PROJECT COMPLETION REPORT

ECUADOR

CHOCO-ANDEAN CORRIDOR

GEF MSP GRANT No. TF023882

JUNE, 2004

Bolivia, Ecuador, Peru and Venezuela Country Managing Unit
Environmentally and Socially Sustainable Development Sector Unit
Latin America and the Caribbean Region

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CHOCO-ANDEAN CORRIDOR - ECUADOR MSP (TF-023882)
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I. BASIC DATA:

1. **Date of Completion Report:** November 20, 2003
2. **Project Title:** Chocó-Andean Corridor Project
3. **GEF Allocation:** US $1,000,000
4. **Grant Recipient:** Fundación Maquipucuna
5. **World Bank Manager/Task Team:** Gabriela Arcos (2000-2001) & Steve Maber and Gabriela Arcos (2001 - 2003)
6. **Goals and Objectives: (include any changes in the objectives):**

The original goals and objectives were observed during project implementation. The general goal was the conservation of the threatened biodiversity of the Choco-Andean ecosystems of northwest Ecuador--the Chocó and the Andean Cloud forests-- through securing their functional connectivity, while tackling some of the underlying social factors that drive deforestation. The specific objectives were strategically designed to unfold in a dual scale: 1) To establish conservation priorities and guidelines for the Choco-Andean bioregion -an area of ca.1,0000,000 ha linking cloud forests, tropical rainforests and the mangroves on the Pacific shores- while building consensus and sharing information amongst the largest institutional stakeholders; 2) To establish a pilot corridor by increasing the extent of the area under conservation and sustainable management between protected areas at a sub-regional scale targeting ca 75,000 hectares and its local population; 3) At both scales, to increase the quality, quantity, and availability of environmental information, facilitating decision-making; and 4) To design and establish a system of incentives for conservation and management for long- term sustainability.

7. **Financial Information: Describe any changes from original financing plan including co-financing.**

Table with key components (initial and final allocations). Key discrepancies can either be described here, or addressed in the sections below as they relate to other implementation issues.

Overall, the project maintained expenses within budget and only three significant changes were made after being discussed and approved during different evaluation missions.

a) Instead of renting and refurbishing an old house, the project built a permanent field office and training center in the town of Sta. Marianita. The GEF/grant contributed twice the original budgeted amount of eight thousand dollars, while Maquipucuna secured a matching grant to buy the land and finish the construction.

b) Instead of organizing an International Congress, several small workshops were carried out during the three years, and in year 3 the project co-sponsored the I National Congress of Protected Areas together with the Ministry of Environment. The Choco Andean Corridor led the national workshop on conservation corridors.

c) The study for the establishment of the Conservation High School was executed by two US specialists in education and sustainable agriculture that volunteered their time, not by bidding consultants; and, the freed up resources were used to offset other costs within the same technical assistance category.

Table I: Initial and Final allocations by Components

Project Component	GEF		Co-Financers Maquipucuna, Butler F. & UGA (USD $)		Co-Financers-Others*	Total	
	Planned	Actual	Planned	Actual	Actual	Planned	Actual
Conservation priorities and plan of action	175,823	170,456	341,570	259,695	50,000	517,393	480,151
Establishment of a pilot Corridor	125,000	139,097	1,166,755	788,473		1,291,755	927,570
Integrated Environmental Information System	240,000	265,636	96,000	226,145		336,000	491,781
Environmental Education	157,081	161,411	109,940	306,961		267,021	468,372
Training and production on economic alternatives	227,122	205,698	482,200	511,539	500,000	709,322	1,217,237
Trust fund establishment	49,637	43,340	156,801	135,381	2,112,500	206,438	2,291,221
Land tenure security and strengthening organizations outside pilot corridor					1,200,000		1,200,000
	974,663	**985,638**	**2,353,266**	**2,228,194**	**3,862,500**	**3,327,929**	**7,076,332**

The difference between the 974,663 US Dollars received from GEF and the 985,638 spent are 10,975 dollars paid in interests by Banco Internacional on the Project Special Account. The actual resources contributed by Maquipucuna and its partners, UGA and the Butler Foundation, were closely as planned. Other's* contributions to which the project served substantially as leverage, but implemented by other agencies amount to $3,862,500. The agencies are FLORA & FAUNA with land purchase and technical assistance; CI with technical assistance and workshops for Choco-Manabi Corridor; Min. of Env. With the organization of the Protected Areas Congress , APROCANE with the establishment of the Sustainable Management and Production of Cocoa. Also, an eight part of the amount corresponding to the OCP EcoTrust (16.9M) has been included because roughly that is the portion of the fund which will be allocated for the Mindo and Cuenca Alta Protected Forests.

Table II: Co-financing and leveraged resources

Component	GEF		Co-Financers Maquipucuna, Butler F. & UGA (USD $)		Co-Financers-Others*	Total	
	Planned	Actual	Planned	Actual	Actual	Planned	Actual
1. Goods	117,500	105,182	79,000	148,725		196,500	253,907
2. Workshops & training	547,250	546,673	60,000	299,078	150,000	607,250	995,751
3. Technical assistance	197,500	202,194	1,433,116	944,192	400,000	1,630,616	1,546,386
4. Operational costs	112,413	131,589	306,150	462,836	2,112,500	418,563	2,706,925
5. Land purchase			475,000	373,363	1,200,000	475,000	1,573,363
TOTAL MSP	**974,663**	**985,638**	**2,353,266**	**2,228,194**	**3,862,500**	**3,327,929**	**7,076,332**

II. PROJECT IMPACT ANALYSIS

8. Project Impacts

The project covered a very vast geographic and thematic spectrum of activities, yet it achieved most and even over achieved some of the performance indicators.

Key areas for conservation were identified along the corridor and the project built the grass roots level support and infrastructure required to expand the protected areas through the establishment of community reserves and sustainable economic development projects.

Several solid programs were initiated. For instance, the Naturalist Environmental Education program will continue to involve thousands of children. It is expanding into an international environmental education and research initiative: “Our Shared Forests: Georgia and Northwest Ecuador’s bird connection”.

The management and construction with native bamboo, a key non-timber forest product – for its versatility, durability, rapid growth, and affordability - is increasingly gaining attention among local people, architects, and politicians.

The establishment of an international commercialization and branding strategy using the umbrella brand, Choco Andes™, to market shade grown organic coffee and cocoa, and other products of conservation from the region has generated large support and expectations among farmers looking for viable markets.

From the institutional perspective, Fundación Maquipucuna matured significantly and attained great knowledge and understanding about the influence of different degrees of a community's social capital on conservation projects. It also gained a first hand realistic perspective of the true economic and conservation potential of a variety of activities touted as economic alternatives to deforestation; namely, crafts, organic gardening, bamboo, shade grown coffee, in-vitro propagation, reforestation, sugar cane, jams, and ecotourism.

Unfortunately, a dangerous disrespect to private property by the government -INDA specifically- is threating to mine the conservation successes achieved, by allowing land speculation, within a third of the Maquipucuna Reserve and the Bosque Protector Cuenca Alta del Río Guayllabamba, despite the efforts of Maquipucuna’s lawyers and the overwhelming support of local communities to Maquipucuna, which oppose the illegal land titling within the Maquipucuna Reserve. Maquipucuna, which is the first private protected area established by an NGO in Southamerica, is at risk of losing a third of its property or close to 2000 ha, through a goverment sponsored land grab, which is described in the special circumstances.

Objectives and degree of impact achieved

i) To establish conservation priorities and guidelines for the Choco-Andean bioregion, while building consensus and sharing information amongst the largest institutional stakeholders.

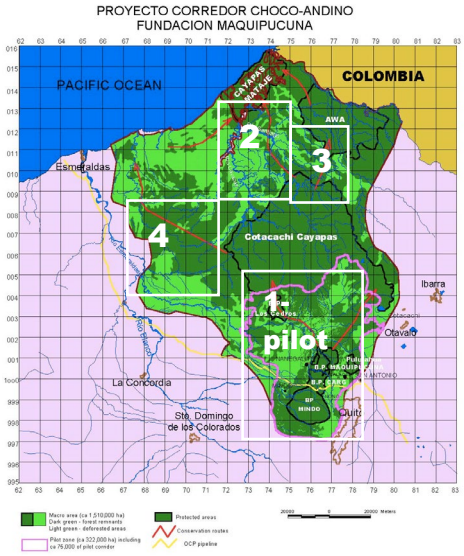

Fig. 1: A number identifies each main route on the map, while the corresponding discussion is in the accompanying paragraphs.

The project had a definite positive impact on identifying conservation priorities and establishing guidelines for the conservation of the region. Conservation priorities were identified through GIS analysis, and discussed and validated through several local and national workshops. Furthermore, the Choco Andean Corridor was used as a case study during the National Workshop on Conservation Corridors at the National Congress of Protected Areas, which produced the National Principles for the Design of Conservation Corridors.

Further impacts are summarized below.

1. The impact on route 1 is referred to on section B a separate outcome, pilot Corridor.
2. Route 2 corresponds to the Comuna Río Santiago Cayapas, which is the largest (15,000 inhabitants) Afro Ecuadorian community of Ecuador.

It has ancestral possession on more than 60,000 ha of which about 20,000 ha are still pristine forests, and the rest are agroforestry systems of organic shade cocoa and tagua. The Comuna, with the support of the project, requested the declaration of a Community Reserve of 20,000 ha to the Ministry of Environment, in order to halt deforestation despite major pressure from logging companies. Their goal is the sustainable production, processing and marketing of cocoa, and the establishment of ecotourism in a similar fashion as Maquipucuna has done in the pilot area.

3. Route 3 includes the AWA territory and the AwaCachi corridor. The AWA territory has long-term continued support from WWF. The AwaCachi Corridor is being implemented by the newly formed Choco foundation (founded in Ecuador by Flora & Fauna International), which over the past 4 years has purchased 10,000 ha and which is receiving support from the CEPF-CI program. The project has had indirect positive impact on the area. Its progress, hindered by squatting, lack of clear boundaries, and the difficulty on finding appropriate economic alternatives, lead Flora & Fauna to make radical changes; one of them was hiriing former Maquipucuna and the Choco Andean Corridor's science coordinator as Awacachi's new coordinator.
4. Route 4 is predominantly under the influence of the Federation of Chachi indigenous associations, which claims rights over 220,000 ha. The Federation is coordinating with the Choco-Andean Corridor, put a moratorium to new timber exploitation contracts in their lands and is requesting support to set up communal protected areas and alternative sustainable development alternatives.

Additionally, throughout the corridor, the project assisted several communities and NGO's in the preparation of a portfolio of conservation and sustainable development initiatives.

ii) To establish a pilot corridor by increasing the extent of the area under conservation and sustainable management between protected areas at a sub-regional scale targeting ca 75,000 hectares and its local population.

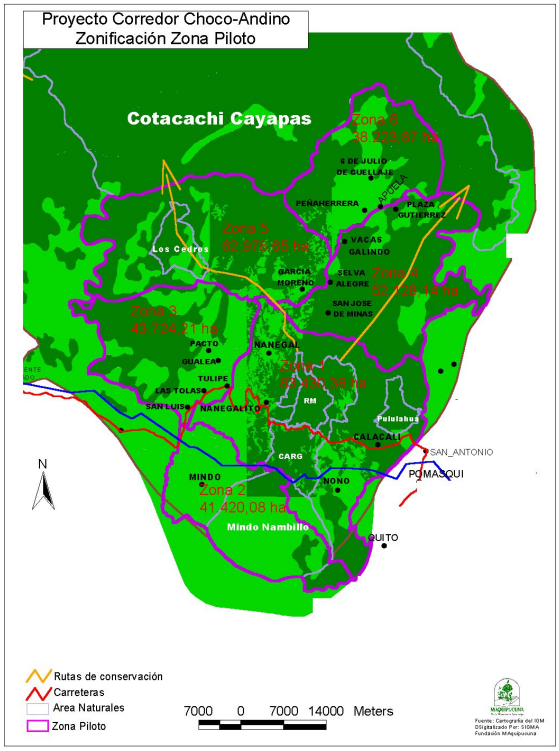

Fig. 2. Pilot area divided in zones of implementation.

The project established strong basis for the conservation of the pilot area or route 1. Five hundred thousand trees were planted on farms spread over an area of 2000 ha, while over 1,100ha were purchased for conservation. The required steps were taken to extend the area under protected forest status, and to achieve involvement of the local people through the establishment of the community guards and drafting of the conservation and sustainable development plans and their implementation. In terms of sustainable production, the project generated an entire chain of production for shade grown organic coffee benefiting 11 communities spread over 200,000 ha. The requested extension for the protected area on 24,000 ha was submitted to the Ministry of Environment and is awaiting favorable resolution.

Birdlife International expanded the Northwest Pichincha Important Bird Area (IBA), which includes the IBA Mindo, to include the Maquipucuna-Guayllabamba protected forests. This designation identifies areas critical for the conservation of birds and of biodiversity, which demonstrate capacity to carry out research and conservation activities.

iii) To increase the quality, quantity, and availability of environmental information, facilitating decision-making.

The project developed one of the most comprehensive GIS (geographic information database) environmental databases publicly available for the entire macro region, including basic digital cartographic information as well as a sophisticated land use change model. The GIS theme maps for the pilot corridor were prepared at a 1:25,000 scale predominantly, and at 1:50,000 for the macro area, whenever possible. All this information is being actively used by different organizations and communities of the area[1].

The project also carried out 3 years of integrated pest management research on coffee and plantain systems in the mid elevations, a region of the country most suited for coffee production, and where coffee research was lacking. Research results, some already published, are being transferred to farmers.

Monitoring protocols for water quality, bird diversity, and C budgets have been developed and tested. The monitoring projects are generating databases that will become increasingly valuable over time to the research community, as seen, when researchers are already "piggy backing" on existing monitoring projects. A veterinarian researcher plans to sample blood for antibodies from key bird species that are found on the bird community grids. Another researcher is sampling mosquito populations from the artificial breeding sites that were created to monitor amphibian populations. While biodiversity research on *Guadua angustifolia* has been instrumental to promote this native bamboo nationwide as a sustainable non-forest timber product.

[1] Some of the users of the Information System include: Ministry of Environment, Provincial Council of Pichincha, Chachi Federation, Comuna Rio Santiago Cayapas, Yunguilla, Sta. Lucia Cloud forest reserve, Catholic University, Central University, San Francisco University, University of Texas at Austin, Oxford University, University of Georgia, PROBONA-Intercooperation, Conservation International, AWACACHI project, among others.

Finally, the project conceptualized an environmental education program that consists of junior, youth and leader naturalist curricula modeled after the Garden Earth Program of the State Botanical Garden at the University of Georgia. The implementation focused on the junior naturalist for elementary school aged children. The program exceeded its goals. It involved over 2,000 elementary school children from local communities and the capital city of Quito and now is sustaining a rate of visitation of 1000 children per year. Besides definite increased environmental awareness of children and rural communities, there was positive incidence on the institutional development of the partner organizations involved. For instance, now environmental education is financially self-sustaining at Maquipucuna. The community of Yunguilla is trained to run one of the programs, which is generating income to its ecotourism program. And both, Maquipucuna and the Georgia Botanical Garden, are building on their joint success and have launched an international conservation and educational program called "Our Shared Forests: Georgia and Northwest Ecuador's bird connection."

iv) To design and establish a system of incentives for conservation and sustainable management for long-term sustainability.

Training and eco-businesses

This project aimed at creating positive economic impacts on conservation through training, promoting eco-business opportunities, and generating long-term funding opportunities.

The goals set for number of beneficiaries and communities participating in training were exceeded. Extensive training was carried out in a diverse set of themes, including leadership, organic agriculture, ecotourism, bamboo, in-vitro propagation of orchids and bromeliads, integrated pest management of coffee, accounting, micro-enterprise administration, crafts and jam making among others.

Besides contributing opportunities for extensive training, the project was instrumental to the materialization of a national certification program for ecotourism. Project staff helped draft the certification guidelines. Also, of the 13 ecotourism operations certified by the Ministry of Tourism and the Ecuadorian Ecotourism Association, three operations fall within the Choco Andean Corridor, Maquipucuna, Yunguilla, and Bellavista. Ensued by the certification, was the international prize for ecotourism conferred upon Maquipucuna by Skål, a distinguished international organization uniting all branches of the travel and tourism industry.

Another positive economic impact is that commodities like coffee and cocoa, which in the past have gone through boom-bust cycles, are progressively being re-adopted oriented to organic and high quality niche markets. Farmers and organizations have started grouping through the Choco Andes Alliance, and in less than a year, 100 coffee farmer families have joined it.

People's interest for bamboo is also growing substantially. Native bamboo, which has traditionally being considered "poor men's wood", and which has being exploited unsustainably and replaced by pastures, is attaining value as people realize its usefulness for quality construction. Several bamboo constructions made during the project demonstrated the versality of Guadua.

Other new job types created through the project include: community environmental guards, community extensionists, environmental education guides, bamboo construction and woodwork specialists, tissue culture technicians, tree nursery owners and caretakers, cheese and yogurt makers, and research assistants.

Long term funding

The project sought long-term financial sustainability through the establishment of eco-enterprises and the establishment of a trust fund. Several small eco-enterprises designed to maintain themselves were initiated, including the marketing and commercialization of shade grown organic coffee and cocoa, a bamboo workshop in Nanegal, an in-vitro propagation laboratory in Sta. Marianitas, a cheese plant in Yunguilla, and a new jam factory in Sta. Marianita.

While some work was initiated towards the establishment of the Maquipucuna Land Trust for the long-term protection of the Maquipucuna Reserve, continued land purchases, and supporting new conservation opportunities, most effort focused on the establishment of the OCP-Ecofund. The 16.9million dollar trust -

endowed by contributions of the oil companies building the pipeline- was an outcome of the extensive negotiations between Birdlife International, Maquipucuna, CECIA, Natura, and later several other NGO's and OCP, and largely due to the close follow up to the environmental performance of OCP

Outcomes & Activities	Original indicators	Revised indicators	Results
Outcome 1: Choco-Andean conservation priorities and a plan of action established.			
Activity 1: Develop protocols for monitoring key environmental, land use, and demographic patterns	Establishment of a database & monitoring protocols	Results of monitoring protocols are reported in outcome 3	A comprehensive GIS database was produced that includes: a) Base maps (elevation curves, roads, rivers & towns) at 1:50,000 scale for 2,000,000ha or macro area & at 1:25,000 scale for pilot corridor (300,000 ha) b) Theme maps on distribution of plant endemism, distribution of bird diversity, rainfall, temperature, soil type, primate distribution, slope, watersheds, population (1970 & 2001), provinces, parrochias, public & private protected areas, land tenure, coffee production, bamboo distribution (Guadua angustifolia) existing & potential, vegetation types, land use (1970's, 1990's & 2002)
	A land-use change model that monitors drivers of land-use change	No change	A multi-temporal model of deforestation was created using time series analysis of land use maps. The model forecasts risks of deforestation through 2023 for the macro area. Maquipucuna, UGA & Winrock Institute used the GEOMOD module from IDRISI to create the model.
	Report of evaluation of relevant policies and recommendations	No change	A stakeholder analysis and a database of conservation and development projects were prepared. The design of a new policy instrument, an adaptation of Transfer of Development rights called "Trade of Use Agreements" was began as a policy instrument that creates incentives for conservation through land use zoning.

Activity 2: Setting Choco-Andean conservation guidelines and priorities	Design and dissemination of regional conservation priorities and plan of action (Consultation process & International Choco-Andean Conservation Congress) Choco Andean Working group conformed	Several small workshops throughout the project lifespan were agreed to substitute one major International Congress	- Conservation priorities were identified through GIS analysis, resulting on a conservation priorities map for macro area. The map was discussed in several national, regional & local workshops. - The project co-sponsored the National Congress of Protected Areas (2003), and using the Choco Andean Corridor as case study, lead the National Workshop on Corridors to define Principles for the Design of Conservation Corridors - Plans of action were prepared with key communities. 5 Communities of the pilot area drew detailed plans of conservation action. The Comuna Río Santiago Cayapas agreed on the establishment of a community-protected area of 20,000 ha subject to receiving technical and financial support to establish a Comuna-wide sustainable development project. The Federación Chachi put a moratorium to new forest exploitation concessions. - The plan of expanding the Guayllabamba River Protected Forest was consulted widely and the Ministry of Environment carried out the due diligence. - Key economic activities of potential widespread positive impact on connectivity were identified after farmer consultation, market and technical feasibility analysis. Gourmet shade grown organic coffee for the mid-elevations, shade grown fine organic cocoa of aroma for the lowlands, native bamboo for the whole area, and ecotourism for selected forest areas. - Process of adoption of planning framework by the government is pending, it was interrupted by the change of government. - Choco Andean Working group did not materialize as a group of NGO's, yet, substantial involvement and interest was achieved from communities. Both Comuna Río Santiago and Federación Chachi have so much interest that people from at least 20 communities traveled up to 13 hours one way, by boat and bus, to attend Corridor workshops.
Outcomes & Activities	**Original indicators**	**Revised indicators**	**Results**
Outcome 2: Core corridor conservation-area (75,000 ha) established between Guayllabamba Watershed Protective Forest and proximate protected areas.			

Activity 1: Establishment of a pilot core corridor conservation-area between Guayllabamba Protective Forest and proximate protected areas (ca. 75,000 ha)	Management plan for pilot core conservation corridor (75,000 ha)	Management plan & plan of action merged	a) Workshops & information gathering were completed on an area of 300,000 ha. As a result the following maps were produced: - Conservation and reforestation priority areas. - Distribution of actual and potential Guadua (bamboo) areas map. - Coffee areas mapped. b) Five Detailed Community Development action Plans finished and draft of management plan integrating into Action Plan. c) Birdlife International declared the Maquipucuna Reserve and its surrounding forests as the Maquipucuna Important Bird Area.
	Land titles or conservation easements for at least 300 ha/yr or total of 1000ha/3yr	No change	This goal was exceeded. A total of 1,130 hectares were purchased. Moreover, the application for the addition of ca. 24,000 ha to the Guayllabamba Watershed Protective Forest is being processed at the Ministry of Environment. Several communities have designated their community conservation areas.
	Increased enforcement of biodiversity conservation with community participation (Pi)	No change	This goal was met. Three posts of community guards are operating. At least 10 guards were trained in forestry law, enforcement, first aid, environmental interpretation, reading maps, GPS use, digital camera use & water monitoring. A 24 hr radio system was implemented connecting the sites and the national police. Mapping of active squatted areas and maintaining a register of illegal timber and charcoal transported through the posts has been institutionalized within F. Maquipucuna. Surveillance area covered is approximately 120,000 ha. Fundraising efforts ongoing to help offset costs to maintain the program.
	600 ha reforested (with matching funding)	300 ha reforested	The original goal was exceeded. Approximately 500,000 native trees were planted in over 2,000 ha of agroforestry farms. Additionally, approximately 55,000 plants of coffee & 40,000 of bamboo were planted. Co-sponsoring was achieved from the Municipality of Quito.
	Identification of 7 communities to involve in alternative productive activities	No change	The goal was exceeded. Five communities have detailed Development Plans, and 16 communities within in an altitudinal gradient from the summit to the sea have become involved in different project activities.

Outcomes & Activities	Original indicators	Revised indicators	Results
Outcome 3: Development of an integrated information and decision-making system and facilitation of multiple stakeholders' access to available conservation and management related information.			
Activity 1: Development of an Environmental Information System made publicly available (Ma)	Design of a web-based Environmental Information System		This goal was met. An html program and a digital catalog of maps and reports are housed at Maquipucuna. A bilingual website is operational and, a more complete bilingual site is under construction. When appropriate, we will post duplicate information in English will be posted on the River Basin Science and Policy web site at the University of Georgia.
	Choco Andean conservation working group	No change	No working group of traditional NGO's was achieved, instead the Chocó Andes Alliance of farmers and organizations for sustainable production.
Activity 2: Creation of a socioeconomic monitoring plan (Pi)	Document planning process with local communities for management plan of the pilot corridor underway (Pi)	No change	A series of documents produced include: - Socio-economic baseline data in SPSS for pilot area. - GIS information layers for demography (census 1990 and 2001). - Time series land use maps (70's, 80's, 90's & 2002) at 1:25,000. - Land use change model using the GEOMOD module of IDRISI. - Systematization of the Yunguilla experience. - Annual operating plans worked out yearly with 5 communities. - Stakeholder Perception Assessment study in the area of influence of OCP within the Cuenca Alta del Río Guayllabamba and Mindo Nambillo Protected Forests.
	Ecotourism monitoring plan (Pi)	No change	Project sponsored several undergraduate and graduate thesis & studies related to Ecotourism.
Activity 3: Development of a research program to	C sequestration and storage protocol established & data collection initiated	No change	Goal met. A general report was prepared for the entire Choco Andean region, as well as a specific carbon study-which was submitted for publication- was prepared comparing C on bamboo and pasture systems.

support management & establishment of an ecological monitoring plan(Pi)	Study Effect of land-use on connectivity	At least one ecological study on fragmentation	Goal met. Research was initiated with the study of 3 types of primate populations, producing preliminary maps of population distribution. But the study was suspended because the results didn't justify the costs. Instead the project is co-sponsoring with Oxford University the study "Functional connectivity: The relations of avian community composition to habitat and implications for the conservation of an Andean avifauna", and "Avian community response to habitat modification in the Andes". Other ongoing studies include: Disease incidence on wild bird species and on domestic poultry; Amphibian decline, and Indicators of stream health
	Establish a pilot adopt-a stream program	Water monitoring studies to focus on impact of OCP	Goal met. Two protocols for monitoring water quality were created and tested. One protocol, "Stream visual assessment" was designed for community participation. The other protocol, "Water quality assessment" requires more technical training but provides results that are more rigorous. Baseline data of water quality - biophysical parameters and macro invertebrates - was collected for OCP impacted sites.
	Identification of commercial potential and technical feasibility of propagating epiphytes and medicinal plants – Study report.	The goal was modified to focus only on orchids and bromeliads	Goal met. Orchid experts from the Atlanta Botanical Garden (ABG) advised on a list of 10 species of or orchids of commercial value not listed within CITES and trained local technicians on protocols for their in-vitro propagation. Over 10,000 plantlets cultivated to date. Some orchids are already being sold in the Museum shop at ABG. A UGA graduate student who is leading the development of the Choco Andean Orchid Conservation Center is studying the feasibility of introducing endangered in-vitro propagated orchids back into the wild. An illustrated guide to the orchids of the corridor is available on CD.
		Integrated Pest Management research for coffee agroforestry systems	Goal met. Scientific results published in the CRSP-IPM website.
		Development of a pilot & model agroecological farm for Food Security	Goal met. Model farm implemented, implementation manual prepared, including several spreadsheets to track costs and production.
		Model management plan for Guadua	Goal met. 7.5 ha under management.
		7 people trained on monitoring & data collection	Goal exceeded. Training at least 10 local people on water sampling, agroecological farm follow up, insect sampling & C sampling.
Outcomes &	**Original indicators**	**Revised indicators**	**Results**

Activities			
Outcome 4: Environmental education			
Objective 1: Implement an environmental education program in 7 communities for adults and children.	5 elementary (250 students) and 2 high schools (500 students) involved.	The program was revised to focus on Elementary School age (ages 8-11) during the first phase of program development.	The goals were exceeded. 2000 children in 10 local schools and 6 Quito schools participated in the program. One university from Quito is also participating in the program. Revenues generated from participating Quito schools pay for the participation of local schools.
	3 types of rainforest educational kits; 5 kits of each	5 modules (ecosystems, insects, plants, mammals, birds) & 1 prototype kit	Goal exceeded. Modules about ecosystems, mammals, birds, and insects have been completed in English and Spanish. Prototype kit boxes prepared for each module. Each module includes a puppet show as well as games and experiments.
	Env. Ed. Camps targeted to local & Quito schools (yrs2&3)	To take place in yrs 1 & 2	Goal exceeded. Camps with 400 school children from Quito were part of the field-testing. One international camp in year 1. Unable to reproduce international camps after Sept. 11. Concerns arose about international travel and liability from UGA.
	Env. Ed Parade	No change	Goal met. Every year there is an environmental education float in Nanegal festivities.
	Training Env. Ed. Personnel	No change	Goal met. Maquipucuna's environmental education coordinator was trained at the State Botanical Garden during 3 week internships in yrs 2& 3, and a workshop in Cuba. In addition, the project trained at least 12 local guides.
	Volunteer program established	No change	Goal met. At least 25 volunteers enroll yearly to help all programs and communities of the Corridor. A web page was designed exclusively for volunteers. A volunteer program coordinator is funded by revenues of the program.
Outcomes & Activities	**Original indicators**	**Revised indicators**	**Results**
Outcome 5: Progressive substitution of deforestation and other non-sustainable land-uses by alternative production in 7 communities			

Activity 1: Technical assistance and promotion of alternative productive options	Technical assistance to groups of interests within 7 communities in epiphyte and medicinal plant propagation	The focus of the project was widened from epiphyte and medicinal plants propagation to explore economic development options of more widespread impact.	Training took place in a diversity of topics: Community leadership: 95 people of 5 communities. Guadua: 17 people on managing, harvesting, and construction. Cheese & yogurt making: 48 people. Food Security agroecology: 1 workshop, 12 people. Coffee IPM methods: 1 workshop, 12 people from 5 communities. Poster about organic coffee produced in collaboration with COFENAC. Jam production: 1 workshop, 12 women. In-vitro propagation: 2 people from 2 communities trained. A permanent field training facility was built.
	Ecotourism training (2 courses/yr; open to 5 groups of interest within 5 communities)	No change	YR 1: 6 training courses (env. interpretation, ecotourism, English lessons (58 people from 3 communities). YR2: 3 workshops, 51 people from 6 communities. YR3: Ecotourism feasibility study in progress for the people of Alaspungo to identify an inventory of attractive ecotourism sites.
	Certification program for ecotourism operations (development of standards and guidelines)	Cancelled	The ecotourism certification was achieved even though this goal was cancelled during the evaluations. Staff from the project participated in the preparation of certification guidelines for the National Program for Certification of Ecotourism of the Ministry of Tourism and the Ecuadorian Association for Ecotourism. The Maquipucuna and the Yunguilla ecotourism operations received certification in the pilot program that certified 12 operations nationwide.
	Market image and strategic signage for ecotourism	Develop marketing image for Corridor's eco-products & strategic signage for ecotourism in pilot area	A branding and business strategy was created to enable economies of scale in marketing, which is focused on key conservation products and services of the entire Corridor, and which aims at the vertical integration of the coffee, cacao, bamboo, and ecotourism businesses, emphasizing on quality and the unique origin of the products. "Chocó Andes" is the registered trademark. The Maquipucuna web site is being restructured to accommodate e-commerce functions. In addition, a UGA researcher in collaboration with the Smithsonian Migratory bird is studying the criteria for bird-friendly certification that would be best applicable to the area. A program for eco-roadside signals was designed, and implemented (graphic design, interpretation and architectural designs in bamboo) because approval of permits faced competition of jurisdictions between the Municipality of Quito and the Provincial Council and took over 2 years. 15 road signs promoting ecotourism were constructed. Three have been placed along the main highway that connects Quito and the coast.

	Training women from 7 communities on producing greeting cards on recycled paper & local fibers (50 women trained)	It was decided that the project should only focus on existing women's craft groups instead of creating new ones because the market for crafts is too small.	Six workshops with the participation of 16 women were held in 3 communities in yr 1 & 2 in yr 2, specifically oriented to crafts. A study on the elasticity of demand was done with Iowa U. (1,800 cards) which, indicated that our market expectations were too high. For the rest of the project, all training efforts focused on men as well as women. Women participated in training about: bamboo construction, jam production, guadua crafts, recycled paper, coffee silviculture, ecological monitoring, guiding, cooking, first aid, vegetable gardening, and English lessons.
Outcomes & Activities	**Original indicators**	**Revised indicators**	**Results**
	Feasibility study for the establishment of a local Technical High School on Conservation and Sustainable Development		The goals, objectives, and implementation of the school were explored with focus groups representing men and women from 7 communities, from Yunguilla to Maldonado, in an altitudinal range from sea level to 2700 masl. The study was completed. The next step will be to involve international experts to discuss the future of the school and possible sources of funding.
Activity 2: Promotion of the establishment of 2 eco-enterprises with community/NGOs/investors participation.			Beginning in September 2003, the new Student Learning Center-SLC Coffee House at the University of Georgia serves Chocó-Andes coffee. Several other universities have expressed interest in a similar contract. 15,000 pounds of coffee were purchased to 100 families at up 4 times the price paid by middlemen. The farmers are organizing into the Choco Andes Alliance. Coffee was processed and selected in collaboration with a Belgium expert and shipped to the US. Maquipucuna Foundation US is leading marketing and commercialization for Choco Andes. Maquipucuna contracts a US coffee roaster and delivers the coffee to the SLC, other cafeterias and individuals. Basic promotional materials and a branding image are ready. An e-commerce site is contracted and under construction.

			In addition to trading coffee and more recently cocoa, the project has also created a diversity of small business opportunities which will also be marketed through the Choco Andes brand: -Two operational plant that produces marmalades (jams and jellies) in the community of Yunguilla and Marianitas -A dairy plant in the community of Yunguilla -A community operated micro-sugarcane mill -An in-vitro plant propagating lab for orchids and bromeliads -A Guadua workshop in Nanegal -Women, bamboo and tagua Craft shop in Marianita Commercial and technical relationships have been developed with the Atlanta Botanical Garden, University of Loja, and a commercial orchid lab in Cuenca. Planning is underway for a Center for Orchid Research and Propagation.
Outcome 6: Long term financing available for conservation and biodiversity friendly productive activities			
	Evaluation of long term financing mechanisms and definition of project strategy, including the identification of income generating activities		The evaluation of the long term financing mechanism was an iterative process of analysis and of trial an error. At the end four economic areas were chosen to focus on– shade mountain coffee, shade cocoa, native bamboo and ecotourism. One of the main results is the establishment of an international Choco Andes™ marketing and commercialization strategy for conservation products and services of the region.
	Community investment concept developed and promoted among members of eco-enterprises	Negotiate C-carbon credits: Prepare proposal and initiate negotiation with either of Bio-Carbon Fund and/or Community Development Carbon Fund.	A program idea note (PIN) was prepared as first requirement for submitting a full proposal. We have identified areas that are especially suitable for reforestation and participation in this proposal. We are preparing a proposal to the Bio-Carbon Fund and the Carbon Fund for Community Development. The proposal requests tradable carbon credits based on carbon sequestration in restored forests.
	Design of the Trust Fund meeting GEF criteria		Active participation in design and establishment of OCP Eco-trust with participation of key stakeholders. Ecofund endowed with 16.9 million dollars for 20 years. Guayllabamba River Protective Forest and Mindo Nambillo Protective Forest will benefit from part of the fund.

1. Project Sustainability

Sustainability has three components. First, there has to be the capacity to adapt to change, second there has to be sustaining interest in the project by key stakeholders and third, there has to be adequate financial support. The project has done very well in the first two components. Regarding financial sustainability it promoted several small self –sustaining eco-enterprises, but it was too optimistic to expect reaching financial sustainability within three years, confirming the conclusion and recommendations of the GEF Council[2].

v) Capacity to adapt to change

A dynamic systems management approach has been taken. Because market, environmental, and other factors change, a dynamic approach was taken to develop the plan of action for the corridor, and the management plan for the pilot area. Projects and initiatives are continually revisited to ensure that goals are being met and continue to be appropriate. New opportunities are sought for and reflecting on lessons learned in order to maintain a progressive approach to sustainable development is a priority. One of the most outstanding outcomes of this approach is having being able to seize the opportunity to initiate direct marketing of coffee to the Student Learning Center Coffee House at the University of Georgia, and to a large number of buyers.

vi) Sustaining interest in the project by key stakeholders

Because all of the corridor projects have featured intensive community involvement at all stages of development it is believed that community commitment is strong. Long-term agreements between Fundación Maquipucuna and owners of forested land exist with the communities of Yunguilla, Alaspungo, Marianitas, Chacapata, Golan, and the Comuna Río Santiago Cayapas. More agreements are on the way with the Federación Chachi. A Choco Andes Alliance of 100 coffee farmer families is being formed. These agreements have direct incidence over the conservation and sustainable management of over 300,000 ha which are buffer zones for the major protected areas of the corridor[3]. Long-term strong institutional commitments also exist. The Maquipucuna Foundation will continue to search for new project funds. The University of Georgia will continue to collaborate with the Maquipucuna Foundation on research and outreach projects. The Butler Foundation has pledged matching funds for an endowment fund, and the Atlanta Botanical Garden will continue collaboration with the in-vitro propagation laboratory and will assist in fundraising. The business department at Ithaca College is designing a long-term service-learning program to assist business development. The faculty of Architecture from the Universidad Católica of Ecuador is supporting with Guadua designs. Several Ecuadorian universities are cooperating through interns. There is also an MOU and coordination with Conservation International's Choco-Manabi Project, within which this MSP helped participants to the Cumbre Ecológica prepare a portfolio of conservation initiatives.

Regarding government support, before the change in government (end of year 2), the office of planning at the Vice Presidency of the Republic of Ecuador was interested in adopting the Choco Andean Corridor framework to lead the development of the northwestern provinces. The Ministry of Environment was interested in jointly managing the environmental information system for the region. Maquipucuna would have been the node for the Choco-Andean Region. In both cases, further central

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[2] The constituency of Switzerland concluded and recommended during the GEFSEC : "…The views of the highly supportive and positive STAP review is fully shared. It is strongly recommended to consider follow-up financing on completion of the three-year project, pending overall success. Although the project optimistically aims at financial self-sufficiency to be reached through different revenue-generating pilot projects and the establishment of an endowment fund on project completion, the expectations may be too optimistic… "

[3] The Cotacachi-Cayapas Reserve, The Cayapas-Mataje Reserve, The Maquipucuna Reserve, The Upper Guayllabamba Protective Forest and the Mindo-Nambillo Protective Forest.

government involvement was not pursued after the change of Presidencies but it is likely that the new officials will also agree to proceed with the agreements specially if funding is available.

vii) Financial sustainability

At project onset, sustainable financial support was expected through the development of a trust fund and from revenue-generating pilot projects. There was good progress, but financial self-sufficiency was not reached. While the project was instrumental in the establishment of a 20 year, 16.9M dollar EcoTrust – which resulted from a long process of negotiation with the OCP pipeline companies and which focused mainly on the ecologically vulnerable areas along the 500 km pipeline – only a fraction of the Trust will be available for part of the Choco Andean Corridor, the Mindo and Guayllabamba Watershed Protective Forests. On the other hand, revenue-generating enterprises are small scale and still in their infancy; just starting to break even.

Thus, to sustain activities –training, environmental education, patrolling, monitoring, and managing the information system- and for continued critical land purchases, Maquipucuna is still fundraising to endow the Maquipucuna Land Trust; a matching pledge of $1 million exists, several proposals and business plans have been prepared, others are being worked on. Along with various other funding agencies, continued funding will be sought at GEF and World Bank- BioCarbon, Community Development Carbon Funds and IFC.

However, for true, long-term financial sustainability, the dependency on grant money must decrease, as the Choco Andes eco-enterprises prosper[4]. Yet, the environmental enterprises industry is in its infancy, and the success of the enterprise approach is subject to the usual business risks. Furthermore, the direct marketing of Choco Andes coffee and cocoa is a start-up business with limited liquidity. Thus, ultimately, the development of these markets will be effective if the enterprise is able to generate profits and also to finance the protection of the environment, strengthen the nonprofit community, and provide economic alternatives for local people. Risks are addressed by taking decisions founded on solid technical support from business experts from the University of Georgia and the Ithaca College.

3. Replicability

viii) Community outreach

Weak social organization and inaccessibility must be taken into account when extending and replicating the project. Young mestizo communities that have arrived within two or three generations are characteristically difficult to organize. Afro Ecuadorian and Chachi indigenous communities have hierarchical social structures at a macro level, though highly influenced by political decisions from the central national government, whereas at the community level are essentially similar to most rural communities. Such, are the approximately 300 small communities, each of 350 inhabitants on average, scattered through rough terrain barely accessible due to poor or no roads, or costly canoe transportation; they are making land use decisions that directly impact the Corridor.

Maquipucuna provided permanent one to one accompaniment to the communities involved in the pilot area, because communities with a weak social fabric require greater help to get organized. In addition, it learned that increasing the number of outreach personnel is part of the solution, yet more impacting is organizing people around economic opportunities that yield quick economic results. Because, if conservation and environmental education alone are advocated, other than increasing the number of outreach personnel, there is no satisfactory solution.

Outreach to targeted stakeholders initiated with an assessment of local resources, community social capital (i.e., can they work together?), community priorities, and external support (e.g., from market demand). These four factors can readily be replicated but the outcomes may differ. One

[4] See attachment Strategic Overview for Maquipucuna

community may take on bamboo production, another may accept shade organic coffee production, while another may take ownership of water quality assessment. In other words, the process can be replicated though the outcomes may differ. There are no projects that are fundamentally unique to the corridor. Shade-grown organic coffee and cacao, orchid production, water quality assessment, environmental monitoring, environmental education and so on could be done in many other places, as long as the four components of the process are followed.

ix) The Maquipucuna Land Trust

There are two ways of achieving conservation. Directly, through land purchase, and indirectly, through creating economic alternatives to deforestation, raising awareness, and by establishing regulatory environmental policies.

Purchasing land and conservation concessions are the most effective conservation measures in the short term– the approach demands non-profitable investments for land purchase and for continued protection, clarification of land titles, legal assistance, conflict resolution, physical delimitation of boundaries and patrolling. However, in the long-term, conservation can only become sustainable if communities are involved and if they have sustainable profitable alternatives to deforestation.

Maquipucuna's Land Trust goal is to raise five million dollars to endow operations, protection, continued land purchase, and to trigger productive activities. In addition, there are indications that the campaign is likely to succeed; it has 1 million dollars match pledged, and several communities are willing to set aside land for conservation– Comuna Río Santiago Cayapas, Federación Chachi, Yunguilla, Alaspungo.

x) Research & Monitoring

Two protocols for monitoring water quality were created and tested. One protocol, "Stream visual assessment" was designed explicitly with community participation and can be carried out by community members with minimal training. The other protocol, "Water quality assessment" requires more technical training but provides results that are more rigorous. Both can be used to monitor the possible impact of the OCP pipeline in key sites within the pilot project area, especially the protected forests of the Cuenca Alta Río Guayllabamba and Mindo.

It is planned to extend these protocols into at least five altitudinal regions in the larger corridor. Monitoring protocols have been developed and tested for the following:

- Bird diversity as a function of land use
- Carbon budgets in bamboo and pasture systems
- Disease incidence in key bird species, wild and domestic poultry
- Amphibian breeding sites
- Mosquito breeding sites
- Water quality
- Orchid populations

Regarding funding, scientists from different universities with their own funding are encouraged to visit the Maquipucuna research station and are expected involve local people in monitoring. To support critical applied research and local scientists, a fraction of the revenues of the Choco Andes marketing will fund research projects.

A website, progressively being completed, is expected to help dissemination of research results, and thus replication.

xi) Native Bamboo (*Guadua Angustifolia*)

G. angustifolia, is likely to be among the non-forest timber products of most economic potential for Latin America, yet, it is undervalued and unsustainably exploited. For that reason, threats to its

conservation were identified, mapped the remnants within the pilot corridor, and initiated a sustainable management program.

The project established a *G. angustifolia* program that includes carbon research, management of native stands, and training on construction, while its financial self-sufficiency is sought through grants, consulting, training, and a managing a furniture and construction workshop.

The approach taken on G. angustifolia is relevant to most countries in tropical Latin America where Bamboo grows native, and where young and growing populations need housing made with low impact materials. The likelihood of replication is good, for demand for bamboo has increased throughout Ecuador since the project began promoting bamboo.

The results of the project encourage intensifying activities with *G.angustifolia.* In mitigating climate change projects, it could be used in substitution management projects, which have the greatest potential in the long term (>50 years) and views forests as renewable resources. The reestablishment of *G.angustifolia* in large areas it once inhabited would be particularly fitting because systems with high growth rates, like *G.angustifolia*, and low-medium initial biomass C standing stocks, such as the agricultural land they might replace, are amenable for conversion to managed forests, with considerable quantities of C sequestered if the harvested wood is used directly. For example, *G.angustifolia* can be used to build entire houses. If *G.angustifolia* was used in to help house the increasing populations of Ecuador and Colombia, on the kind of scale that it once did, and advanced timber preservation technology is transferred to these countries, C could be sequestered for long periods. This would make this G. angustifolia model suitable to the Clean Development Mechanism (CDM) despite the fact that G. angustifolia is not a forest tree. The production of timber products requires much less energy than does production of modern construction materials such as cement, steel, and plastics and there can be a large energy return on investment in timber products. However, a full analysis of the full life cycles of the timber products would be required to appreciate the impact of on net C cycle storage and net emissions.

The exceedingly great extent of housing was assessed during the project; especially among Afro-Ecuadorian communities, 70% of the families either needs a house or to replace their old one. Consequently, Maquipucuna and the Universidad Católica are preparing a sustainable management project proposal for bamboo reforestation, management, and housing, which will contribute to a C trading program.

xii) Choco Andes ™ & the Café Choco Andes

Marketing is keystone for any successful program, yet most conservation and development projects promote production but not marketing. The project was concerned on developing appropriate durable markets, as well as production. Thus, it developed Choco Andes™, a direct marketing strategy[5], which is increasingly becoming an important way to sell conservation products. Choco Andes aims at reaching economies of scale along the Corridor, because individual international marketing is expensive and out of the reach of farmers. By selling through Choco Andes, farmers receive fair prices without intermediaries and large distribution chains that exhaust all profits. To the buyer Choco Andes guarantees a certification of origin, quality, and sustainability. The umbrella brand, Choco Andes™ can accommodate sub-brands depending on the product and the community enabling diversification building up on the brand equity created incrementally with each sustainable product promoted.

Choco Andes coffee has begun selling through a coffee shop at the new Student Learning Center at the University of Georgia (SLC-UGA)[6]. Because the SLC-UGA buys only a limited amount, Maquipucuna is also expanding the market. Soon it will also sell through Maquipucuna's e-commerce site together with ecotourism and coffee other conservation products. Over one hundred families of coffee farmers from 11 communities are grouping under the Choco Andes Farmer Alliance to sale their coffee

[5] www.divinechocolate.com
[6] http://www.uga.edu/aboutUGA/compete-maquipucuna.html

and to obtain organic certification. Harvesting is carefully supervised by Fundación Maquipucuna, and during processing, with the assistance of a Belgium coffee development specialist, the coffee is wet processed, fermented precisely, classified by density and size and sun dried. A world class coffee expert tests and grades through cup tasting the quality of coffee.

The approach is succeeding within the region. The amount of coffee offered through Choco Andes is expected to increase at least by 5 times during the 2004 harvest, so to follow up the increasing number of farmers, Maquipucuna is partnering with COFENAC[7]. Yet, external funding will be required to enlarge the processing facilities and to increase the technical assistance, for Choco Andes started with limited liquidity. The approach could also be replicated in other parts of the world; project staff and ICRAF[8] are discussing a collaborative strategy for Kenyan coffee farmers.

xiii) Choco Andes Cocoa and other products

Selling quality coffee under this brand is creating brand recognition, which is starting to drive marketing of the other products such as espresso chocolate beans (Choco-beans), crafts, in-vitro propagated orchids and bromeliads and jams. The orchids and bromeliads are being sold as souvenirs and at botanical museums in the US.

A similar approach to marketing coffee is being taken with shade-grown cocoa of aroma from the lowlands of northwest Ecuador, which is regarded among the best in the world. Maquipucuna has partnered with an association of cocoa growers[9], APROCANE that groups over 300 cocoa farmers. APROCANE provides technical assistance, processes, and sells the raw cocoa. A business plan is being prepared to optimize production, to increase sales of cocoa, and to establish a cocoa processing plant to aggregate more value to cocoa locally.

Sustainable cocoa has important potential. Besides the Afro Ecuadorian groups, the Chachi Indigenous Federation and indigenous communities from the Amazon are interested in cocoa. Maquipucuna and APROCANE have already trained a group of Amazonian Siona Indians. The replication potential of the Choco Andes coffee marketing in cocoa is high, and it is very important that it succeeds, for a strong cocoa market is likely the only alternative to coca production; the lack of economic opportunities is making coca the last resource economic alternative for communities bordering Colombia.

xiv) Environmental Education and The Conservation & Systems School

A children's environmental education program was designed and introduced at the Maquipucuna Reserve as a model program for the Choco-Andean corridor. A major project goal was to guide teachers and children (as well as parents) into understanding and valuing the wonderful world of plants, birds, insects, and the complex relationships within the rainforest, while presenting basic concepts such as plant and animal life cycles, pollination mechanisms and the value of soil. The *Maquipucuna Naturalist Program* (MNP) introduces the organisms at the Reserve while highlighting issues affecting these organisms and the ecosystems they are a part of. The program formed the foundation for weeklong environmental camps and field trips for students from local and Quito schools from 2nd to 8th grade. A complementary *Maquipucuna Naturalist Program* for adults provided training for local guides/ program leaders.

The children's program is likely to grow in the future, because several organizations are adopting the Naturalist Program, and it is already paying for itself. Private schools from Quito participate in the program paying a small surcharge allowing the participation of poor local schools; yearly over 1,000

[7] COFENAC (Consejo Cafetalero Nacional)
[8] International Center for Research in Agroforestry (**ICRAF**), Kenya & the East-African American Business Council.
[9] APROCANE (Asociación de Productores de Cacao del Norte de Esmeraldas)

children continue participating in these activities. And, the National Green Vigilance and PROBONA[10] have adopted the Naturalist Program. There is also evidence of growth internationally. The Naturalist program was developed by partnership between Maquipucuna and The State Botanical Garden of Georgia and the Institute of Ecology, both at the University of Georgia, Athens. In addition, building on this partnership, a new international initiative is initiating. "Our Shared Forests: Georgia and Ecuador's bird connection" will promote bird conservation and will provide practical tools for teachers and children from schools in Georgia and Ecuador, and to coffee and cocoa farmers of the Choco Andean region.

As the number of children and people involved in education grew, so did ideas. Throughout the project, the conception of environmental education evolved into a new paradigm for total education; where children first learn basic environmental concepts and thinking skills, while adults learn practical skills to produce sustainably and to create sustainable communities. As originally planned, the project carried out training through workshops and outreach programs. Soon it realized. There exists large demand for technical assistance; neither short term projects, or a weak public education system can fulfill it. The themes taught were relevant – leadership, organic agriculture, crafts making, business administration, ecotourism, bamboo management, etc., but to have sustainable and widespread impact training must be institutionalized.

Through the feasibility study for the Choco-Andean Institute for Sustainable Systems (CAISS), conceived was the mechanism for institutionalizing training. In its development participated numerous communities from the corridor and other focus groups interested in rural education. Unanimously, the participants envisioned the CAISS as the vehicle to enhance the quality of rural education in ecologically significant areas – that is a key to the long-term reconciliation of environmental conservation, social equity, and economic growth. Thus, they envisioned graduates having the skills not just to survive, but to succeed in the modern world in a way that maintains the unique ecological and cultural environments that they are part of.

To make it feasible in the short term, CAISS infrastructure will build on what already exists. Physical infrastructure includes a training center, coffee and cocoa processing stations and the Orongo Agro-ecological station. In terms of human resources, a volunteer program attracts qualified people from different parts of the world to cooperate with the project. Funding will be sought to develop and adapt curricula and for seed operational investments, only until CAISS has a system to overcome the intrinsic cultural gap and temporal nature of volunteering; because the school has been envisioned as a living sustainable system with financial sustainability as a goal from the onset.

xv) Ecotourism

The project contributed to consolidate existing ecotourism operations through extensive training, by providing radio communications, by placing signs and by fomenting the process of certification – Maquipucuna, Yunguilla, and Bellavista were eco-certified by the Ministry of Tourism. It also developed a feasibility study for a new community based ecotourism project in the community of Alaspungo.

Establishing new ecotourism operations is becoming more difficult. Dollarization has increased costs of operation; competition has risen significantly, in both Ecuador and elsewhere; and, the number of tourists has decreased after September 11. Along the border with Colombia are the areas of the Corridor where the scenic and cultural richness justify promoting new ecotourism; unfortunately, tourists are discouraged to go there. In the mean time, immediate replication of training, and support in marketing and communications should be provided to the ecotourism project of Playa de Oro, an Afro-Ecuadorian community east of the Cotacachi Cayapas Reserve.

[10] PROBONA – Programa Bosques Nativos Andinos – Intercooperation-FOSEFOR

4. Stakeholder Involvement

The term stakeholder includes people who live within the corridor as well as people whose professional lives are linked to the corridor. The latter group might include policy makers, investors, researchers, or educators, among others. A wide range of stakeholders was involved in project design and implementation in all possible ways. Through town meetings; meetings with producer associations; talking with local, state, and national officials; hosting workshops; Maquipucuna, as much as possible, tried to engage stakeholders in all phases of a project, from design through implementation.

This intense level of stakeholder involvement leads to a strong sense of community ownership of projects and it leads to stable support (though not necessarily financial) from the local and national government. However, it is extremely time and labor intensive and thus limits how many communities a project can engage. In addition, interests can be very different, even contradicting, among stakeholders.

One approach is to aggregate communities that share similar interests and then work with a group that contains representatives from each community. That was the approach taken with coffee, which worked because there was a strong incentive to participate, a market for their coffee.

On the other hand, other than increasing staff, there is no satisfying alternative to generate true appropriation of community planning. That involvement was achieved, and required intense outreach at the individual community level. However, that didn't mean that all NGOs or other political organizations would have interest in participating at that level of planning, or would be interested or supportive of the plans.

The lessons learnt are that in order to involve communities, conservation projects must provide them with strong incentives to participate with vision for both the short term and long-term, and that getting agreement of all stakeholders, is not always possible, nor necessary. The most fundamental aspect to keep in mind is that conservation represents to local landowners the foregone opportunity cost to deforest, and often an additional economic burden when there is a cost to protect the land. Thus, conservation incentives must be developed focusing on mitigating the economic burden that conserving forested land represents to landowners.

5. Monitoring and Evaluation

The original logical framework and the progress annual targets were the basis for monitoring and evaluation. The annual operating plans followed the progress annual targets attachment to the MSP grant. The project staff met at least on a monthly basis to share results, concerns and to coordinate activities. At the community level, an annual operating plan was drawn with each community involved, and at the end of the year before drawing the next operating plan there was a joint evaluation. The Bank management team met with the project staff every semester and carried out an extended evaluation exercise, which included the review of half-year progress reports and meetings, as well as field visits.

The most challenging aspect of planning and monitoring this project was its broad interdisciplinary nature, and its different approaches that unfolded in a dual scale in collaboration with stakeholders with apparently disparate interests. Several consultants didn't stand to the challenge due to lack of commitment or limited professional backgrounds that didn't stand out during personnel selection. To track so many activities, and to bring everyone together, during the second year considerable effort was devoted to entering the project into Microsoft project. That effort was abandoned, because it was not possible train all staff to use the software, and instead a simplified template progress chart for activities, means of verification, costs & resources and observations was handed to each component coordinator. Internal SWOT (strengths, weaknesses, opportunities and threats analysis) workshops, revealed a weak policy and insufficient investments in communication.

Towards the end of the MSP, each component had achieved more structure, and as preparation to function with financial self-sufficiency, a new dimension to financial monitoring and evaluation was introduced within Maquipucuna. Activities are assigned to various cost centers to track profits and losses on a monthly and quarterly basis.

The environmental monitoring protocols are straightforward and, at this time, no major changes are anticipated. However, in cases where the community is primarily responsible for conducting the monitoring (e.g., the stream visual assessments) there is concern that monitoring may become haphazard or stop altogether over time unless there are incentives to continue the process. These incentives may range from monetary compensation to partnerships (e.g., technical support) and all these options are being explored.

6. Special Project Circumstances

Great creativity and effort were needed to deal with dollarization and inflation (inflation in dollars reached over 20% in yr2), which increased costs of personnel, construction materials, and operation. The raising price of gasoline during the last year (~$2/gallon) was a major financial burden; it was overcome by optimizing and reducing the frequency of field visits. The salary level the project could offer dropped and was not sufficient to attract the highest caliber professionals originally planned; some more capable people ended up bearing extra responsibilities. Nonetheless, increased costs didn't affect expected outcomes.

The construction of the new heavy crude oil pipeline (OCP) across part of the project area was another important unforeseen circumstance was. Much effort of the Bank management team and of the project coordination was invested in following up OCP's environmental performance, to ensure that the pipeline would not affect project outcomes, and to ensure good communication with a series of stakeholders concerned about the impact of the pipeline in the project area. The Government of Ecuador designed OCP's compliance with World Bank's Environmental Safeguards as OCP's main environmental benchmark.

The perceptions of the risks posed by the construction of OCP were bigger than the actual risks. For instance there were no risks to the town or river Mindo from construction or operation. The risks of OCP destroying the Black Breasted Puffleg remaining habitats were minor. By comparison, the risks posed by local's charcoal production or land speculation are far more important and require urgent attention. The activists' campaign influenced perceptions of risk by local people and media, and about the role of different institutions.

For the area where OCP affects the Corridor, Fundacion Maquipucuna played a key role in a negotiation between NGOs and the pipeline company. The establishment of a USD 16.9 million environmental eco-trust for the entire pipeline was the result of that negotiation. Some trade offs were made. WB reallocated management resources to provide expert assistance to deal with the OCP issue. The coordinator focused on the OCP Ecotrust, instead of an eco-trust for the entire corridor. Funds from the OCP Ecotrust will be instrumental for the long-term protection and conservation of the Mindo and Cuenca Alta Forests, by tackling the short term serious threat posed by charcoal production, patrolling protected areas, monitoring water quality, to be ready, in the event, of an oil spill.

7. Institutional Capacity / Partner Assessments

The implementing agency, Fundación Maquipucuna is an NGO established 15 years ago, with strong financial management capacity and with a strategic long-term commitment to the conservation of the project area; so project planning and implementation benefited from Maquipucuna's proven track

record. Yet, approaching eco-regional conservation through activities that unfolded in parallel at different spatial and temporal scales, achieved a level of complexity that has tested every institutional aspect of Maquipucuna, and there are several lessons worth sharing.

i) Partnerships – Communities or NGO's

During planning, Maquipucuna was capable of involving a large number of stakeholders, conservation NGOs, government officials, scientists, and communities. Indigenous communities, in possession of large holdings of forestland, were involved during implementation.

The project produced and reinforced long-term agreements between Fundación Maquipucuna and communities and owners of mature forestlands and agricultural lands critical for the connectivity of the corridor, over an area of influence of about 300,000 ha.

Despite the initial enthusiasm of some national and international NGO's, stronger relationships resulted at the grass roots level. Whereas, the Choco Andean the working group didn't become the productive partnership of NGOs that was expected. Maquipucuna's leading role faced competitiveness and resistance from NGOs that had their own agendas. There was reluctance to share information about their projects, and existing geographic information was not readily shared.

To outweigh these difficulties, Maquipucuna could have used a more distinct and consistent communication strategy. Effectiveness of communication was hindered because three different consultants were assigned to the task, unlike the community relations program, which was carried out consistently by the same person. In retrospect, it is also believed that if more funds were explicitly allocated to public relations at the institutional level – planning-workshops don't necessarily serve the purpose of public relations- the project would have achieved more NGO supporters.

ii) Partnerships - Government

Without question, the government must be a key player in an eco-regional strategy for conservation, and Maquipucuna had experience in dealing with different instances of the government, yet had mixed results in this project.

Planning and introducing long-term commitments into the government are uncertain challenges. Maquipucuna tried to get the of National planning at the Vice Presidency of the Republic of Ecuador to participate in the definition of the conservation guidelines of the Choco Andean Corridor, and to use that framework to organize conservation and development initiatives in the northwestern provinces of the country. The office of planning was actually interested in participating in the definition and adopting the guidelines, however the end of the presidential term came about (end of year 2) and by the time the new government was established, the MSP grant was over. A similar situation occurred to the environmental information system. The intention was to get the Ministry of Environment to include the Choco Andean information system within the National Environmental System at the Ministry of Environment. An alliance of 13 NGOs was underway. Maquipucuna would have been the node for the Choco-Andean Region. However, after the change in presidencies in January 2003, new Ministries of Environment have taken the appointment, on average, every quarter. Resuming and concluding both initiatives will demand that Maquipucuna counts with sufficient funds to carry them through.

Collaborating with the government in discrete instances was easier. Co-sponsoring the I National Congress of Protected Areas, Maquipucuna and the Ministry of Environment interacted positively; Maquipucuna run the National Workshop on Corridors that produced the national principles or guidelines for Conservation Corridors. Another example, is Maquipucuna's prominent role as the Vice-President of the Board of Directors of the Green Vigilance, a national organization to control illegal logging integrated by the Minister of Environment and four other NGOs and where the Ministry of Environment is by default the president.

With more stable governments, such as the Municipality of the Quito Metropolitan District, the experience was positive. The municipality was an instrumental partner for reforestation, and will

continue supporting reforestation even after GEF funding. The municipality purchased the plants produced by Maquipucuna and the communities, and Maquipucuna provided technical assistance and monitored reforestation.

iii) Partnerships – Research Institutions

The partnership with the University of Georgia was strengthened by the project. The University of Georgia (UGA) is a Land Grant Research Institution, and as such is as multidisciplinary institution with incalculable academic and practical resources for a complex eco-regional endeavor as the Choco Andean Corridor. The project coordinator divided her time between Ecuador and Maquipucuna's liaison office at UGA's Institute of Ecology, an arrangement that greatly enhanced the outcomes. Maquipucuna's USA office played a key role as logistic support and as a bicultural and bilingual catalyst fostering a fruitful relationship between UGA scientists and Maquipucuna's outreach specialists, and allowing Maquipucuna to tap into UGA's diversity of resources. Maquipucuna's office is also in charge of marketing Choco Andes products.

Through the collaboration with UGA's State Botanical Garden GASBG Maquipucuna developed an Environmental Education program building on GASBG's decades of experience. The program and the partnership were so successful that is expanding into an international environmental education initiative: "Our Shared Forests: Georgia and Northwest Ecuador's bird connection" that is reinforcing marketing of coffee.

The relationship with the Atlanta Botanical Garden was also enhanced by Maquipucuna's presence at UGA. Maquipucuna's President serves as a trustee for the Atlanta Botanical Garden (ABG), ABG is collaborating with both research and selling tissue culture orchid and bromeliads and has pledged support in continued fundraising efforts.

Besides UGA, Maquipucuna also interacted with several research centers and universities across the globe (INIAP-Ecuador, USAID's CRSP-IPM, University San Francisco de Quito, UTE and PUCE in Ecuador, and various from England, Sweden, Japan, USA, Germany, Holland, Switzerland). Outstanding are the collaborations of the University of California at Davis (botanical studies have continued for 15 years) and Oxford University (Avian Monitoring).

iv) The Butler Foundation

Commitments of the Butler Foundation to conservation and to the institutional growth of Maquipucuna are the pillars for Maquipucuna's achievements. The positive characteristics of this foundation are its non-bureaucratic nature in its involvement with Maquipucuna. In addition to a substantial match in cash to the GEF grant, especially for land purchase, protection, and the development of ecotourism infrastructure, the Butler Foundation's contribution that is more especial is its commitment to Maquipucuna's long-term institutional development

III. SUMMARY OF MAIN LESSONS LEARNED

- **Be conservative when setting objectives for eco-regional conservation,**

Local farmers through day-to-day decisions shape land use change. They must take decisions fast, individually impact small areas, but their cumulative impact is the most important driver of land use change. Therefore projects should focus on working with farmers if the objective is to achieve short term visible results, but keeping in mind the limitations of that approach. The investments required to provide sufficient support to each community, and a variety of other project-specific factors, renders the eco-regionalization of the community experience cumbersome and costly. In other words, the process of project replication, is not a linear one.

Indirectly, regional, national and foreign policies influence farmers decisions over large areas, but they will take time to be agreed upon. Therefore, success at one scale is not necessarily perceived as success at all scales. For instance, the project met communities frustrated about their experience with previous eco-regional projects –otherwise considered successful by their funding and implementing agencies- which only produced studies, planning and meetings, and didn't concrete visible short-term improvements.

We learned that it is possible and necessary to intervene at both scales, but leading all stakeholders to regional consensus' is a complex process not realistically achieved in the short term. While this project was more successful at identifying local and community level conservation opportunities and achieving their commitment; the time period of the GEF grant was not sufficient to institutionalize the Choco Andean Corridor at the government or national levels. In other words, it was hard to maximize both objectives- community impact and ecoregional impact- at the same time.

- **Innovative methods of conservation and development are best left to those people who will carry them out and who will ultimately gain or lose from the outcome. Therefore, focus resources on stakeholders that directly influence land use change.**

Conservation for whom and conservation by whom? Getting agreement of all stakeholders, is not always possible, nor necessary. In the region we found many actors with a Conservation agenda, which didn't address concerns of the communities responsible of land use decisions. The most critical aspect to keep in mind is that conservation of forests represents to local landowners the foregone opportunity cost to deforest, and often an additional economic burden when there is a cost to protect the land. Thus, conservation incentives should be developed with their involvement, focusing on mitigating the economic burden that conserving forested land represents to landowners.

Although, investing on research, planning and studies is important, if the goal is achieving conservation in the short term, there should be more direct investments in conservation, such as land purchases for conservation, clarifying land tenure, paying for conservation easements, creating long term funding mechanisms to finance the costs of protection and maintenance, and on strengthening institutions to sustain conservation projects locally.

Forging strong community relationships, with communities, which are the actual land use decision makers is particularly important in the Choco Andean Corridor, where land use decisions are taken by disappointed communities and farmers not represented by NGOs.

- **Communities with strong social fabrics can be stronger partners for conservation**

Strong social fabric, which includes responsible leadership, good capacity to establish dialogues among community members, accountability of the local authorities, capacity to set long term goals, and pride in their community, make a fundamental difference on the

Training had most impact on communities with higher degree of social organization. In those communities training generated economic opportunities faster, as was the case of Yunguilla for which a field trip to a community cheese factory was sufficient motivation to start their own.

Objectives of projects should be adjusted according to an analysis of social capital of the communities.

- **Engaging communities successfully requires that conservation projects provide them with strong incentives to participate, and a strong market based approach is one the most efficient ways.**

Where the objective is to implement economic alternatives to deforestation, and communities are involved in production for the market, the likelihood of sustainability is good only as long as the market demand is strong. In other words, it's not worthy attempting economic activities –sometimes chosen by the same community- if there aren't markets or cost effective marketing and commercialization mechanisms for the products of conservation. For example a new ecotourism operation should not be initiated in Alaspungo, until the other operations in the region are consolidated and increased the market

share of tourists going to the region. Along the same line, instead of starting a new ecotourism project for Palmitopamba, where there are archeological ruins under study- which in the medium term will likely become a great attraction- the focus should be placed on developing additional packages including the archeological site for tourists already visiting Maquipucuna, Sta. Lucía, Mindo o Yunguilla.

Initially the project was allocating a lot of human and financial resources to product development and marketing of crafts, jams and organic vegetables. The limited demand, the expensive cost of production, and expensive effort of marketing those small volumes rendered the process unsustainable, so the project changed the focus to products that that can involve a larger number of people in the production because they have wider demand, such as shade grown organic coffee, shade grown organic cocoa, and native bamboo.

- **The World Bank**

The World Bank's GEF staff, both in Washington and in Quito, played a constructive role during project planning. Their advice was insightful and professional, and Maquipucuna benefited greatly from the interaction. During implementation, the management team from the World Bank was firm, yet flexible, when minor changes where well justified. During the first year, they were ready to advise and to discuss changes.

Other Lessons

- Do not expect local people to become overnight entrepreneurs
- Reaching economies of scale in marketing and commercialization are requirement for finantial sustainability
- A long term scientific monitoring program demands the commitment of established research organizations
- Reduce dependency on external processes that can't be controlled. For example, efforts to deal with the politics surrounding the OCP fund diverted time away from other projects
- Avoid falling into bureaucracy and commodity of following a rigid work plan
- Two important lessons learned are: try to anticipate how external events can influence your objectives and then create contingency plans.

IV. FINANCIAL MANAGEMENT STATUS

Period June-December 2000

The Financial Management Specialist reviewed the audit report issued by the firm Deloitte & Touche covering the period from June to December 2000. The financial statements and audit report presented by Fundación Maquipucuna complies with Bank standards.

Audit opinions. The auditors issued an unqualified (clean) opinion on the Statement of Sources and Uses of Funds and the Statement of Cumulative Investments, and on the Special Account Statement, and the Internal Control Report has reportable conditions. All of the information detailed above was provided by the auditors however the Letter of Agreement requires only a Special Account Opinion.

Compliance issues. In general, the auditors found that F. Maquipucuna complied with the terms of the agreement and applicable laws and regulations.

Overall conclusion. This report contains the information required and the figures shown for funds received in the special account during the period from June to December 2000, match with Bank records. However, some aspects regarding F. Maquipucuna have to be addressed to the Bank as follows:

a) Section 3.2 (the report and auditor's opinion for the final period in which Grant funds are expended will be provided within six month of the date of the last such expenditure) of the contract was not complied by F. Maquipucuna.
b) The auditors issued some internal control recommendations, the Bank followed up on the implementation of such recommendations. All of them were satisfactorily implemented.

Period January-December 2001

The Financial Management Specialist reviewed the financial statements' audit report of the Choco Andean Corridor Project for the period ended December 31, 2001 issued by the firm Deloitte & Touche.

Project Financial Statements:

Acceptability: The report has been prepared in accordance with the Grant Agreement requirements. However, the FMS suggested that for future audits Terms of Reference should be submitted to LCOAA for clearance to ensure that Bank guidelines are followed.

Audit opinions: The auditors issued unqualified opinions on the Statement of Sources and Uses of Funds; and on the Special Account Statement.

1. According to the Audit Report there are ineligible expenditures by US$1,571 corresponding to tax payments.
2. The audit report sets out US$144 thousands corresponding to inadequate support documentation (invoices) of consultant payments according to the local law requirements.

Compliance: In general, the auditors found that F. Maquipucuna complies with the terms of the agreement and the applicable laws and regulations, however there is an incompliance of the clause 3.2 of the Grant Agreement.

Internal Controls: Internal controls have been evaluated as satisfactory, nevertheless there are some recommendations from auditors that need attention from the project:

- The audit report was supposed to be submitted on April 30, 2002, however it arrives on September 16, 2002.
- Consultant payments without adequate support documentation (no invoices) – US$144 thousand ; tax payments – US$1,571; expenditures of 2000 registered in a 2001 – US$5,000 and old advance payments accounts.

Recommendation and Action Plan to mitigate risks : As a result of the audit report review, The Bank recommended the following action plan.

2.

Inherent Risk	Activity	Target date
External Audit	Submit the audit report for the year ended December 31, 2002 on time, to comply with the clause 3.2 of the Grant Agreement.	04/30/2003
Consultant Payments	Implement a monitoring procedure in order to obtain adequate support documentation.	11/07/2002
Tax payments	We require the immediately replenishment of the amount utilized to cancel taxes.	11/07/2002
Terms of Reference	Terms of Reference should be submitted to LCOAA for clearance to ensure that Bank guidelines are followed.	11/07/2002

The action plan to mitigate risks was duly implemented. The amount used to pay taxes was replenished to the Special Account and acceptable support documentation for consultants payments was provided.

Period January 2002-July 2003

The FMS reviewed the financial statements' audit report of the Corredor Choco Andino Project for the period ended January 1, 2002 to July 31, 2003 issued by the firm Deloitte & Touche.

Project Financial Statements

Acceptability: The report has been prepared in accordance with the Grant Agreement requirements and Terms of Reference reviewed by LCOAA.

Audit opinions: The auditors issued unqualified opinion (clean) on the Statement of Sources and Uses of Funds; the Statement of Cumulative Investments; and Statement of the Special Account.

Compliance: In general, the auditors found that Maquipucuna Foundation and Corredor Choco Andino Project comply with the terms of the Grant Agreement and the applicable laws and regulations.

Internal Controls: Internal controls have been evaluated as satisfactory.