu and Quarrie, is divided into a homestead area of some five square miles between the Takatu River and the Moco Moco and Kumu Creeks, just south of Lethem, and a farming area of about 80 square miles bounded on the north by the Moco Moco reservation, on the south by the Shulinab reservation, on the east by the upper reaches of the Sourab Creek, and on the west by the straight-line boundaries of three Cattle Grazing Permissions in force at the time of the Amerindian Lands Commission recommendation in 1968. These areas were specified in the 1976 Act amending the Amerindian Act, and remained the legal definition of St Ignatius until the government demarcation survey of 1998. St Ignatius, along with other villages, refused to accept formal title based on the survey, and the Act still applies.

Land Use

The greater part of the reservation is savannah, in which the Makushi do not farm but hunt for deer, turtles, armadillo and birds. The reservation extends up into the mountains, and the forested foothills are used for slash-and-burn agriculture as well as for hunting and gathering.

St Ignatius families have their farms in forests along the bottom of the Kanukus, in areas away from Kumu and Quarrie, since those settlements both grew up over many years from groups of St Ignatius people who chose to live near their farms, at an inconvenient distance from the central settlement. The reservation is traversed by trails suitable for vehicles, bullock carts and bicycles.

Though the whole reservation may be said to be under occupation to some extent or other, there is not a sense of urgent need for expansion. There are several reasons. First, the forested hills in this part of the Kanukus provide ample timber and non-timber produce. Second, the population, to a greater extent than any other in the Rupununi, is involved in wage employment in Lethem and in Bon Fim and further afield in Brazil. Third, there are beginnings of enterprises, such as drip irrigation and cashew processing, which may lead to agricultural utilisation of the savannahs which are not used for traditional Amerindian farming. St Ignatius appears to be conscious of possibilities for a future which is not so dependent on traditional resource use.

Administration

The Village Council of St Ignatius includes three members representing Quarrie and five representing Kumu. Councillors after the February 2000 elections were:

For St Ignatius:
Ernesto Farias (Touchau)
Evaristo Rafael
Sylverio Jose
Derek Williams
Johnny Farias
Roland Joseph
Theresa Mansingh
For Quarrie:
Colin Bento
Fidel Raymond
Moses Vincent
For Kumu:

Grenville Park
Dennis Valerio
Mark Joseph
Osma Francisco
James Anderson

The APA facility in the village is used as a Community Centre. There is a sports ground and pavilion.

Education

St Ignatius Secondary

Staff: 1 HM (CPCE trained), 7 trained, 5 untrained Assistants.

	Boys	Girls	Total
Form 1 (11-12 yrs)	43	38	81
Form 2 (12-13 yrs)	27	40	67
Form 3 (13-14 yrs)	66	48	114
Form 4 (14-15 yrs)	21	32	53
Form 5 (15-16 yrs)	24	14	38
Total on Roll	111	172	353

St Ignatius Primary

Staff: 1 HM (CPCE trained), 2 trained, 3 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	11	16	17
Prep B (6-7 yrs)	13	5	10
Prim 1 (7-8 yrs)	15	12	10
Prim 2 (8-9 yrs)	13	14	7
Prim 3 (9-10 yrs)	8	8	10
Prim 4 (10-11 yrs)	13	17	8
Total on Roll	73	72	145

St Ignatius Nursery

Staff: 1 trained teacher, 2 untrained.

	Boys	Girls	Total
Year One (3-4 yrs)	11	6	17
Year Two (4-5 yrs)	11	9	20
Total on Roll	22	15	37

Quarrie Primary

Staff: 1 HM (CPCE trained), 2 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	4	3	7
Prep B (6-7 yrs)	6	2	8
Prim 1 (7-8 yrs)	6	5	11
Prim 2 (8-9 yrs)	3	2	5

Prim 3 (9-10 yrs)	2	4	6
Prim 4 (10-11 yrs)	0	0	0
Form 1 (11-12 yrs)	1	1	2
Form 2 (12-13 yrs)	0	1	1
Total on Roll	22	18	40

Health

Proximity to the regional hospital at Lethem makes it unnecessary to maintain any health personnel or infrastructure in St Ignatius.

Water Supply

There are three deep wells with windmill pumps in residential St Ignatius, at the school compound, at the Catholic mission complex and at the women's centre building. Most homes have a shallow well or waterhole, or get water from the Moco Moco Creek or the Takatu River.

Skills base/human resource potential

The following skills were claimed for St Ignatius (including Quarrie)

CHW	1
Piaiman	1
Herbalist	1
Microcopist	none
Malaria Evaluator	none
Trained Teacher	13
Untrained Teacher	12
Hunter	20
Fisher	22
Carpenter	3
Joiner	none
Mason	8
Adobe maker	many
Brick maker	10
Chainsaw operator	2
Pitsaw operator	several
Plumber	none
Painter	none
Canoe maker	none
Seamstress	several
Cotton spinner	few
Cotton weaver	none
Basketworker	14
Leatherworker	4
Potter	10

Persistence and Strength of Traditional Culture

St Ignatius is perhaps the most acculturated of the villages we visited. This village grew up around the Catholic mission established in 1909, the Government Agricultural and Livestock Station established in 1948 and the District Administration centre established in Lethem in the 1940s. Employment opportunities, with the government station and with the non-Amerindian ranches using the Lethem abbatoir and

cattle shipping facilities, brought villagers very early into contact with the cash economy and with coastlander culture.

Even before the Catholic mission attracted more Amerindians, the location had been an old Makushi settlement named Zariwa, on the Takatu River just across the border from a dispersed Brazilian Makushi population which in its turn coalesced into the village of Bon Fim. As a result cross-border contact with Brazilian Amerindians, many of them actually blood-related and living in practically identical circumstances to the British Makushi, was always a feature of this community, which accordingly acquired many of the larger Brazilian cultural features as they became dominant there. In recent times wage employment has been even more available to St Ignatius folk on the Brazilian side of the border than in Guyana.

So involved are St Ignatius villagers with non-Amerindian ways of making a living that it is almost surprising to find that many of them speak Makushi at home; that almost every family has a cassava and provision farm; that half the men regularly go hunting, and two-thirds of the entire population regularly fish for the greater part of their protein intake; and that half the families still rely on medicinal herbs and shrubs gathered in the forests. Since bitter cassava is the invariable staple, basketry skills have of necessity persisted, to make the domestic implements involved in its processing. In short the domestic culture remains on a traditional basis, and modernization comes as an addition rather than a replacement to the old ways of life. Of course there is a rough division between those families living in the housing area of St Ignatius and those living in Quarrie closer to their farms, the latter tending to be more traditional in style.

Partly because of proximity to the administrative centre in Lethem, partly because they are easily accessible to bodies like the APA, and partly because of their experience of contact with outside influences, the leadership of St Ignatius tends to be politically conscious on issues of Amerindian rights and representation. Leaders willingly accept the activist policy of building a modern economy upon foundations of traditional skills and cultural consciousness. Due to their strategic location in geography and history, this community will be a focus of cultural revival as soon as resources can be mobilized to support such activities in parallel with economic development.

Gender Participation in Community Activity

The leadership of this community is distinguished by a few very dynamic women, including Emily Bareto, who is influential for being the wife of the Regional Chairman but a strong leader in her own right. One of the most noteworthy developments in St Ignatius is the agricultural production and processing programme undertaken by one of the two women's groups. Both women's groups are active in non-traditional income generation and women in general make a full contribution to village life.

4.7 KUMU

Access to Central Settlement

The Kumu Community Centre, at 3°18.028'N, 59°43.692'W, is on a good vehicle trail about 5 miles off the main South Savannah road at St Ignatius. The Kumu trail goes all the way to Kumu Falls, a local tourist attraction, and gives easy access by walking and bicycle paths to many of the homes and farms of the settlement.

Separately named neighbourhoods, Caracas, Kanama, Berbice and Cuba, are close enough to Kumu's school and church that there is no likelihood they will become satellites in the future.

PopulationStructure

From CHW records, the age breakdown of Kumu's population is:

Age Group	*Male*	*Female*	*Total*
< 1 yr	5	6	11
1-4 yrs	27	16	43
5-14 yrs	47	47	94
15-19 yrs	13	16	29
20-44 yrs	40	34	74
45-64 yrs	13	10	23
≥ 65 yrs	6	4	10
Total	151	133	284

There are 46 households in the settlement, all Makushi.

Extent and Status of Land Title

This settlement is included in the Farm Lands portion of the St Ignatius titled area.

Land Use

Kumu families have their farms up to three miles from home, in clearings in the forest along creek banks and in bush at the foot of the mountains. There are probably about 120 acres in cultivation at a time, spread over only a few square miles. Walking and bicycle trails are used for access to farms. The forests higher up the mountain slopes are used for extracting timber for housing, handicraft materials, minor items of diet and medicine. For fishing, all the residents of Kumu use the rivers and creeks throughout the area, with seasonal and perennial savannah ponds, both within and outside the reservation. Occasional trips even further afield are made for hunting and micro-scale mining.

Land availability & resource classification

The land is relatively fertile for use in the traditional slash and burn pattern, and the forest cover is not severely depleted. Ample space remains for expansion as the population increases. The St Ignatius council tends to take a slightly militant position, in line with the APA demands, that the government will sooner or later have to allocate sufficient land for all Amerindian needs, and in the meantime communities are not strongly restrained from occupying unused state land to which they have convenient access.

Administration

Kumu is represented on the St Ignatius council, elected March 2000, by

Grenville Park
Dennis Valerio
Mark Joseph
Osma Francisco
James Anderson

Their CHW, Thomas Campion, is another respected leader. The village has a Community Centre built near its sports ground.

Education

There is a new primary school building. A separate Industrial Arts building is currently used by the nursery school.

Kumu Primary

Staff: 1 HM (CPCE trained), 2 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	8	7	15
Prep B (6-7 yrs)	5	3	8
Prim 1 (7-8 yrs)	7	4	11
Prim 2 (8-9 yrs)	2	4	6
Prim 3 (9-10 yrs)	5	2	7
Prim 4 (10-11 yrs)	4	5	9
Form 1 (11-12 yrs)	3	3	6
Form 2 (12-13 yrs)	4	3	7
Form 3 (13-14 yrs)	6	7	13
Total on Roll	44	38	82

There is one untrained teacher in the Nursery school, for which enrolment was not given.

Health

There is a Health Post staffed by an experienced and respected CHW.

Water supply

Many homes are located close to one of several creeks. Others have shallow wells or waterholes. There is a deeper well near the school. The water tanks at the school were displaced in a windstorm in 1999 and not yet restored.

Human Resources

The village claims the following skills:

CHW	1
Piaiman	none
Herbalist	none
Microcopist	none
Malaria Evaluator	none
Trained Teacher	1
Untrained Teacher	2

Hunter	6
Fisher	40
Carpenter	few
Joiner	none
Mason	8
Adobe maker	10
Brick maker	few
Chainsaw operator	3
Pitsaw operator	several
Plumber	1
Painter	4
Canoe maker	4
Seamstress	few
Cotton spinner	few
Cotton weaver	few
Basketworker	23
Leatherworker	none
Potter	none

Persistence and Strength of Traditional Culture

This community is administered by the St Ignatius Village Council, and appears to be composed of families who moved their homes from the housing area close to Lethem in order to reduce travel time to their farms near the Kanuku foothills. The move took place several decades ago, and the modernization that has taken place in St Ignatius has influenced rather less the farming communities in Kumu and Quarrie. However there is constant traffic to the bright lights of Lethem and the Brazilian cultural influence is felt in the remotest farmsteads.

Domestic patterns remain traditional and Kumu people appear to be comfortable in their Makushi identity, though as susceptible as any to the inexorable erosion of their culture, but as likely as any to take part in organised efforts at its revival.

Gender Participation in Community Activity

One of Kumu's seats on the St Ignatius Village Council is reserved for a female. Women are involved in church leadership and participate on a separate-but-equal basis in village life.

4.8 PARIKWARUNAU

Access to Central Settlement

The households of Parikwarunau are spread out either side of the main South Savannah road about 20 miles from Lethem. The centre of the village, between the Health post and the School, is at 3°08.23'N, 59°51.075'W. Starting just south of Sapaika Bridge there is a dry season short cut which runs close to the mountains behind the village, and this trail is sometimes used by travellers to the South in preference to the main road which passes through Parikwarunau. Both roads join up again before the Ematauwau Bridge just past the end of the village.

Population Structure

Age Group	*Male*	*Female*	*Total*
< 1 yr	5	1	6
1-4 yrs	19	15	34
5-14 yrs	50	36	86
15-19 yrs	7	10	17
20-44 yrs	7	7	14
45-64 yrs	5	3	8
≥ 65 yrs	1	1	2
Total	94	73	167

There are 33 households in Parikwarunau, Makushi and Wapishana..

Extent and Status of Land Title

This is not officially Amerindian land. The village is located in State Land covered by a Cattle Grazing Permission which was abandanoned after the owners of Imprenza Ranch fled to Brazil in 1969. On the presumption that the Annual Grazing Permission had lapsed after 25 years of non-renewal, the residents made formal application for communal title in 1994. Renewed requests in 1995 and 1997 met no response, but elections for Touchau and Council were held by the Regional Administration after the village ceased to be part of Potarinau in 1982. The village leaders hope that they are on the government's list of communities whose requests for title will receive attention in due course.

Land Use

The village claims that its housing area covers some 6 square miles, and the cultivated area, over 60 farms, between 175 and 200 acres, spread over a total area of some 15 square miles. Most of the farms are on the south bank of the Sawariwau River, with a very few in the mountains, toward the source of the Ematauwau. There are good walking trails to farms, up to two hours away. Some riverbank farms are reached by canoe.

The land available for Parikwarunau's expansion (subject always to tenure at least as secure as they have on their present, untitled, domain) would be savannah suitable for cattle as far as the Takatu River, and forested hills suitable for traditional farming as far as the source of the Ematauwau Creek. Some negotiation with Kumu and Shulinab would be necessary before those two villages began to press claims for their own expansion. If access trails can be improved, the most promising direction to expand would seem to be into the mountains; given the environmental issues involved, perhaps it is as well that Parikwarunau

is not a particularly dynamic and expansionist community. However it does represent a significant settled population whose needs for land will have to be addressed in whatever future evolves.

Administration

On March 26, 2000 a new Village Council was elected:

Ivan Isaacs	Touchau (and CHW)
Cedric Buckley	Headmaster
Christopher Daniels	
Christopher Griffith	
Henry Lewis	
Harold Alfred	
Christopher Phillips	

Parikwarunau has a Village Office (no radio), a market shed and a sports ground,with a pavilion.

Education

There is a new school building housing both Primary and Nursery divisions.

Parikwarunau Primary

Staff: 1 HM (CPCE trained), 2 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	5	5	17
Prep B (6-7 yrs)	4	2	10
Prim 1 (7-8 yrs)	6	3	10
Prim 2 (8-9 yrs)	1	3	7
Prim 3 (9-10 yrs)	4	1	10
Prim 4 (10-11 yrs)	3	4	8
Form 1 (11-12 yrs)	2	2	10
Form 2 (12-13 yrs)	3	2	7
Form 3 (13-14 yrs)	5	6	3
Form 4 (14-15 yrs)	3	2	3
Total on Roll	36	30	66

Parikwarunau Nursery

Staff: 1 Teacher, 1 Assistant, both untrained.

	Boys	Girls	Total
Year One (3-4 yrs)	3	4	7
Year Two (4-5 yrs)	7	2	9
Total on Roll	10	6	16

Health

The Health Post is manned by an experienced and influential CHW who won the March 2000 election for Touchau.

Water supply

The school is supplied by a deep well with hand pump. There is a good well at the Health Post, and shallow wells/waterholes at many of the homes.

Human Resources

Parikwarunau claims the following skills among its villagers:

CHW	1
Piaiman	none
Herbalist	none
Microcopist	none
Malaria Evaluator	none
Trained Teacher	2
Untrained Teacher	3
Hunter	most men
Fisher	all
Carpenter	most men
Joiner	4
Mason	none
Adobe maker	all men
Brick maker	4
Chainsaw operator	none
Pitsaw operator	few
Canoe maker	several
Seamstress	3
Cotton spinner	most women
Cotton weaver	some women
Basketworker	most men
Potter	2

Persistence and Strength of Traditional Culture

About 60 per cent of the families in Parikwarunau are Wapishana, about 20 per cent mixed Wapishana-Makushi and the balance Makushi and "other". Native languages are used in all informal situations and some children can claim to speak Wapishana, Makushi, English and Portuguese. The way of life is still based on domestic tradition, but our impression is that this is by default of opportunity for "betterment" and the cultural heritage can be discarded very lightly once alternatives are easily available in diet, food preparation, entertainment and employment.

The Catholic church services are conducted largely in Wapishana, and the oral traditions are still strong in terms of folklore and knowledge of forest plants and animals. A readiness to accept improvements to traditional agriculture, in a touching belief that modern science must be superior to thousands of years of adaptation to the environment, reveals that even though these people consciously rely on their cultural heritage they take little pride in it.

Gender participation in community activity

In this community women are said to be insisting on sharing responsibility. There seems to be little resistance from the men, though they appear to see it as a novelty. Three of the seven positions on the council are reserved for women, and the deputy Touchau is usually a woman.

4.9 SHULINAB

Access to Central Settlement

Shulinab, also known as Makushi Village, is located on the main South Savannah road about 35 miles south of Lethem, about 12 miles south-east of Parikwarinau. The village centre is at 3°04.000'N, 59°42.902'W, midway between the Sawariwau River and the Kanuku foothills. A vehicle trail leads from the village through Red Hill Ranch to Potarinau about 5 miles to the west. On the main road south the next major village is Sawariwau, about 40 miles away, with branches to cross the Rupununi River at Dadanawa, 25 miles away, or at Sand Creek, 16 miles from Shulinab.

The cluster of houses furthest from the village centre, about four miles down the main road, is Meriwau. It is reached by a one-mile trail from the main road. The next largest satellite, Quiko, is half a mile from the main road close to the Sourab River, a mile from Shulinab centre. Those two settlements are the only ones distinguished as satellites by having councillors elected to speak for them on Shulinab Council. There are only one or two houses where the main road crosses the Sourab, and Midway Ranch half a mile down that stream. Black Rock consists of a few houses close to the Sawariwau River, and Red Hill is a ranch near the same river, two miles from Shulinab on the other side of the main road. There is a network of cart trails between all these parts of the village.

Population & age breakdown

Age Group	*Male*	*Female*	*Total*
< 1 yr	8	9	17
1-4 yrs	39	24	63
5-14 yrs	86	68	154
15-19 yrs	23	16	39
20-44 yrs	91	76	167
45-64 yrs	15	15	30
≥ 65 yrs	3	4	7
Total	265	212	477

No. of households by settlement

Shulinab: 47 households;
Meriwau: 18 households;
Quiko: 13 households;
Saurab, Midway, Black Rock, Red Hill etc: about 10 households.

Total of 88 households, four female-headed. Only three households have no children. The majority of the population are Makushi.

Extent and Status of Land Title

The Shulinab reservation of about 150 square miles is separated from Potarinau's reservation by the Sawariwau River. The area is defined in the law but this village did not take part in the 1998 demarcation exercise.

Land Use

At the point of Shulinab's reservation, roughly 15 miles east to west between the Sawariwau River and the mountains, the land is mostly low-lying savannah only good for poor grazing. Shulinab families farm

on both banks of the Sourab River and its tributary the Shulinab Creek, where the alluvial soil is better though subject to swampiness in the rainy season. Upriver the land is higher, and the source of the Sourab lies in flat valleys between the mountains. Here, despite the distance from home, many families are now farming. Most Meriwau families are now also farming behind the first range of hills, further south close to the Moruiwau River. A cart trail from Meriwau was recently extended across the Meriwau Creek up into the farmlands, and a similar trail is planned from Shulinab centre across the Shulinab creek into the hills which feed the Sourab.

There is plenty of land up in the mountains fertile enough for cropping three years or more, with a cool, damp microclimate which is promising for intensive agriculture. The limitation of access is being addressed by the new trails, and village leaders have the idea that if suitable cash crops can be grown the profits will compensate farmers for spending several days at a time away from home. The question will arise whether the available land falls within the reservation, but the issue is not taken seriously, since it is felt that no government would deny beneficial occupation of state land, even before resolution of the larger Amerindian land question can result in formal title being secured.

Administration

A new Village Council was elected in March 2000. Willie Clement was retained as Touchau. In addition to the Village Council there is a parallel body, with overlapping membership, called the Shulinab Development Council, which involves the local APA and GOIP representatives, the ex-Touchau and the teachers, and other prominent personalities such as the youth leaders, Sports Organiser and sewing group officers. Shulinab is an important centre of the South Central People's Development Association (SCPDA), which is active in cultural and economic development. The impression is given of a busy and dynamic leadership planning for the future.

There is a Village Office with HF radio transceiver, a Community Centre and a sports ground. There is a village rest house, and a corral is being developed for the village herd.

Education

Shulinab has serviceable Primary and Nursery school buildings, whith attached school garden, school farm, and pens for the school's flock of sheep. Also at the school are a carpentry workshop and a deep well with windmill, tank and standpipes.

Shulinab Primary

Staff: 1 HM (CPCE trained), 4 untrained Assistants.

163 pupils — breakdown not given.

Shulinab Nursery

Staff: 2 untrained teachers.

24 pupils — breakdown not given.

Health

The Health Post is staffed by a CHW, also trained as microscopist.

Water supply

There are about 15 wells over 20 feet deep distributed around the village. Households without these "deep" wells rely on shallow wells or waterholes.. There are 3 hand pumps but only one is working. In spite of the use of these wells, and the claim that every family has a pit latrine, the chief health problem in the village is waterborne diarrheal disease.

Human Resources

Shulinab claims the following skills among the village population:

CHW	1
Piaiman	2
Herbalist	few
Microcopist	none
Malaria Evaluator	none
Trained Teacher	1
Untrained Teacher	6
Hunter	most men
Fisher	all persons
Carpenter	4
Joiner	5
Mason	4
Adobe maker	all men
Brick maker	5
Chainsaw operator	7
Pitsaw operator	most men
Canoe maker	4
Seamstress	6
Cotton spinner	most women
Cotton weaver	most women
Basketworker	25
Leatherworker	2
Potter	none

Persistence and Strength of Traditional Culture

This is the only Makushi village south of Lethem, in Wapishana territory. There are legends that the Makushi were driven from the South Savannahs by the Wapishana in a series of wars in "prehistoric times". Mount Shiriri, only 20 miles south of Shulinab, is claimed to be sacred ground for having been the last battleground between the tribes, and indeed many human remains have been found there. This folklore is interesting to compare with North Savannah folk stories of Makushi battles against interloping Caribs, in which the Iwokrama Mountains figure as a place of refuge, and the presence of Makushi settlements, said to have been accepted as refugees, in Patamona country on the Ireng river well above Karasabai. It would be interesting to resolve the Makushi's own version of history against scholarly work which places the tribe's arrival in the Central Savannahs in the late 18th century from Brazil, and the entry of the Wapishana into the South Savannahs as late as 1810.

Whatever ethnohistory can be accepted, Shulinab villagers seem consciously Makushi, members of an outpost in Wapishana country. Inter-tribal relations have always been excellent in recorded times; at the time of the Amerindian Lands Commission Shulinab and its nearest neighbour, Potarinau, jointly applied for and were recommended for joint occupation of one reservation. By the time village lands were defined in law, the area was split into two contiguous reservations. To this day the two villages have the closest cooperation and the tribal issue only arises when Shulinab villagers are moved to regret the loss of parts of their traditional culture to the dominance of Brazilian entertainment or Guyanese coastlander customs — in common with their Wapishana neighbours.

Most families still use the native tongue at home, and the Catholic church services are conducted largely in Makushi, but use of the language is not encouraged in school. There are said to be still some

elders who practise the Alleluia religion, and ethnomedicine is certainly still strong, with the claimed presence of two piaimen who are regularly consulted for traditional remedies.

Gender Participation in Community Activity

There was only one female participant in the workshop, although we had requested equal gender representation. We raised this in discussion but the issue was not taken very seriously because, everyone said, the women of Shulinab are quite secure in their importance and do not need to assert themselves for more status than they already have. We did speak to several women outside the workshop sessions; they seemed amused that special provision should be contemplated for gender equity, since their partnership at family and community level ensured their contribution in vital ways to the life and development of the community. There are some areas in which women can be specifically targeted, as care-givers to the young and the disabled, and as primary sufferers from alcohol-related social problems.

4.10 SAND CREEK

Access to Central settlement

The main settlement is located on a square mile of flat land where the Katiwau (Sand) river enters the Rupununi River. The main road from Lethem crosses the Rupununi, about 20 miles from Shulinab, by a rocky ford that is passable by 4WD vehicles for most of the dry season. The crossing is about a mile from the village centre at 2°59.514'N, 59°31.353'W. Homesteads are laid out on both sides of the vehicle road for another mile before the Rupunau trail branches off to the left between the two southernmost hills of the Kanuku range. The main road then turns right to go south towards Dadanawa, about 12 miles away. The Rupununi River crossing at Dadanawa is shallower than that at Sand Creek, and the availability of a pontoon there allows vehicles to cross during the rainy season when the river is too high for fording, four to six months of most years.

The settlements which have long been associated with Sand Creek, Weiramur, Arantau and Rupunau, have since the 1980s been subsumed under Rupunau.

Population Structure

Age Group	*Male*	*Female*	*Total*
< 1 yr	7	12	19
1-4 yrs	36	30	66
5-14 yrs	83	97	180
15-19 yrs	50	42	92
20-44 yrs	76	71	147
45-64 yrs	50	49	99
≥ 65 yrs	13	16	29
Total	315	317	632

Sand Creek comprises 118 households, almost all Wapishana.

Extent and Status of Land Title

The Sand Creek reservation defined in the Amerindian Act, bounded by the Rupununi and Sand Rivers and the Kwassiwau and Turukwau Creeks, is estimated as a little under a hundred square miles. The area was surveyed for the government in 1998 but the village refused to accept written title based on the demarcation.

Land Use

The homesteads are mostly to the east of the Katiwau, except for a cluster established near their farms in some low hills on its west bank, quite close to the road crossing. Most of the farms are a few miles away, on the lower slopes of forested hills and along smaller creeks which run into the Rupununi River. The majority of farms are on state land outside the reservation. Most of the land formally titled is considered cattle grazing, and hunting, fishing and gathering takes place in the forests on both sides of the Rupununi. The area thus used by Sand Creek amounts to perhaps a hundred square miles.

Land availability & resource classification

Sand Creek's reservation is mostly savannah; at the time of the Amerindian Lands Commission the village was heavily involved in the cattle industry, and the way forward was envisioned to be in livestock. A

lot of effort was put into improving both the genetic quality of Amerindian-owned herds and animal husbandry practices, in order to equip the communities for development of a modern business based on grazing in the savannahs.

The cattle industry pretty well fell apart after 1969, due to three related factors: First, the national regime's harsh reaction to the Rupununi Rebellion led by ranchers and involving their Amerindian employees and relations; second, the disintegration of the air service to the region with the management and technical collapse of the Guyana Airways Corporation, compounded by the escalation of fuel prices in the 70s; and third, the neglect of protection measures against foot-and-mouth disease transmittal over the porous Brazilian border, resulting in a ban on beef exports from Guyana which is in force to this day. Agricultural and organisational limitations prevented the isolated Amerindians of Sand Creek, and even the several coastlander ranchers holding grazing permissions in adjoining savannahs, from developing the economic potential of the grasslands, and the native population fell back on subsistence farming on the limited areas where traditional slash-and-burn agriculture could be practised.

With only the forest for the livelihood of this growing population, the greatest land resource for expansion has already begun to be used, on both banks of the Rupununi almost as far downriver as the Mapari. This latter tributary is the tacitly agreed boundary between Sand Creek's forest domain and that of Yupukari. Of course the area is all state land but Amerindians of both villages have been undisturbed in their use of it for farming, fishing, hunting and gathering, including logging.

Administration, leadership

Village Council elected March 18, 2000:

Eugene Andrews	Touchau
Dorothy Faria	
Mary Joseph	
Lionel McBirney	
Thaddeus Gomes	
Lawrence Henry	
Maxie Pugsley	
Paul Douglas	
Richard James	
Stanley La Cruz	
Evaristo Bernard	

The "Big House" public building is used as a meeting hall, and a Village Office is now being built. Other infrastructure includes a market building and a sports ground. A landing strip was recently cleared to the north of the village.

Education

There is a new primary school building with an annexe which houses a library, and a teacher's house.

Sand Creek Primary

Staff: 1 HM (CPCE trained), 6 trained, 1 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	9	5	27
Prep B (6-7 yrs)	11	8	16
Prim 1 (7-8 yrs)	10	11	16

Prim 2 (8-9 yrs)	17	16	12
Prim 3 (9-10 yrs)	10	8	15
Prim 4 (10-11 yrs)	7	15	14
Form 1 (11-12 yrs)	21	15	16
Form 2 (12-13 yrs)	7	6	12
Form 3 (13-14 yrs)	4	6	5
Form 4 (14-15 yrs)	8	7	13
Total on Roll	104	99	203

Sand Creek Nursery

Staff: 1 trained teacher, 2 untrained.

	Boys	Girls	Total
Kindergarten (2-3)	9	11	20
Year One (3-4 yrs)	12	8	20
Year Two (4-5 yrs)	7	13	20
Total on Roll	28	32	60

Health

Sand Creek is the site for Health Centre, in effect a 4-bed cottage hospital, staffed by a Medex. Other staff are amalaria evaluator and a microscopist. The Health Centre is equipped with a large solar electric system, which however is not working. Roof gutters feed water tanks to serve the Health Centre.

Water supply

Each household has a shallow well. There are 3 hand pumps but only one of them is working.

Human Resources

The village claims the following skills:

Medex	1
CHW	1
Piaiman	none
Herbalist	few
Microcopist	1
Malaria Evaluator	1
Trained Teacher	7
Untrained Teacher	3
Hunter	6
Fisher	all
Carpenter	14
Joiner	none
Mason	10
Adobe maker	6
Brick maker	none
Chainsaw operator	several
Pitsaw operator	30
Plumber	none
Painter	none
Canoe maker	few
Seamstress	several

Cotton spinner	many
Cotton weaver	several
Basketworker	about half the adults
Leatherworker	several
Potter	none

Persistence and Strength of Traditional Culture

As the second largest Wapishana village, Sand Creek has been exposed to non-Amerindian elements, notably cattle rearing, since the Catholic mission was established in 1918. The population has not increased since the estimate (including Rupunau and Achimeriwau) of 850 by the Amerindian Lands Commission. The decline in the cattle and balata industries has made a huge difference to the economy since the late sixties; in a sense the Amerindians were forced to fall back on their traditional knowledge of subsistence farming, fishing, hunting and gathering. The result is a material culture based on old Wapishana knowledge which permits an acceptable living from the rather inhospitable environment, overlaid by a veneer of acculturation to the dominant national (and Brazilian) culture.

Gender Participation in Community Activity

The leadership is influenced by the presence of Dorothy Faria, a very dynamic woman who is a village councillor and also a member of the Regional Democratic Council. Other village women of high capability wield influence in village affairs not so much by force of personality as by superior initiative and usefulness in a community where the male leaders seem to be less than authoritative. Gender equity is not at issue: the problem seems to be overcoming inertia and apathy among the leadership as a whole. It would not be unfair to mention alcohol as a factor in this situation, since it is an area in which women can operate as a conscious force in the microsociety.

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4.11 RUPUNAU

Central settlement — location & communication

Rupunau is located on a savannah between the southernmost hills of the Kanuku range, about 12 miles south-east of Sand Creek. A vehicle trail runs from Sand Creek between the mountains about 13 miles to Rupunau, then on through Achimeriwau to Shea. Another trail leads south from Rupunau, branching after 5 miles toward Awarewaunau to the south-east or Dadanawa to the west. Though Rupunau lies on a route to Shea, most traffic to the Deep South villages is likely to take a more direct route through Dadanawa.

The village counts the 36 residents, owners and staff, of Weiramur Ranch, a few miles north, among its population, as well as 30 persons in 6 households at Achimeriwau, a few miles east. There is one family of 7 at Arantau, an outstation of Weiramur. The area is traversed by trails good for carts and bicycles.

Population

Age Group	*Male*	*Female*	*Total*
< 1 yr	7	4	11
1-4 yrs	16	17	33
5-14 yrs	44	28	72
15-19 yrs	21	15	36
20-44 yrs	29	28	57
45-64 yrs	13	13	26
≥ 65 yrs	6	7	13
Total	136	112	248

In the whole area are 52 households, 42 in Rupunau, 6 in Achimeriwau, 3 at Weiramur and 1 at Arantau. All are Wapishana except the Fredericks family, of Arawak origin, owners of Weiramur.

Extent and nature of land title

The area occupied by Rupunau village is state land, not covered by any Amerindian title. The settlement, which dates back to 1920, came under the administrative control of Sand Creek up to and beyond the time of the Amerindian Lands Commission, and the land there was included in Sand Creek's request for title in 1968. However the Rupunau area never became part of the Sand Creek reservation and subsequent requests for separate title have not succeeded, leaving the population technically squatters on state land. Meanwhile a Grazing Permission had been issued for Weiramur Ranch in 1966, with the assent of Sand Creek Council, then responsible for the Rupunau Amerindians. When Rupunau established its own Council in 1978, the situation changed from Weiramur grazing cattle on Rupunau's land to Rupunau people living and farming on Weiramur's range.

Land Use

The housing areas in Rupunau, Achimeriwau and Weiramur together cover one or two square miles of savannah. Farm lands to the north-east are spread over several square miles of forest, but in the slash and burn pattern not more than a hundred acres is cultivated at any one time. Walking trails are established to the farms. Cattle herds belonging to two Rupunau families, 25 and 15 head respectively, graze close to the village and do not appear to compete for grazing with the 1500 head of Weiramur's cattle. The latter range over about a hundred square miles of savannah, state land under grazing permission.

Rupunau families fish in the Kwassiwau Creek, which runs across the north of the village, and the Katiwau (Sand) Creek which runs across the south, turning southward just where the Achimeriwau Creek joins it just below Rupunau. Fishing parties go to several other tributaries of the Sand Creek, and occasionally as far as the Rupununi River.

Other land use, logging, hunting and gathering, takes place in the forests along the base of the mountains which almost surround the area — a total of perhaps 30 square miles under very light utilisation.

Rupunau residents agree that as their numbers increase they will not run out of accessible farming lands. The layout of their area between the mountains seems to provide room for expansion of cattle and sheep rearing for some time to come. That part of the Kanukus accessible to Rupunau can supply expanded hunting and gathering needs. However since all the land they already use is not under secure title, there can be little definitive planning for land they might use in the future.

Administration

Because Rupunau is not on titled Amerindian land, its Touchau and Council have no legal status but their authority is recognised by the Regional Administration and the entire Amerindian population. On March 2000 the following were elected councillors:

Richard Wilson	Touchau
Laurentino Herman	for Achimeriwau
Katie Harley	
Titus Indach	
Leonard Douglas	
Herbert Gonsalves	
Josephine Marcel	

Other influential villagers are Headmaster Fred Atkinson, CHW Imelda Aguilar, PLA Basil Douglas, and Carmelita Chan of Achimeriwau.

A Village Office is now being built. There is an HF radio transceiver in the school office. The Council is planning a Village Farm, with a processing building near the farm lands.

Education

There is a new primary school building, and the old building is used as annexe. There is also a teacher's house.

Rupunau Primary

Staff: 1 HM (CPCE trained), 2 untrained Assistants.

	Boys	Girls	Total
Prep A (5-6 yrs)	15	7	22
Prep B (6-7 yrs)	8	6	14
Prim 1 (7-8 yrs)	6	1	7
Prim 2 (8-9 yrs)	3	2	5
Prim 3 (9-10 yrs)	3	3	6
Prim 4 (10-11 yrs)	4	0	4
Form 1 (11-12 yrs)	1	1	2
Form 2 (12-13 yrs)	0	0	0

Form 3 (13-14 yrs)	2	3	5
Total on Roll	42	23	65

Rupunau Nursery

Staff: 1 Teacher, untrained.

Enrolment: not given.

Health

The Health Post is staffed by a CHW, also trained in Microscopy, who has minimal equipment but no major problems.

Water

The new school has a well 23 feet deep with a windmill and tanks, which also supply the nearby teacher's house. All other households have shallow wells/waterholes. The Sand Creek is used for bathing and laundry.

Human Resources

CHW	1
Piaiman	none
Herbalist	few
Microcopist	none
Malaria Evaluator	none
Trained Teacher	1
Untrained Teacher	2
Hunter	most men
Fisher	all persons
Carpenter	few
Joiner	none
Mason	none
Adobe maker	several
Brick maker	none
Chainsaw operator	2
Pitsaw operator	6
Plumber	none
Painter	none
Canoe maker	none
Seamstress	few
Cotton spinner	several
Cotton weaver	several
Basketworker	most men
Leatherworker	few
Potter	none

Persistence and Strength of Traditional Culture

This village is rather isolated and sees little traffic of visitors. The families have been living here for generations in a rather comfortable accommodation with their environment, in which it may be said that their traditional knowledge, skills and culture have succeeded in providing the necessities of life. Long exposure to ranching makes them open to the advantages of modernization, in a gradual adaptation on the traditional base.

Gender Participation in Community Activity

Gender equity is a non-issue in Rupunau, where women take part in all areas of community life.

5. General Analyses

In each workshop we asked for details of day-to day economic activities in the villagers. We recorded complete lists of crops grown and livestock reared, of fishes, animals and birds taken, and forest products gathered. We discussed methods and implements used, processing, problems and procedures, and final use or sale of produce. Across the eleven villages we found close correspondence in the answers. In agriculture there were only very slight variances in the minor crops grown and stock kept, and all villagers used only basic traditional methods. All the variations noted appeared to be a response to market opportunities or local consumption habit; that is, even if all these crops are not now grown in all these villages, if desired they could be grown with equal ease. Similarly, fishing, hunting and trapping were very similar throughout, the differences reflecting only minor variations in the resource endowment of the particular micro-ecologies within what is a fairly uniform environment. To a large extent the same is true of forest produce.

To report on economic activities village by village would therefore be a tedious repetition, and it is preferable to offer one account covering all the communities surveyed.

5.1 Agriculture

5.1.1 Agricultural Patterns

Practically all farming in these villages is on the traditional slash and burn pattern, with a small trend to cash monoculture in peanuts. The staple cassava takes at least 6 months to mature, and can be left in the soil for over a year after it is first ready for reaping. In the superior soils of the Yupukari area, and where Shulinab and Sand Creek farm alluvial soils in the foothills, there is usually one replanting after the first roots are pulled. After the last lot of cassava is harvested the plot will be depleted in nutrients and weeds will have become dominant beyond economic control. The field is then abandoned to fallow for a number of years which will vary from place to place according to initial soil fertility.

Since the cassava is reaped a little at a time, once or twice a week over a long period, this allows a long transition between farms, timed by the sequence of rains. Most families will start a new farm each year, on which they will plant a few other crops, e.g. pumpkin and watermelon, soon after the ground is burnt. Corn is also planted on a new farm, taking advantage of early rains, and the cassava put in after the corn is reaped. There will probably be a separate "provision farm" for bananas, plantains, eddoes, yams and sweet potatoes. Some families will also maintain a citrus orchard, but the main pattern is a mixture of crops planted in suitable patches of the same field as the cassava, at different times according to water availability and growing period. After a field is abandoned it will still be visited periodically, to harvest perennial fruits and secondary root crops which have continued to regenerate by suckers on their own.

In Amerindian subsistence farming more than 90 percent of produce is directly consumed by the family, with small surpluses disposed of for cash needed for essentials that cannot be grown. The low proportion of cash crops is due to a lack of accessible market: transportation is too expensive for low-value products even to the tiny non-agricultural community in Lethem. Since it is not worthwhile to produce more than the family can eat, plot sizes are very limited; it is most unusual for an Amerindian farm to exceed two acres. Half an acre of bitter cassava will provide the staple farine for a family of six on a continuous basis; the edges of the cassava plot will be planted with secondary crops, and perhaps another half-acre will be sufficient for root crops and fruit plants.

Farming methods are uniform across the villages. Most crops are sown with minimum tillage, using a hoe to form low beds. Practically all crops are sown direct; transplanting is only employed in a few cases of special cash crops, generally introduced species or varieties. Weeding is done with a hoe or cutlass.

Irrigation is unknown. Two villages have been given gasoline-powered tillers by the government, and it will be interesting to see how mechanized soil preparation can make a difference to traditional agriculture.

Pests of Amerindian farming are headed by acoushi (leaf-cutting) ants and caterpillars. No chemical pesticides are employed, and since there seem to be few natural methods against insects, crop loss is frequently severe. Caterpillars will sometimes be picked off the crop by hand, particularly if they are of a species gathered for eating. In Yupukari we were told of a plant called "Rasta" which allegedly repels the acoushi, but it was not mentioned elsewhere. In some places the plant called "cassava mumma" was known for the same purpose, but not widely used.

Traditional agriculture has always been in clearings cut and burnt in the forest. since the savannah soils are of very low natural fertility as well as subject to inundation in the rainy season. However recent experiments of planting in the savannah, in beds improved by additions to the soil, and using drip irrigation with simple organic fertilizer, may show that it is possible to grow crops on hitherto unused land close to housing areas. The many advantages of such a solution should encourage close attention to the trials and demonstrations begun in St Ignatius in 1999.

5.1.2 Agricultural Crops

Crops grown are typical of Makushi and Wapishana agriculture, including many varieties of bitter cassava and a few of sweet cassava. The diet requires different varieties of bitter cassava for processing into the staples farine and cassava bread. Farine is subject to fashions in colour and flavour which influence the choice of variety. Again different varieties are planted for cassava bread for eating or for making parakari. The major factor in varietal choice, after yield and desired culinary characteristics, is probably resistance to drought and disease in response to the soil type and other physical features of the farm being planted. These many variables result in a large number of cultivars being available to choose from, each variety keeping its character because it is reproduced on the farm from cuttings. It is the special skill of the Amerindian farmer to keep track of all the features of dozens of varieties, but some individuals will still experiment with sexual reproduction of cassava, which being a lot less stable can give rise to new combinations of characteristics. There is a constant exchange in bitter cassava cultivars between farmers, mostly women, across families and across villages.

Other crops grown include:

Sugarcane
Blackeye peas, red beans, bora (runner) beans
Hill rice, sorghum, minica
Peppers
Squashes, gourds, cucumber
Ochro, eggplant
Pineapple, papaya, passion fruit
Cotton, Kurowa (agave for cordage fibre), Arrow cane
Tobacco, Coffee
Conami and hiari fish poisons

A minority of families will plant tomatoes, spring onions, cabbage and other greens, but the Amerindian diet is generally not strong on greens. It is however notoriously strong on pepper, and many varieties are known. Some households will plant extra peppers to produce shikitai, the fierce dried powder which can be sold for cash. Other cash crops are bananas and of course cassava in processed form as farine, tapioca and cassareep, but because of the distances from most villages to the nearest organised market in

Lethem there is only a small trade in agricultural produce. Cash sales within villages are insignificant because practically all residents are farmers.

There is some opportunistic collection of cashews from trees which grow in the housing areas of many of the villages. The fruit are used for human consumption but even more as pig feed. The external seeds are processed into cashew nuts for local consumption or for cash sale. This is becoming a significant enterprise in St Ignatius, where one women's group has begun centralized processing for Georgetown markets with the assistance of IICA. The project shows signs of success which may lead to plantation culture of cashews in the savannah lands convenient to homesteads in more than one village. Several outside organisations are suggesting new or intensified cultivation of crops, as well as organised collection of fruits now underutilised, suitable for processing for markets outside the region. A start was made in Sand Creek with drying mangoes, but the project failed due to inadequate support from the marketing side.

The biggest non-traditional crop is peanuts, which have been cultivated on a relatively large scale in Rupununi Amerindian areas for over 35 years. The commercial market for peanuts has fluctuated with transport opportunities to the coast, which have too many times frustrated farmers who produced large quantities with government encouragement and credit. In recent times Rupununi peanuts, grown by Amerindians and settlers taking advantage of cheaper trucking to the coast, have had to compete with imported product from huge US agribusinesses. Local processing has been proposed to lower costs and provide employment in the region.

Corn has also been planted on a larger scale in the past, when ranches maintained numerous horses, essential for working large cattle herds. Nowadays several varieties of maize are grown for human consumption and small-scale stockfeed. If a trend to poultry production develops as a protein alternative to dwindling fish stocks, corn cultivation may pick up along with minor grains such as sorghum. Some villages where pig-rearing is on the increase may also move toward stockfeed production in grains and sweet cassava. The surge of interest in fish farming may also lead to increased cultivation of feed crops.

5.1.3 Agricultural land use

As communities grow, in the absence of wage employment outside agriculture, the demand for farmland will increase even for mere subsistence. According to opinions voiced by many workshop participants, the most favourable economic development would be village-based agricultural processing for sale to extra-regional markets. This solution does appear to be quite promising once management skills can be improved to handle all the organisational details. Success in processing will of course multiply the extent of cultivation, which will involve greater acreages. In the short term a strong trend to savannah farms is unlikely. The most fertile soils are in the Kanuku foothills, and it is in the Kanukus that farmers will seek to expand.

Several of the villages surveyed are already using farmlands in the mountains. Yupukari and Sand Creek farmers occupy the banks of the Rupununi River and its tributaries for its whole passage through the Kanukus, Yupukari up to the Mapari River and Sand Creek from Crab Creek upriver. Moco Moco farmlands are among hills at the western edge of the mountains, and their natural expansion is further up the valleys. Shulinab is located next to a part of the Kanukus that is broken up into hills separated by wide, flat valleys. The elevation is good for coffee-growing, and this is a cash crop with good potential. It does appear, therefore, that accessible areas of the Kanuku mountains must be considered as reserves of farmland which may come under more intensive use than the present low level of hunting and gathering.

Another issue in the future is the demand for timber for housing as these populations grow. Moco Moco, St Ignatius/Kumu/Quarrie and Sand Creek are already engaged in logging that will trend more to commercial scale as the local economies grow. Already just outside Parishara a rancher is operating a motorised portable sawmill, processing logs felled by permission of the Nappi council, for commercial sale

to a growing market in Lethem. The mountain forests which are accessible for logging will come under this utilization to a greater extent quite soon. As logging trails are cut into the mountains they facilitate access for farming and increase the effective range of hunters and gatherers.

The conclusion must be drawn that while the heart of the Kanukus will remain free of human pressure for the foreseeable future, the more easily reached fringes have the potential for land use demand in the near and medium term. Expanded agriculture in this district, desirable as it is for human benefit, will be a factor in planning for conservation.

5.1.4 Livestock

The picture of Amerindian crop farming in these parts of the Rupununi is of an ample subsistence on sufficient land of adequate quality to sustain populations of the current order of magnitude. The emerging need for small-animal husbandry is related to increasing human pressure on fish and wildlife protein sources, and this is likely to bring about changes in crop emphasis. One avenue for such developments may be through school farms, as in Shulinab where the school owns a flock of sheep from which an animal will be slaughtered from time to time to feed an organised workforce giving voluntary labour on the school farm. As the flock multiplies to the point where available grass is not enough, the farm must expand to provide some of its supplementary feedstuffs, and there is an opportunity to try different feed crops.

The livestock situation in these villages is more variable. The Wapishana settlements of Sand Creek and Rupunau have their history bound up with cattle ranching, which means that keeping cattle is a natural part of the domestic economy. All eleven villages are located close to ranches owned or run by non-Amerindians (though the ranchers all have close associations with Makushi or Wapishana) and there are many linkages with the cattle industry. Rupununi folk say that in the absence of banks it is best to keep their savings on the hoof, and it is usual for all but the poorest families to have one or a few head close to the homestead. If the family has a bullock cart, it has to have at least one pair of draft animals. Of course cattle multiply at a slow but geometric rate, and within a number of years the herd is a significant asset for very little input.

One trend in cattle husbandry which seems to have has escaped the notice of Amerindian cattle owners is improving pasturage. There may be opportunities to introduce more nutritious grasses in pastures or in forage plots where simple water control measures can be used. Lower-cost fencing, perhaps electrified, to allow rotational grazing may also be profitable. It will require planned intervention to try to demonstrate higher carrying rates, weight gain and beef quality as a result of relatively low additional inputs.

Sheep, goats and pigs represent a similar investment opportunity for a smaller unit investment. All villages have at least a few head of each, and in some villages there are considerable numbers. It seems the variation is a function of investable surplus, that is to say a measure of wealth generation, not resource availability for keeping the animals, which all seem to live off the land to a remarkable extent. All the villages surveyed could allocate grazing land for expanded herds of sheep and goats, and all the farmers could easily produce supplementary feed if they could be shown the benefits of more intensive husbandry.

This is an opportunity for future development which could be brought about by an intervention which would amount to little more than information sharing. With some outside investment in education and encouragement, the communities would devote resources already available, in ways which require only a higher level of organisation and cooperation under consistent leadership. A similar opening exists in poultry and aquaculture, and interest has been shown in wildlife farming of animals such as iguana and capybara, as practised for many years in nearby countries. Incentives for adopting new livestock practices grow each year as traditional protein sources decline with human population increase.

5.2 Fishing

5.2.1 Importance of Fishing

While fish cannot be said to be as central to the culture and diet of the Wapishana people as it truly is of the Makushi, the three Wapishana villages in our survey are as dependent on fish and fishing as the eight Makushi communities. Though Sand Creek and Rupunau have been associated with the cattle industry for most of the last century, their easy access to rivers has accustomed them to fishing far more than the southern populations who have to travel long distances to fishing grounds. Parikwarunau is close to fish sources and many of their families use canoes to go to farm. The Makushi villages are oriented to rivers and creeks which supply their chief protein foods, and their seasonal rhythms are tuned to the annual inundation of the savannahs between the Rupununi and Takutu river systems.

Fish lore is a basic part of the culture in this area. There is an amazing local knowledge of marine life and ways to exploit it, and a corresponding eagerness to learn new methods such as aquaculture. A lot of the handicraft which men engage in has to do with fishing implements, including intricate basketry or wooden fish traps, arrow and spear points hand-formed from wire and bits of metal, and handmade nets and lines of local and imported materials. The traditional knowledge built up over thousands of years has been modified by advancing methods, such as machine-made tackle and nets. These have unfortunately led to accelerated utilization of fish stocks, not only for direct consumption by increasing local populations but for sale to markets in Brazil whose growth has outstripped their own fish production. As a result some popular species have practically disappeared.

In all these villages, therefore, fishing is a basic skill and important occupation, at least once weekly, of almost every individual. All the Rupununi villages complain of declining catches due to increasing pressure on the fisheries by growing human populations. Those located, as in Yupukari or Sand Creek, among a number of largish tributaries of the Rupununi are better off than their neighbours with a smaller choice of fishing grounds. Villagers will make longer fishing trips at the fish migration season. Those north of Moco Moco also make special trips to a lake they call Tranzing, spelled on the map Turantsink, which abounds in fish at several times of the year. Parikwarunau people fish in the Takutu as well as the Sawariwau. Shulinab is fortunate in a large lake called House Lake, where the Sourab River comes out of the hills. Meriwau people fish the Moruiwau and Rupununi on the other side of their hill farms.

In all the villages we made lists of the species caught and eaten, with trends in availability and popularity. Most of the popular species are common to all the villages, with variations according to the different types of habitat in each particular locality. There are also seasonal fluctuations in abundance which vary by species and area. Some fishing techniques depend on interception of migrations at spawning seasons, or taking advantage of savannah ponds drying out in the dry season. An interesting local factor is competition for fish from water dogs (otters and giant otters) in some parts of the big rivers.

Of the list which follows, therefore, there is some variation in species taken, and in the proportions of the catch, across the villages. The variations however are not large enough to justify the repetition that would result from reporting each village separately.

5.2.2 Species of fish caught by villagers

Houri	
Yarrow	
Perai	(4 kinds)
Hassar	(boom-boom, cuyo cuyo)
Patwa	(3 kinds)
Arawana	
Lukanani	smaller nowadays but not yet fished out

Sunfish
Basha
Tiger fish
Cat fish
Biara
Sword fish
Dawala (cuma cuma)
Kulet
Banana fish (Skeet)
Wabre
Dog fish
Yakutu
Dare
Larima
Kassi
Manji
Haimara
Paku
Luga-luga
Cartabac
Imehri
Piab (shapiru in North)

Even in the big rivers, arapaima are very rare nowadays, and laulau rarely caught. Stingray and flounder are known but not eaten in many of these villages. Eels and 3 kinds of crab are occasionally taken and eaten, and water turtles more often. Shrimp occur in small numbers and may be used as bait: they are not abundant enough to be caught for food.

5.2.3 Fishing Methods:

Hooks: hand line
rod & line
spring line (kamurin)
long line (multiple hooks)

Nets: Seine (gillnet, tangle seine, carapixe)
Cast net
nets made or store-bought

Bow and arrow (still very common, special arrow points)

Spear (harpoon)

Maswa (basketwork trap) in different sizes and designs

Stop-off with trap or box

Chopping in shallows, shine & chop by night

Poisoning: by hairi, conami, cassava water
by conami pellets (magic stone)

Diving: with small bow
with "water gun" (small rubber-driven speargun)
now more common with masks

"Twirling" in a savannah pond which is drying out.

In practically all the villages there is a ban on poisoning streams for fish. Testimony in our workshops was that the ban is largely effective, but many admitted to modified methods of poisoning which mitigate the harm to fish stocks.

It is an indication of the cultural importance of fish that in every workshop anxiety was expressed over the decline in fish availability. The growing interest in aquaculture may result in new sources of diet and business for these populations, at the same time relieving the pressure on fish species in the Kanuku region.

5.3 Hunting & Trapping

There was not a lot of variation between the accounts of hunting and trapping given in workshops in the eleven villages. The cultural practices are uniform among the Makushi, very similar among the Wapishana. While some villages are more exposed than others to the dominant Guyanese or Brazilian culture, these people are similar in far more ways than they are different. Their strongest common feature, poverty, allows them little choice to adopt changes in lifeways vital to subsistence off the natural resources of their shared habitat. As a result the native hunting technique, though sophisticated in its knowledge base, is not at a modern level of effectiveness sufficient to pose a significant ecological threat.

Hunting is primarily a male occupation, lower in dietary priority than fishing. Not all men hunt regularly, and there are a few individuals who pursue the expertise, but game is significant in the diet when fishing is bad, as in the rainy season. In some villages most families have hunting dogs (pet dogs not trained for hunting are rare). Hunting for animals is done mainly at night in the forests in the fringes and in foothills of the Kanukus where the farms are located and labba, agouti and bush hogs are a pest, and forest deer and tapir can be tracked or lured, and in the savannahs where deer, land turtles and armadillos are often found. Birds are hunted by day at savannah ponds and in the forest around farms and during gathering trips. In the more acculturated villages it is claimed that monkeys and anteaters are not eaten nowadays. Many people dislike the taste of capybara, which can be found in swamps and near creeks. On rare occasions a special hunting trip will be made by enthusiasts into the Kanuku mountains.

Game appears to be more or less evenly distributed across the Kanuku region. Some villagers claim the high mountains are a huge reservoir of wild animals that come down only to feed off the Amerindians' farm produce. Although few men venture deep into the mountains on any regular basis, the majority seem closely aware of the incidence and habits of wildlife in the heights and in the remote valleys. Intensified utilization of the wildlife resource is restricted by difficulty of travel and lack of guns and ammunition.

Weapons used are predominantly bows and arrows, all locally made on the traditional pattern. Spears are also locally made and used. It is interesting that ethnohistorians claim South American Indians only learned the use of bows just before the contact period, so that Columbus for example encountered societies already in transformation by the unequal distribution of superior weaponry. This means that the large precolumbian populations could be supported by hunting with only close-contact weapons, and perhaps points to a greater reliance on fish than on animal protein. Animal populations in proximity to human settlements must have been affected by the later availability of not only bows but guns, but in this area they would have been able to resurge when firearms in Amerindian hands became a national security bogey after the 1969 "rebellion".

Today there are a few shotguns but cartridges are hard to get and anyway prohibitively expensive. Snares and traps are not much used, but different hunting techniques are used according to the animal hunted. Most common is to take dogs to an area where animal tracks have been noted. The dog follows the animal by scent and corners it where it can be dispatched by the hunter. Without a dog a hunter will lie up in a hide or tree-rest (called, as in all other parts of the interior, a "wabani") for the quarry to pass on its way to water. Another technique less traditional, and known all over Guyana as "shuling", is to move slowly along a riverbank or savannah trail shining a bright beam of light until it reflects off the eyes of an animal transfixed by the illumination.

Birds are taken opportunistically when encountered by an Amerindian, typically a small boy, travelling the savannah or forest trail armed with bow and arrows or even a slingshot. Birds are also hunted systematically by individuals or parties using bows with special arrows made with bulbous hardwood points. In this case a visit will be made to a savannah pond known for resident ducks, or one which is drying out, attracting flocks of predator birds to the fish trapped in the dwindling water, or to a point in the forest noted for being frequented by powis or maam or marudi. Game birds are not nocturnal, as are most of the

animals hunted in this area, but a hunting party on its way home in the morning will be on the look-out for them.

Game hunted (in order of frequency)

Savannah Deer	
Forest Deer	
Labba	
Agouti	(acouri, adouri)
White-lipped Peccary	(bush hog, kairuni)
Collared Peccary	(bush hog, abouya)
Tapir	(bush cow, waira)
Capybara	(water haas, pranwi)
Land Turtle	
Armadillo	(3 kinds)
Alligator	(not caiman)
Monkeys	(4 kinds including howlers)
Anteater	(2 kinds, mainly for medicine)
Tiger	(various, for fat)
Iguana	
Salimpenter	

Birds Hunted

Ducks	(wicisi, muscovy, other)
Powis	
Marudi	
Pigeon/dove/quail	
Maam	
Macaw	(several kinds)
Parrot	(several kinds)
Toucan	
Stork/crane/heron/ibis	(jabiru and others)
Waracabra	
Ducklar	
Hanaqua	

Trapping is carried out seasonally by a few individuals who are in touch with wildlife dealers' agents in Lethem or with Kurt Herzog, a quota dealer who visits from the coast. The latter specializes in reptiles but the trade in birds is bigger. The large Georgetown market for songbirds could undoubtedly take greater numbers if the trade were more organised. Currently it is largely a buyer's market in Lethem and prices are lower than they could be, which indicates that pressure on these species is not at a serious level at this time.

If any progress is made on conservation measures in the Kanuku area, there will have to be research on these faunal populations, their geographical spread and their vulnerability to exploitation. The communities would welcome any regulation that was proved necessary, especially as it would probably help to organise the trade in ways which secured greater long-term advantage for the local supply side. In the present situation trapping represents one of the ways to make money to which local people will always be

driven by poverty, even if the very local knowledge that enables them to carry on the practice makes them uneasy about its sustainability. Most participants in our workshops agreed that wildlife research was necessary, preferably involving local participation, and that their communities stood to gain from rational regulation which took into consideration the needs of the Amerindian people.

Species trapped for sale

Toucans
Songbirds — Twa Twa, Towa Towa
Parrots (5 kinds)
Macaws (5 kinds)
Reptiles (for Kurt Herzog) — spectacled caiman, mata mata turtle, toads.

5.4 Forest Resources Utilization

The forests in and near the Kanukus supply local plant-based materials needed for housing and crafts. Palms for thatching and fruit also grow along savannah creeks. Only a few special items like tree gums and latex, and medicinal plants, require a rare trip into the mountains. Other specialities of the diet, like brazil nuts, are collected in the deep forest but the market is so disorganised that rather than make a special trip an individual will visit a remembered site in passing for another primary purpose.

Even in the most acculturated villages, our surveys revealed a wide and deep knowledge of forest products and their use and gathering in the Kanuku area.

5.4.1 Items gathered

Wood for house building
Roofing thatch — ite, cokerite, awara
Basketry fibres — mukru, nibi, ascitar, mamuri, kamwari, tibisiri
Wattles for mud walls
Letterwood for bows
Beads and other decoratives for craft
Balata latex
Honey, beeswax
Gums and resins — karamani, hiowa, locust gum, bloodwood gum
Bird trapping gum
Medicines — cinchona and many other barks, greenheart seed, crab oil, copaiba oil etc
Haiari and other fish poisons, curare vines (reported though dubious nowadays)
Fruit — turu, lu, ite fruit, awara, acquero and many others
Edible oils — awara, cokerite
Tonka beans, sawari nuts, brazil nuts
Turtle eggs, caiman eggs, iguana eggs
Edible grubs — tucuma worms, cokerite worms, gru-gru beetles, acoushi ants

5.4.2 Craft production & marketing

Handicraft is essential for local production of many items of daily domestic use. Most important are basketwork matapis and sifters used in cassava processing, and various baskets and trays used in food preparation and serving, all woven from the mukru reed. Agricultural loads are carried in warishis, which are frame backpacks woven from nibi lianas, by means of which a hundred pounds can be fetched for miles on the back of a person, supported chiefly by a bast strap around the forehead. Fish traps and bows and arrows are made entirely by hand from local materials. Baskets known as darawan are made in several patterns from leaves of the ite palm. Awara palm leaves and shoots make hand fans for the cassava bread process. Cassava processing depends on graters handmade by inserting fragments of metal into wooden boards, sealed by karamani gum. The staple drink parakari is fermented and stored in large containers called goobies, which are still made by hand from balata latex.

Although modern substitutes are seen for some of these traditional domestic items, notably mill-woven cotton hammocks and moulded plastic parakari containers, there are still some items which can only be made in the old way. In the present generations there is a fair proportion of adults and older folk who are expert at the old handicraft, but skills are not being passed down to young people fast enough to ensure they will not be lost. Already, for instance, there is no potter in the majority of these villages. With the traditional crafts can disappear much of the Makushi material culture.

One way to preserve traditional handicraft is to produce items for the urban market, where indigenous artifacts can command a much higher price than the modern equivalent. However in the Rupununi there is almost no organised marketing channel for handicraft, and expert weavers and woodworkers are not prepared to deal with the problems of selling their product. The only exception is the Rupununi Weavers Association, which has managed to make lucrative overseas sales of hammocks. Women in several of the villages sell handspun cotton to the Association, and the trade has potential once the organisational problems, too complex to go into here, can be overcome.

5.4.3 Logging

In some of the villages we found that woodcutting for timber was not just a minor use of the forest resource but potentially a serious commercial enterprise. Amerindian buildings in the Rupununi are generally made of adobe, an advance on the older wattle and daub. In modern times there is a trend to burnt bricks, where local clay resources permit, or concrete where money is available, such as for externally funded public buildings. The timber fittings and roof framings of these buildings have traditionally been made from round timbers cut from secondary forest close to the housing sites. Now there is greater use of sawn timber for building accessories including roof frames, flooring, doors and windows, and a few all-timber houses are being built. In the villages there is increasing use of chainsaws, which are taking over from the manual pitsaws which have long supplied local demand. For both kinds of sawing, larger logs are more efficient, and this trend is increasing the exploitation of the bigger trees in primary forest. Even more efficient are portable bandsaw or circular saw mills.

As the Rupununi enters into its long-desired economic development, there is a demand for heavy timbers for public works including bridges over the numerous rivers and creeks crossed by the main roads all the way from Kurupukari to Achiwuib. A significant new feature is the rapid expansion of housing in Lethem itself, soon to achieve township status. There, brick and concrete structures are more popular than all-wood ones, but all require sawn timber for roof frames and accessories. The growing demand for sawn wood can be satisfied from the forests around the Kanukus, close to the villages of our survey and convenient for trucking to the Lethem market. It makes excellent economic sense to utilise the valuable resources of the area as local materials for infrastructural development, providing employment with the profits remaining in the district.

The first serious sawmilling enterprise in the area was started up in 1999. The owner, David King, has excellent Rupununi credentials, being the son of a Melville mother and the husband of a Makushi lady of the Buckley family prominent in Parishara. They have retired from successful businesses including sawmilling in other parts of Guyana, and recently returned to develop a progressive ranch just north of Parishara. With the assistance of his three grown sons, David King has introduced an efficient, modern portable mill supplying an outlet in Lethem with quality materials at competitive prices. He is logging, in an equally progressive low-impact style, in forests north of Nappi where commercial varieties are relatively accessible. Although the land used falls outside titled Amerindian land, he has insisted on compensating by cash royalties the villagers of Nappi for any notional loss of their interest in the natural resources close to their domain. Since his ranching and sawmilling businesses offer wage employment to Parishara residents, and since he enjoys the good relationship he deserves with all local leaders, Mr King's enterprise is a model for the growth of a timber industry representing development from the natural endowment. Issues of sustainability will of course arise, and local communities with diverse vested interests will have to be involved in their resolution.

This detail is worth going into because it shows the case which must be met by any initiative toward conservation in the Kanukus. Of course any plan to protect nature must take account of the development needs of the area, but local residents cannot help an apprehension that conservation equals restriction on

their resource exploitation. This is an issue that must be resolved by explanation and consultation, with a constant awareness that it is a potential source of misunderstanding and delayed acceptance of moves toward conservation measures.

The same difficulty would apply to the small-scale logging practised at village level in most of the villages surveyed. Moco Moco in 1998 and 1999 allowed a Lethem group of chainsaw loggers permission to extract timber from its forests in return for materials for buildings in the village. The arrangement was terminated following a dispute over royalties on timber sold in Lethem, but Moco Moco leaders remain aware that their reservation contains a valuable source of revenue to which they can turn whenever favourable terms can be negotiated. In St Ignatius five villagers engage in commercial logging and pitsawing for the Lethem market. In Sand Creek several forest entrepreneurs employ a total of six power saws and twelve pitsaws to produce lumber for commercial sale. Both they and smaller-scale operators in Shulinab accept contracts to supply materials for publicly funded buildings and road bridges in the vicinity. In all the villages there are men using chainsaws and pitsaws to supply local demand for construction and other needs such as school and church and domestic furniture. All these legitimate forest operators will need to be satisfied that their livelihood is not threatened by any restriction on timber extraction from a protected area.

A list of species logged across the villages would include:

Water cedar
Bitter cedar
Silverballi (freijur)
Hububalli
Crabwood
Purpleheart
bloodwood
Bulletwood
Redwood (a euphemism on the coast for bulletwood, illegal there)
Kenazib
Wichabai (split for fence posts)
Rap-rap
Piniokin
Mora
Greenheart
Kabukalli

There is no doubt that letterwood has been sold to coastlander dealers, up to quite recently, and it should therefore be counted as a timber product as well as a handicraft material. This exotic material, which is locally used for bows and walking sticks but known to be of high export value, occurs in some lowland forests and in the mountains. Yupukari and Parishara men claim they do not cut living letterwood trees but gather the heartwood "tacouba" of long dead trees, which is a logical labour-saving measure, probably shared by most Amerindian bowmakers, in dealing with an extremely hard and heavy material. However the extremely high prices paid by exporters in Georgetown must present a temptation to exploit the few trees still growing in the area.

5.5 Mining

In the general pattern of migrant labour many Rupununi men have worked as miners in various gold fields of Guyana, and there is a familiarity with mining issues at an informal level. There is an awareness of the presence of gold in some parts of the Kanukus, including the Mapari Creek, which has been a medium scale prospecting site, and other locations that have been investigated over the years. It is general knowledge however that the gold deposits are too poor to justify any significant operations.

In Sand Creek the collection of amethyst was mentioned, from outcrops found in some savannah areas to the south of the village. The semi-precious stone was sold to Brazilians who crossed the Takatu illegally in small trucks perhaps ten years ago, but the enterprise did not last long, presumably because of the low grade of the product.

Occasionally a group of men from any one of these villages will go on a prospecting trip into the mountains, more as an adventure holiday than as an economic venture, and return with small amounts of gold and diamonds, perhaps just equivalent to what they would have earned in regular occupations, but certainly not enough to justify the rigours of travelling and the dangers of snakebite, malaria and other accidents prevalent in the mountains. There seems to be no sense that the mountains hold any mother lode of great wealth, and even the suggestion that Vannessa's investment in prospecting must surely be justified is balanced by superstitions that the mountain spirits will exact a high price in human life and suffering for the gold and diamonds they may be guarding.

There is of course much interest in the Vannessa investment just mentioned. Briefly, we learned that in 1998 the Vannessa Mining Company made an agreement with the Touchau and Council of Moco Moco to carry out physical prospecting for minerals on land within the village reservation. In return for certain material support to community infrastructure, to a value accrued at a set monthly rate during the life of a prospecting licence which the company expected to get from the central government, the village gave written consent for the company and its agents and employees to enter into the mountains within the village's lands, and there dig test pits in the earth and otherwise explore for indications of commercially exploitable mineral deposits, specifically gold and diamonds. In the event of discovery of commercial deposits, separate agreements would have to be negotiated over actual mining operations. Vannessa committed itself to offering Moco Moco villagers any labour opportunities resulting from the exploration, and the prospect of wage employment was no doubt the greatest factor in the village's consent.

In all the villages we visited, but particularly in Nappi, Hiowa and Kumu whose farmlands abut the Moco Moco reservation, persons were following the company's deal with Moco Moco with some apprehension. Particular fears were expressed that excavations and pollution in the mountains would affect water quality in streams leading to creeks used by downstream settlements, that trees would be felled for access of machinery, and that noisy human presence would drive animals away. The very presence in the area of mining prospectors also disquieted villagers over the social effects of the mining culture, and the promise of employment to local candidates was not much comfort. It was reported that the village of Nappi was also approached by Vannessa but a similar deal was not agreed.

This issue is regarded throughout the subregion, and indeed the whole of Region 9, as more than a local matter for Moco Moco alone, but the legitimate concern of all the village authorities, since the consequences of the operation, success or failure, will reach far afield. At the same time it is neither easy nor simple to advise a village living in poverty not to accept the chance of material advantage, in the absence of any painless alternative, and in the face of many promises of safeguards against undesirable side-effects. The situation is being watched by many observers, from all the villages we visited, from the regional administration and from several other groups and organisations mindful of the unhappy history of indigenous peoples in connection with mining, in Guyana and in many other parts of the world.

The regional authorities do not expect Vannessa to proceed with prospecting in the Moco Moco reservation, and the company's application for a prospecting licence there appears to be bogged down in the bureaucracy of the Geology and Mines Commission. If Vannessa do not soon make visible efforts to fast-track the application, it will reinforce a certain cynicism expressed by a minority over their propositions to Moco Moco.

In the context of a Protected Area, the general opinion we heard in all the workshops is that if a ban on mining were to be part of any new regulations for the Kanukus nothing much would be lost since there are not significant quantities of gold there anyway.

5.6 Out-migration

Though there is no lack of economic opportunities in Amerindian agriculture, the expanded scale necessary for commercialisation would require levels of organisation and capital now unavailable. At the same time there is a trend especially among young and/or educated people to prefer wage employment. As a result there is considerable movement out of the village in search of jobs. The greatest movement is to Brazil, where jobs are available in commercial farms between Bon Fim and Boa Vista and beyond, and in the high construction activity associated with rapid economic expansion in the state of Roraima. Practically every family in every village surveyed has members living in Brazil, even more than the relatives who live in other parts of Guyana.

Rupununi Amerindians in Brazil are employed chiefly as farm labourers, construction workers, domestics and service workers in bars and restaurants. There is considerable exploitation especially when the Guyanese are undocumented. Rupununi Amerindians admit that, barring rare exceptions, in Brazil they do the same kind of work they would do in their own village, for the profit of an employer who might not treat them well, but still they prefer to be organised and directed and paid in cash from which they can save to buy goods to which they would have no access at home. Such goods confer prestige when they return, whether permanently or on holiday, to the native village.

This migrant labour is preponderantly temporary, as young persons go off to seek their fortune and return after a stay of months or years with material spoils of bicycle, fancy clothes and boom boxes, often with a skill learned on the job, with a taste of a different culture and a sense of wanderlust satisfied. Such cases are not seen as harmful to the community, as they fit into long-established cultural patterns and provide an infusion of new ideas. Other cases, where an entire family goes off and the children's education is disrupted by the sojourn, or where the migration represents a permanent loss to the village of the talent and energy of promising individuals, cause alarm in leaders who see the cream of their society being skimmed off to the benefit of another country.

There is another kind of migrant labour, in which many of the men will hire out as day labour to enterprises outside the village. Except in St Ignatius and Kumu, the nearest employers are ranches, but some men have travelled from the furthest villages as far as Moco Moco, during the construction of the hydro project, and Lethem for government and private sector work such as the building trade. Karanambo and Dadanawa ranches offer sporadic employment to boathands as well as vaqueiros and general hands. David King hires for his ranch and for logging and sawmilling, and ranches close to several villages use local workers to the extent that their own fortunes demand. These labour opportunities are scarce and seasonal.

The village leaders are aware of out-migration as a problem, and the solution as the provision of job employment which would keep their people in the village. They are conscious that their schools are graduating young people every year — an estimated ammual total of 130 in these 11 villages — for whom, they feel, jobs have to be provided if they are not to leave and make their lives away from the village. There are acutely mixed feelings about the brighter children who, through their success in gaining scholarships to Georgetown secondary schools, become educated in ways which practically force them into permanent exile.

Scholarship winners represent a loss of talent to their home villages as a direct reward for all the effort put into earning their success. Although the regional administration have it as a priority for change, at village level there seems little hope of escaping the wierdness of an education system that systematically deprives Amerindian communities every year of their brightest and most promising hopes for the future. At the same time there is no national system which sets out to improve the prospects of the second-class

students left in the villages, no national effort to offer real alternatives to eventually seeking their fortune far from home.

5.7 Other economic activity

5.7.1 Prospects for a diversified economy

In each workshop we listened very carefully to expressions of participants' preferences in occupation. We sought to record the vision these communities shared for Amerindian development, for ways they considered ideal to make a living and provide a secure future. Participants were pragmatic in assessing that the regional economy had to be based on natural resources, but that Amerindian agriculture as presently practised would not be profitable enough to overcome poverty. Either the agricultural base would have to be modernized, or the timber industry would have to be expanded, or mineral resources would have to be discovered and exploited, or preferably all three, as sources of even moderate prosperity. The fledgling efforts being made in ecotourism and handicraft do not hold much hope for rapid growth.

Timber or mineral extraction is envisaged as medium scale enterprise, financed and managed by non-Amerindians, giving wage employment to villagers whenever they wished to work. Modern agribusiness based on growing crops or livestock and processing for market was similarly envisaged only as owned and operated by some rich outfit from outside the community, which could employ residents on a permanent or temporary basis according to the wishes of the employee. In the pervasive poverty if the present situation, this is the solution hoped for in these villages.

We explored this issue in every workshop, trying to learn why a group of 21st century Guyanese believe themselves incapable of taking part in economic development except as wage employees for bosses who do not share their cultural heritage, rich in knowledge of the natural resources of their own habitat. It is an inferiority complex embedded in the social psychology by their entire post-contact history of unequal relations with dominant incomers to their territory. It amounts, even in a time of mounting political consciousness, to a culture of exploitability which will not be reversed in a generation.

Whatever the hopes or chances for the inculcation of self-determined economic development, the test of the situation comes down to this question: what economic activity is available or in contemplation which can provide the even paid employment which the villager feel they need to safeguard their future? The answer, none or few, is depressing to the village leadership and to any outside observer. Even in the most promising sector, agroprocessing, there is no organised enterprise and the little production destined for market is done at a family level. The solution of integrating economic effort with other communities does not arise in a society which is traditionally ingroup-oriented and relatively isolated by transportation difficulties.

While it is true that Conservation International is not a development agency, these economic facts of life will remain the background to all initiatives for change among these communities. They indicate that, without investment by outside entrepreneurs, land use and resource exploitation will probably not accelerate in the near future since, even if financing were available, there is little likelihood of local initiatives for development much beyond subsistence activities. Any discussions on a Protected Area must emphasise job opportunities in positions which utilise the relevant skills gained from Makushi and Wapishana culture, and build on traditional knowledge with training in technical and management fields. It is the prospect of employment, at least as much as the preservation of natural resources for their continued benefit, that will dispose these communities to cooperate in planning and implementation of a PA scheme in the Kanukus.

5.7.2 Subsistence vs market activity

Discussions of economic activity indicate that there is very little organised production in any of these communities for sale either within the village or outside it. There is a market building in many village centres which are used for periodic selling occasions, and there are one or two small shops in most vil-

lages, but no one emphasised the role of commerce in daily activity. Since many staple items have established cash values for the very limited local trading which does take place, it was possible in the workshop to arrive at a rough and subjective estimate that between one-sixth and one-quarter of total family consumption was of cash-bought goods. However enquiry elicited a list of items essential to ordinary life and only obtainable for cash:

Things bought by villagers

Salt, soap, matches
Cigarettes, beer, soft drinks
Clothing, rubber slippers, shoes
Fishing line, hooks, fishnets
Agricultural tools: cutlasses, axes, hoes, files
Kerosene, candles, flashlights and batteries
Quite a full range of regular groceries
Bicycles and parts, chainsaw parts, fuel and lubricant
Building materials, tools and hardware.

Clearly quite significant amounts of cash are being earned, since there seems to be little actual hardship or deprivation among most of these populations. Indeed the partial lists of material possessions in some of the villages reveal substantial cash investment. One example is given below, from a village of average, or slightly above average, prosperity for the area:

Things owned by Yupukari residents

Bullock carts: 18 in Yupukari, 12 in Quatata, 4 in Kaicumbay, 3 in Katoka, 6 in Fly Hill, 2 in Marakanata. For each cart there are at least one pair trained oxen.
Cattle: over 300 in Katoka (the church herd), 50 privately owned in Katoka, 45 in Yupukari, 13 in Kaicumbay, 30 in Quatata, 87 in Fly Hill, 30 in Capybara and 11 in Marakanata.
Horses: 30 in Katoka, 13 in Yupukari, 14 in Quatata, 6 in Capybara, 8 in Fly Hill. Horses are essential for managing any herd of cattle.
Donkeys: 1 in Katoka, 3 in Quatata, 4 in Capybara.
Sheep: one small flock of about 12 in Quatata.
Pigs: beyond count: most families have several sows which are producing all the time.
Chickens: similarly ubiquitous and innumerable; like pigs and sheep they appear to live off the land to a remarkable extent.
Dogs: every family has dogs, claimed as hunting dogs, which suggests higher monetary value than pets, in the sense that Amerindians profess to be too poor to support an animal that will not repay its keep.
Bicycles: At least one, sometimes several, in each household. These carry loads such as farm produce as well as people.
Sewing Machines: 3 in the Yupukari sewing group, another 5 or 7 privately owned.
Saddles: A substantial investment. Most riders have one.
Pitsaws: 3.
Chainsaws: 2 belonging to the village, 1 privately owned.
Gas stoves: 5.
Gas refrigerator: 1.
Pedal powered cassava graters: 4.

Radio/Tape players: almost all households.

This kind of listing was taken in most of the workshops, and Yupukari appears to be fairly typical in terms of private assets. The smallest villages, Parikwarunau and Rupunau, disclosed less personal wealth, and ownership of cattle is uneven due to historical patterns. All Rupununi Amerindians, of course, claim to be mired in abject poverty, and some show more evidence of it than others. Statistically they do rank very high in the national poverty indices, though there is little glaring destitution. But there is evidence that there is quite a lot of money income to this population as a whole. It would take a long and detailed study to trace the sources, as between Brazilian employment, short-term labour outside the village, remittances from migrant labour of family members, sale of livestock or surplus agricultural produce, or others not yet disclosed. However it is possible to assess, from observed activity as well as from the very difficulty of discerning earning methods, that the market system is at a very low stage of organisation in this subregion.

This finding relates to the absence of formal economic enterprise in the villages. Given the recently emerged preference for wage employment, this situation will have to change if the communities are to grow or even survive along any lines that resemble their traditional social organisation. It will be interesting to observe how the circum-Kanuku communities respond to the challenge of finding the social strength to evolve appropriate modern forms of economic organisation.

CONSERVATION
INTERNATIONAL

REPORT ON A STUDY TOUR TO SURINAME DURING 10 – 15th AUGUST 2000

Wednesday 23rd August 2000

REPORT ON A STUDY TOUR TO SURINAME DURING 10 – 15th AUGUST 2000

1.0 BACKGROUND

During discussions among Conservation International Guyana (CIG), local government officials of Region Nine and Captains of Amerindians communities in Region Nine, it emerged that there was a need for more information on Conservation International's activities in other countries. This need for information arose because Amerindians generally react to discussions on the establishment of protected areas with suspicion and apprehension in Guyana. This is especially so with regard to the potential impact of such interventions on the rights they have traditionally enjoyed over their land resources.

Several Amerindian Captains of Region Nine have therefore requested the support of CIG to observe the projects in which CI is collaboration with the indigenous peoples of Suriname. CI Guyana agreed to support this initiative and a study tour was arranged to Suriname during 10 – 15th August 2000. The primary objective of the study tour was to observe the manner in which CI is collaborating with the communities of indigenous peoples and to assess the impacts their projects were having. It was also expected that the Amerindian Captains elected to participate in this tour would have a responsibility to share their experiences with their communities and other indigenous leaders.

2.0 PROGRAMME OF ACTIVITIES AND ITINERARY

A detailed description of the itinerary is attached in Appendix 1. Besides discussions with community leaders, tours of the villages were also undertaken. In addition to a list of participants, a list of persons met by the participants and other important contacts are also included in the appendices.

3.0 DISCUSSIONS

3.1 DISCUSSIONS AT GALIBI

'A number of international events are occurring and we need to participate [in order] to be counted internationally.'
- Vincent Aloema, Vice-President, UMARI

'Success in any initiative depends on the level of participation of community members. It is also important that there is transparency. It is important for sections of the community to buy into the process. This cannot be overemphasised!'
- Denis Kiba, designated Chairman of STIPUNAL

'The establishment of new bodies is not a problem because the community is aware of global trends and if you want to be counted you have to adjust.'
- Denis Kiba, designated Chairman of STIPUNAL

'This is a unique village: they [the community members] have found their strength and are using their strength to develop themselves.'
– Vincent Henry, Regional Vice-chairman, Region 9

3.1.1 Strategies for Sustainable Development

The primary source of income for the community is derived from fishery resources. Tourism is the second largest source of income and has been increasing over the last two-three years. The following subsections provide some insights into how the community has oriented itself to foster its development.

3.1.1.1 Organisation of the Community

Galibi is well organised to support the process of community development. Conceptually, the Chief is responsible to the community for all aspects of village life. The various organisations within the community (see appendix 4 for a partial list) are delegated specific tasks and each is responsible to the Chief for the effective implementation of its mission. The organisations in the community include an organisation for market sellers, a women's organisations and UMARI (a Galibi village development foundation). UMARI is a statutory organisation that is responsible for advocating appropriate development opportunities within the community.

In addition, although the details were not clarified, it was pointed out that some of the organisations in the village were developed to facilitate access to donor funds. When questioned on the community's position regarding donors insisting that statutory organisations/bodies be established to access funds, Denis Kiba stated that 'the establishment of new bodies is not a problem because the community is aware of global trends and if you want to be counted you have to adjust.'

3.1.1.2 Full Participation of Women in Development Initiatives

Women appear to play a major role in the development of the community. They have performed all the tasks required to construct a Women's Centre in the community using financial resources from their own fundraising efforts, the Village Fund and external donors. The women's organisation (Women Forward) also owns a boat, which is used to provide transport for tourists visiting the community. During one evaluation session, Touchau Willie Clement expressed shock that women could play such a 'healthy' role in the community. He therefore expressed the opinion that, because of this, the community has 'a long way to go', i.e., it has significant potential for further progress.

3.1.1.3 Cultural Conservation

Galibi appears to be an excellent example of a community that categorically values its traditional culture. This is partially reflected in what appears to be the daily practice of community members on *sambura* drums. However, the most potent reflection of how much the community values its culture is its policy regarding the tribal language. This policy emphasises that the local language is the first language of the community and this is emphasised to youths in the society.

3.1.1.4 Indigenous Control of Development Initiatives

The Guyana delegation was informed that the community maintained some control over the pattern of development that unfolds within the community. This is reflected in previous community decisions to disagree with investment proposals to construct a road to the community and for the construction of a hotel within the community. During the daily evaluation of observations, admiration was expressed for the deliberate and proactive approach that the community takes to the process of development.

Further evidence of the extent of community control over the management of natural resources is reflected in the role of the community in the management of the nearby nature reserve. There is an agreement between Galibi and STINASU that stipulates that the staff responsible for the management of the reserve must come from the village of Galibi. It was also agreed that the members of the community had to participate in the construction of the lodges established for ecotourism. Further, it is agreed that all tourists visiting the Warana lodge must also visit Galibi village, since this would allow the village to achieve further benefits from the establishment of the reserve. This benefit would be further multiplied because members of Galibi village manage the transport facilities.

Discussions with the community leaders have also clarified that the community's strategy is to have full management of the reserve. However, the full capacity for this is not present within the community at the moment. It was disclosed that the intention is to manage the reserve to, not only local and national standards, but also to international standards.

Finally, a 'Village Fee' of US$ 300 is normally charged to parties visiting the village. However, the details of this fee were not clarified during the discussions.

3.1.1.5 Independence and Initiative

It was observed that the community showed a clear sense of independence and initiative in managing its challenges for development. It was pointed out that although the government could potentially make major contributions to socio-economic development in the village, the community has been forced to do many things on its own. The achievements are therefore the result of a persevering attitude. One reflection of this is the decision by the community members to pay for electricity produced and consumed within the community, since the government has not provided the diesel required for this purpose.

3.1.1.6 Land and Development

The traditional perception of land is that **'what is around you is yours'**. However, Galibi does not have legal title to the land it uses traditionally. In this context, it was observed that the community did not allow the lack of legal title to its land to prevent it from taking initiatives for community development.

The Vice-President of UMARI pointed that collaboration with institutions to stimulate community development does not imply that the community has given up its claim of rights to the land.

The community appears to take the management of its land resources seriously since its motto regarding its land is **'where we live from we should be able to manage'**. However, the Vice-

President of UMARI noted that the Surinamese Government has used the argument that the community does not have the capacity to manage the land for logging, protection, etc., to avoid addressing the issue of land title. The Vice-President therefore observed that the utilisation of collaboration opportunities empowers the community to fill the gaps in the required capacity for resource management. This could lead to a situation where the community would be able tell the Government that they have developed the capacity to manage their land. He emphasised that without the required capacity, the takeover of the management of resources by the younger generation will remain an illusion. The Vice-President therefore concluded that training is of paramount importance to the community.

It also emerged from the discussions that VIDS (Centre of Indigenous Peoples of Suriname) is developing a project that will create capacity within communities to support the demarcation of indigenous lands. The intention is to forestall the Government from taking the position that the human resources required to demarcate traditional indigenous lands are not available. VIDS is therefore confident that, 'although the land issue promises to be challenging, the organisation is well prepared to deal with it in a manner that will lead to success.'

During the discussion on land rights, Touchau Willie Clement clarified that members of his community are afraid of the activities that may be promoted by CI Guyana because they think that such activities could result in their traditional land rights being taken away. He observed that it is now clear to him that it was never the intention to compromise the traditional land rights of the indigenous peoples.

3.1.1.7 Communication for Sustainable Development

A local radio station is established in the community and is managed by the members of the community. This station emerged out of the need to inform community members about the opportunities for development and to sensitise members about relevant issues.

3.1.2 Donor Support for Sustainable Development

A small revolving loan programme is available to provide funding for the development of alternative income generating activities for those persons within the community who have formerly benefited from selling the eggs of endangered turtle species. The maximum that may be borrowed from the programme is US$ 2,000 (over G$ 350,000) at a rate of interest of a mere 3 percent. However, the high demand for loans within the community has resulted in many persons not being able to borrow such a large sum. So far there are no problems in relation to the repayment of the loans. However, the first set of loans has to be repaid before a second round of loans could be issued.

The modalities for accessing a loan include the formulation of a proposal, which is then submitted to a project committee for approval. The small loan programme targets projects for building local capacity and supporting infrastructure development. The first phase of the loan disbursement focuses on tourism. It has been decided that the second phase will focus on the development of activities related to the fishery resources of the community.

One such alternative income generating activity is an investment in a simple lodge that provides shelter and basic cooking facilities for low spending tourists to the village. The owner of this lodge formerly benefited from commercialising the eggs of endangered turtle species.

An icemaker has been funded by the European Union to provide support to the fishery activities in the village.

During the discussions, the Vice-President of UMARI pointed out that the community did not want to participate initially in the UNDP small grants programme. The project was mistakenly perceived as 'the white man coming back to get resources' and was therefore seen initially as a threat by the community members. **A total of three years passed before the community finally adopted this project. The community has now seen that ecotourism, supported by the small loan programme, is a good alternative because it is not very damaging to the environment and is a good way to generate resources for the community.**

3.1.3 Conservation International and the Community

It was emphasised that CI Suriname is not an implementing institution for development interventions. Rather, CI Suriname is a facilitator of development. The communities with which CI Suriname collaborates therefore have to be clear on their development options and the exact direction they wish to initiate development activities. **It was further emphasised that the community leaders had to invite CI to support initiatives for development in which there is mutual interest and this meant that CI does not impose its will on communities.** Development could therefore be stalled if a community is not clear on its needs.

Generally, CI has no interest in permanently supporting development initiatives within communities. Communities are there informed, at an early stage, that once the objectives set by the CI partnership with the community are achieved, the collaboration with the community would be terminated. The community would then be completely responsible for sustaining the initiative. The general pattern of collaboration with CI may therefore go through the following stages:

- a clarification of the needs and priorities of the community;
- a request for assistance to CI;
- agreement to collaborate to achieve specified objectives that also fall within the scope of CI's mission;
- achievement of the specified objectives;
- the exit of CI; and
- the community taking responsibility for sustaining the initiatives after CI's exit.

Finally, it was pointed out that Conservation International had no direct project in Galibi. However, because the community was such a progressive one, it was decided that the Guyana delegation should have the benefit of observing the patterns of development within this community.

3.1.4 Other Highlights

- Touchau Willie Clement of Guyana expressed the desire for the establishment of a Centre by CI in the Kanuku Mountains area. The Touchau also expressed anticipation for collaborating with CI if all goes well.

- Neville Waldron expressed the hope that this visit will mark the beginning of a process of information exchange and sharing of ideas and experiences. This sentiment was echoed several times by various Captains in subsequent discussions.

- Armand Karufodi pointed out that cooperation between CI Suriname and VIDS has been successful. A trust fund has been established and VIDS is represented on the Board that manages this trust fund.

- The opinion was expressed that the leader of Gabili was not a dictator. Admiration was expressed for the pattern of delegating responsibility for community development. It was suggested that the success of Galibi in its development efforts was a result of the quality of its leaders.

- **It was emphasised that the present success of Galibi was the result of a long period of confronting the problems facing the community. It was noted that there were failures, in addition to successes, and that the community had learnt from its mistakes.**

- It was emphasised during the discussions that development has a higher chance of succeeding if women and youths support the process.

- It was suggested that although the leaders in the community appear to be capable, they could become even better leaders if they were trained.

- One lesson from experiences in trying to facilitate development is that consultations are not enough; the full partnership of the indigenous peoples is required for effective development.

- The captains of the two communities comprising Galibi are currently in Holland to receive a prestigious award for their contribution to development among the indigenous peoples.

- **It was pointed out that the idea of a protected area in the Kanuku Mountains area in Guyana is a national initiative and that the role of CI Guyana is to ensure that the relevant communities participate in the process of developing a protected area.**

3.2 DISCUSSIONS AT KWAMALASAMUTU

'Since CI Suriname has been in Kwamalasamutu they have been helping us in our work.'
- Asongo Alalaparoe, *Patu Entu* (*Granman* or Head Chief), Kwamalasamutu

'If he [Stan Malone] does not work according to the rules, then I will release him and put him in jail. Until now, what we have seen is that the support by CI Suriname is for the benefit of Kwamalasamutu – for all the people in the community.'
- Asongo Alalaparoe, *Patu Entu* (*Granman* or Head Chief), Kwamalasamutu

'If we have a problem, we put it forward and, just like a son to a father, CI Suriname will make an effort to help us whenever they can; and that is why I kept hanging on to him [Stan Malone] and the organisation.'
- Asongo Alalaparoe, *Patu Entu* (*Granman* or Head Chief), Kwamalasamutu

'We go to the shop [the forest] for our protein supply and therefore our shop needs to be protected and managed by us
just as the owner of a shop in a town protects his shop.
We therefore have a major responsibility as shopkeepers for our people.'
- Asongo Alalaparoe, *Patu Entu* (*Granman* or Head Chief), Kwamalasamutu

3.2.1 Initial Discussions and Questions

The discussions with the community of Kwamalasamutu were not as detailed as the visitors would have liked due to the limited time available. What follows below is therefore a mere recording of the most important elements of the discussions.

After the formalities of introductions, the Guyanese indigenous representatives made the following comments and asked the following questions to the group of chiefs met in the Village.

- How are the issues related to having legal title to your traditional lands being managed? Do you feel, and say, that your traditional lands belong to you?
- A major fear among Amerindians in Guyana is that the implementation of protected areas could result in a loss of traditional Amerindian land rights. Is this a problem for Kwamalasamutu? Are members of the community being prevented from entering the reserve? Can you still use the nature reserve as you have used it traditionally? Has CI Suriname, or the Government, stopped anyone from using the reserve?
- What benefits is Kwamalasamutu getting from committing traditional lands to a nature reserve? Are you satisfied with the benefits?
- Do you see CI Suriname as good helpers? Do they ask your permission to do things or do they just do things themselves?
- Why did some persons leave the village? Is it because of CI Suriname?
- Has CI Suriname trained anyone to hold major positions in the management of the nature reserve? If so, how many? What were they trained to do?
- Are there short-term and long-term benefits available to the village from CI Suriname's activities?
- Are tourists coming to the community on a regular basis? What benefits are being derived from tourists? What facilities are available for tourists?

3.2.2 History of Kwamalasamutu

The first village inhabited by the people of Kwamalasamutu was Alalapata. While living at Alalapata, Claude Livette, an American missionary, came to the community. Before his arrival, the community was not exposed to the outside world and therefore knew nothing of aeroplanes, schools, etc. Claude Livette introduced the community to western medicine, insect repellent, etc. He also taught members of the community to read and write the traditional language. Basic arithmetic was also taught. Before this the custom was to count using a string and several knots, with the number of knots indicating a specific amount.

In 1976 Kwamalasamutu was established. The current population of Kwamalasamutu is approximately 2000 persons and comprises ten sub-tribes. These include the Sakata, Katriena, Wakuma, Pariese, Katrieno, Sikiana, and the Moruana sub-tribes. These tribes have united within the village of Kwamalasamutu and are known collectively as the Tirio to the outside world.

In 1980 the community got the idea to request title to its traditional lands from the government. There was no response from the Government and the community decided to proceed with the identification of their lands on their own. The elders in the village were therefore consulted to guide the identification of the traditional lands. A request was then made for a youth to produce a draft map of the traditional lands of the community. A first draft was developed in 1981 and a second draft was developed in 1983. This mapping initiative was subsequently supported by CI Suriname, and with funding available through the Amazon Cooperation Treaty. In particular, CI Suriname provided training for community members to use Global Positioning Systems (GPS). A draft map is already available and it is expected that a final map will be produced in October 2000.

It was emphasised that it took many years of data collection for the community to get to the stage where it is now.

It was also noted that the location of some medicinal plants are shown on the map and it is important for the community to protect these plants so that they are available for use in the future.

3.2.3 General Discussions

Regarding the question on the use of the nature reserve by the community, the Head Chief noted that the Government has demarcated the nature reserve, but it has done so for itself. The community knows what resources it needs to protect. The community has to protect the resources in the Sapaliwini savannahs. These resources need to be protected from foreigners. The community knows how to use these resources and no one will be allowed to come and tell the community how to use these resources.

The Head Chief pointed out that the community is still able to use the resources in the nature reserve because it is the community that decides what can be used and how. However, if the area is protected the community will not squander the resources. He noted that the community is protecting the forest resources from destruction by outsiders because members of the community are nature minded people.

The Head Chief emphasised that the strategy of the community is to manage all the stations and hold all the important jobs arising from activities associated with the community.

He also emphasised that outsiders will not be allowed to determine what will happen in the territory of the community.

Regarding the role of CI Suriname in the development of the community, the Head Chief suggested, initially, that he had no assessment of Stan Malone as yet. He said that he was monitoring the situation and watching what Stan Malone was doing. Since he is still 'sifting' Stan Malone and CI Suriname, he could not decide as yet whether Stan Malone is a 'thief' or not. The assessment of CI Suriname and Stan Malone is ongoing.

The Head Chief further suggested that collaborating with CI Suriname is a process that is based on mutual trust. He recognised that it is important to monitor what CI Suriname and Stan Malone say, and to observe whether this becomes a reality. Of Stan Malone, the Chief said 'he keeps showing me the feathers of the Curacao [a bird] but I am still waiting to see the whole Curacao.'

Nevertheless, the Head Chief highlighted that 'since CI Suriname has been in Kwamalasamutu they have been helping us in our work.'

The Head Chief also noted '...if we have a problem, we put it forward and, just like a son to a father, CI Suriname will make an effort to help us whenever they can; and that is why I kept hanging on to him and the organisation.'

He also stated that:

> 'sometimes people and organisations visit Kwamalasamutu and make empty promises. We have a development fund in the community called "Stichting Miel" [Cock of the Rock]. Each time CI Suriname brings visitors or friends they make a contribution to the fund for development. Sometimes other organisations come and promise to contribute, but we never receive. We do not want them [the organisations that do not contribute] here. Not to take photographs or to do things that only benefit them.... That is the difference between CI Suriname and other organisations.'

The Head Chief enquired of the Touchaus of the Guyana delegation whether they had maps of the traditional land resources of their villages. Touchau Eugene Andrew stated that maps were available but there was a need for extending the area available to the communities. Touchau Andrew Demetro also noted that the area offered by the Government to his community was refused because it was not sufficiently large. He claimed that there were not enough consultations by the Government. The Regional Vice-Chairman, Vincent Henry explained that after Guyana received its independence [in 1966], the Amerindian Lands Commission was established to support the resolution of issues relating to Amerindian lands. He noted that of the Amerindians had requested over 40,000 square miles. Of this, the Amerindian Lands Commission only recommended some 23,000 square miles for allocation to Amerindians [in 1969]. Since then, the Government has allocated only 4000 - 5,000 square miles. This has resulted in most Amerindians not being satisfied with the area of land that has been allocated to their community.

The Head Chief then shared Kwamalasamutu's experience in trying to gain legal title to its traditional lands as follows:

> 'The Government recently invited us to talk of the land issue. The Government proposed that the community's land should be five square miles from the centre of the community. I said I cannot sign an agreement and will consult with my people. I called a meeting. The people said to tell the Government that it needs to put a barbwire around the village to keep in all the animals. The Government also has to set up a large net to keep in all the fishes. And a large cage would have to be constructed to keep in all the birds. I put this position to the Government and the Government decided to postpone the discussions on the community's land.'

During the evaluation of the day's experience in the community the following points were made:

- Trust is still being developed between the community and CI Suriname after seven years of direct involvement;
- There is a sense of the members of the community being in control of their development and that they were taking steps to advance the land issue;
- The protocol governing relationships within the community was admirable;
- Although the community is still evaluating CI Suriname, they have accepting the organisation as a partner in the community;
- Since CI Suriname has allowed persons from the village to be responsible for their activities in the village, this is a strong point for CI, and this pattern should be implemented in Guyana also;
- The attitude of respect that was reflected in the interactions between CI Suriname staff and members of the community was noted;
- The opinion was expressed that CI Suriname should have done more to support the development of the community;
- One Touchau from the Guyana delegation suggested that the level of trust for CI Suriname in the community was over 50%; and
- It was suggested that the discussions with the Head Chief indicated that a successful collaboration was in progress between CI Suriname and the community.

3.2.4 Other Highlights at Kwamalasamutu

- The Head Chief noted that the Government has shown a tendency to impose on the resources of the community. He has therefore ruled that investment companies should not operate within or near to the territory belonging to the community.

- The land resources utilised by the community is the most important issue. The Head Chief pointed out that the forest is like a shop to the community. He stated that:

  'We go to the shop for our protein supply and therefore our shop needs to be protected and managed by us just as the owner of a shop in a town protects his shop. We therefore have a major responsibility as shopkeepers for our people.'

- The Head Chief also expressed profound happiness that the Touchaus from Guyana were visiting his community because they are 'all one family'. He expressed a desire to be able to return the visit to the Touchaus. This possibility was discussed and it was agreed that further discussions will occur through the radio frequency used by VIDS.

- On the second day of the visit, the apprentices to the Shaman's Apprentice Programme (SAP) were present. The Guyana delegation was informed that the apprentices include both males and females. The programme of training lasts for two years with a written and practical examination every six months. The community healers (Shamans) would act as the board of examiners for these examinations. CI Suriname supports the programme by paying the young apprentices a stipend every month. In addition there is an agreement that provides for potential benefits to be provided to the descendants of the Shamans, whose intellectual property are being utilised under the programme, in the event of the commercialisation of a major medicinal product. This agreement is done in the local Tirio language as well as English and took two years to negotiate.

4.0 OVERALL EVALUATION OF THE STUDY TOUR

During the evaluation of the study tour of the two indigenous communities, the following were the main points made:

- Community leaders have to seek to develop a clear plan for the development of each community. External donors could then be requested to support the elimination of specific constraints.

- The Secretary of VIDS, Mr Armand Karufodi urged the participants to consider a two-pronged strategy for addressing the issue of traditional land rights. He elaborated that that an aggressive development strategy should be pursued while simultaneously seeking to address the issue of land rights. He maintained that a failure to do this could result in some communities being left behind in the process of development.

  Captain Karufodi also suggested that communities should utilise the opportunities for training and capacity building provided by donors while still maintaining control of the development process.

  Captain Karufodi noted that he is fully aware of the manner in which CI Suriname operates, but, nevertheless, allowed the Touchaus from Guyana to go through the process of conducting an evaluation for themselves. He suggested that it would be good to continue a relationship with CI Suriname.

  Finally, Captain Karufodi requested, on behalf of VIDS and the *Patu Entu* (Head Chief) of Kwamalasamutu, that CI Suriname and CI Guyana should explore the possibility of a

reciprocal visit of indigenous leaders from Suriname to Guyana. He argued that such a visit could make a great contribution to the conservation of resources.

- Regional Vice-Chairman of Region Nine, Mr Vincent Henry, suggested that Galibi was a demonstration of what development was all about. He noted the strong inclination to retain the culture and language of the community while pursuing economic development. He further stated:

  'I have finally come to a conclusion that CI is a good partner for development because of what I have seen them promoting. The fact that they took us to Galibi shows that they want us to get there [to that level of development] also.'

- It was noted that the real benefit of the study tour will occur when the Touchaus return to their villages. An important next step is for the Touchaus to consult with their communities and colleagues and, if necessary, request support from CI Guyana for the development of a protected area in the Kanuku Mountains.

- All the Touchaus stated that they considered the trip a success. Not only did they learn about the nature of CI, but they also learnt valuable lessons about the development processes in the indigenous communities visited.

APPENDICES

Itinerary for Visit of Indigenous Leaders of Guyana — Appendix 1

Period : Aug. 10 till aug.15
Locations: Galibi
Kwamalasemutu

Group size: 13 Persons

Thursday Aug.10 14.00 Arrival of the Guyana's delegation at Zorg & Hoop
Transfer to Residence Inn

Friday Aug.11 08.00 Departure by bus to Albina
09.30 Arrival at Albina
10.00 Piaka-Boat to Galibi (Christiaan and Langaman Kondre)
11.15 Arrival at Galibi after which duty call with village leaders
13.00 Lunch
After lunch meetings, discussions and visits
19.00 Dinner
Overnight in hammocks or beds in the community lodge

Saturday Aug.12 08.00 Breakfast
09.30 Piaka - Boat trip to Baboensanti (sea turtle beach & Warana Lodge)
12.30 Return to Galibi
13.30 Lunch
In the afternoon consultations with the Community Foundations and leaders
19.00 Dinner after which formal closing of the visit
Second overnight

Sunday Aug.13 08.00 Breakfast
09.00 Departure for Albina
10.30 Flight from Albina to Kwamalasemutu
13.30 Estimated arrival at Kwamalasemutu
Duty call to Gramnan Asongo Alalaparoe of the Tareno's
14.00 Lunch
After a short rest meetings with the Granman and other village elders.
19.00 Dinner
Overnight

Monday Aug. 14 08.00 Breakfast
After breakfast continuation of the meeting and consultations of board of the existing foundation of the village.
12.00 Lunch after which a farewell visit to the Granman.
14.30 Flight to Zorg & Hoop
16.30 Arrival at Zorg & Hoop and transfer to hotel Residence Inn

Tuesday Aug. 15 09.30 Transportation Residence Inn to Zorg & Hoop for the ruturn flight
10.0 Departure to Guyana

Abbreviations **Appendix 2**

APA	-	Amerindian Peoples Association
CI	-	Conservation International
GOIP	-	Guyana Organisation of Indigenous Peoples
SAP	-	Shaman's Apprentice Programme
STINASU	-	Foundation for Nature Conservation
UMARI	-	A Galibi village development foundation
UNDP	-	United Nations Development Programme
VIDS	-	Centre of Indigenous Peoples of Suriname (an association of 22 indigenous tribes in Suriname)

Participants in the Study Tour **Appendix 3**

Andrew Demetro	-	Touchau, Nappi Village, Region Nine Deputy Chief of Chiefs, Region Nine
Eugene Andrew	-	Touchau, Sand Creek Village, Region Nine Member, APA
Willie Clement	-	Touchau, Shulinab Village, Region Nine
Vincent Henry	-	Regional Vice-Chairman, Region Nine Member, GOIP
Stan Malone	-	Programme Director, CI Suriname
Stan Power	-	Ecotourism Coordinator, CI Suriname
Jan Myers	-	Field Coordinator, CI Suriname
Neville Waldron	-	Programme Director, CI Guyana
George Franklyn	-	Field Coordinator, CI Guyana
Bernard DeSouza	-	Project Coordinator, CI Guyana

List of Persons Met During the Study Tour **Appendix 4**

Armand Karufodi	-	Secretary, Captain, Matta (an Arawak Village)
Vincent Aloema	-	Vice-President, UMARI
Chrisnelly Aloema-Pungtal	-	Chairperson, Women Forward
Denis Kiba	-	Chairman (designated), STIPUNAL Conservation Foundation, Galibi
Asongo Alalaparoe	-	Patu Entu/Granman/Head Chief, Kwamalasamutu
Euku Ochtapo	-	Chief of sub-tribe in Kwamalasamutu
Pepu	-	Chief of sub-tribe in Kwamalasamutu
Ai Ai	-	District Secretary

Other Important Contacts (not present)

Ricardo Pane	-	Chief, Christiaan kondre, Galibi
Ramses Kajoeramarie	-	Chief, Langaman kondre, Galibi
Edgard Marajawai	-	Chairman, Organisation of Market Sellers, Galibi
Johan Tohoe	-	Chairman, Fisheries Organisation, Galibi
Wynbery Takoe	-	President, Credit Cooperation, Galibi

Attachment Philippines-1

Status report on the Mapping needs of the Sierra Madre Biodiversity Corridor Program as of September 30, 2000

Name of Database	Theme/Coverage	Location	Region	Scale	Format	Scan	Digitizing		Remarks
							On-going	Finish	
Geographical	Vegetative (PATECO TLA)	Mun. of Dinapigue & San Mariano, Prov. Of Isabela and Mun. of Dilasag, Prov. Of Aurora		1:50,000	Analog	Scanned	ongoing		
Geographical	Community Based Forest Management Projects (CBFM)	Region 02	Region 02	1:250,000	analog	Scanned	———	Finished	Finished but not yet registered
Geographical	Base Map	within the Administrative Jurisdiction of Penro-		1:250,000	Analog	Scanned			
Geographical	Land Use Map	Cagayan			Analog	Scanned		Finished	Finished
Geographical	Map of DENR (TLA)		Region 02		Analog	Scanned	———		
Geographical	Pasture Lease Agreement		Region 02	1:250,000	Analog	Scanned			
Geographical	Vegetative Cover Map		Region 02	1:250,000	Analog	Scanned			
Geographical	Geologic Map		Region 02	1:250,000	Analog	Scanned			
Geographical	Areas Subclassified Map		Region 02	1:250,000	Analog	Scanned			
Geographical	Land Classification Map (A & D)		Region 02	1:250,000	Analog	Scanned	ongoing		
Geographical	Land Use Map(Protected Areas)		Region 02	1:250,000	Analog	Scanned			

Attachment Philippines-1

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Name of Database	Theme/Coverage	Location	Region	Name of Mapsheet	Kind of Map	Source Date	Scale	Source (s)	Format	Remarks
Geographical	Provincial Maps	Cagayan		Cagayan	Administrative		1:250,000	NAMRIA	Analog	
		Isabela		Isabela	Administrative		1:200,000	NAMRIA	Analog	
		Quirino		Quirino	Administrative		1:150,000	NAMRIA	Analog	
		Aurora		Aurora	Administrative		1:200,000	NAMRIA	Analog	
		Quezon		Quezon	Administrative		1:250,000	NAMRIA	Analog	
		Nueva Viscaya								
		Nueva Ecija								
		Bulacan								
		Rizal								
		Laguna								
Geographical	Land Use & Forest Types Maps	Cagayan		Cagayan	Land Use & Forest Types Maps		1:100,000	NAMRIA	Analog	
		Isabela		Isabela	Land Use & Forest Types Maps		1:100,000	NAMRIA	Analog	
		Quirino		Quirino	Land Use & Forest Types Maps		1:100,000	NAMRIA	Analog	
		Aurora		Aurora	Land Use & Forest Types Maps		1:100,000	NAMRIA	Analog	
		Quezon		Quezon	Land Use & Forest Types Maps		1:100,000	NAMRIA	Analog	
		Nueva Viscaya								
		Nueva Ecija								
		Bulacan								
		Rizal								
		Laguna								
Geographical	Administrative Boundary	Cagayan		Cagayan	Administrative Boundary		1:250,000	NAMRIA	Digital	
		Isabela		Isabela	Administrative Boundary		1:200,000	NAMRIA	Digital	
		Quirino		Quirino	Administrative Boundary		1:150,000	NAMRIA	Digital	
		Aurora		Aurora	Administrative Boundary		1:200,000	NAMRIA	Digital	
		Quezon		Quezon	Administrative Boundary		1:250,000	NAMRIA	Digital	
		Nueva Viscaya					1:150,000	NAMRIA	Digital	
		Nueva Ecija					1:150,000	NAMRIA	Digital	
		Bulacan					1:150,000	NAMRIA	Digital	
		Rizal					1:100,000	NAMRIA	Digital	
		Laguna								
Geographical	Land Cover	whole Philippines		(43 sheets)	broad Land use category	1987-1988	1:250,000			
Geographical	Land Cover	Aurora		Aurora				NAMRIA	SPANS	
Geographical	Land Cover	Quirino		Quirino				NAMRIA	SPANS	
Geographical	Land Cover	Portion of Cagayan		Portion of Cagayan				NAMRIA	SPANS	
Geographical	Land classification	Aurora		Aurora	land classification			NAMRIA	SPANS	
		Quirino		Quirino	land classification			NAMRIA	ArcInfo	
Geographical	Slope	Aurora		Aurora	slope			NAMRIA	SPANS	
	Landsat MSS (1,2,3)	Philippines			Satellite Imageries	1972-1978		NAMRIA		
	Landsat MSS (4%)	Philippines			Satellite Imageries	1983-1986		NAMRIA		

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

	Landsat TM	Region 2 and 7			Satellite Imageries	1988-1989		NAMRIA		
	Landsat TM	Cagayan			Satellite Imageries	1993		NAMRIA		
	SPOT XS	Philippines			Satellite Imageries	1987-1988		NAMRIA		
	SPOT XS	Region 2 and 7			Satellite Imageries	1988,1990		NAMRIA		
	SPOT PAN	Region 2 and 7			Satellite Imageries	1988,199		NAMRIA		
	SPOT PAN	Isabela			Satellite Imageries	1994		NAMRIA		
	Synthetic Aperture Radar	Whole of Luzon except Region 5			Satellite Imageries	1991		NAMRIA		
Geographical	Vegetation	Northern Sierra Madre Natural Park		Vegetation Northern Sierra Madre Natural Park	(upper montane)mossy forests(>1,500m);lower montane forest (1,000m-1,500m);forest on limestone soil; lowland dipterocarp forest;mangrove forest;grassland or cultivated land;coral reef;coastline;rivers/streams;prov. Bdry.;mun. bdry.;parkbdry.;municipal proper;trig point (meters)	1998	1:500,000	NORDECO-DENR	Digital	
Geographical	Luzmatim Logging Road Municipality of Dinapigue	Northern Sierra Madre Natural Park		Luzmatim Logging Road Municipality of Dinapigue, NSMNP	Settlements;roads;proposed road;trig points(meters;municipal proper;coastline;prov. Bdry; mun. bdry.;park bdry.;luzmatim logging road	1998	1:500,000	NORDECO-DENR	Digital	
Geographical	Proposed Roads	Northern Sierra Madre Natural Park		Proposed Roads Traversing the Northern Sierra Madre Natural Park	Inter regional road; proposed road; primary urban centers	1998	no scale	Regional Development Council	Analog	
Geographical	Timber License Agreements	located within and along the Northern Sierra Madre Natural Park		Timber License Agreements located within and along the Northern Sierra Madre Natural Park	Park bdry.;coastline;municipality	1998	1:600,000	NORDECO-DENR	Digital	

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Settlements and Roads	Northern Sierra Madre Natural Park		Settlements and Roads in Northern Sierra Madre Natural Park	Settlements;roads;proposed road;trig points(meters;municipal proper;coastline;prov. bdry; mun. bdry.;park bdry.	1998	1:500,000	NORDECO-DENR	Digital	
Geographical	Hotspots for Illegal Logging, Fishing, and Smuggling of Logging Products	Northern Sierra Madre Natural Park		Hotspots for Illegal Logging, Fishing, and Smuggling of Logging Products Northern Sierra Madre Natural Park	hotspot;(upper montane)mossy forests(>1,500m);lower montane forest (1,000m-1,500m);forest on ultrabasic soil;forest on limestone soil; lowland dipterocarp forest;mangrove forest;grassland or cultivated land;coral reef;coastline;rivers/streams;prov. bdry.;mun. bdry.;parkbdry.;municipal proper;trig point (meters)	1998	1:600,000	NORDECO-DENR	Digital	
Geographical	Biodiversity Corridors	Sierra Madre 9Cagayan, Isabela, Quirino, Aurora and Quezon	2 & 4	Sierra Madre Biodiversity Corridors	Old growth forest;mossy forest;ultramafic forest;residual forest	1991	1:2,000,000	ESSC	Digital	
Geographical	Land Use Permits and Projects	Northern Sierra Madre Natural Park, Isabela province	2	Land Use Permits and Projects Northern Sierra Madre Natural Park	watershed proclamation;community based forest management;certificate of ancestral domain claim;reforestation program;industrial forest management agreement;pasture lease agreement;integrated social forestry program;socialized industrial forestry management agreement;forest land mangement agreement;protected wilderness area;dipterocarp plantation;mangrove rehabilitation program;timber license agreement;rattan cutting permit;phil. navy reservation;irrigation projects;municipal proper;coastline;prov. bdry.;park bdry.	1998	1:600,000	NORDECO-DENR	Digital	

Attachment Philippines-1

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Vegetative (PATECO TLA)	Mun. of Dinapigue & San Mariano, Prov. Of Isabela and Mun. of Dilasag, Prov. Of Aurora	2 & 4	Vegetative Cover Map	Boundary of the License area;Rivers & creeks; Logging road network (existing, Proposed);Bdry. Of alien or disp. Land;commercial forest (adequately stocks, inadequate stocks);brushland;mossy/sub-marginal forest;planted/reforested;wilderness area;logging camp/saw mill site;patrol sector outpost;open/cultivated		1:50,000		Analog	in-house
Geographical	Community Based Forest Management Projects (CBFM)	Region 02	2	Community Based Forest Management Projects (CBFM) Region 02	Community forestry program;regional resources management program; coastal environment program;integrated social forestry;certificate of ancestral domain claim;forest land management agreement;provincial boundary;municipal bdry.;rivers		1:250,000		analog	in-house
Geographical	Base Map	Cenro-Palanan;Prov. Isabela;Congressional District 1	2		Alienable/disposable land;CFP;CADC;ISF; Prov. Bdry.;Mun. bdry;rivers/creeks;RCP		1:50,000		analog	(2 copies) in-house
Geographical	Base Map	Cenro-Palanan;Prov. Isabela;Congressional District 4	2		Alienable/disposable land;ISF;private plantations(Gmelina);Prov. Bdry;mun. bdry.;rivers/creeks;TLA;mining claims;RCP;IPAS bdry;CADC;timber corridor		1:50,000		analog	(2 copies) in-house
Geographical	Environmentally Sensitive areas and Hot Spots	Philippines		Environmentally Sensitive areas and Hot Spots	Protected areas; Forest; national capital; water pollution;solid & hazardous waste management; air pollution; high pollution intensity; rivers; international boundaries	August 2000	1:8,000,000	The World Bank	Analog	
Geographical	Currents Land Use of CBFMA of Baggao	Prov. Cagayan; Mun. Baggao; Brgy. Santa Margarita; Sitio-Mansarong, Camunayan, Cagayan province	2	Currents Land Use of CBFMA of Baggao	Land Use (Agricultural, Old growth forest,Secondary forest); school, teacher's house, built-up area, church, cooperative, goat house, training center, trail, road, river, CBFMA bdry.	August 2000	1:50,000	DENR Regional Office	Analog	in-house

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Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Proposed Zoning of CBFMA of Baggao	Prov. Cagayan; Mun. Baggao; Brgy. Santa Margarita; Sitio-Mansarong, Camunayan, Cagayan province	2	Proposed Zoning of CBFMA of Baggao	Bunkhouse,culvert, bridge, trail,road, river, CBFMA bdry., assisted natural regeneration, agricultural,agroforestry, botanical garden, buffer zone, communal forest, community site, nursery, orchard, production & protection area, wildlife sanctuary	August 2000	1:50,000	DENR Regional Office	Analog	in-house
Geographical	Contour Map of CBFMA of Baggao	Prov. Cagayan; Mun. Baggao; Brgy. Santa Margarita; Sitio-Mansarong, Camunayan, Cagayan province	2	Contour Map of CBFMA of Baggao	school, teacher's house, built-up area, church, cooperative, goat house, training center, trail, road, river, CBFMA bdry.,contour	August 2000	1:50,000	DENR Regional Office	Analog	in-house
Geographical	CADC maps	Cagayan			CADC,reforestation project, ISF, CFP, protected landscape, national park, game refuge & bird sanctuary, ENR-SECAL, FLGLA, PLA, TPLA, rattan permit, CEP, Alien oe disp., forest zone, watershed, project river, SIFMA		1:250,000	DENR Regional Office	Analog	in-house
Geographical	Protected Areas	Muns. Of Maconacon, Divilacan, Palanan, Dinapigue, Sn. Pablo, Tumauini, Cabagan, Ilagan, & San Mariano; Prov. Of Isabela	2	Map of Northern Sierra Madre Natural Park(Land+287,86 1 has; 71,625 has.)			1:312,500	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	within Batanes Islands	2	Map of Batanes Protected Landscape & Seascape (land= 20,000 has. 193,000 has)			1:250,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Mun. of Penablanca; Prov. Of Cagayan	2	Map of Penablanca Protected Landscape (Approx. area=4,136)			1:50,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Protected Areas	Mun. of Ilagan; Prov. Of Isabela	2	Map of Fuyot Spring National Park (Approx. area = 819 has.)			1:50,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Muns. Of Lal-lo & Gattaran; Prov. Of Cagayan	2	Map of Magapit Protected Landscape (3,403.62 has.)			1:50,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Muns. Of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Map of Baua Protected Landscape ((8,955.0 has)			1:100,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Map of Wangag Protected Landscape (6992.0 has)			1:57,142	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Muns. Of Bambang, Kayapa & Aritao; Prov. Of Nueva Vizcaya	2	Map of Salinas Natural Monument (5,564.0 has)			1:50,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Mun. of Dupax del Sur; Prov. Of Nueva Vizcaya	2	Map of Dupax Protected Landscape (424.80 has)			1:20,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Protected Areas	Muns. /Prov. Dupax del Norte, Dupax del Sur, Nueva Vizcaya, Maddela, Quirino, Dipaculao, Aurora	2	Map of Casecnan Resource Reserve (Approx. area= 85,219.0 has)			1:250,00	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Protected Areas	Muns. Of Sn. Pablo, Cabagan, Tumauini, Maconacon, Divilacan; Prov. Of Isabela	2	Map of Tumauini River Watershed Forest Reserve (17,670.0 has)			1:100,000	DENR Regional Office	Analog	Protected Areas per NIPAS Implementation As of December 1999 (in-house paper size only)
Geographical	Base Map	within the Administrative Jurisdiction of Penro-Cagayan		Base Map within the Administrative Jurisdiction of Penro-Cagayan	Shoreline, provincial bdry., municipal bdry., river & creeks, road		1:250,000	DENR Regional Office	Analog	in-house
Geographical	Land Use Map			Land Use Map within The Administrative Jurisdiction of Penro-Cagayan	Forest Land (Mossy forest, closed canopy, mature tree, open canopy, mature tree, mangrove vegetation),Extensive Land Use (cultivated area mixed w/ brushland & grassland, grassland),Intensive Land Use (fishpond, crop land mixed w/ coconut plantation, arable land, crops mainly cereals & sugar), Non Vegetative Land (riverbed, build up area, siltation, coral reef			DENR Regional Office	Analog	in-house
Geographical	Land Use Map		2		Existing watershed, proclaimed watershed, potential watershed, SIFMA/IFMA, National Parks, Oher Reservations, tree farm lease agreement regular reforestation, (provincial bdry., municipal bdry., rivers)		1:250,000	DENR Regional Office	Analog	kind of map ( )exist in the map (in-house)
Geographical	Geologic Map	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Geologic Map of Baua River Watershed Forest Reserve	Survey line, municipal bdry., geologic bdry.		1:50,000	DENR Regional Office	Analog	in-house
Geographical	Hydrologic Map	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Hydrologic Map of Baua River Watershed Forest Reserve	Survey line, municipal bdry., difficult		1:50,000	DENR Regional Office	Analog	in-house

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Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Topographic Map	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Topographic Map of Baua River Watershed Forest Reserve	Survey line, municipal bdry., contour line, rive & creeks, transect		1:50,000	DENR Regional Office	Analog	in-house
Geographical	Vegetative Cover Map	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Topographic Map of Baua River Watershed Forest Reserve	Survey line, municipal bdry., vegetative bdry.		1:50,000	DENR Regional Office	Analog	in-house
Geographical	Elevation Map	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Topographic Map of Baua River Watershed Forest Reserve	Survey line, municipal bdry., elevation bdry.		1:50,000	DENR Regional Office	Analog	in-house
Geographical	Land Use Map	Mun. of Gonzaga & Lal-lo; Prov. Of Cagayan	2	Topographic Map of Baua River Watershed Forest Reserve	Survey line, municipal bdry., land use bdry.;Forest Land (open canopy, mature tree, closed canopy), Extensive Land Use (cultivated area mixed w/ brushland & grassland), Intensive Land Use (arable land, crops mainly cereals)		1:50,000	DENR Regional Office	Analog	in-house
Geographical	Map of DENR (TLA)		2					DENR Regional Office Region 02	Analog	in-house
Geographical	Pasture Lease Agreement		2				1:250,000	DENR Regional Office Region 02	Analog	in-house
Geographical	Barangay Bdry.	Cagayan	2					NSO	Digital	Bought from NSO the 7 Mun. of Cagayan Only
Geographical	Vegetative Cover Map		2				1:250,000	DENR Regional Office Region 02	Analog	in-house
Geographical	Geologic Map		2				1:250,000	DENR Regional Office Region 02	Analog	in-house
Geographical	Slope Category Map		2				1:250,000	DENR Regional Office Region 02	Analog	in-house

Checklist of maps for Sierra Madre Biodiversity Corridor Program as of September 30,2000

Geographical	Areas Subclassified Map		2				1:250,000	DENR Regional Office Region 02	Analog	in-house
Geographical	Elevation Map		2				1:250,000	DENR Regional Office Region 02	Analog	in-house
Geographical	Road Network		2				1:250,000	DENR Regional Office Region 02	Analog	in-house
Geographical	Land Classification Map (A & D)		2				1:250,000	DENR Regional Office Region 02	Analog	in-house

Geographical	Topographic Map	Cagayan	Region 2	Fuga Island	7280-I		1:50,000	NAMRIA	Analog
				Dalupit Island	7281-III		1:50,000	NAMRIA	Analog
				Camiguin	7380-I		1:50,000	NAMRIA	Analog
				Adams	7179-I		1:50,000	NAMRIA	Analog
				Claveria	7180-II		1:50,000	NAMRIA	Analog
				Piat	7278-I		1:50,000	NAMRIA	Analog
				Tuao	7278-II		1:50,000	NAMRIA	Analog
				Abulug	7279-I		1:50,000	NAMRIA	Analog
				Pudtol	7279-II		1:50,000	NAMRIA	Analog
				Calanasan	7279-IV		1:50,000	NAMRIA	Analog
				Sanchez Mira	7280-III		1:50,000	NAMRIA	Analog
				Baggao	7278-I		1:50,000	NAMRIA	Analog
				Penablanca	7378-II		1:50,000	NAMRIA	Analog
				Tuguegarao	7378-III		1:50,000	NAMRIA	Analog
				Alcala	7378-IV		1:50,000	NAMRIA	Analog
				Gonzaga	7379-I		1:50,000	NAMRIA	Analog
				Capissayan	7379-Ii		1:50,000	NAMRIA	Analog
				Gattaran	7379-III		1:50,000	NAMRIA	Analog
				Aparri	7379-IV		1:50,000	NAMRIA	Analog
				Camiguin Island	7350-I		1:50,000	NAMRIA	Analog
				Baguio Pt.	7478-III		1:50,000	NAMRIA	Analog
				Twin Peaks	7478-IV		1:50,000	NAMRIA	Analog
				Cabutanana Pt.	7479-III		1:50,000	NAMRIA	Analog
				Santa Ana	7479-IV		1:50,000	NAMRIA	Analog
				San Vicente	7480-III		1:50,000	NAMRIA	Analog
Geographical	Topographic Map	Isabela	Region 02	Bunhian	7276-I		1:50,000	NAMRIA	Analog
				Cordon	7276-II		1:50,000	NAMRIA	Analog
				Vergonesa	7375-I		1:50,000	NAMRIA	Analog

in-house

				Maddela	7375-IV	1:50,000	NAMRIA	Analog	
				Cauayan	7376-I	1:50,000	NAMRIA	Analog	
				Napoliong	7376-II	1:50,000	NAMRIA	Analog	
				Santiago	7376-III	1:50,000	NAMRIA	Analog	
				San Mateo	7376-IV	1:50,000	NAMRIA	Analog	
				Tumauini	7377-I	1:50,000	NAMRIA	Analog	
				Ilagan	7377-II	1:50,000	NAMRIA	Analog	
				Roxas	7377-III	1:50,000	NAMRIA	Analog	
				Quezon	7377-IV	1:50,000	NAMRIA	Analog	
				Penablanca	7378-II	1:50,000	NAMRIA	Analog	
				Tuguegarao	7378-III	1:50,000	NAMRIA	Analog	
				Digollorin Bay	7476-I	1:50,000	NAMRIA	Analog	in-house
				Dinapiqui Pt.	7476-II	1:50,000	NAMRIA	Analog	in-house
				Dos Hermanos	7476-III	1:50,000	NAMRIA	Analog	in-house
				San Mariano	7476-IV	1:50,000	NAMRIA	Analog	in-house
				Divilacan Bay	7477-I	1:50,000	NAMRIA	Analog	in-house
				Palanan	7477-II	1:50,000	NAMRIA	Analog	in-house
				Sindon	7477-III	1:50,000	NAMRIA	Analog	
				Mt. Crista	7477-IV	1:50,000	NAMRIA	Analog	in-house
				Baguio Pt.	7478-III	1:50,000	NAMRIA	Analog	in-house
Geographical	Topographic Map	Nueva Viscaya	Region 02	Kayapa	7175-I	1:50,000	NAMRIA	Analog	
				San Nicolas	7175-II	1:50,000	NAMRIA	Analog	
				Kabayan	7176-II	1:50,000	NAMRIA	Analog	
				Maria Aurora	7274-I	1:50,000	NAMRIA	Analog	
				Pantabangan	7274-IV	1:50,000	NAMRIA	Analog	
				Kasibu	7275-I	1:50,000	NAMRIA	Analog	
				Tawayan	7275-II	1:50,000	NAMRIA	Analog	
				Burgos	7275-III	1:50,000	NAMRIA	Analog	

				Bayombong	7275-IV	1:50,000	NAMRIA	Analog
				Cordon	7276-II	1:50,000	NAMRIA	Analog
				Solano	7276-III	1:50,000	NAMRIA	Analog
Geographical	Topographic Map	Quirino	Region 02	Maria Aurora	7274-I	1:50,000	NAMRIA	Analog
				Kasibug	7275-I	1:50,000	NAMRIA	Analog
				Tawayan	7275-II	1:50,000	NAMRIA	Analog
				Cordon	7276-III	1:50,000	NAMRIA	Analog
				Baler	7374-IV	1:50,000	NAMRIA	Analog
				Vergonez a	7375-I	1:50,000	NAMRIA	Analog
				Dinalonga n	7375-III	1:50,000	NAMRIA	Analog
				Nagtipuna n	7375-II	1:50,000	NAMRIA	Analog
				Maddela	7375-IV	1:50,000	NAMRIA	Analog
				Santiago	7376-III	1:50,000	NAMRIA	Analog
Geographical	Topographic Map	Nueva Ecija	Region 03	Cabanatu an	7173-I	1:50,000	NAMRIA	Analog
				San Miguel	7173-II	1:50,000	NAMRIA	Analog
				Tarlac	7173-IV	1:50,000	NAMRIA	Analog
				San Jose	7174-I	1:50,000	NAMRIA	Analog
				Munos	7174-II	1:50,000	NAMRIA	Analog
				Gerona	7174-III	1:50,000	NAMRIA	Analog
				Cuyapo	7174-IV	1:50,000	NAMRIA	Analog
				San Nicolas	7175-II	1:50,000	NAMRIA	Analog
				Gabaldon	7273-I	1:50,000	NAMRIA	Analog
				Ulalikan Pt.	7273-II	1:50,000	NAMRIA	Analog
				Sibul	7273-III	1:50,000	NAMRIA	Analog
				Gen. Tinio	7273-IV	1:50,000	NAMRIA	Analog
				Maria Aurora	7274-I	1:50,000	NAMRIA	Analog
				Ligaya	7274-II	1:50,000	NAMRIA	Analog
				Palayan City	7274-III	1:50,000	NAMRIA	Analog
				Pantaban gan	7274-IV	1:50,000	NAMRIA	Analog

				Burgos	7275-III	1:50,000	NAMRIA	Analog	
Geographical	Topographic Map	Aurora	Region 04	Gabaldon	7273-I	1:50,000	NAMRIA	Analog	in-house
				Ulalikan Pt.	7273-II	1:50,000	NAMRIA	Analog	
				Maria Aurora	7274-I	1:50,000	NAMRIA	Analog	
				Ligaya	7274-II	1:50,000	NAMRIA	Analog	
				San Luis	7374-III	1:50,000	NAMRIA	Analog	
				Baler	7374-IV	1:50,000	NAMRIA	Analog	
				Vergonez a	7375-I	1:50,000	NAMRIA	Analog	
				Dinalongan	7375-II	1:50,000	NAMRIA	Analog	
				Nagtipunan	7375-III	1:50,000	NAMRIA	Analog	
				Calabgan	7475-III	1:50,000	NAMRIA	Analog	
Geographical	Topographic Map		Region 04	Mt. Irid	7272-I	1:50,000	NAMRIA	Analog	
				Baras	7272-II	1:50,000	NAMRIA	Analog	
				Ulalikan Pt.	7273-II	1:50,000	NAMRIA	Analog	
				San Francisco	7469-I	1:50,000	NAMRIA	Analog	
				Lopez	7470-I	1:50,000	NAMRIA	Analog	
				Catanauan	7470-II	1:50,000	NAMRIA	Analog	
				Gumaca	7470-IV	1:50,000	NAMRIA	Analog	
				Pugon	7569-III	1:50,000	NAMRIA	Analog	
Geographical	Topographic Map	Rizal	Region 04	Paete	7271-I	1:50,000	NAMRIA	Analog	
				Muntinlupa	7271-IV	1:50,000	NAMRIA	Analog	
				Mt. Irid	7272-I	1:50,000	NAMRIA	Analog	
				Baras	7272-II	1:50,000	NAMRIA	Analog	
				Quezon City	7272-III	1:50,000	NAMRIA	Analog	
				Angat	7272-IV	1:50,000	NAMRIA	Analog	
Geographical	Land Cover Map	Cagayan	Region 02	Calayan Island	2502	1:250,000	NAMRIA	Analog	
				Laoag City	2503	1:250,000	NAMRIA	Analog	
				Aparri	2504	1:250,000	NAMRIA	Analog	
				Bontoc	2505	1:250,000	NAMRIA	Analog	
				Ilagan	2506	1:250,000	NAMRIA	Analog	

Geographical	Land Cover	Isabela	Region 02	Ilagan	2506	1:250,000	NAMRIA	Analog
				Solano	2508	1:250,000	NAMRIA	Analog
Geographical	Land Cover Map	Nueva Viscaya	Region 02	Dagupan City	2507	1:250,000	NAMRIA	Analog
				Solano	2508	1:250,000	NAMRIA	Analog
				Laur	2510	1:250,000	NAMRIA	Analog
Geographical	Land Cover	Quirino	Region 02	Solano	2508	1:250,000	NAMRIA	Analog
				Laur	2510	1:250,000	NAMRIA	Analog
Geographical	Land Cover Map	Bulacan	Region 03	Tarlac	2509	1:250,000	NAMRIA	Analog
				Laur	2510	1:250,000	NAMRIA	Analog
				Manila	2511	1:250,000	NAMRIA	Analog
Geographical	Land Cover Map	Nueva Ecija	Region 03	Dagupan City	2507	1:250,000	NAMRIA	Analog
				Solano	2508	1:250,000	NAMRIA	Analog
				Tarlac	2509	1:250,000	NAMRIA	Analog
				Laur	2510	1:250,000	NAMRIA	Analog
Geographical	Land Cover	Aurora	Region 04	Solano	2508	1:250,000	NAMRIA	Analog
				Laur	2510	1:250,000	NAMRIA	Analog
Geographical	Land Cover Map	Quezon	Region 04	Laur	2510	1:250,000	NAMRIA	Analog

Attachment Philippines-2

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Attachment Philippines-3

List of Actors

Regional

Environmental Science for Social Change (ESSC)- conducts forestry surveys, research community mapping, policy development and resource management. Focus on community resource mapping and community organizing. Activities are done in conjunction with local communities dependent on the natural resources for their survival.

Protected Areas and Wildlife Bureau (PAWB): is responsible for the establishment and management of the country's Integrated protected Areas System, as well as the formulation of policies for the preservation of biological diversity. The PAWB also serves as the management authority in the enforcement of the convention on the International Trade in Endangered species of Wild Fauna and Flora (CITES)

Department of Environment and Natural Resources (DENR) oversees the conservation, optimal use, and programmed exploitation of the country's natural resources and ecosystems. Among its objectives are to promote the sustainable development of forest resources; the optimal use of lands and minerals; social equity and efficiency in resource use; and effective environmental management.

Other important National and regional Government Agencies include the Department of Public Works and Highways (road and infrastructure development)

Regional Development Council-Region II (Regional Planning), is in charge of assembling the region's development plan. This plan is developed through consultation with the different stakeholders composed of the private sector, local government units (LGU), regional and provincial line agencies.
The group formulated the Cagayan Valley Strategic Development Plan has been formulated for the year 1999-2004. However, protected areas and other tenurial instruments were not mentioned in the document. It vision is for the Cagayan Valley to have a competitive agri-industrial economy, modern infrastructure, responsive basic services and well manage ecosystem.

Bureau of Mines and Geosciences- the agency is a bureau under the DENR which provides permits to the mining applicants. Some of the mining permits they issued overlaps on some tenurial instruments which cause some people to question the validity of the permit.

Environmental management Bureau (EMB) tasked with handling Environmental Impact Assessments.

The Cagayan Valley Project for Environment and Development (CVPED) is a joint project by Leiden University and Isabela State University focusing primarily on the western side of the Sierra Madre Range. Activities include the research of graduate students from Leiden in the area.

Philippine Economic Zone Authority (PEZA)
Cagayan Economic Zone Authority (CEZA)

Philippine Working Group (PWG)- The group seeks to identify and recommend natural resource management policies that support community participation and are grounded on sound environmental principles. The group aims to deepen its understanding of natural resource approaches for critical policy review and recommendation. The PWg associates are professionals in the field of development, natural resource management, international aid, legislation and the academe. The ESSC provides secretariat services to the group.

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Green Circle Property Development- the Pacific Coast City is a project by the Green Circle Properties and resources Corporation owned by Atty Romeo G. Roxas. The proposed project . Encompass 28,000 hectares of land. The said project is considered as a flagship project of Pres Joseph Estrada, the Pacific Coast City project was granted the status of a Special Economic Zone and Tourism Estate through Proclamation No. 223 directing all heads of department, bureaus, offices agencies and instrumentalities of the government to support the program and assigned GCPRC to implement their plan.

Pacific Timber Export Corporation (PATECO)- The timber company is currently operating in Dinapigue, Isabela and Dilasag, Aurora province. Their Timber License Agreement (TLA) is set to expire on December 31, 2006. They have a lot of influence in the government. They are employing clear cutting activities in the area.

Luzon Mahogany Timber Industries (LUZMATIM) Companies - the timber company is currently operating in Dinapigue, San Mariano and Echague, Isabela . Their TLA expired in June 30 1982 but was renewed and converted to 25 years and set to expire on December 20, 2007. They are currently conducting clear cutting activities and reported to be expanding their area from the original plan. The company has a lot of influence in the government.

Mining companies- There are several mining companies lobbying for the opening of more lands within the proposed corridor. Mining applications (not yet approved) cover almost all the remaining forest within the proposed corridor (See attached document on page - & -). Some of these mining applications have been granted exploratory permits and permit to operate.

"Dumagats" (Indigenous People) - These are one of the last hunter gatherers in the south-east Asia. They are becoming marginalized due to encroachment of lowlanders. They want their ancestral lands to be recognized and given to them.

NORTHERN SIERRA MADRE NATURAL PARK

Technical Assistance Unit (TAU) -To facilitate dialogue and coordination between foreign assisted projects in Northern Sierra Madre Natural Park (NSMNP). Member organizations include the Global Environment Facility (GEF), Danish International Development Assistance (DANIDA), Dutch International Development Assistance (DGIS), United States Agency for International Development (USAID), Conservation International and the Isabela State University. The group is headed by the DENR regional Executive Director.

Summer Institute of Linguistics & Christian Missionaries for the Unreached- Summer Institute of Linguistics (SIL) and the Christian Missionaries for the Unreached (CMU) are active among the coastal Agtas in the Northern Sierra Madre Natural Park. These agencies tend to be protective of the indigenous community rights they teach the Agta about Christianity and send them to schools.

Plan International- NSMNP Conservation Project- The NSMNP-Conservation Project is a conservation and natural resource management project in NSMNP, which is funded by the Dutch Government (USD 7.28 million for 5 years), which is being implemented by Plan International. The project runs from 1996-2001 under a Memorandum Of Agreement (MOA) with the Regional Director.
Boundary demarcation and zoning the focus of Plan Internationals activities are protected areas management with an emphasis on community development. Major activities include Resource profiling and inventory; Development and implementation of a management plan; Ethnographic profiling of indigenous communities and Training of PA staff and PAMB. Additional components are the Setting up of livelihood fund, Infrastructures (Palanan hospital) and provide technical assistance to the Isabela State University, Cabagan, Isabela

Isabela State University (ISU)- The University is the only academic institution with an environmental curriculum in Isabela province. The college of Forestry and Environmental Management is the lead institution for ISU. It has substantial experience in community forestry. Since 1989, ISU has collaborated with the Dutch University of Leiden educating bachelors, Masters and Ph. D. students. Many studies investigated the underlying causes of environmental problems in Cagayan valley, including the western part of NSMNP. CI partnered with ISU and CTFS, a Harvard and Smithsonian partnership, to develop botanical field research and monitoring plots from 1991-1996. The plot work continues with the financial assistance of Plan International, but lack of resources has hampered completion of sample identification and inventory to date. ISU assists the DENR and provincial government in undertaking Environmental Impact Assessments of forest utilization and infrastructure development plans.

Provincial Environment and Natural Resources Officer (PENRO)- is the provincial government officer tasked with coordinating regional environmental and natural resource activities.

Park Superintendent (PASU)- Chief DENR officer on site, responsible to the Protected Areas Management Board and Regional Executive Director. Dedicated in protecting and conserving the NSMNP but lack funds for operations and maintain patrolling activities

Protected Areas and Management Board (PAMB) – highest management body in NSMNP and approves or takes actions on the matters relating to planning, protection and administration. PAMB is composed of the community and indigenous people. They are willing to preserve and stop illegal activities given that alternative livelihood are provided.

DENR Environment and Natural Resources-Sectoral Adjustment Loan (ENR-SECAL) Program Monitoring and Enforcement- The monitoring and enforcement component (MEC) of the ENR-SECAL focuses on monitoring the implementation of forestry laws with the assistance of local Multi-Sectoral Forest Protection Committees.

Conservation of Priority Protected Areas Project- The project is funded by the Global Environment Facility (GEF). It provides assistance to the Government of the Philippines in developing and managing ten priority protected areas including the Northern Sierra Madre Natural Park. The project runs from 1996-2002. However, there is a discussion of shutting almost all projects down this year, except for NSMNP, because of dissatisfaction by GEF on the projects performance. The NSMNP project recently underwent an overhaul and apparently the project has much improved as a result.

Key components of the CPPAP are Site Development, community and NGO supported management, socio-economic development including traditional land tenure delineation. Additionally the project provides other technical assistance to the Park Authority and the Protected Areas and Wildlife Bureau of the DENR.

Nordic Agency for Development and Ecology (NORDECO)- The organization is funded by the Government of Denmark as technical assistance for the GEF-CPPAP project which focuses on biodiversity training, awareness raising, inventory and monitoring in three of the ten priority protected areas which includes the Northern Sierra Madre Natural Park. NORDECO's Technical assistance includes a baseline inventory with the aim to improve the knowledge among the protected area staff and members of the Protected Area Management Board (PAMB) on the status and distribution of selected habitats and species, the significance of the ecosystem and its components to communities and protected area management constraints and realistic mitigating measures.

Attachment Philippines-3

CAGAYAN

The Foundation for Philippine Environment (FPE) is a national level foundation, set up by USAID, that promotes local and international cooperation towards developing improved environmental policies and effective programs. It assists and finances biological diversity conservation and sustainable development activities. Currently, it is funding PROCESS-Luzon's activities in the region.

PROCESS- Luzon is a non-stock, non-profit organization. It started as an offshoot of an International Labor Organization- encouraged experiment to stimulate self-help initiatives among rural communities in Antique and Batangas. Its operations today extend to Northern Luzon (Cagayan, Isabela, Nueva Viscaya and Quirino), Bohol and Panay Island. Process seeks to strengthen grassroots organizations to promote social justice through democratization of access and management of resources, and to promote sustainable development and conservation.

Sierra Madre Outdoor Club (SMOC)- A volunteer group assisting the Department of Tourism in Cagayan to identify possible tourism destination within the province. It has currently a MOA with DENR to conduct such activities in Baggao. The group's activities also include monitoring and documentation of illegal activities within the municipalities of Baggao and Peñablanca, Cagayan and submits its reports and finding to the DENR.

PICO Mineral Corporation- the mining application was approved by the Bureau of Mines in Region 2. They are interested in extracting Gold. NIPAs areas were excluded but it overlaps with two tenurial instruments, the CADC in Gataran-Lallo and the CBFM in Gattaran and the 3-Diamond CBFM in Baggao

Aurora State College of Technology (ASCOT)- is the only provincial college in Aurora. It has motivated staff interested in environmental issues but relatively low capacity in terms of budget and human resources.

Aurora Integrated Area Development Project (AIADP II)- A European government funded project. The project is now on its Phase II of implementation and last year of project. The focus of the AIADP on its first phase has been on the development of the lowland communities. On Phase II the project emphasis is on environmental management and sustainable resource development in the upland watersheds which comprise hills and mountains surrounding the lowlands. Currently the focus of the project is on the development of a coastal resource management in the area. The project runs from 1989 to 1999.

Cagayan Valley for Peoples Environment and Development (CAVAPED)

QUIRINO

RP-German Debt-For-Nature-Swap Initiatives Program- the program uses the community based Forest management Approach. The program includes mapping of land use of the province and identifying and delineating the ten CBFM sites under their project. It is a three-year project which involves IEC and community organizing. Part of the project is a resource base inventory involving PO's as part of their capability building. *It also includes delineating areas with old growth forest for it to be proclaimed as Protected area (needs verification, based on the initial conversation of the project leader?)*

Philippine Working Group (PWG)- The group is composed of several NGO's and GO's. The group was formed to develop the community and other stakeholders to have stronger stance on Community Based Forest Management (CBFM) in Quirino Province. They are hoping the success of the CBFM project in the province can serve as a model for other areas. It also involves local government and community participation

ACTOR ANALYSIS

ACTORS	Primary Interest
Regional Level	
Department of Environment and Natural Resources (DENR) - oversees the conservation, optional use, and programmed exploitation of the country's natural resources and ecosystems. They promote sustainable use of resources and issues permits on the use of land and mineral resources, social equity and efficiency in resource use and effective environmental management.	Sustainable and optimum use of natural resources
Protected Areas and Wildlife Bureau (PAWB) is responsible for the establishment and management of the country's Integrated protected Areas System, as well as the formulation of policies for the preservation of biological diversity. The PAWB also serves as the management authority in the enforcement of the convention on the International Trade in Endangered species of Wild Fauna and Flora (CITES)	Protection of biodiversity and establishment of protected areas
Regional Development Council (RDC) – in charge of assembling the region's development plans through consultation of various stakeholders composed of private sector, local government, regional and provincial line agencies. Cagayan Valley strategies Development plan has been formulated for the year 1999-2004. However, protected areas and other tenurial instruments were not mentioned in the document. It vision is for the Cagayan Valley to have a competitive agri-industrial economy, modern infrastructure, responsive basic services and well manage ecosystem.	Emphasized in the social, economic and cultural development of the region
Bureau of Mines and Geosciences- the agency is a bureau under the DENR which provides permits to the mining applicants. Some of the mining permits they issued overlaps on some tenurial instruments which cause some people to question the validity of the permit.	Monitor existing mining operations and approve permit of mining applicants
Environmental management Bureau (EMB) tasked with handling Environmental Impact Assessments.	
Environmental Science for Social Change (ESSC)- conducts forestry surveys, research community mapping, policy development and resource management. Focus on community resource mapping and community organizing. Activities are done in conjunction with local communities dependent on the natural resources for their survival.	Establishment of tenurial instrument and provide information on resource management
National Council for Indigenous People Region 2 (NCIP-Region 2)	
Provincial Environment and Natural Resources Officer (PENRO)- coordinate regional environmental plans and natural resources activities. Oversee the over all environmental activities within his/her province. Some people are sincere but they lack funds, equipment and low staff capability in conducting Biodiversity studies and monitoring	Strengthen staff capability on biodiversity conservation

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ACTORS	Primary Interest
NSMNP Protected Areas and Management Board (NSMNP-PAMB)- Highest management body in NSMNP and approves or takes actions on the matters relating to planning, protection and administration. PAMB is composed of the community and indigenous people. They are willing to preserve and stop illegal activities given that alternative livelihood are provided.	Alternative livelihood for the community
"Dumagats" (Indigenous People) - These are one of the last hunter gatherers in the south-east Asia. They are becoming marginalized due to encroachment of lowlanders. They want their ancestral lands to be recognized and given to them.	Tenurial security and preservation of their ancestral home
Plan International-NSMNP-Conservation Project- The focus of Plan International's activities protected area management with emphasis on community development. Other activities include boundary demarcation, implementation of management plan, resource profiling and inventory, ethnographic profiling of indigenous communities, and training of DENR protected area staff. In addition, livelihood assistance fund, infrastructure such as hospitals and technical and financial assistance to Isabela State University.	Conservation and protection of the Northern Sierra Madre Natural Park (NSMNP) (" livelihood first then conservation will follow")
Nordic Agency for Development and Ecology (NORDECO)- The organization is funded by the Government of Denmark as technical assistance for the GEF-CPPAP project which focuses on biodiversity training, awareness raising, inventory and monitoring in three of the ten priority protected areas which includes the Northern Sierra Madre Natural Park. NORDECO's Technical assistance includes a baseline inventory with the aim to improve the knowledge among the protected area staff and members of the Protected Area Management Board (PAMB) on the status and distribution of selected habitats and species, the significance of the ecosystem and its components to communities and protected area management constraints and realistic mitigating measures.	Provide technical assistance in the development of management plan and capacity building of DENR and PAMB
Conservation of Priority Protected Areas Project- The project is funded by the Global Environment Facility (GEF). It provide assistance to the Government of the Philippines in developing and managing ten priority protected areas including the Northern Sierra Madre Natural Park. The project runs from 1996-2002. However, there is a discussion of shutting almost all projects down this year, except for NSMNP, because of dissatisfaction by GEF on the projects performance. The NSMNP project recently underwent an overhaul and apparently the project has much improved as a result.	Site development, community and NGO supported management, socio-economic development including traditional land tenure delineation

1. Key components of the CPPAP are Site Development, community and NGO supported management, socio-economic development including traditional land tenure delineation. Additionally the project provides other technical assistance to the Park

ACTORS	Primary Interest
Authority and the Protected Areas and Wildlife Bureau of the DENR.	
Technical Assistance Unit (TAU) -To facilitate dialogue and coordination between foreign assisted projects in Northern Sierra Madre Natural Park (NSMNP). Member organizations include the Global Environment Facility (GEF), Danish International Development Assistance (DANIDA), Dutch International Development Assistance (DGIS), United States Agency for International Development (USAID), Conservation International and the Isabela State University. The group is headed by the DENR regional Executive Director.	Conservation of the NSMNP and proper coordination of all activities towards the same goal
Pacific Timber Export Corporation (PATECO)- The timber company is currently operating in Dinapigue, Isabela and Dilasag, Aurora province. Their Timber License Agreement (TLA) is set to expire on December 31, 2006. They have a lot of influence in the government. They are employing clear cutting activities in the area.	Continuous operations and expansion of the company;
Luzon Mahogany Timber Industries (LUZMATIM) Companies - the timber company is currently operating in Dinapigue, San Mariano and Echague, Isabela. Their TLA expired in June 30 1982 but was renewed and converted to 25 years and set to expire on December 20, 2007. They are currently conducting clear cutting activities and reported to be expanding their area from the original plan. The company has a lot of influence in the government.	Continuous operations and expansion of the company; advocate development and improvement of logging road
NSMNP Local Government Units- Willing to conserve biodiversity of the and interested in the development of alternative livelihood but lack funds to initiate such activities. Participate in decision making on the different activities within the park.	Advocate for the development of farm to market road; development of tourism in the area
NSMNP Park Superintendent- Chief DENR officer on site, responsible to the Protected Areas Management Board and Regional Executive Director. Dedicated in protecting and conserving the NSMNP but lack funds for operations and maintain patrolling activities	Monitor and coordinate all stakeholders activity and serve as secretariat for the PAMB and oversee park protection
Mining companies- There are several mining companies lobbying for the opening of more lands within the proposed corridor. Mining applications (not yet approved) cover almost all the remaining forest within the proposed corridor (See attached document on page - & -). Some of these mining applications have been granted exploratory permits and permit to operate. Some mining applications have been awarded but overlaps with some tenurial instruments such as CADC, CBFM and even within NSMNP.	Approval of their mining applications/operations
Cagayan Corridor	

Attachment Philippines-3

ACTORS	Primary Interest
The Foundation for Philippine Environment (FPE) is a national level foundation, set up by USAID, that promotes local and international cooperation towards developing improved environmental policies and effective programs. It assists and finances biological diversity conservation and sustainable development activities. Currently, it is funding PROCESS-Luzon's activities in the region. A MOA is being formulated with CI for the corridor project.	Promote biodiversity conservation and sustainable development of Natural Resources
Process Luzon - a NGO that seeks to strengthen grassroots organizations and promote social justice through democratization of access and management of resources and promote sustainable development and conservation	Strengthening of local organizations in managing resources and CBFM
Cagayan Valley Peoples Development and Environment	Address issues and concerns of the local community
Local Government Units of Cagayan province- LGUs of Penablanca and Baggao Municipalities are willing to cooperate with the SMBC project of CI-Philippines. Baggao is the first municipality in Cagayan to have a land use plan through GOLD project of USAID.	Protection and conservation of their resources
Cagayan Economic Zone Authority (CEZA)	
Indigenous People ("Agay") and Peoples organization of Gattaran- They are currently having problem on there land claims. A mining application was recently approved that overlaps with their CADC and CBFM	Right to their lands.
PICO Mineral Corporation- the mining application was approved by the Bureau of Mines in Region 2. They are interested in extracting Gold. NIPAs areas were excluded but it overlaps with two tenurial instruments, the CADC in Gataran-Lallo and the CBFM in Gattaran and the 3-Diamond CBFM in Baggao	Interested in extracting the gold resources of the area.
Northern and Southern Aurora Corridor	
Aurora State College of Technology (ASCOT)- This is a new established State College, though they have motivated staff they lack capacity interms of budget and human resources.	Provide biodiversity information for the province
Aurora Integrated Area Development Project II (AIADP II)- EU funded project tied up with the Department of Agrarian Reform. They have been in Aurora for the past 10 years. They were able to established Watershed forest reserves within Aurora province. However, the Project ended last December 1999. No extension has been heard yet	Development of lowland communities, environmental management and sustainable resource development.
Quezon Corridor	
Local Government of General Nakar	

Attachment Philippines-3

ACTORS	Primary Interest
Green Circle Property Development- the Pacific Coast City is a project by the Green Circle Properties and resources Corporation owned by Atty Romeo G. Roxas. The proposed project . Encompass 28,000 hectares of land. The said project is considered as a flagship project of Pres Joseph Estrada, the Pacific Coast City project was granted the status of a Special Economic Zone and Tourism Estate through Proclamation No. 223 directing all heads of department, bureaus, offices agencies and instrumentalities of the government to support the program and assigned GCPRC to implement their plan.	Extract timber resources and build industrial estates within the area
Quirino Corridor	
Philippine Working Group (PWG)- The group is composed of several NGO's and GO's. The group was formed to develop the community and other stakeholders to have stronger stance on Community Based Forest Management (CBFM) in Quirino Province. They are hoping the success of the CBFM project in the province can serve as a model for other areas. It also involves local government and community participation	Identify and recommend policies on natural resource management that support community participation

Attachment Philippines-3

Actor Assessment

Regional Level

Department of Environment and Natural Resources (DENR) - oversees the conservation, optional use, and programmed exploitation of the country's natural resources and ecosystems. They promote sustainable use of resources and issues permits on the use of land and mineral resources, social equity and efficiency in resource use and effective environmental management.

Required Change: Strengthen capacity and increase understanding towards biodiversity conservation. Maintain their commitment to promote sustainable use of resources.

Protected Areas and Wildlife Bureau (PAWB) - establish and manage protected areas, formulate of policies for the preservation of biological diversity.

Required change: Increase technical capacity of the PAWB staff at the regional and National level.

Regional Development Council (RDC) – in charge in assembling the region's development plans through consultation of various stakeholders composed of private sector, local government, regional and provincial line agencies. Cagayan Valley Strategic Development plan has been formulated for the year 1999-2004. However, protected areas and other tenurial instruments were not mentioned in the document. It vision is for the Cagayan Valley to have a competitive agri-industrial economy, modern infrastructure, responsive basic services and well manage ecosystem.

Required Change: Increase understanding about Philippine biodiversity and biodiversity Conservation. Needs more input about the biological richness of the area and its importance at the regional, national and global.

Bureau of Mines and Geosciences- the agency is a bureau under the DENR which provides permits to the mining applicants. An Environmental Impact Assessment is required to all applicants. Some of the mining permits they issued overlaps on some tenurial instruments which cause some people to question the validity of the permit.

Required Change: maintain and strict implementation of forestry laws and other environmental laws.
Environmental Management Board (EMB)- Tasked in handling Environmental Impact Assessment.

Required Change: Strict implementation of laws and conduct necessary monitoring of projects.

Environmental Science for Social Change (ESSC)-conducts forestry surveys, research community mapping, policy development and resource management. Focus on community resource mapping and community organizing.

Required Change: Strengthen understanding on Philippine biodiversity
Isabela State University (ISU) – the only academic institution with an environmental curriculum in Isabela province. The college of forestry and environmental management is the lead institution for ISU. It has substantial experience in community forestry. Since, 1989, ISU has collaborated with the Dutch University of Leiden educating bachelors, masters and Ph D. students. Many studies investigated the underlying causes of environmental problems in Cagayan Valley, including the western part of NSMNP. CI partnered with ISU and CTFS, a Harvard and Smithsonian partnership, to develop botanical field research and monitoring plots from 1991-1996. The plot work continues with the financial assistance of Plan International, but lack of resources has hampered completion of sample identification and inventory to date. The ISU also assists the DENR and provincial government in undertaking Environmental Impact Assessments of forest utilization and infrastructure development plans.

Required Change; Enhance biodiversity conservation knowledge and maintain its commitment in providing assistance to various government agencies.

National Council for Indigenous People Region 2 (NCIP-Region 2)- gathering information

Northern Sierra Madre Corridor

Provincial Environment and Natural Resources Officer (PENRO)- coordinate regional environmental plans and natural resources activities. Oversee the over all environmental activities within his/her province. Some people are sincere but they lack funds, equipment and low staff capability in conducting Biodiversity studies and monitoring

Required Change: Expand their knowledge of the regions biodiversity and Philippine biodiversity, monitoring and assessment of biodiversity.

NSMNP Protected Areas and Management Board (NSMNP-PAMB)- Highest management body in NSMNP and approves or take actions on the matters relating to planning, protection and administration. PAMB is composed of the community and indigenous people. They are willing to preserve and stop illegal activities given that alternative livelihood are provided.

Required Change: Building capacity of the group in understanding their roles and responsibilities including effective decision making.

"Dumagats" (Indigenous People) - These are one of the last hunter gatherers in the south-east Asia. They are becoming marginalized due to encroachment of lowlanders. They want their ancestral lands to be recognized and given to them.

Required Change: Expand their knowledge about their rights and use it to improve their awareness on environmental laws and conservation.

Plan International-NSMNP-Conservation Project- The largest budget for work in the areas has tended to dominate the group. The project runs from 1996 to 2001. The focus of Plan International's activities protected area management with emphasis on community development. Other activities include boundary demarcation, implementation of management plan, resource profiling and inventory, ethnographic profiling of indigenous communities, and training of DENR protected area staff. In addition, livelihood assistance fund, infrastructure such as hospitals and technical and financial assistance to Isabela State University.

Required Change: Maintain their commitment in conserving biodiversity in the Northern Sierra Madre Natural Park

Nordic Agency for Development and Ecology (NORDECO)- Serve as technical assistance for the GEP-CPPAP project through biodiversity training, awareness building inventory and monitoring and providing scientific knowledge to the PASu staff and PAMB.

Required Change: Maintain their commitment in conserving biodiversity in the Northern Sierra Madre Natural Park

Conservation of Priority Protected Areas Project (CPPAP)-provides assistance to the GOP in developing and managing ten priority protected areas including the NSMNP.

Required Change: Maintain their commitment in conserving biodiversity in the Northern Sierra Madre Natural Park

Technical Assistance Unit (TAU)- this was formed to encourage coordination and information sharing between agencies working in the NSMNP.

Required Change: Maintain their commitment and coordination of activities towards conserving biodiversity in the Northern Sierra Madre Natural Park

Attachment Philippines-3

Pacific Timber Export Corporation (PATECO)- The timber company is currently operating in Dinapigue, Isabela and Dilasag, Aurora province. Their Timber License Agreement (TLA) is set to expire on December 31, 2006. They have a lot of influence in the government. They are employing clear cutting activities in the area.

Required Change: Promote best practices and consider reforestation as an option.

Luzon Mahogany Timber Industries (LUZMATIM) Companies - the timber company is currently operating in Dinapigue, San Mariano and Echague, Isabela. Their TLA expired in June 30 1982 but was renewed and converted to 25 years and set to expire on December 20, 2007. They are currently conducting clear cutting activities and reported to be expanding their area from the original plan. The company has a lot of influence in the government.

Required Change: Promote best practices and consider reforestation as an option.

NSMNP Local Government Units- Willing to conserve biodiversity of the and interested in the development of alternative livelihood but lack funds to initiate such activities. Participate in decision making on the different activities within the park.

Required Change: Expand knowledge on biodiversity conservation and its importance to their livelihood and protection against disaster. Maintain their willingness to conserve biodiversity.

NSMNP Park Superintendent- Chief DENR officer on site, responsible to the Protected Areas Management Board and Regional Executive Director. Dedicated in protecting and conserving the NSMNP but lack funds for operations and maintain patrolling activities.

Required change: Maintain commitment to conserving the Northern Sierra Madre Natural Park and more support from the government and DENR.

Mining Companies- mining applications are all over the proposed corridor. Some mining applications have been awarded but overlaps with some tenurial instruments such as CADC, CBFM and even within NSMNP. Most of these approved mining applications (according to the locals that are affected) were not properly consulted.

Required Change: Stop lobbying for concessions for areas already under some kind of tenurial instruments and protected areas. Promote best practices

Cagayan Corridor

Foundation for Philippine Environment (FPE)- a national level foundation that assists and finances biological conservation and sustainable development activities.

Required Change: Maintain the commitment in assisting biodiversity conservation and sustainable development and promote the Sierra Madre Biodiversity Corridor.

Process Luzon - a NGO that seeks to strengthen grassroots organizations and promote social justice through democratization of access and management of resources and promote sustainable development and conservation.

Required Change: Increase knowledge on biodiversity conservation.

Cagayan Valley Peoples Development

Local Government Units of Cagayan province- LGUs of Penablanca and Baggao Municipalities are willing to cooperate with the SMBC project of CI-Philippines. Baggao is the first municipality in Cagayan to have a land use plan through GOLD project of USAID.

Required Change; Increase knowledge on Philippine Biodiversity and its importance and promote the Sierra Madre Biodiversity corridor concept.

Cagayan Economic Zone Authority (CEZA)

Indigenous People ("Agay") and Peoples organization of Gattaran- They are currently having problem on there land claims. A mining application was recently approved that overlaps on their CADC and CBFM areas.

Required Change: Expand their knowledge on environmental laws and used it to enforce their rights.

PICO Mineral Corporation- the mining application was approved by the Bureau of Mines in Region 2. They are interested in extracting Gold. NIPAs areas were excluded but it overlaps with two tenurial instruments, the CADC in Gataran-Lallo and the CBFM in Gattaran and the 3-Diamond CBFM in Baggao.

Required Change: Promote Best practices and respect tenurial rights of the indigenous people. Conduct proper consultation with the affected communities.

Northern and Southern Aurora Corridor

Aurora State College of Technology (ASCOT)- This is a new established State College, though they have motivated staff they lack capacity in terms of budget and human resources. The college was mandated to provide biodiversity information for the Aurora province.

Required Change: More support from the government agencies and increase technical knowledge of the staff on monitoring and assessment of Biodiversity.

Aurora Integrated Area Development Project II (AIADP II)- EU funded project tied up with the Department of Agrarian Reform. They have been in Aurora for the past 10 years. They were able to established Watershed forest reserves within Aurora province. However, the Project ended last December 1999.

Required Change: Maintain its commitment in protecting the lowland forest of Aurora province

Quezon Corridor

Green Circle Properties and Resources Corp.- a private corporation that initiated the Pacific Coast City in General Nakar, Quezon. The group prefer selective logging and protection of the proposed land against encroachment. They have a lot of influence with the government. They were able to get the government to declare the area as special economic zone.

Required Change: EIA and strict implementation of environmental laws

Philippine Economic Zone Authority (PEZA)

Required change: EIA and strict implementation of environmental laws

Quirino Corridor

Philippine Working Group (PWG)- The group is composed of several NGO's and GO's. The group was formed to develop the community and other stakeholders to have stronger stance on Community Based Forest Management (CBFM) in Quirino Province. They are hoping the success of the CBFM project in the province can serve as a model for other areas. It also involves local government participation

Required change: Continue commitment and lobbying for policies on resource management

RP-German Debt-For-Nature-Swap Initiatives Program- the program uses the community based Forest management Approach. The program includes mapping of land use of the province and identifying and delineating the ten CBFM sites under their project. It is a three year project which involves IEC and community organizing. Part of the project is a resource base inventory involving PO's as part of their capability building. *It also includes delineating areas with old growth forest for it to be proclaimed as Protected area (needs verification, based on the initial conversation of the project leader?)*

Required Change: Continue funding in strengthening and delineation of tenurial instruments

Attachment Philippines-3

Summary of the threats and Actor Analysis

Threat	Actor	Primary Interest	Required Change
Legal Logging	DENR	Sustainable and optimum use of natural resources	Improve coordination with other actors in the area and strict implementation of forestry laws
	PAMB	Alternative livelihood for the community and protection of their natural resources	Increase knowledge of their responsibility and duties and awareness and the cause and effect of biodiversity loss
	Local communities	land tenure and alternative livelihood	Increase knowledge on the different tenurial instruments and legal rights and improve coordination with DENR
	CI-Philippines	conservation and preservation of the Sierra Madre mountain range	Lobby against the continuation of Timber License Agreement
	LUZMATIM	increase production and expansion of the area	Best practices, EIA and monitoring
	PATECO	increase production and expansion of the area	Best practices, EIA and monitoring
	Local Government Units	Advocate for the development of farm to market road; development of tourism in the area, alternative livelihood	Implementation of environmental Impact Assessment and monitoring of the activity, best practices and conservation compatible livelihood
Timber poaching	PAMB	Alternative livelihood for the community and protection of their natural resources	Increase knowledge of their responsibility and duties and awareness and the cause and effect of biodiversity loss, development of alternative livelihood
	CPPAP	Provide support to the PASu on forest protection and establishment of Bantay Kalikasan Brigade	Maintain commitment in forest protection
	PASu	Monitor and coordinate all stakeholders activity and serve as secretariat for the PAMB and oversee park protection and conservation of the park	More support from the DENR region and the government
	NSMNP LGUs	Advocate for the development of farm to market road; development of tourism in the area and alternative livelihood	Development of alternative livelihood and strict implementation of laws
Small scale Mining	PAMB	Alternative livelihood for the community and protection of their natural resources	Increase knowledge of their responsibility and duties and awareness and the cause and effect of biodiversity loss
	PASu	Monitor and coordinate all stakeholders activity and serve as secretariat for the PAMB and oversee park protection and conservation of the park	More support from the DENR region and the government

Attachment Philippines-3

Threat	Actor	Primary Interest	Required Change
	NSMNP LGUs	Advocate for the development of farm to market road; development of tourism in the area, livelihood	Development of alternative livelihood and strict implementation of laws, increase knowledge on the cause and effect of biodiversity loss
	DENR-Bureau of Mines	Optimum use of natural resources	Best practices, EIA and strict implementation of laws
Commercial Mining	DENR	Sustainable and optimum use of natural resources	EIA and strict implementation of forestry and environmental laws
	PAMB	Alternative livelihood for the community and protection of their natural resources	Capacity building in decision making and technical knowledge
	Local Community	land tenure and alternative livelihood	Increase knowledge on the different tenurial instruments and legal rights and improve coordination with DENR
	Dumagats	Land tenure	Increase knowledge on the different tenurial instruments and legal rights and improve coordination with DENR
	LGUs	Advocate for exclusion of areas within the park for mining operations	Alternative livelihood and increase awareness on the cause and effect of biodiversity loss
	Conservation International		
	DENR-Bureau of Mines	Optimum use of natural resources	EIA and strict implementation of forestry and environmental laws
Management Conflict (Land Tenure, mining vs CADC and CBFM)	Dumagat	Land tenure	Increase knowledge on the different tenurial instruments and legal rights and improve coordination and facilitate consultation with DENR
	CI-Philippines	appropriate land use, conservation compatible land use	development of baseline information for sound management planning
	LGUs	delineation of boundaries and identification of land use for their municipal development plans	more participation and consultation between the local community and LGU's
	PASu	Monitor and coordinate all stakeholders activity and serve as secretariat for the PAMB and oversee park protection and conservation of the park	More support from the DENR region and the government and other NGOs working in the area
	DENR	Sustainable and optimum used of natural resources	Improve coordination among stakeholders
	NORDECO	conservation and development of barangay management plan for the identification of the different proposed zones within the park	close coordination with other stakeholders in the park
	Plan International	conservation and development of barangay management plan for the identification of the different proposed zones within the park	close coordination with other stakeholders in the park

Attachment Philippines-3

Threat	Actor	Primary Interest	Required Change
	TAU	coordination of the different activities in the area	sharing of information and integration of common activities
	PAMB	land tenure	coordination and cooperation with the different stakeholders
Infrastructure Development such as roads, dams and real estate development e.g. Pacific Coast City	DENR	Sustainable and optimum used of natural resources	EIA and strict implementation of forestry and environmental laws
	GOP	Sustainable and optimum used of resources	EIA and strict implementation of forestry and environmental laws
	RDC		improve coordination with all the stakeholders within the affected area
	Local Community	land tenure and alternative livelihood	increase awareness of the development projects and proper consultation with the community
	Dumagats	Land tenure	increase awareness of the development projects and proper consultation with the community, understanding their tenurial rights
	CI Philippines	conservation and effective protection of the Sierra Madre mountain range	Lobby against the establishment of conservation incompatible land uses, promote strict implementation of policy and environmental laws

Attachment Philippines-4

SIERRA MADRE BIODIVERSITY CORRIDOR THREATS MATRIX

ROOT CAUSE(S)	PROXIMATE THREATS	ENVIRONMENTAL EFFECT	INTENSITY		OPPORTUNITY (INTENSITY)
	Regional Level Threats		Short term	Long term	
Localized demand to reduce economic isolation (East-West) National trans-SM Super-highway (North-South) Coastal Road w/in NSMP National Poverty Alleviation Program	**ROAD DEVELOPMENT:** (East-West) (North-South) Timber extraction/ Logging; Migration; Easier Access for Mining; Increase Food Supply; Tourism Increase (Unregulated); Increased Social Conflict; Displacement of Indigenous Communities	Primary: Habitat loss/ Alteration; Biodiversity loss; Increased Sedimentation Secondary: Pollution/Garbage Build-up	2	4	Provide alternative transportation strategies (3) Feasibility Study on road construction (4) Influence/participate in Environmental Impact Assessment (4) Promote best practices (2) National Senator has interest in extending NSMNP to Cagayan province (Cagayan Economic Zone Authority (CEZA) is willing to be consulted on road construction (3) Indirect/National level Opportunities Local governors willing to receive audience/information analysis results regarding road development (3) Creation of Presidential Task force on SMBC can influence legislation and future development decisions – provide timely analysis/data to show effects of road development. (3) Poverty Alleviation of President Estrada's Agenda
National Economic Goals/Priorities GDP Growth Employment Trade Desire for Increased trade/foreign and domestic investment	Development of Industrial Estates	Primary: Habitat loss/alteration; Pollution/Industrial Waste		4	Philippine Economic Zone Authority seeks to ensure Project has no negative environmental impacts and is willing to hear environmental assessment (4) Political Connections in Administration/Agencies who support conservation (4)

Attachment Philippines-4

Root Cause(s)	Proximate Threats	Environmental Effect	Intensity		Opportunity (Intensity)
	Regional Level Threats		Short term	Long term	
Development of Alternatives to small-holder agriculture Increase local level incomes Promote economic/industrial migration centers outside of Manila	Road Construction; Migration; Displacement of Indigenous People	Secondary: Increased Demand for Resources: Water, Soil (increases erosion); Destruction of Marine Resources			Assessment of Alternatives to Industrial Estates (Cost-Benefit Analysis, Maps and Models), specifically for Pacific Coastal City (PCC) Condor Example (4)
Pressure to utilize resource base to prevent outsiders from benefiting from use (within NSMNP) Logging outside of concession areas because low risk of sanctions (economic opportunism) Domestic and international demand for tropical hardwood	Logging (large-scale legal and small-scale illegal) Access to new areas for hunting and agriculture; Misguided alternative livelihoods (coffee growers)	Habitat Alteration; Fragmentation; Soil erosion – siltation in rivers; Sedimentation of coastal reefs/mangroves; Increase in vector-borne disease incidence	3	3	Document logging outside concessions (use as(grounds for cancellation of concessions (1) Defense Minister Interest in Green Army in time of peace (1) Strengthening PAMB- training of community forest guards (4) Promote alternative livelihoods (3) Support/promote DENR's participation in national level conservation (comprehensive agreement to address all regions MOU, MOA) (4)
Foreign Investment Domestic and International demand for Gold, Nickel and Chromite, copper	Mining (large-scale and small-scale exploration, development and extraction)	Water/Soil Contamination ; Habitat Destruction ; River Sedimentation/Soil Erosion;	3	4	Involvement in EIAs (4) Assessment of Alternatives (Cost-Benefit Analysis, Maps and Models) Condor Example – (4) Promote best practices with industry partners (3)

Attachment Philippines-4

Root Cause(s)	Proximate Threats	Environmental Effect	Intensity		Opportunity (Intensity)
	Regional Level Threats		Short term	Long term	
	Large-scale: National Filipino and Foreign-owned mining operations	Human Health Impacts mercury use, malaria pools (unregulated) Food source contamination (animal protein)			
Hydroelectric energy source for Luzon Casecnen Dam	Dams; Community displacement; Electricity Generation; Roads and associated infrastructure development; Tourism/recreation	Flooding/inundation; Disruption of aquatic habitat; Habitat loss	1	3	Cost-benefit analysis of dam creation (4) Press Attention (4) Fisheries food security issues (2)
Source of income from revolutionary taxes	Increased rebel activities	Logging	2	3	Rebels seek to preserve forest cover for refuge (1)
Lack of alternatives	Low awareness		3	3	Awareness campaign at corresponding levels national, regional, local (4)
Increased population pressure	Small-holder Agricultural expansion	Habitat destruction/alteration Encroachment to forest areas	1	3	Resource use analysis (4) Population analysis (4)

LIST OF LOCAL GOVERNMENT OFFICIALS
IN THE NORTHERN SIERRA MADRE NATURAL PARK (NSMNP)

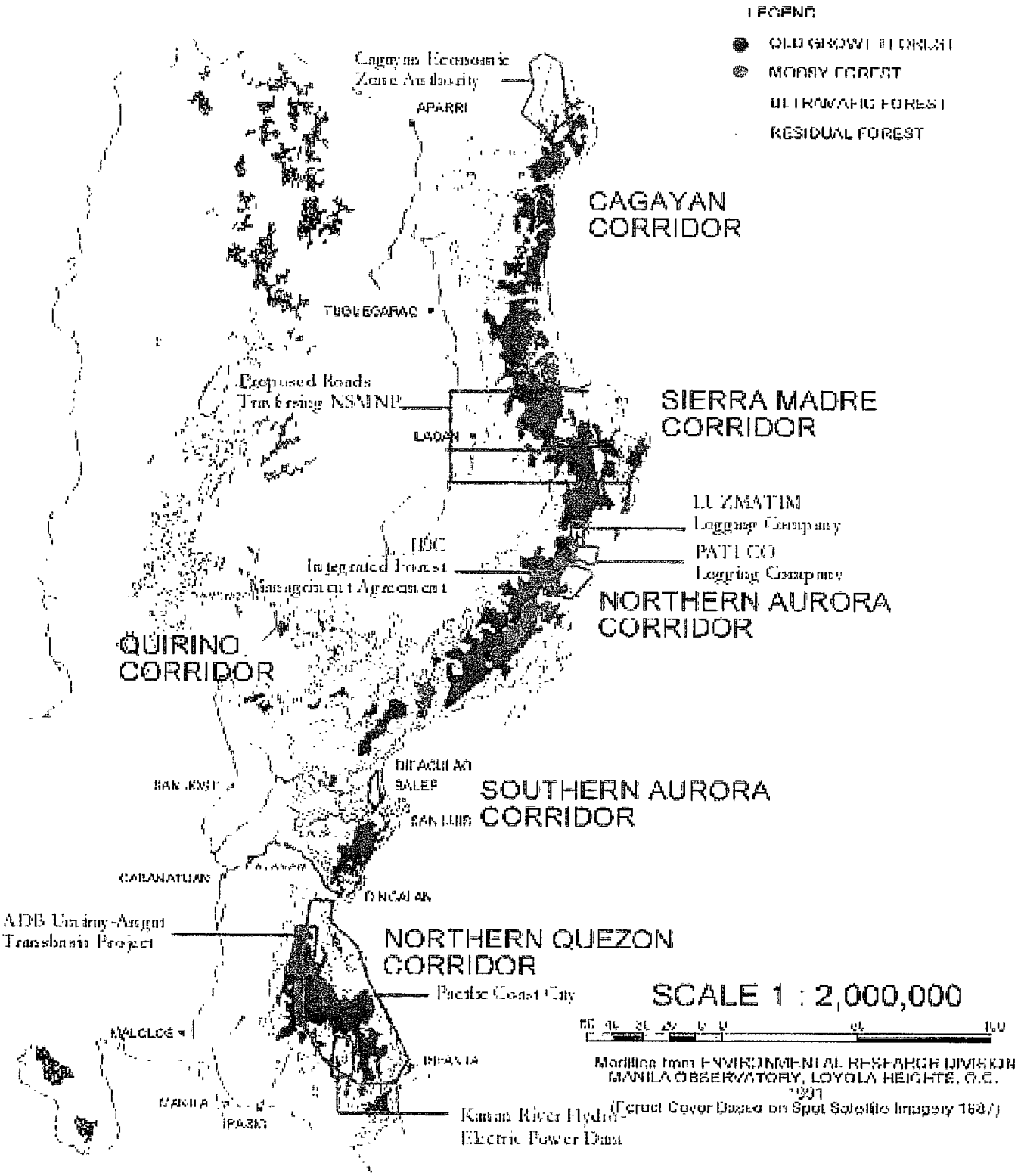
MUNICIPALITY	POSITION	NAME
Divilacan	Mayor/LCE	Olegario S. Cortez
	Vice Mayor	Venturino C. Bulan
	Barangay Captains	Dicambangan – Florentino Agullana Dilakit – Federico S. Bautista Dibulos – Elalo C. Calaadiang Bicobian – Crispulo Candelaria Dimapnat – Alfredo P. Custodio Ditarum – Ramon O. Cayumba Dicaruyan – Domingo D. Daguitan Dimasalansan – Eduardo C. Eslabon Dikatian – Diosdado D. Robles Dipudo –Nelson B. Palos Dimapula – Cesar P. Tabbada Sapinit – Adolfo P. Baddongen
Dinapigue	Mayor/LCE	Diosdado G. Donato
	Vice Mayor	Herminio B. Domincel
	Barangay Captains	Ayod – Basilio Caligton Dimaluade – Leodivico O. Apelado Bucal Sur – Victor Padilla Bucal Norte – Elpidio Espiritu
Maconacon	Mayor/LCE	Richard U. Peralta
	Vice Mayor	Michael M. Perucho, Sr.
	Barangay Captains	Canadam – Rogelio Abiva, Jr. Diana – Rowena DT. Asuncion Aplaya – Wenceslao F. Lacar Fely – Valentino M. Liberato Malasin – Jose G. Quebral Lita – Odette D. Rapanut Reina Mercedes – German R. Subia Minanga – Delia G. Tabangay Eleanor – Andres Fermin
Palanan	Mayor/LCE	Natividad A. Bernardo
	Vice Mayor	Herman S. Mago
	Barangay Captains	San Isidro – Benjamin P. Alvarez Alomanay – Rodolfo F. Alvarez Centro West - Mona Pacita Q. Atanacio Dimasari – Crispulo P. Cauilan Maligaya – Romeo dela Peña Dialawyao – Gregorio M. de los Reyes Dimalicu-licu – Luis P. Donato Didian – Noel U. Galvez Marikit – Flordeliza A. Lopez Villa Robles – Jacinto O. Magas Sta. Jacinta – Pantaleon E. Magas Culasi – Gregorio M. Mago Centro East – Robert B. Neri Dimatican – Jesus G. Ramos Bisag – Froilan M. Usbal Dicaduan – Luis M. Usbal Diddadungan – Jessie B. Valdez
San Mariano	Mayor/LCE	Jesus C. Miranda

Attachment Philippines-5

MUNICIPALITY	POSITION	NAME
	Vice Mayor	Edmundo G. Viernes
	Barangay Captains	San Jose – Rodolfo Ramirez Del Pilar – Jose Wanol Casala – Rosendo T. Ligmayo Dibuluan – Nicolas Collado Minanga Disulap-
Cabagan	Mayor/LCE	Mila T. Albano-Mamauag
	Vice Mayor	Rosmito B. Rodriguez
	Barangay Captain	Balasig – Jose G. Bucag Masipi East – Rodolfo N. Laguinday Masipi West - Dionisio N. Suguitan
San Pablo	Mayor/LCE	Eduardson P. Tumaliuan
	Vice Mayor	Celia M. Aragon
	Barangay Captains	Dalena Tupa Simanu Sur – Rodolfo Soriano Simanu Norte – Monico Domincel
Tumauini	Mayor/LCE	Ric-Justice E. Angobung
	Vice Mayor	Arnold S. Bautista
	Barangay Captain	Antagan I – Macario R. Romero Antagan II – Esperanza B. Cercenia Capellan – Dy-Abra-
Ilagan	Mayor/LCE	Mercedes P. Uy
	Vice Mayor	Sammuel A. Maddara
	Barangay Captains	Batong-Labang – Anastacia Nepomuceno Rang-Ayan- Antonio Serquiña Villa Imelda Nanaguan

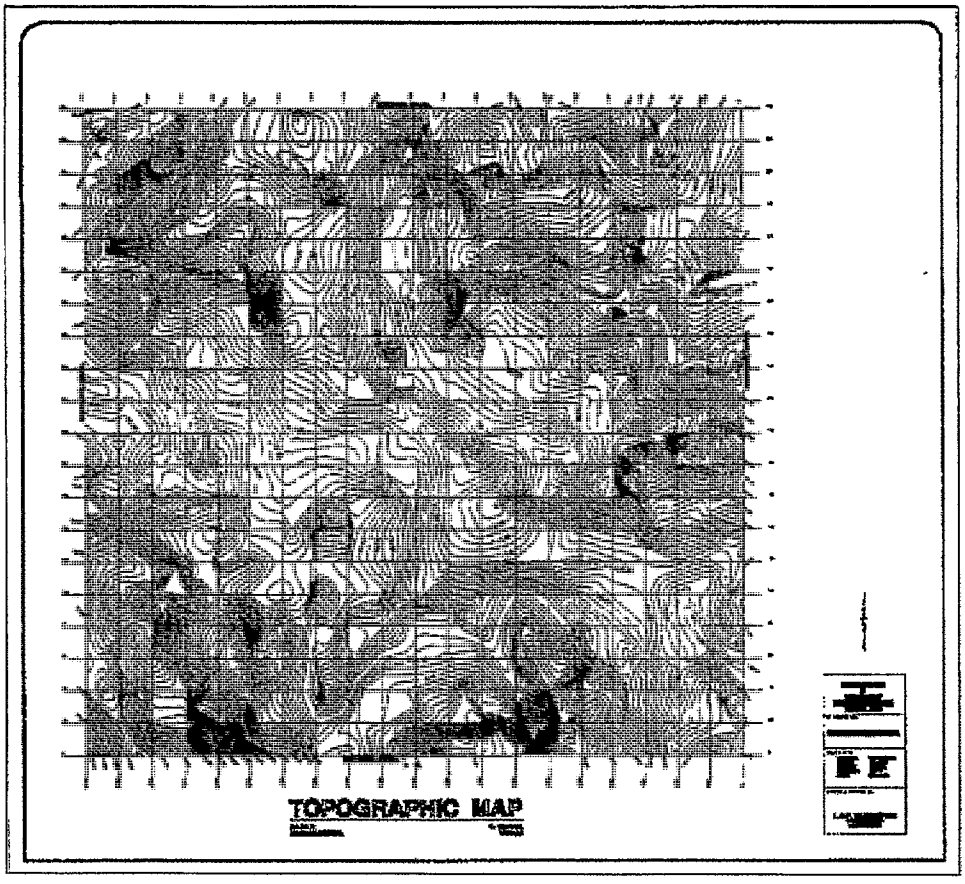
Attachment Philippines-6
Draft-Not to Scale

SIERRA MADRE BIODIVERSITY CORRIDOR



NOTE: Other proposed roads, infra developments and dams not yet incorporated

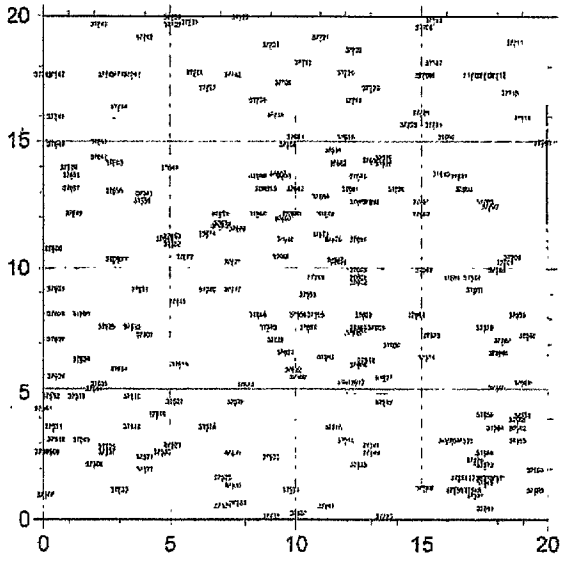
Attachment Philippines-7



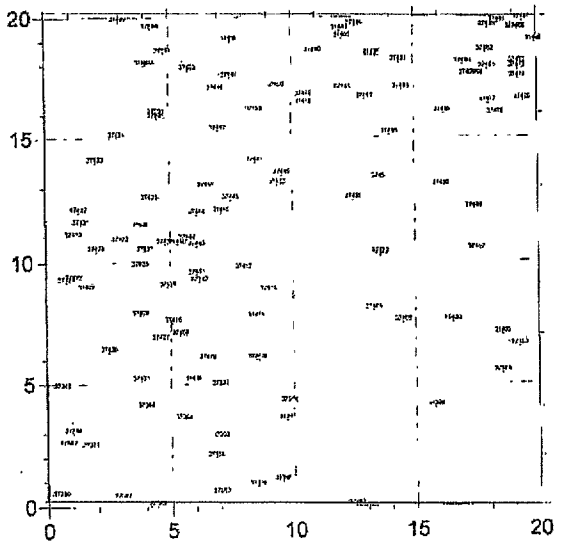
Topographic map of the 16-hectares Forest Dynamics Plot in Palanan,Isabela at 1 meter interval

Below is a sample of a tree distribution map (20x20 m) (a and b)

a) Palanan 1999 Census 8-ha plot
Lower Left Global Coordinate is: 80 : 340



b) Palanan 1999 Census 8-ha plot
Lower Left Global Coordinate is: 80 : 320



Attachment Philippines-8

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE FOUNDATION FOR THE PHILIPPINE ENVIRONMENT
AND
FIRST PHILIPPINE CONSERVATION INCORPORATED

FOR A

COMPLEMENTATION OF ACTIVITIES AND RESOURCES
FOR BIODIVERSITY CONSERVATION AND SUSTAINABLE DEVELOPMENT

KNOW ALL PERSONS BY THESE PRESENTS:

This **Memorandum of Understanding** is made and entered into this 23rd day of June 2000, in Quezon City by and between:

The **Foundation for the Philippine Environment**, with office address at 77 Matahimik St., Teachers Village, Quezon City, herein represented by its Chairperson, **MS. ALMA MONICA DE LA PAZ**; and

The **First Philippine Conservation Incorporated**, with office address 4th Floor Benpres Building Exchange Road cor. Meralco Avenue, Pasig City herein represented by its Chairperson, **MR. OSCAR M. LOPEZ**

WITNESSETH:

Whereas, biological diversity (or biodiversity) is the sum total of genes, species, and ecosystems whose existence and interactions are indispensable for human survival and societal development;

Whereas, the Philippines is endowed with a high degree of biological diversity that forms a vital part of the Filipino people's lives and livelihoods, and constitutes the resources upon which families, communities, and future generations depend;

Whereas, biodiversity conservation seeks to meet people's needs for biological resources while ensuring the long-term sustainability of the country's biotic wealth;

Whereas, the Philippines is considered as the "Hottest of the Hotspots" based on levels of endemism, lost of original forest cover and current rate of forest destruction resulting in severe loss of biological resources;

Whereas, the Sierra Madre rainforest the largest remaining contiguous track of rainforest in the Philippines that contains approximately 50% of the Philippine Biodiversity, 50% of the primary forest remains nationally.

Whereas, Philippine Agenda 21 enjoins all sectors of Philippine society to engage in concerted efforts at biodiversity conservation towards sustainable development, that is, development that is economically viable, socially equitable and acceptable, ecologically sound and gender responsive;

Whereas, the **FOUNDATION FOR THE PHILIPPINE ENVIRONMENT** (FPE) is a non-government organization that supports biodiversity conservation and sustainable development efforts of NGOs, POs, and communities in identified critical areas throughout the country;

Whereas, the **First Philippine Conservation Incorporated**, a foundation established to support efforts to conserve Philippine biodiversity particularly that of Conservation International-Philippines'

efforts to conserve biodiversity in the Sierra Madre rainforest in Cagayan, Isabela, Aurora, Quirino, and Northern Quezon provinces;

Whereas, FPE and *FPCI* believe that the sustainability of biodiversity conservation programs requires the complementation of efforts of NGOs, POs, and government agencies and units at all levels, as well as donor institutions supporting initiatives of these groups; and

Whereas, FPE and FPCI, having seen the efficacy of complementation of efforts and resources in their assistance to the **Sierra Madre Biodiversity Corridor project of Conservation International-Philippines in the provinces of Cagayan, Isabela, Quirino, Aurora and Quezon**, agree to replicate such complementation in other sites;

Be it hereby resolved that FPE and *FPCI* agree to undertake a **Complementation of Efforts and Resources for Biodiversity Conservation and Sustainable Development** in the Sierra Madre Biodiversity Conservation Corridor and other sites to be jointly identified by both parties, with the following objectives:

1. Share information, strategies, and expertise towards greater synergy and area impact of biodiversity conservation and sustainable development;

2. Complement resources to support community-based programs on biodiversity conservation and sustainable development in mutually agreed sites;

3. Conduct joint training and development, capability building, project cross visitation and other activities that will mutually benefit the staff of both organizations and partners.

4. Conduct joint training and development, capability building, project cross visitations and other activities that will mutually benefit the staff of both organizations;

5. Promotion of the region as a priority for biodiversity protection locally, nationally and globally;

6. Identification of Local Coordinating Units (LCUs) in the Cagayan corridor.

7. Consolidation of public support for the corridor through participation, dialogue and discussion with stakeholders, and the development of strategic policy interventions;

8. Promote biodiversity corridor approach as a framework for conservation planning and Identify Local Coordinating Units (LCU) in the Cagayan Province.

9. Document and publish exemplary practices in community-based biodiversity conservation and sustainable development and promote models evolved in such efforts.

This MOU shall remain valid and binding for 5 years after signing and may be renewed and / or amended upon the mutual consent of both parties.

In witness thereof, the Parties, through their respective representatives, have caused this MOU to be signed on the date and place first written above.

For the	For the
FOUNDATION FOR THE PHILIPPINE ENVIRONMENT	**FIRST PHILIPPINE CONSERVATION INCORPORATED**
_____	_____

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ALMA MONICA DE LA PAZ
Chairperson

OSCAR M. LOPEZ
Chairperson

Witnesses:

JULIO GALVEZ TAN
Executive Director

DR. PERRY S. ONG
Country Director

IMPLEMENTING GUIDELINES

FOR THE

MEMORANDUM OF UNDERSTANDING BETWEEN
THE FOUNDATION FOR THE PHILIPPINE ENVIRONMENT
AND FIRST PHILIPPINE CONSERVATION INCORPORATED

FOR A

COMPLEMENTATION OF ACTIVITIES AND RESOURCES
FOR BIODIVERSITY CONSERVATION AND SUSTAINABLE DEVELOPMENT

I. The Agreement. These implementing guidelines provide the operational framework for the Memorandum of Understanding between the Foundation for the Philippine Environment (FPE) and the First Philippine Conservation Incorporated (FPCI) through Conservation International Philippines for a Complementation of Activities and Resources for Biodiversity Conservation and Sustainable Development.

II. Definition of Terms

Biodiversity Hotspots are areas that support more than 60% of terrestrial species diversity on just 1.4% of the planet's land surface

Biodiversity Corridor are large interconnected networks of protected areas, that together with the landscape matrix, seek to maintain ecosystem and evolutionary process of biodiversity erosion in tropical ecosystems.

III. Premises

IV. Objectives

The project shall be known as the **Sierra Madre Biodiversity Corridor (SMBC)** that will encompass the provinces of Isabela, Cagayan, Quirino, Aurora and Nothern Quezon.

The Project shall be implemented towards the attainment of the following objectives

1. To build a Biodiversity Corridor Planning and Implementation Support Framework

    a. Preliminary biodiversity Corridor Assessment
    b. Participatory Corridor planning and implementation Process
    c. Integrated Corridor Information System

d. Corridor-wide Threat Assessment
e. Corridor Learning System (Based on monitoring and evaluation)

2. To strengthen, create and extend individual Protected Areas
3. To connect proximate Protected Areas to form core nuclei
4. To connect core nuclei to form the Biodiversity Corridor

V. Responsibilities of FPCI

First Philippine Conservation Incorporated through the Conservation International-Philippines Sierra Madre Biodiversity Corridor project shall:

1. Create an information system of biological, social, legal and land use and economic data for the proposed corridor.
2. Development of local capacity and strengthened institutions to carry out participatory biodiversity conservation planning within the proposed area;
3. Consolidation of existing protected areas and stimulate the creation of new public and private conservation units within the proposed areas;
4. Identification of areas of high biodiversity and assessment of the potential to establish protected areas
5. Conduct biological inventory work in each corridor covering different habitat types in the above-specified study areas;
6. Conduct biological monitoring work at both habitat and species levels;
7. Other activities that may be necessary to meet the objctives of the project and as may be agreed upon in advance by the parties to this agreement.

VI. Responsibilities of FPE

1. Provide fund support for the establishment of the Sierra madre Biodiversity Corridor Project Coordinating Body
2. Share information on the FRPE assisted NGOs/Pos community based resource management (CBRM) projects implementation in the Sierra Madre Corridors
3. Provide technical assistance in the establishment of NGOs/Pos/LGUs and/or business sector linkages and network in the Sierra Madre Corridors.
4. Other activities that maybe necessary to meet the objectives of the project and as maybe agrees upon in advance by the parties to this agreement.

VII. Implementation of the MOU

VIII. Validity and Amendments

This Memorandum and its implementing guidelines were signed for FPE by Ms. Alma Monica de la Paz, Chairperson, and for FPCI by (name and position designation), on (date). It is valid and binding for (number) years after signing and may be amended and /or renewed upon mutual consent of both parties.

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DRAFT

MEMORANDUM OF AGREEMENT

ON ACTIVE DATA SHARING AND GIS INSTITUTIONAL PARTNERSHIP

This Memorandum of agreement made and executed this____ day of____at Quezon by the between:

Conservation International Foundation (CI)-Philippines, a privately owned and operated, non-profit, non-stock organization with office address at #7 Cabanatuan Street, Philam Homes, West Ave., Quezon City represented herein by its Country Director, Dr. Perry S. Ong, hereinafter referred to as "CI".

Institute of Environmental Science for Social Change, a non-stock, nonprofit, non-government research and mapping organization with office address at 1/F MO Building, ADMU Campus, Loyola Heights, Diliman, Quezon City, represented herein by its Director, Fr. Peter Walpole, hereinafter referred to as "ESSC".

WITNESSETH THAT:

WHEREAS, the parties believe that the Philippines, being one of the 17 Megadiversity countries and one of the 25 biodiversity hotspots in the world, should received all combined efforts to arrest and reverse environmental degradation, particularly biodiversity loss in the country;

WHEREAS, the parties believe that biodiversity conservation programs are urgently in need of a strategy to pool together resources, scientific expertise, information technologies and environmental data;

WHEREAS, all members of the working partners believe that effective biodiversity conservation can only be possible with efficient and well-oriented data collection, composition and presentation;

WHEREAS, CI is the implementor of the biodiversity programs, while ESSC will act as an active partner for data sharing and GIS application.

NOW THEREFORE, for and in consideration of the above, and of mutual covenants hereunder set forth, the parties hereto have agreed as follows:

1) CI and ESSC hereby agreed to collaborate and coordinate with each other on data sharing and application of GIS technology in order to make an available information base which will be use to achieve the following objectives:

    a) Assist policy makers, planners and donors to incorporate biodiversity conservation objectives into their management plans
    b) Strengthen local capacity for conservation planning management through the development of an integrated information system and related skills training; and
    c) Promote effective information dissemination of biodiversity information for conservation purposes.

2) In furtherance of the purpose set forth in Section I, ESSC agrees to carry out the following:

a) Provide technical advice and assistance to CI in the preparation of maps in draft and final form;
b) Share soft copies of digital maps relevant to biodiversity conservation activities in the national programs of CI, e.g. National Biodiversity Conservation Priority- Setting Workshop to be held by CI, ESSC and Partners in December 2000 (National Program) and Sierra Madre Biodiversity Corridor program and the Palawan Biodiversity Conservation Program and such other program that are of mutual interest to both parties;
c) Facilitate distribution of final output maps generated through the assistance of ESSC. This distribution shall be in the form of CD's compatible with a particular GIS software chosen by both ESSC and CI, and in paper form whose format is agreed upon by both parties;
d) provide digitizing and plotting capability, GIS equipment and personnel for the National Workshop to be scheduled accordingly, compensation for which shall covered in a separate agreement on an amount agreeable to both parties;
e) Review and prepare output maps with CI in a form ready for publication and facilitate their reproduction for distribution purposes;
f) Allow CI staff to work with ESSC staff to promote the exchange of ideas and transfer of skills.

3) In furtherance of the purpose set forth in section I, CI agrees to carry out the following:

a) Provide biodiversity data that is available in CI's database will be useful in ESSC's projects;
b) Pay for expenses that will go beyond those budgeted by ESSC in partnership with CI for the national programs, e.g. CDs, office supplies, ink, plot paper, and travel expenses for ESSC's staff;
c) Encourage ESSC to provide selected staff to join in incidental training programs connected with the CI national programs; with CI covering the cost of registration fees and meal but ESSC covering travel and lodging.

4) Each party shall maintain a copy of the data provided to the other and data received from the other in order to avoid possible losses of data.

5) All raw data shared by ESSC and CI and vice versa shall be used exclusively by CI and ESSC in their respective programs, and cannot be shared nor distributed to other entities (groups or Individuals) without prior knowledge and consent by ESSC or CI. Both parties agree that processed data from these raw data can be freely distributed.

6) In the event an entity or organization asks for copies of the data shared by ESSC and CI and vice versa, such entity or organization should request such data from the party which the data originated, in writing.
7) Both parties shall maintain original copies of data consistently be referred to their author or source, and while only the duplicates shall be reformatted for the purpose of the National Program;

8) Both parties shall receive a copy of the final publishable output: report, and publishable maps of the National Program done in consultation with ESSC;

9) Except those maps process by CI independently of ESSC, the output maps process for the national programs in consultation with ESSC should always bear logos of both parties and other appropriate logos;

10) No data gathering activity shall be made by either party on behalf of the joint partner programs without the consent and approval of both parties. Neither party can be made

culpable for misuse of data obtained from third parties independent of this agreement nor for embarrassment due to rejection by the same.

11) This agreement shall be in force and in effect until such time that both parties express their amendment or termination of this agreement.

IN WITNESS WHEREOF, the parties hereto have set their hands on the date and at the place first above written.

DR. PERRY S. ONG
Conservation International Foundation (CI)

FR. PETER WALPOLE
Environmental Science for Social Change (ESSC)

In witness:

Leticia E. Afuang
NBCPSW
Project Manager (CI)

Oliver G. Coroza
Information Systems
Manager (CI)

Sylvia Miclat
Project Manager
(ESSC)

Attachment Philippines-10

Republic of the Philippines
Province of Isabela
NORTHERN SIERRA MADRE NATURAL PARK
Palanan

Excerpt from the minutes of the meeting of the NSMNP Protected Area Management Board (PAMB) held in Dicotcotan, San Isidro, Palanan, Isabela on September 14 & 15, 2000.

Resolution No. 12, S. 2000

RESOLUTION FOR THE APPROVAL OF CONSERVATION INTERNATIONAL'S SIERRA MADRE BIODIVERSITY CORRIDOR PROGRAM IMPLEMENTATION WITHIN THE NORTHERN SIERRA MADRE NATURAL PARK

WHEREAS, the Northern Sierra Madre Natural park (NSMNP) was declared protected area under Presidential Proclamation No. 978 covering an area of 359, 486 hectares;

WHEREAS, the NSMNP is one of the most important protected areas in the country being rich in marine and terrestrial species both flora and fauna;

WHEREAS, the NSMNP is a home to various species with very high endemism and was tagged as megadiversity hotspot;

WHEREAS, the NSMNP faces threat caused by timber poaching in the lowland dipterocarp forest, mining in ultramafic forest, unsustainable agricultural practices, degradation of coral reefs and sea grass beds;

WHEREAS, there is a need to protect and conserve the remaining contiguous forests from the mangrove areas up to the mossy forest;

WHEREAS, Conservation International aims to address the above cited NSMNP concerns through its Sierra Madre Biodiversity Corridor Program;

WHEREAS, Sierra Madre Biodiversity Corridor Program's long term objectives--- conserve and protect the biodiversity of the Sierra Madre Biogeographic Region; reverse the process of biodiversity simplification therein; and restore and rehabilitate degraded ecosystems, protect important habitats and watershed areas, address the soci-economic and cultural aspiration of the local communities within the corridor and its adjoining buffer zones to create social fence--- and found to be in congruence with existing efforts, and in support to existing management systems in the NSMNP;

WHEREAS, in a meeting of the Protected Area Management Board (PAMB) for the NSMNP held at Dicotcotan, San Isidro, Palanan, Isabela last September 14 & 15, 2000, CI's Sierra Madre Biodiversity Corridor Program was presented to the body for approval;

WHEREFORE, the members of the Protected Area Management BOARD (PAMB) for the Northern Sierra Madre Natural Park, hereby RESOLVE to approve the implementation of the Sierra Madre Biodiversity Corridor Program activities within the NSMNP;

RESOLVED FINALLY as it is hereby RESOLVED, to finish a copy of this Resolution to the offices of the DENR Secretary, DENR Regional Executive Director, LGUs and all concerned agencies for their information and record.

UNANIMOUSLY APPROVED this 15th day of September 2000.

I hereby certify to the correctness of the above stated resolution.

For the NSMNP-PAMB Secretariat

WILLIAM C. SAVELLA
CENRO/PASU

Attested by:

LEONARDO R. SIBBALUCA
Co-Chair, NSMNP PAMB &
ARED for Operations, DENR RO2

SAVE THE NORTHERN SIERRA MADRE NATURAL PARK
- Involving local communities in conservation

A Project supported by The RICOH Company Ltd

Report for the Preparatory Stage of the Project:

- **Knowledge, Attitude and Practice (KAP) Baseline Assessment**
August 2000

CONSERVATION INTERNATIONAL
PHILIPPINES

SAVE THE NORTHERN SIERRA MADRE NATURAL PARK
- Involving local communities in conservation:
A Project supported by The RICOH Company Ltd

Report for the Preparatory Stage of the Project:
- Knowledge, Attitude and Practice (KAP) Baseline Assessment

Introduction:

This report contains major findings of the quantitative and qualitative exercise conducted recently. The assessment was conducted in order to achieve the objective of obtaining baseline data for existing KAP[1] of the target audiences and for a preliminary needs assessment.

This is also detailed in the proposal as the Preparatory Stage. This stage was essential, as the data generated determines the design of the entire project. As the community has been consulted, it is expected that they will participate actively. The three main activities conducted were the Focus Group Discussions (FGDs), the Consultations and Perception Survey. Validation of the results with the community has yet to be done.

Background of the Project:

The planning exercise conducted by the senior team from CI Philippines decided to first plan activities for the preparatory stage and Project Cycle I. (Project Cycles II and III will follow completion of the activities of the Project Cycle I.)

It was clear that, while the general purpose of the project is to strengthen the Park Administration, the focus would be on IEC and training/capacity building of the Park Administration and Community Forest Guards (CFGs).

It was also decided that the project should be confined to two of the four coastal municipalities that lie within the Park[2]. The two municipalities targeted were:

- Palanan Cluster, comprising two Barangays - Villa Robles and Bisag
- Divilacan Cluster, comprising three Barangays – Dicambangan, Ditarum and Sapinit

These clusters were chosen because they are defined as the "hotspots" within the Northern Sierra Madre Natural Park. While the habitat here is in good condition, there is also a high level of threat (logging). Also, these communities are organized and volunteer environmental committees have been established. CI is familiar with both areas, having worked there before.

The main partners in the project are the Park Administration - Protected Area Superintendent (PASu) and Protected Area Management Bureau (PAMB) - local government units (LGUs), the community, and others, including CPPAP [WB] project staff, people's organizations [POs], and other active NGOs in the area.

It was recognized that the outputs necessary to achieve the project's purpose were awareness of the importance of the remaining forests, among the local communities, LGUs, PASu, and PAMB, and strengthening the Park Administration. This would be achieved by imparting bio-diversity conservation IEC and Training to the Park Administration and the existing Volunteer Community Forest guards known as Bantay Kalikasan Brigade (BKBs).

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[1] KAP is Knowledge, Attitude and Practice of individuals and community

[2] There are a total of 8 Municipalities within the Park. Four coastal municipalities are on the eastern side and four on the western side of the Sierra Madre mountain range.

In order to raise awareness in the selected target audiences (local community, LGUs and the PASu and PAMB), it will be necessary to first establish baseline data on the existing KAP of the community, LGUs and PASu/PAMB. In order to strengthen the Park Administration, a "Needs Assessment" would determine the parameters of the needed strengthening, i.e., training, equipment, and capacity building of PASu and PAMB and the Volunteer guards.

The conservation awareness data gathering activity and needs assessments were undertaken and completed in the months of May and June 2000.

Methodology (used in the Preparatory Stage of the Project)

The methodology included both qualitative and quantitative exercises, in the form of Focus Group Discussions (FGDs) and the Perception Survey (PS) conducted in the two clusters mentioned above.

1. Focus Group Discussions (FGDs) and Consultations
   A qualitative data gathering exercise, with the identified target audience, was undertaken at one place to solicit the data required. This exercise was conducted separately in the two clusters. The results achieved the following:
   - Information on the state of KAP of the community on bio-diversity conservation.
   - Perception and attitudes of the community towards the concept of BKBs.
   - PAMB and PASu's assessment of their capacity building needs.

2. Perception Survey:
   A quantitative instrument - a Questionnaire Survey, using the Random Sampling technique - was undertaken. It was carried out in the two clusters separately. This determined the following:
   - KAP of the community towards bio-diversity conservation
   - The perception of the community towards the additional guards
   - The perception of the Park Administration to the additional guards.

3. Validation. This is a consultative process with the representatives of the community, the LGUs and the Park Administration, to present the results and recommendations of the data gathering exercise. It will validate and verify the results of the FGDs and the Perception Survey. Success indicators for the project will also be determined.

Attachment Philippines-11

Summary of findings:

Both the qualitative and quantitative gathering exercises were conducted in the same Barangays. They were done in order to capture the sentiments of the community, which is not always possible if only quantitative survey methods are used.

The objective of the data gathering exercise was to:

a. Determine the state of Knowledge, Attitudes and Practice of the community towards bio-diversity conservation.
b. Identify the community's and Park administration's perception towards additional forest protection.

Situational context:

NSMNP is the site for the activities of the three major Projects; those of CPPAP-WB, PLAN International and NORDECO. All have their component of IEC interventions. There is an IACG-IEC committee, which has planned an integrated IEC for the Park. Also, NORDECO-DENR, the agency responsible for IEC, has been conducting IEC campaigns in the area since 1998, but has focused more on raising awareness in schools.

At the time of the survey, there were two main volunteer community-based conservation groups present, along with the environmental committees. These were the "bantay-dagat" or community-based coastal guards and "Bantay Kalikasan Brigade" (BKB) mainly in the municipalities of Palanan and Divilacan. Both groups operate are on a voluntary basis. The extent of involvement of both groups is patrolling and apprehension activities against illegal fishing and illegal logging, respectively. Both are organized through the coordinated efforts of all major actors in the Park, i.e. DENR/PASu/PAMB, CPPAP-WB and PLAN International.

The concept of Bantay Kalikasan Brigade has been evolving, but at the time of the data gathering exercise the situation was as follows:

a. Bantay Kalikasan, a volunteer movement involved in patrolling and apprehension efforts. Members are encouraged to monitor illegal activities in their area and communicate illegal activities to the DENR for apprehension. From time to time, members are also involved in apprehension activities, as needed by the DENR.

b. Bantay Kalikasan volunteers are recruited regardless of organizational membership. However, to avail of CPPAP's livelihood projects, BKB members should be members of local people's organizations. As of this writing, CPPAP has been working for the BKB to get DENR deputation.

c. Forest guards is the concept initially conceived by CI-P, with focus on forest protection.

Perception Survey

It was conducted in two barangay clusters in the municipalities of Palanan and Divilacan in the Northern Sierra Madre Natural Park in Isabela. Of the total of 97 respondents surveyed, 51 were from in Barangays Villa Robles and Bisag in Palanan, and 46 respondents were surveyed in Barangays Sapinit, Dicaruyan, Dicambangan and Ditarum in Divilacan.

The demographic details are as follows:

Of the total 97 respondents, 72% were male, 24% female, while 4% did not specify sex. Most of the respondents (36%) are in the 21-40 years age bracket. Only 2% had no formal schooling, while 54% and 31% had availed of elementary and high school education. About 13% had

attained college level and/or vocational education. 80% of the respondents have lived for more than 10 years in the area.

Nine sectors were represented in the survey, including farmers, fishermen, women, indigenous peoples (IP), youth groups, church, local government units (LGU) and non-government organizations (NGO). Members of the Protected Area Management Board (PAMB), who come from some of these groups, were also specifically included in the survey. Most of the respondents belonged to more than one sector (e.g. farmers/fishermen, farmers/women, farmers/LGU, etc.)

A total of 88 respondents were involved in farming; 5 respondents were involved in fishing; one in hunting/gathering; 5 respondents indicated they were in all the sectors; while one respondent (a woman) had no livelihood. No respondent had regular employment.

Focus Group Discussions

Focus Group Discussions were held in both the clusters. The participants represented the local government and some sectors of the community. The discussion for the Palanan cluster was held on March 21, 2000 in Villa Robles and was attended by 14 persons. They were from both Villa Robles and Bisag. The discussions with the Divilacan cluster, from the barangays of Dicambaganhan, Ditarum and Sapinit, also involved 14 participants from the government and other sectors.

Analysis of the results:

The summary of the results of both the exercises showed the following:

1. Bio-diversity Conservation Knowledge and Awareness:

Conservation awareness is high. Respondents' idea of bio-diversity was that it includes all living things, and that there was a relationship among all these living things. They saw conservation as saving resources for later use, by regulating their extraction and proper use

It was found that the respondents connected conservation with livelihood. They seem to understand that conserving bio-diversity means ensuring a source of livelihood for them and for the next generation. People also see reforestation as necessary to protect the watershed, specifically irrigation.

A fairly high number of them are aware that human activities, such as *kaingin,* logging hunting, fishing, etc., are threatening bio-diversity. They are also aware of threats, such as illegal logging and fishing, in their neighborhood, but justify these on the basis of the cash incentives provided by financiers from outside the Park. However, their knowledge of other practices, like waste management and forest fires, is not that clear.

While they are aware that conservation efforts are being undertaken, they do not fully understand practices such as rapid rural appraisals, resource mapping, etc. Many of the respondents were not sure how these efforts would help conservation. However, they see the connection of Bio-diversity Monitoring Systems (BMS) to livelihoods. They understand that BMS are a way to monitor use of natural resources. They are also aware that the BMS group is not involved in patrolling and apprehension.

Many seem to know the existence of the environmental laws, such as the NIPAS Act, CADC, IPRA, etc, but were not sure which of them were being enforced in the Park. They also realize that other conservation efforts include enactment of local ordinances, wherein logging, hunting and fishing is regulated for consumption purposes only.

Few seem to be aware of all the actors in the area. Those most recognized were DENR, PASu, and a couple of NGOs and POs. Respondents are aware of the IPAS primarily as an organization that gives direction to form organizations in the community. They understand that organizations are necessary to formulate rules, and penalties for breaking these rules.

A large number of the respondents felt that the main tasks in environmental protection are to enforce laws, raise people's awareness, conduct regular patrols, monitor illegal activities, and mobilize all people to these efforts.

In order to do this, they suggested offering alternative livelihoods, organizing volunteers in forest protection, hiring more rangers, organizing bio-diversity monitoring groups, formulating more environmental laws, and strict enforcement of these laws.

The most common source of information, on both conservation practices and laws, are the following: seminars, meetings, DENR, NGOs, and community organizations. The least common source of information seems to be the LGU, radio, advertisements, families, neighbors, church and schools.

Hence, the topics on which respondents had the most comprehensive awareness were the following: reasons for protecting bio-diversity, scope of bio-diversity, areas of bio-diversity, bio-diversity's effects on humans, and the environmental laws being enforced in the area. Topics on which respondents showed limited awareness were the following: actors in environmental protection, conservation practices, immediate/prevalent threats and the solutions to these threats.

The priority sites identified by the respondents were as follows:

a. Palanan - Dicalan (as a source for water); Dinipan, Kasariyan, Dayap, Anghas, Dipian, Ditumagi and Dipadian (because of illegal activities).
b. Divilacan - Ditarum, boundary between Sapinit and Dicambangan, Dicambangan itself, and Minoli.

2. Attitude towards conservation

Respondents were not sure if human activities had negative effects on bio-diversity or not. Also, while conservation awareness is fairly high, attitudes towards conservation are confused and contradictory. They were unsure whether environmental protection would be detrimental to their own livelihood.

They were divided in their opinion as to who should take the leadership in leading conservation efforts, i.e., whether it should be local government officials or the BKBs.

3. Conservation Practices

Most of those who participated in the survey and the FGDs claim that they are involved in environmental protection. They are involved in monitoring illegal activities, patrolling, conservation education, etc. Many are members of (BKB). Some who are involved in environmental protection did not specify how.

Respondents claim they are involved in order to ensure resources for the next generation. Some felt that, as a matter of principle, the environment must be protected. But most wanted to do so for the long-term protection of the sources of livelihoods. A few mentioned it as a source of employment.

4. Conservation needs:

Respondents seem to have a fairly good idea of how to improve protection. They also seem to have a general idea of the specific functions and differences of the three groups involved in bio-

diversity related activities - park rangers, Biodiversity Monitoring Systems (BMS) Group and the Bantay Kalikasan Brigade (BKBs).

The park rangers are expected to be responsible for the patrolling and surveillance activities as well as to collect evidence on illegal activities for apprehension. A majority felt that BKB's function was to undertake patrolling/surveillance of illegal activities, and be a support for the park rangers. And most understood the BMS Group's unique function is in monitoring of the extraction and use of natural resources, but not in patrolling, etc.,. While many felt that IEC and training should be done by the BMS group, equally they felt that BKB could also undertake IEC and Training as well.

The response of the PAMB members who were asked about their perceptions on how to improve park protection and of what needs to be done was:

a. provide alternative livelihood.
b. support activities of the PAMB and Park guards in their activities
c. provide incentives to Barangays to engage in conservation work
d. LGUs need to formulate new laws and strictly enforce the existing ones
e. secure all entry from the seas to prevent transportation of illegal logging
f. more visits from NGOS to show support for the community conservation efforts and provide training.

5. Perception and Attitudes towards the concept of Community Forest Guards.

a. In the view of the PAMB members and the Barangay officials, the concept of Bantay Kalikasan and environmental committees is interchangeable. The only difference between the guards and volunteers of environmental committees is that guards are expected to function full-time and should man the guard posts. But they recommended that the BKBs should be limited in number.

Efforts in environmental protection should be led by the DENR/PASu/ PAMB, the LGU and the Bantay Kalikasan. Proper setup of Bantay Kalikasan / dagat should be established, i.e. they should have radio/ICOM or a fast, efficient means of communication with the authorities, camera for surveillance equipment and the collection of evidence, and other logistical needs for patrolling.

Funds should be sourced from funding agencies and from government. Minimum period that these groups should be in operation is 3 years. Guard posts should be established by the DENR in key areas, and should be properly equipped.

b. The perceptions of the community, on the other hand are given below.

Bantay Kalikasan is a voluntary group and actively engaged in protecting the environment without the benefit of allowances or other benefits. However, they concede that providing salaries to people will not necessarily ensure success of the protection of forests.

Most of the members of the BKB are part-time volunteers and mainly farmers by occupation. All of them have their daily farming tasks to do and expect that they should be compensated for the work hours lost in patrolling/surveillance duties. There was apprehension over the danger involved and most wanted some kind of compensation

Forest protection involves patrolling the vicinity, surveillance of illegal activities and collection of evidence, which are reported to proper authorities for appropriate action to be taken. However, DENR should be the appropriate authority to take legal action. The people's organization leads the BKB's activities, while coordinating directly with the Barangay officials and the PASu.

There was no need for regular patrol but only when called to action. Also, adequate number of BKBs will be necessary to protect priority sites.

Community's perspective on the creation and operation of the Community Forest guards are as follows:

- Volunteers guards need to be in operation for a fairly long period of time.
- The idea of hiring guards who will work part-time requires that they are paid allowances and insurance for the duration of their employment.
- by the end of which time these guards should be absorbed by the government.
- guards should come from among the volunteers who are already involved in protection.
- Care should be taken in selecting who should be hired as guards.
  The selection process should be done in such a way that it is clear to all in the community why these specific individuals were chosen as guards over all the others.
- At the same time, livelihood projects for the whole community should be continued successfully to maintain voluntary community-based efforts in environmental protection.

The perceived needs for both training and others were as follows:

1. Logistical needs, such as communication equipment (radios, ICOM and cameras) for surveillance purposes. Uniforms and rainwear and food allowance or provisions during the patrol would be helpful.
2. Training needs include training in self -defense, First Aid and proper use of communication and surveillance equipment.
3. There is a need for life and medical insurance for the BKB (barangay captain's view)

Conclusions

1. A surprisingly high level of bio-diversity awareness is seen among the respondents. Their high conservation awareness (seen by the right answer they seem to be giving) may be due to the intensive IEC campaign conducted by other agencies earlier and it is also possible that these respondents have been subject to previous KAP surveys. However, this awareness seems more at the conceptual level than operational.
2. What is clear is that the respondents' state of knowledge and awareness is primarily determined by their direct relationship with their environment.
3. They connect conservation with their livelihood. The concept of conserving biodiversity for the purpose of sustaining life is translated into practical and immediate terms. This is probably because that most of the respondents were farmers.

   Livelihood activities indulged by the community in the past, (were extractive in nature) included, harvesting of rattan, logging and fishing for profit. Today with environmental protection laws being enforced in the Park, the community can do so only for self-consumption.

Practical realities create a conflict between conservation and their immediate survival. The community, though aware of the need for conservation, feel that protecting their environment is not their priority. With no other means of alternative livelihood available to them, they are unwilling to put their livelihood at stake. They have problems in committing themselves to forest protection.

As Alternative sources of livelihood are not in place, people may be forced to engage in illegal activities. The most urgent solution to environmental threats is to have alternative sources of livelihood, so that people will not have to resort to illegal activities that would adversely affect the environment. This is the key solution that would put a stop to illegal activities.

4. While they seem to understand the concept of conservation, they find it difficult to incorporate it into their own situation and lives. This is because theoretical concepts become harder to follow if it affects your own lives.

5. Community organizing and mobilization can work only in so far as the community suffers no loss, and instead gains advantages in actively protecting the forest.

6. In a situation where the law is felt only in the town centers, patrolling and apprehension activities deep in the forest would only put the community in danger of retaliation from those indulging in illegal activity. Law enforcement can work only in so far as logistical support, including efficient and faster means of communication with authorized agencies, is readily available to the community.

7. There is immediate need for capability building of the Protected Areas Management Board (PAMB). The PAMB needed skills in policy formulation, conducting community-based skills training and to improve communication between barangays. It was clear that there was a lack of communication between barangays and inadequate guard posts.

Recommendation

A. Knowledge, Attitude and Practice :

Awareness raising can work only in so far as practical need does not force them to shy away from involvement in forest protection, or revert back to illegal activities. It is important to develop IEC relating to their context.

1. Biodiversity and Livelihood:

   The findings seem to connect conservation to livelihood. Conventional wisdom is that awareness -raising activities should not be limited to bio-diversity conservation in relation to sustainable livelihood, and that local people should learn to appreciate bio-diversity conservation per say. While this sounds good theoretically, it will not be adopted unless people see the value in it personally.

   Biodiversity conservation should serve as a framework in developing alternative livelihood projects and studies should be made on alternative livelihood projects that are based on conservation and not extraction of resources. However, Alternative Livelihood should not be looked upon as the ultimate source of income, but only as one of the sources, otherwise this could lead to depletion of the resources. IEC activity should focus on the following:

   - IEC activities should show connectivity between the livelihood and conservation for example Bee keeping -

     IEC should show the interaction of the bees and flowers, dipterocarps, and thereby showing the connectivity and the value of conserving the dipterocarps. In doing so, the people will understand the connection not in the abstract concept but in a way that they can participate while earning a livelihood. Demonstrating the conservation value of livelihood projects could become a criteria for approving future livelihood activities

   - Eco-tourism is another possible non-extractive alternative for livelihood, though the weather in the NSMNP is not very conducive for any major eco-tourism product. However, care should be taken to see that the community must not become dependent on income by tourism only.

2. Biodiversity and Knowledge building

   The community needs to realize that human activities do have negative effects on biodiversity. They need to see beyond the framework of livelihood. The IEC activities should be the following:

   - The community should be presented to with case studies from local and international conservation efforts to give them awareness of better conservation practices.
     - Lessons learnt could be through by showing documentaries of disasters that have occurred due to environmental degradation.
     - Cross visits to different areas to meet other Pos with successful livelihood activities will help better appreciation of conservation

   - Paralegal approaches to biodiversity conservation should be discussed extensively with the community.

   - Policy advocacy is may another way of dealing with illegal activity as most is not from within the Park. As most of the people of the area, are recruited a by larger interests outside the Park. Illegal activity should be investigated and exposed by using the media

3. Biodiversity and Practice:
   In order to develop the local communities' appreciation of and concern for biodiversity in the park, community exercises should be conducted such as following:

   - Conduct IEC campaigns such as "adopt-a-species" campaign for endemic species, wherein barangays can compete with each others' conservation activities, and where we can develop each barangay's sense of pride on its unique features of biodiversity.

   - Environmental activities for the youth should be thought off. Local annual science Fairs should be conducted. Poster competition should become an annual feature

   - The 8 Ha Plot should be developed as a science field site and a biological station.and as an educational center. Field trips to this science plot should be organised to provide people in that area, the opportunity to know the different species, the state of conservation, and get trained in different aspects of bio-diversity conservation. This could also provide livelihood opportunities for the youth acting as guides for students, educators, researchers, tourists and other visitors to the area.

Its because of these practical realities, solutions to threats to the environment are multi-faceted: it requires the integration of awareness-raising, law enforcement, adequate logistical support and community organizing and mobilization.

B. Conservation guards

In order to support and strengthen the Park Administration, all the stakeholders should support the concept of the Bantay kalikasan. Each organization should contribute its expertise in strengthen the PAMB and making conservation work in the Park.

1. There should be clear understanding of the term "Bantay Kalikasan. A levelling off among the actors and community on the use of the term is essential before proceeding with the project.
   - its role, function and expectations should be determined .
   - Certain criteria will have to be followed for the recruitment of these guards

2. There should be clear demarcation between the roles and duties of the Bantay Kalikasn Brigade (BKB) and the Biodiversity Monitoring Group (BMS).

3. Basic training should consist of the following:

   - Training in evidence gathering should be given to them to enable them to collect evidence of illegal activity near their own Barangays.

   - Paralegal training.

   - Training should include basic knowledge of conservation science in order to appreciate the different species in the area.

4. Bantay Kalikasan should be properly equipped with basic surveillance equipment to help the park rangers such as Radios, Cameras, Binoculars, Footwear,and Rainwear.

5. Attention to other component such as communications between the barangays, is necessary. This will be particularly important in times of emergency, and also other times as in normal patrolling or surveillance work.

ls/ci-p/RICOH prep stage report

BRIEF REPORT ON THE PARALEGAL TRAINING
September 8-10,2000
Barangay Dicotcotan, Palanan, Isabela province

A project of Conservation International-Philippines and Conservation of Priority Protected Areas Project in support of the Department of Environment and Natural Resources - Northern Sierra Madre Natural Park (DENR-NSMNP)

CONSERVATION
INTERNATIONAL
PHILIPPINES

I. SUMMARY REPORT

A total of 46 Bantay kalikasan Brigade Volunteers attended the training. The training proper started on September 8, 2000. It was held at Barangay Dicotcotan, Palanan, Isabela.

The participants that attended the Paralegal Training represents the 15 barangays out 17 barangays of Palanan. For every barangay 5 participants were invited: the Barangays Captain, PO President, Head of BKB, and 2 BKB members. Unfortunately, in the 3 days activity no Barangay Captains attended the training due to the over-lapping of schedule between this activity and the 4 day PAMB en banc training which was conducted on September 5-8, 2000 at IPAS Center, Centro East, Palanan, Isabela. Out of 15 barangays identified, 4 barangays were not able to send representatives: these are Barangay Culasi, Alomanay, Sta Jacinta and Diddadungan.

There were four environmental lawyers from the Tanggol Kalikasan- HARIBON Foundation that conducted the paralegal training. 8 staff from the Department of Environment and Natural Resources (DENR) and Conservation Priority Protected Areas Project (CPPAP) attended the training as support staff.

Table 1. Daily attendance per barangay during the Paralegal training in Barangay Dicotcotan, Palanan, Isabela.

BARANGAY	DAILY ATTENDACE PER BARANGAY			
	Sept. 7 (Arrival)	Sept. 8 (Training Proper)	Sept. 9 (Training Proper)	Sept.10 (Departure)
Alomanay	0	0	0	0
Bisag	5	5	6	6
Centro East	2	4	5	5
Centro West	3	2	2	2
Culasi	0	0	0	0
Dialawyao	5	5	5	5
Dicaduan	1	1	1	1
Dicotcotan	1	3	4	4
Diddadungan	0	0	0	0
Didian	4	4	5	5
Dimasari	4	4	4	4
Dimatican	2	3	2	2
Maligaya	0	3	3	3
Marikit	3	5	5	5
Sta. Jacinta	0	0	0	0
Villa Robles	5	5	4	4
TOTAL	**35**	**44**	**46**	**46**

II. SUGGESTIONS AND QUESTIONS RAISED BY THE BANTAY KALIKASAN BRIGADE VOLUNTEERS

- Additional paralegal training to those who were deputized but not has not attended the paralegal training

- We are very interested in attending trainings such as this, The training should be scheduled weeks before or after another training will be conducted for them to attend to their daily needs.
- They wanted an identification card as proof that we are members of the Bantay kalikasan Brigade and that we are deputized by the Department of Environment and Natural Resources (DENR) to conduct arrest and seizure.
- We need radios or camera for documentation
- Being a volunteer, what compensations can we expect incase accidents happen during the conduct of our duties and responsibilities as Bantay Kalikasan Brigade (BKB).

III. Awarding of Deputization certificates to 82 Bantay Kalikasan Brigade (BKB) Volunteers

A week after the paralegal training, papers of the new deputized BKB members were released. Awarding of deputization papers to 82 BKB volunteers was held at the IPAS Center, Centro East, Palanan Isabela. This brings the total of BKB deputized in Palanan to about 100+ members. This is part of the paralegal activities but way not done during the training since the release of the papers was delayed.

PARALEGAL TRAINING
September 8-10,2000
Barangay Dicotcotan, Palanan, Isabela

Day 1 September 7, 2000 Arrival of Participants (p.m.)

Arrival of 35 participants and 8 support staffs from partner agencies at Dicotcotan Beach Resort, Dicotcotan, Palanan, Isabela.

Day 2 September 8, 2000 Program Proper

08:00-09:00	Registration of Participants	
09:00-10:30	Opening Prayer	Ubeg, BKB member (Agta)
	National Anthem	Yolanda C. Calagui BKB Member
	Welcome Address	Natividad Bernardo Mayor, Municipality of Palanan
	Opening Remarks	William Savella Park Superintendent Dr. Lourdes Dolinen CPPAP Project Coordinator
10:30-11:30	Overview of the Northern Sierra Madre Natural Park	Mr. Zaldy Ziggayo Asst Park Superintendent
11:30-12:00	Lecture on Basic Ecology	For. Albert Gonzales Env'tal Management Specialist
12:00-01:30	LUNCH BREAK	
01:30-03:00	Lecture on Forestry Code Presidential Decree 705	For. Ric Nicolas DENR
03:00-06:00	Expectation Setting of the participants	Ava Batay-an and Jun Narvadez Tanggol Kalikasan
06:00-07:00	Lecture	Atty Ted Bonpin and Asis Perez

Day 2 September 9, 2000

Lecture Topics

Lecture 1: Pilosopiya ng Paralegalismo (Paralegal Philosophy)

- This topic includes the definition of paralegal, persons that can be part of the paralegal and the basis of paralegal. It also tackles the two types of paralegal; "Traditional" and the "Developmental Legal Aid"

- List of Laws and Rights in relation to Environmental protection

Lecture 2: Ang Pamahalaan at ang Kalikasan (The Government and the Environment)

- This topic involves the different legal system, processes and local government codes in the Philippine government

Lecture 3: Panimula sa Batas Pangkalikasan (Introduction to Environmental Laws)

- This includes the different environmental laws in the Philippines (National Integrated Protected Area System, presidential Decree 705; Environmental Impact Assessment (EIA); Environmental Impact Statement (EIS);

Lecture 4: Ang Batas ng NIPAS at ang Samu't Saring Buhay (The NIPAS Law and Biodiversity)

- This topic discusses the definition of biodiversity and laws pertaining to the protection and conservation of biodiversity.
- It also includes the definition of the different habitat zoning based on NIPAS Law, tenured migrants and the Indigenous community

Lecture 5: Mga Ipinagbabawal na gawaing pampangisdaan at mga kaukulang kaparusahan (Violation and Corresponding Penalties in the Philippine Fisheries Code)

Lecture 6: Pag-aaresto, Paghahalughog, pagkumpiska at detensyon (Arrest, search, confiscation and detention)

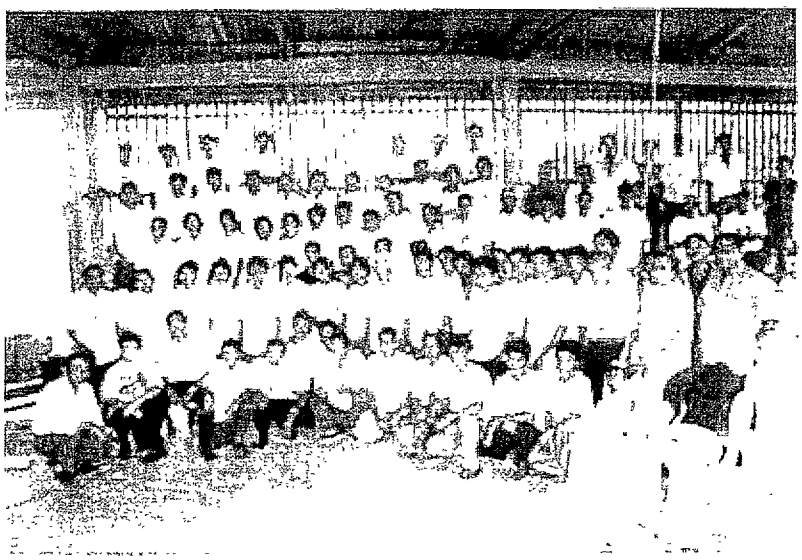
Lecture 7: Pangunahing pag-aaral sa Pamamaraan sa Hukuman (Basic Studies in Court Proceedings)

Lecture 8: Imbestigasyon, Dokumentasyon at Pagkalap ng Ebidensya (Investigation, Documentation, and gathering of Evidence)

Day 3 September 10, 2000 a.m.

- Departure of participants, support staffs and resource speakers

Oath taking and awarding of deputization certificates to the Bantay Kalikasan Brigade(Community Forest Guards)



The Bantay Kalikasan Brigade of Palanan, Isabela after the oath taking ceremony

Attachment Philippines-14

September 13, 2000

Dr. Artemio T. Antolin
CI-SMBC Program Manager
Bagay Road, San Gabriel,Tuguegarao City

Dear Dr. Antolin,

This is in connection with the implementation of various activities programmed towards the conservation of the biodiversity of the Northern Sierra Madre Natural Park. At the moment the Department of Environment and Natural Resources lacks fund to fully implement the lined-up activities in order to achieve its goal. Though there are other NGOs presently supporting the implementation of the different activities, their resources is still not enough to meet the requirements in order to accomplish the programmed activities in a given period.

Knowing of your company's commitment on biodiversity conservation, I would like to request your office to support on the following activities:

- Expansion of the IPAS multi purpose center in the east side and conversion of the same as biodiversity information center;
- Support for the strengthening and operationalization of the bantay kalikasan groups in the coastal municipalities;
- Support for the full establishment of the 16 hectares biodiversity monitoring plot at Villa Robles as research/educational center to include CO work within the two adjacent barangays (Centro East & Villa Robles);
- Establishment/construction of biodiversity monitoring station in the vicinities of the 16 hectares monitoring plot;
- Biodiversity Research as a tool to improve protection of the NSMNP; and
- Reforestation project at Villa Robles around the vicinities of the blue lagoon.

It is expected that these activities when fully implemented will help in the realization of the objective of the park particularly on biodiversity conservation.

I am hoping of your support on this request.

Very truly yours;

WILLIAM SAVELLA
PASU/CENRO-NSMNP
CI-SMBC Office
Bagay Road, San Gabriel,
Tuguegarao City

Reforestation Project in Villa Robles: A Step in Reversing Biodiversity Loss in the Northern Sierra Madre Natural Park (NSMNP)

Executive Summary

Reforestation is identified as one of the major options in rehabilitating denuded forests. To catalyze the regeneration process especially in some strategic areas such as watersheds, anthropogenic contributions should be put in place. Furthermore, alternative livelihoods should go hand in hand with this process in order to divert and lessen the pressure on the natural environment. This proposal seeks to serve as a model reforestation project within the Sierra Madre Biodiversity Conservation Corridor (SMBCC). It has two components: one is the actual reforestation of the project site (i.e., Blue Lagoon) and the second is to identify and implement feasible alternative livelihoods for the local community. The process will involve the participation of the local community to ensure the adoptability of the project to the site.

This project also aims to serve as a starting point for the site such that after a given time period, the local community would handle the entire operation. It is only through this way that this undertaking can really be considered as successful and sustainable. CI with the assistance from RICOH COMPANY LIMITED will have the chance to initiate a pioneering project in the area. If successful it can be duplicated in the different parts of the Sierra Madre.

Similar to another project of CI (i.e., Saving the NSMNP – Involving Local Communities in Conservation) involving RICOH COMPANY LIMITED benefits include appropriate public recognition for participating in conservation of the most important intact forest area remaining in the Philippines.

1. INTRODUCTION

Conservation International (CI)'s global "hotspots" analysis of 1999 identified the Philippines as one of the "hottest of the hotspots". This conclusion was based on levels of endemism (i.e., numbers of animal and plant species not found anywhere else in the world), extent of lost original forest cover, and – importantly – the intensity of threats and current rates of destruction. The threats to Philippine biodiversity span a wide range, but, across the archipelago, the most valuable biodiversity areas are threatened consistently by the pressures of economic development. These include (i) extractive industries, such as mining, timber, and fisheries, (ii) infrastructure and real estate development, and (iii) conversion of land for agriculture.

CI's principal strategy for conserving biodiversity in the Philippines is establishment of the Sierra Madre Biodiversity Conservation Corridor (SMBCC). This is to counter the increasingly fragmented nature of the remaining forests in the Sierra Madre, which if left as it is, will increasingly impede the performance of its ecological and evolutionary process. The Sierra Madre corridor will cover at least 5 provinces. It will extend from Cagayan in the north, down to Northern Quezon in the south, with the provinces of Isabela, Aurora and Quirino in between. Once the SMBCC is set up, it is projected that at least 50% of Philippine biodiversity can be successfully conserved.

Equally important, the SMBCC is also the mother watershed for the Metropolitan Manila area. As such, it provides the water needs of more than half the population of Luzon island.

An integral component of the SMBCC is the Northern Sierra Madre Natural Park (NSMNP), the premier protected area in the Philippines today. Situated in Isabela province, the NSMNP covers 359,486 ha (of which 270,000 ha comprise the terrestrial areas and the rest are marine areas). Under the terms of Presidential Proclamation 978 of March 10, 1997, the NSMNP has been designated as a protected area and is, thus, covered by the NIPAS Act of 1992. It is now in the

final stages of being formally declared as a protected area through congressional action. Despite this semblance of legal protection, however, the NSMNP is currently under severe threat.

As elsewhere, the primary threats to biodiversity in this region come from extractive industry. Several Mineral Production Sharing Agreements (MPSAs) and Financial and Technical Assistance Agreements (FTAAs) relate to areas within, or adjoining, protected areas. Similarly, Timber License Agreements (TLAs) also occur throughout this region. Other more localized and direct threats to biodiversity include wildlife poaching, collection of rare flora, and over-harvesting of non-timber forest products, such as rattan. The economy of the region being largely rural in nature, conversion of land for agriculture and over-fishing are also major problems. Over and above all this is pressure from a population that is growing at the rate of 2.5% (including in-migration) and has a high incidence of poverty (i.e., more than 30 % below the poverty line). The infrastructure development planned to meet the needs of this population will further endanger a protected area already under threat.

2. THE PROJECT

The NSMNP encompasses 8 municipalities, of which the largest is Palanan (122,001.04 ha). Ninety percent of the land area of Palanan (111,415.48 ha) is covered by forest, while agricultural land and open areas make up the remainder. Palanan comprises 17 barangays, of which Villa Robles is the second largest (30,006.9357 ha). It is, in turn, divided into three sitios: Dibutarek, Diminalno and Dimacapac. These sitios occupy about 7% of the land area of Villa Robles. The barangay is flanked by two major rivers: the Palanan in the east and the Dibenbenan in the west. Villa Robles can be reached by foot or by banca across the Palanan river. Timberland is the dominant land use in the area.

Two major creeks are found in Barangay Villa Robles: the Dimacapac and Ditalad Creek. Both these bodies of water originate from the west of Villa Robles, traverse northwards and converge in the Palanan river. Other inland waters include streams and smaller creeks surrounding the barangay and a lagoon known locally as the Diminalno or Blue Lagoon on account of its crystal blue color. It is actually made up of two lagoons, which flow down to the Diminalno creek and discharge into the Palanan river. Seventeen deep wells are connected to these bodies of water and are used mainly for drinking and bathing.

Rationale for the project

The Blue Lagoon is one of the major sources of drinking water in the area and is also tapped for agricultural purposes such as irrigation. Unfortunately, during the rainy season, the water turns muddy, making the well unusable. This is primarily due to siltation, when the soil seeps into the well. This occurs because the area surrounding the lagoon, once rich in vegetation, is now totally denuded. Luckily, the community has fully understood the causes of the siltation and realized the urgency of addressing the problem.

Local government officials and the community have approached CI to help them deal with this problem in a scientific manner. A preliminary site assessment confirmed that the absence of forest cover has hastened siltation, causing rivers and other bodies of water to dry up. In turn, this has led to a lowering of the water table and an eventual draining of water from the well.

The only long-term solution is to plant trees around the lagoon and the peripheral areas of creeks and rivers. This will lessen siltation and erosion, and thus secure potable water for the community, as well as water resources for agriculture. However, the re-forestation program has to be carefully planned and executed in order to make the project truly sustainable. Also, the whole exercise needs to be conducted in a participatory manner, with the community fully involved. If this is achieved, this community-based reforestation project could become a test case for future initiatives for community re-forestation in the area.

Preliminary discussions with the community had indicated that reforestation as a stand-alone project is not a priority but if we link it to their irrigation needs then we will be able to gain their cooperation. Thus, in order to assure the success of the project, though, the first step is to undertake a feasibility study and see how the project can be undertaken that can link these two needs.

The proposed reforestation project covers an approximate area of 50 hectares. It will include 35 hectares of brushland. Moreover, the brushland area will be managed under the agro-forestry system.

General Objectives:

1. To restore the vegetation and sustainably manage the watershed area of the Blue Lagoon at Villa Robles, Palanan, Isabela

2. To inform and educate other communities in the area about a hands-on approach to sustainable community re-forestation and how it relates to the sustenance of their irrigation needs as provided by the Blue Lagoon.

Specific Objectives:

1. To establish a pilot site for a community-based reforestation/rehabilitation effort.

2. To provide baseline information in reforestation using indigenous species that can be used for rehabilitating other areas within the park.

3. To create a healthy environment for the community by converting the approximately 50 hectares denuded watershed of Blue Lagoon into a forest plantation.

4. To decrease human encroachment in the forest by providing the local community with alternative food resources by converting the approximately 35 hectares brushland into an agro-forestry farm.

5. To document the process for dissemination as "lessons learnt"

Plantation Establishment Activities

A. Preparatory Activities

1. Formulation of reforestation work plan.

2. Community consultations for the establishment of the project and validation of information gathered.

3. Information and Education Campaign (IEC) and "hands-on" training on the implementation of the project.

4. Community agreement that clearly states their community's commitment to protect their forests through reforestation around the Blue Lagoon that will in turn bring irrigation benefits to them and our commitment to help them attain these goals through technical assistance.

B. Plantation Development

1. Identification of nursery sites for the project with emphasis in using indigenous species (fruit trees, forest trees and exotic trees) for production.

2. Building-up of a nursery (nursery establishment).

3. Collection of seeds and wildlings from the forest for the nursery.

4. Seedling production, care and maintenance.

5. Planting in the immediate periphery and other strategic locations of Blue Lagoon.

6. Plantation maintenance.

7. Agro-forestry development in the brushland area, secondary forest edges and streams near the project site.

C. Other Activities

1. Conduct of studies on the cultural requirement of reforestation species.

2. Identification of possible alternative livelihoods and conduct of the necessary feasibility studies.

Budgetary Requirements for year 1 (see Table 1 for a detailed outlay)

Personnel	**$ 5,000**
Operations (travel, planting materials)	**7,500**
Administrative support	**2,500**
Total	**$15,000**

Project Implementation Strategy:

1. The project will be implemented in close coordination with the local community. To illustrate, fruit trees, forest trees and exotic trees will be identified based on the suggestions of the community and the feasibility study conducted. CI will provide the general framework of the project while the specific designs will be worked-out together with the community.

2. This project will be implemented hand in hand with the over all goal of CI to arrest and reverse the biodiversity loss in the Sierra Madre area. Information and Education Campaign (IEC) and the "hands-on" training will involve general and specific topics to increase the awareness of the community in biodiversity. More importantly, this will relate their role in the entire picture of conservation. But it should be stressed that this information drive will be of very minimal effect if "trade-offs" will not be provided by the project. This is the portion where feasible livelihood projects will come-in. By introducing effective and sustainable alternative livelihood we can lessen the pressure on the natural environment.

3. A possible alternative livelihood based on initial observations is the introduction of agro-forestry system in the area. Species that will be used will not be limited to forest tree species but will also include fruit trees, rattan and possibly other cash crops. But it should be remembered that as much as possible all species that will be used should be indigenous to the area. As an example, rattan, which is commonly used by the

community, could be cultivated in the reforestation site. Moreover, fruit trees could serve as pioneering species (nurse crops) in areas that are totally open. Forest tree species are sensitive to sunlight exposure during their early stages of development. Thus, they will require cover to increase survival rate.

4. More importantly, classification of reforestation site into different zones would be considered. This is to facilitate and regulate the use of some portions. For example, strategic areas will be considered as strict protection zone (i.e., near streams, springs, etc.), which means that very limited or no harvesting will be performed in the area for a given period of time. This primarily will serve as the watershed portion of the Blue Lagoon. Agro-forestry zones will also be designated. These are areas where agriculture based livelihoods will be accommodated. In the long run, the vision of the project to reforest the denuded watershed of Blue Lagoon will be accomplished and at the same time the community will have an alternative sustainable livelihood.

5. The project will not be limited to the quantity and actual plantation of tree species. To ensure that the planted seedlings and wildlings will survive, a monitoring and maintenance phase is integrated within the project. Aside from the absence of alternative livelihoods, most reforestation projects fail because of the absence of this important phase. Maintenance phase will primarily be spearheaded by the community, the techniques learned during the IEC and "hands-on" training in the early stages of the project.

6. Finally, the lessons generated/learned, designs and techniques used in this project can serve as a model or can even be replicated in other reforestation projects within the Sierra Madre Corridor.

Project Monitoring and Evaluation:

CI and the local community will jointly undertake the monitoring and evaluation of the project. A framework will be developed by CI and presented to the community for leveling. Activities will be monitored and evaluated both qualitatively and quantitatively. This is to ensure the sustainable development of the project. Key points (i.e., expected output) will be identified and developed to facilitate the process.

Monitoring and evaluation will focus on the three major activities (i.e., preparatory activities, plantation development and other activities) as dictated by the flow of the project. This will be undertaken every four months or quarterly. In the preparatory activities, success will be measured by the development of an actual work plan designed specifically for the area. This is followed by the acceptance of the project including its components by the community. This initial stage is very critical, as it will determine the succeeding stages. The second stage is the plantation development. This will involve the establishment of the nursery, the collection of the seedlings and wildlings, the actual re-forestation of identified denuded areas and its maintenance, and the development of agro-forestry. Success in this stage will be measured by the total area covered and the performance (survival ratio) of the planted seedlings and wildlings. Similarly, preliminary work on the agro-forestry farm should have also started at this stage. For the third stage, activities involve: studies on the cultural requirement of reforestation species and identification of possible livelihoods complete with their feasibility study. This will be tracked by the identification of "successful species" for reforestation and other livelihoods suitable in the area.