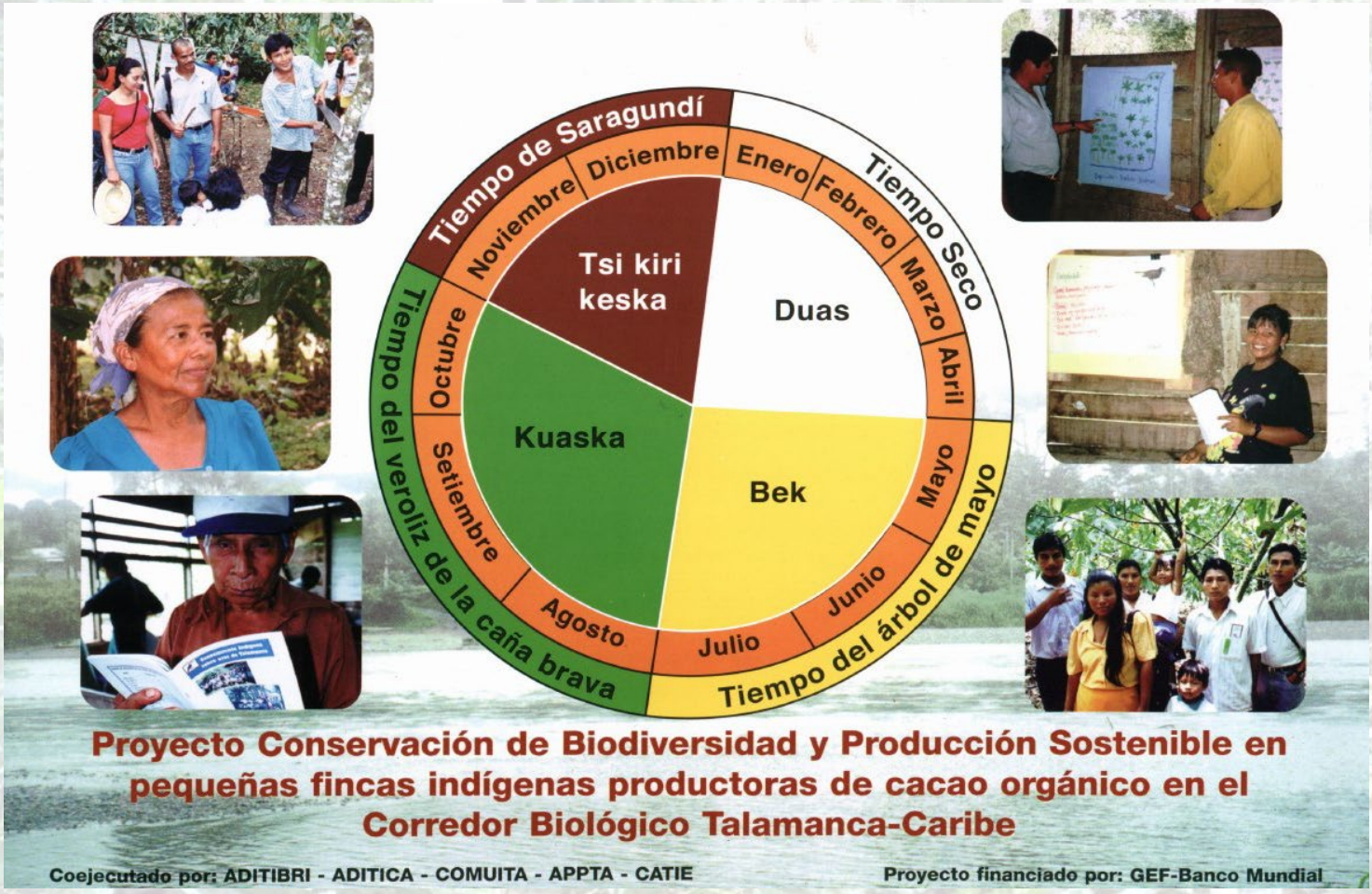
BIODIVERSITY CONSERVATION AND SUSTAINABLE PRODUCTION IN SMALL, INDIGENOUS ORGANIC CACAO FARMS IN THE TALAMANCA-CARIBBEAN CORRIDOR, COSTA RICA



COMPLETION REPORT

2004

Region: LAC
Country: Costa Rica
Project ID: P061315
Grant No. TF027789

GEF Medium-Size Project:

BIODIVERSITY CONSERVATION AND SUSTAINABLE PRODUCTION IN SMALL, INDIGENOUS ORGANIC CACAO FARMS IN THE TALAMANCA-CARIBBEAN CORRIDOR, COSTA RICA

May, 2004

Central America Country Managing Unit
Environmentally and Socially Sustainable Development Sector Unit
Latin America and the Caribbean Region
The World Bank Group

ACRONYMS

ABACO	Bordon Conservationist Organic Agriculture Association (*Asociación de Bordon para la Agricultura Conservacionista y Orgánica*)
ACAPRO	Organic Producers Association *(Asociación de Productores Orgánicos)*
ACRI	American Cacao Research Institute
ADITIBRI	Association for the Development of Bribri Indigenous Territories *(Asociación de Desarrollo Integral de los Territorios Indígenas Bribri)*
ADITICA	Association for the Development of Cabecar Indigenous Territories *(Asociación de Desarrollo Integral de los Territorios Indígenas Cabecar)*
APPTA	Talamanca Small Producers Association *(Asociación de Pequeños Productores de Talamanca)*
BCIE	Central American Bank for Economic Integration *(Banco Centroamericano de Integración Económica)*
CABI	Commonwealth Agricultural Bureau International
GTZ	German Agency for Technical Cooperation (*Deutsche Gesellschaft fuer technische Zusammenarbeit*)
CATIE	Tropical Agricultural Research and Higher Education Center *(Centro Agronómico Tropical de Investigación y Enseñanza)*
CNP	National Production Council *(Consejo Nacional de la Producción)*
IGERT	Integrative Graduate Education and Research Traineeship Program (University of Idaho)
INBio	National Institute for Biodiversity *(Instituto Nacional de la Biodiversidad)*
MAG	Ministry of Agriculture *(Ministerio de Agricultura y Ganadería)*
MINAE	Ministry of Environment and Energy *(Ministerio de Ambiente y Energía)*
OCP	Organic Commodity Project
PFA	Agricultural Frontier Program *(Programa Frontera Agrícola)*
RUTA	Regional Unit for Technical Assistance
UCR	University of Costa Rica *(Universidad de Costa Rica)*
UNA	National University, Costa Rica *(Universidad Nacional, Costa Rica)*
USDA	United States Department of Agriculture
WB	The World Bank
WWF	World Wildlife Fund

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Annexes

GEF MSP IMPLEMENTATION COMPLETION REPORT (ICR)

I BASIC DATA

(1) Date of Completion Report: May2004.

(2) Project Title:
Biodiversity conservation and sustainable production in small, indigenous organic cacao farms in the Talamanca-Caribbean Corridor, Costa Rica, TF027789

(3) GEF MSP Allocation: $ 725,000

(4) Grant Recipient/Main Contact:
CATIE—Tropical Agricultural Research and Higher Education Center (*Centro Agronomico Tropical de Investigacion y Enseñanza*)/ Eduardo Somarriba

(5) Performance Period:
February 2001 – February 2004

(6) World Bank Task Manager:
Juan Martinez / Shelton H. Davis

(7) Goals and Objectives of the MSP grant

Costa Rica ranks among the world's "mega diversity countries." The project was located in the Talamanca-Caribbean Corridor of Costa Rica; a region inhabited by people of indigenous, Latin mestizo and Afro Caribbean origin, in the Talamanca and Siquirres municipalities in the Atlantic zone. This area is host to a unique mixture of endemic and exotic flora and fauna, including more than 10,000 species of vascular plants (incl. more than 1,000 orchid species), more than 4,000 species of nonvascular plants (incl.1,000 different ferns), about 59 species of mammals (13 endemic), 43 amphibian species, 51 reptile species (10 endemic), and more than 350 different species of birds (15 endemic). The region is threatened by commercial banana production, non-sustainable extraction of timber and non-timber products (palms, fishing and hunting), logging of natural forests, and conversion of forestland to agricultural production. This project was part of a wider approach seeking to enhance habitats though productive measures.

The overall objective of the project was to promote and maintain on-farm biodiversity while improving the livelihood of organic cacao producers (indigenous, Latin mestizos and Afro Caribbean) in the Talamanca-Caribbean corridor of Costa Rica.

The specific objective of the project was to improve the management of cacao-based poor indigenous small farms according to both ecological and organic production principles by (i) increasing the number of indigenous and non-indigenous small farmers supporting biodiversity conservation within diverse, structurally complex cacao agroforestry ecosystems, (ii) increasing use of on-farm production practices that favor biodiversity-friendly organic cacao production and that stimulate markets for biodiversity-friendly products, (iii) strengthening, and improving organization of local indigenous associations in order to maintain indigenous socio-cultural values and traditional land use management, and (vi) collecting, systematizing, and synthesizing ecological information for the development of guidelines and practices for biodiversity-friendly organic cacao production.

(8) Financial/Budget Information.

Table 1 shows changes from the original financing plan, including co-financing with key components (initial and final allocations). Table 2 shows key discrepancies in the sources of planned and actual co-finance.

Table 1. Summary of GEF funds, planned and actual

Project component	**Planned US $**	**Actual BM US $**	**CATIE US $**	**Change %**
A. Promotion and conservation of on-farm biodiversity	41,000.00	38,688.46		6
B. Sustainable production, certification and marketing of biodiversity-friendly, organic products	45,000.00	35,987.79		22
C. Strengthening farmers' and producers' organizations.	84,000.00	209,171.33*1		149
D. Biodiversity monitoring	39,000.00	39,257.76		0
E. Project coordination and management	492,000.00	401,894.54*2	10,216.54	18
Unforeseen expenditures	19,000.00	0		100
Amount not budgeted	5,000.00	0		100
Total	**725,000.00**	**725,000.00**	**10,216.54**	

**1 It includes US$140,000 of APPTA*
**2 It includes US$30,000 of Overhead*

During preparation of the contract for execution by the implementing agency, management of GEF-financed expenditures was greatly enhanced, when the planned expenditures by project category were carefully examined and jointly revised by the implementing agency, its partners and the World Bank. The most significant change in planned expenditures was to explicitly account for the project's administrative and management costs as a separate category. The project director was a recognized cacao agroforestry specialist and CATIE lecturer, and constituted a non-GEF contribution by CATIE to the project. Actual expenditures by project component (shown below) and by expenditure category were very close to the revised plan developed at the launch of the project.

In-kind co-financing, as planned in the Project Brief, was only 30% the amount anticipated, however, key contributions and their quality could still match GEF funds. While CATIE maintained planned contributions, other sources of co-financing were altered during implementation. During implementation, the project team was able to diversify its sources of financing to include more regional and national-level organizations. Universities proved very interested in the project and contributed by working on topics raised by the project, and also providing funds mostly for materials and operation. Indigenous organizations has also contributed to the project. ACICAFOC, which is a regional organization connecting biodiversity conservation under agroforestry systems in indigenous territories throughout Mesoamerica, has contributed assistance in planning, regional coordination and to the final self-evaluation process of the Project.

Table 2: Summary of contributions to the project (US$)

Project Contributors	Planned	Actual	Application
CATIE	357,000	338,100	Project director, use of vehicle and other laboratory services, technical assistance, students researching special project topics, extra operational funds
Universities		72,000	Student theses, sustainable production and biodiversity courses for farmer groups, advisory services, operational funds
Indigenous Organizations (ADITIBRI, ADITICA, COMUITA)		11,000	Meetings on planning, coordination, leading social and technical processes and events and final evaluation, meeting infrastructure
APPTA, ACAPRO, ABACO, others	250,000	124,000	Agroforestry extension, technical assistance, certification, processing and marketing of organic cacao and fruits, meeting infrastructure, administrative and managerial support
ACICAFOC		26,600	Assistance in planning, regional coordination and exchange of final self-evaluation process in the region
USDA, CABI, ACRI, OCP, PFA, WWF, GTZ, MINAE, INBio	1,036,000		
PROARCA - APM		3,600	Publications, technical assistance
Producers	650,000	176,250	Participating in social and technical events, implementing activities of all components of the project, reflecting on technical aspects with visitors
TOTAL contributions	2,293,000	751,550	
GEF	725,000	725,000	Incremental cost
Total project cost	3,018,000	1,476,550	

Planned, in-kind co-financing from USDA, CABI, ACRI, OCP, PFA, WWF, GTZ, MINAE, and INBio were not mobilized. The absence of their contributions was due to changes in strategy—focusing on local coordination and defining local organization before seeking external cooperation. Still, every US$ of GEF funding earned another US$ in contributions from partner organizations.

II PROJECT IMPACT ANALYSIS

(1) Project Impacts:

(a) As to objectives:

The project made a significant contribution in conserving globally significant biodiversity in indigenous cacao agroforestry systems. The activities and recommendations of this project have made it possible to include over 400 families as direct beneficiaries. The activities conducted with these families included rehabilitative pruning of trees in their cacao agroforestry plantations; 134 enriched their shade canopies by introducing timber species, both native, valuable, and at risk; 314 producers diagnosed their cacao plantations and developed and applied a rehabilitation plan; 65 farms improved their fruit germplasm through the introduction of air layers of improved varieties of rambutan (*Nephelium lappaceum*); and four cacao clone gardens were established to provide bud wood and rootstock for the future widespread use of grafted cacao in Talamanca. The project identified those agroforestry cacao systems that needed immediate intervention at the family/community level to reverse the degradation of these ecosystems.

(b) As to performance indicators

The following description is presented by project component, using a table format comparing indicators to progress achieved.

Objective/Outcomes	**Indicators in project brief / changes of indicators and reasons**	**Results**
Project Goal: Promote and maintain on-farm biodiversity while improving the livelihood of organic cacao producers (indigenous, Latin mestizos and Afro Caribbean) in the Talamanca-Caribbean corridor of Costa Rica.	Monitoring program to determine species richness and abundance of key indicator groups (e.g., birds, mammals, butterflies, and plants) in established and operational agricultural landscapes. At least 300 cacao plantations rehabilitated according to ecological and productive guidelines. At least 900 local farmers and 10 local organizations supported through technical workshops and farmer-to-farmer extension programs. At least 50 local indigenous farmers trained and capable of monitoring biodiversity on their farms.	Monitoring program (intensive y participatory) carried out: data collections updated, analyzed and partly published. Rehabilitation and improvement of 344 cacao farms More than 150 producers have gained capacity to monitor birds, mammals and during beetles More than 20 local and international organizations benefited/strengthened by project activities.
Results / Components of the Project		
(1) Promotion and Conservation of on-farm Biodiversity.	Four communal tree nurseries and 300 farm nurseries established and propagating useful native plant species	Superior cacao germplasm from 4 clone gardens with international varieties and superior trees of Talamanca is becoming available. Two communal nurseries are established in the Project area. Introduction of native forest species on 134 farms for wood production. Introduction of quality fruit trees on 65 farms. Four experimental plots of pruned cacao (1,000 plants) on two demonstration plots established. Inventory of fruit trees with economic potential completed and shared will APPTA. Database on fruit trees updated.
	Training materials produced, which incorporate local knowledge and are culturally appropriate for educating local communities	All of the materials have been produced in consultation and participation with the co implementing agencies and the team of promoters. The subject of cacao is of utmost importance in the history, culture, society and economy of the Bribri-Cabecar tribes. (Carlos Borge, 2004) Integration of cultural dimension and perspectives was attempted, perception by indigenous members of households to be tested.

Objective/Outcomes	**Indicators in project brief / changes of indicators and reasons**	**Results**
	At least 600 local farmers and 10 organizations trained and educated in biodiversity conservation	Thirty-seven training sessions attended by 670 people, on topics of: diagnosis and farm planning, useful species on cacao farms, superior cacao trees, shade management, introduction of fruit and timber trees on cacao farms. Two Master's theses completed, and one graduation thesis in progress. 314 producing families in 12 communities now have the capability to diagnose their farms.
(2) Sustainable production, certification and marketing of biodiversity-friendly, organic products	Increased number of farms using organic fertilizers and using biodiversity-friendly methods for controlling monilia pod rot	Agroecological cacao production system is strengthened and improved on more than 400 farms. Research on cultural practices to control monilia pod rot finalized and resulted shared with producers and technicians. More than 500 producers visited rehabilitated demonstration clonal farm in Charagre, Panama.
	Biodiversity-friendly organic cacao production improved in 300 local farms; with 600 superior cacao trees propagated, organic fertilization and biological control of monilia pod rot validated, and better post-harvest practices implemented.	Twenty-three community promoters provide technical assistance to producing families regarding rehabilitation and better post-harvest practices. More than 400 farms improved cacao production and maintenance techniques. Education, training and team follow-up, 23 promoters to provide technical assistance to producers, farmer-to-farmer methodology. Study of 33 superior cacao trees underway by promoters and farmers. Demonstration plots with more than 1,250 superior cacao trees established in five communities. Improved cacao fermentation and drying processes on more than 300 farms. Based on this process, and to strengthen the cultural practice of chocolate making, artisanal production by micro-business is encouraged to increase the added value of the production. More than 150 people were trained. Two women-run micro-businesses (Watsi and Shiroles) sell chocolate regularly and successfully. Forty producers trained and producing organic bananas for fresh fruit on 30 hectares certified by ECOCERT and ECOLÓGICA. Brochure on 5-step cacao pruning published.

Objective/Outcomes	**Indicators in project brief / changes of indicators and reasons**	**Results**
	Organic cacao yields of participating farmers double to 400kg/ha in 6 years using biodiversity-friendly management practices	Improved management conditions on 344 farms. APPTA strengthened production management, improving its management capacity. Increased the cacao purchase volume compared with 2002 from 40 tons to more than 50 tons (taking into account that a competitor company is estimated to have bought more than 40 tons). Working groups, as cultural organizations, rehabilitated more than 344 farms, or approximately 300 hectares. Seventy-three training events were held, with the participation of 1,360 people, on topics of sustainable timber extraction, commercialization and certification of organic cacao and banana, cacao rehabilitation, layering and grafting, organic inspection, agroecology, tropical fruits, organic banana management for export as fresh fruit.
	Local information center providing services to local farmers and organizations to support improved marketing and increased volume of marketed certified biodiversity-friendly organic products	APPTA improves its commercial and productive structure. Certified by ECOCERT, ECOLÓGICA, NOP and Biossuise in order to gain greater capacity to access markets. Has more products and improved the trading volume, trades organic products in the national market since 2001. Certification database updated and used by APPTA. APPTA producer database updated. Six studies on topics of organic cacao and banana trading and certification, analysis of improvements in production, cultural practices to control monilia pod rot. Center not created because telephone network in Bribri is deficient; there are not enough lines available.

Objective/Outcomes	**Indicators in project brief / changes of indicators and reasons**	**Results**
(3) Strengthening farmers and producers organizations	Increased capacity, including indigenous farmers and local communities, to manage natural resources and sustain biodiversity	Advisory Board includes ADITIBRI, ADITICA, COMUITA, APPTA, CATIE and relations between organizations were strengthened. APPTA oriented the project concept, and improved relations with producers. Indigenous Associations are more consolidated. Other organizations have been involved in work Acting Project Advisory Council gives follow up on actions. Managerial capabilities of leaders improved. APPTA successfully trades organic cacao and banana, has improved its infrastructure for marketing and post-harvest processing. COMUITA liaison: production of materials and training on cultural issues, organization and facilitation of eight Community Assemblies, identification of projects and coordination with organizations in Indigenous Territories. ADIS and COMUITA are strengthened and have better communication with the base Self-evaluation at the end of the project carried out by co-implementing agencies, 23 promoters and 150 farmers in a participatory process. Two studies on the impact of the project on Bribri and Cabecar cultures carried out and information shared.
	Increased dissemination of education and training materials relating to community development, maintenance of traditional knowledge and agricultural practices, and correlation between formal Costa Rican laws and regulations and customary indigenous laws.	Field days for producers in six communities with more than 500 producers attending. Draft of the pamphlet on Use of Beneficial Plants in the Indigenous View. Educational calendars were produced for 2003 and 2004, which incorporate community development, traditional knowledge, agricultural practices and Project's results
	At least 300 women and 900 men participating in farmer-to-farmer extension program; at least 180 farmers from other cacao-producing areas visit project area, receive training and educational materials by end of project.	Farmer to farmer training program implemented through community promoters, in which more than 300 families participated. Twenty-four training sessions were carried out, with the participation of 891 people, 100 producers and 71 technicians from Bolivia, 80 producers from Belize and 25 producers from Panama, in which they received instruction, participated in exchanges of experiences and received educational materials from the Project. Special edition of the *Journal of Agroforestry in the Americas* publishes Project content for Latin American.
(4) Biodiversity monitoring	Baseline information on farm biodiversity (e.g., birds, mammals, butterflies, and plants) collected through inventories, which are updated quarterly during project implementation	Communities know about biodiversity on their farms. Increased opportunities for certifying and selling products from Talamanca farms Intensive and participative monitoring carried out of birds, mammals, beetles, bats, and mice. Flora inventory in selected habitats completed.

Objective/Outcomes	**Indicators in project brief / changes of indicators and reasons**	**Results**
	Database on species present on farms and their use of farm habitats as corridors established.	Database of vegetation, birds, mammals, beetles and bats updated and results analyzed and partly published.
	Increased capacity of local farmers to monitor biodiversity in agricultural ecosystems.	More than 150 producers with the ability to monitor indicator fauna. Fifty-two training sessions, with average participation of 500 persons, on topics of biodiversity conservation, mammals, birds and other environmental issues.
	Guidelines for the sustainable extraction and harvesting of plants and wildlife prepared and disseminated.	Priority was placed on monitoring, for which producers are equipped with guides for observing and monitoring birds, mammals, and dung beetles. Recommendations derived for useful and/or endangered species (e.g. timber, suita, hunting).
(5) Project Coordination and Management	Project is well documented and systemized	Project documents are available on CD-ROM; many subjects related to the project have been intensively investigated and are documented in thesis and/or published in CATIE's widely disseminated scientific journals. Midterm evaluation involved stakeholders from various project sites. Final participatory self-evaluation based on evaluation of experiences. Upon finalizing the project, an extensive participatory process of self-evaluation and technical-financial conclusion was carried out, with the participation of outside experts contracted by WB. Participating in the self-evaluation were 150 producers from four communities, the co-implementing agencies and their boards of directors (some 40 members), the team of promoters (23) and the neighboring organizations (20 participants).
	Administrative and financial procedures are carried out according to CATIE and World Bank standards	Administration and financial procedures have been improved through internal and external audits. Flow of funds from the World Bank/GEF to CATIE was interrupted due to adaptation for reporting and quality controls. Flow of funds from CATIE to Project implementation site was under administrative stress because of low revolving fund.
	Local stakeholders support the project politically	The project has gained space in public political discussions and received support from the representing bodies of indigenous territories and local technical terms.

Objective/Outcomes	**Indicators in project brief / changes of indicators and reasons**	**Results**
	Results of the project are widely disseminated to different audiences	Contributions for more than a year to the Biodiversity Conservation Forum, advances and results of Project research were presented to the organizations and technical teams in Talamanca, including two high schools, the central government (in Costa Rica: MINAE, CNP, MAG; and in Panama: ANAM, MIDA, IDIAP), local NGOs (in Costa Rica: ANAI, Talamanca-Caribbean Biological Corridor Association, ACAPRO, UCANEHU; and in Panama: ASAP, COCABO, Biological Corridor). Students from various universities developed their research with the needs of the cacao project, and contributed in a professional capacity to all of the project's work components. The universities include: CATIE Graduate School; University of Wales, UK; Universidad de Nariño, Colombia; Universidad de Costa Rica; Universidad Nacional Agraria, Nicaragua; Universidad Mayor de San Andres, Bolivia; and ENGREF, France. The students produced valuable, up-to-date, scientifically supported information, and disseminated it on a mass scale to several key audiences. By supporting students in the completion of their theses, the Project facilitated the graduation of 16 new professionals in the topics and approaches of the Project. The Project became a destination for many groups of producers, professionals and academics that wanted to understand the experiences and results from Talamanca, in order to adapt them to their own areas of expertise.

(2) Project Sustainability

(i) Building management capabilities in local indigenous organizations

The leaders of local co-implementing organizations have regularly received relevant and updated information about sustainable production and the conservation of biodiversity in the territories under their supervision. They have been participating in project decisions on a monthly basis and have gained decision-making skills regarding common and particular interests for control over resources, distribution of responsibility and evaluation of achievements. For example, research confirmed that more timber from laurel trees than actually authorized could be sustainably extracted from cacao agroforestry systems in Talamanca. Indigenous governments can now safely issue more timber harvest permits without degrading the laurel population.

Knowledge for decisions
The project also carried out a dynamic program of applied-strategic research which provides up to date and relevant information to improve the decision making process at the project coordination unit level, and for the Project Advisory Council. Extensive knowledge sharing of project research and results has been carried out with local communities and institutions including family producers, local leaders, three high schools, local technical teams (government, NGOs, other projects), and the international scientific and academic community.

Coordination strengthened among local organizations
Coordination and collaboration among local organizations APPTA (producers organization), ADITICA and ADITIBRI (local indigenous governments) and COMUITA (indigenous women's organization) has increased considerably. Leaders have conducted a participatory self-evaluation and now have a clearer vision on strategic planning and project operation in the indigenous territories. Experiences from this project now form a foundation on which future projects can be built.

Documentation of knowledge gained
Emphasis has been placed on project documentation. Progress reports are available from a virtual library, project results have been published in many media, including official CATIE series, which are widely distributed in Latin America and accessible to the public over the long term.

Exchange of experiences
Institutional networking and local coordination. A series of workshops, demonstration and training events on many project-related subjects linked local organizations with both the international scientific community and several relevant local projects and organizations.

(ii) New projects (and funding) attracted to Talamanca to complement or expand critical activities

Researching biological pest control and other environmental subjects
Four doctoral studies by students with the IGERT-CATIE-University of Idaho partnership will explore the following topics: biological control of banana weevils in bananas and plantains on indigenous reservations and conventional plantations in the Sixaola Valley; ecotoxicology in Talamanca agroecosystem management; soil and water quality; and large and medium-sized mammal conservation in the local landscape. The contribution of the Idaho research is US$ 0.4 million.

Biologically diverse cacao fields qualify for carbon capture program
The new initiative compensates carbon capture in biologically diverse and productive cacao agroforestry systems (World Bank-MINAE-CATIE) in the Talamanca indigenous territories. This new project will

provide continuity to tree gardens with superior materials, as well as organizational and institutional network development. A two-year endeavor, a new project will create a payment model for the environmental service of capturing carbon (US$ 850,000), and prepare a new 5-year project on the same subject.

Incentive for planting grafted cacao in improved agroforestry designs.
APPTA has received approval for IDB funds to encourage planting grafted cacao in improved agroforestry designs (one of the primary technical recommendations of the Cacao Project) on some 1,000 Talamanca farms (US$1000.000). The IDB project will be three years in duration. APPTA's implementation of this project will benefit from the managerial and operational experience gained, and from the local human resources trained by the Cacao Project.

Production and marketing of organic artisanal chocolate produced by indigenous women
COMUITA has received support to prepare an external financial proposal for PRODOMA (US20.000) to stimulate the development of a microindustry to produce and market organic artisanal chocolate made by indigenous women. The Project brought the new PRODOMA initiative to the Project to stimulate a variety of small projects in local organizations in the Talamanca-Caribbean corridor, whose local coordinator would work under the supervision of the local Cacao Project coordinator.

Commercial micro-projects based on the results of the cacao project and local managerial capabilities.
Commercial micro-project profiles have been developed based on the results of the cacao project. These were presented to the Japanese Embassy in Costa Rica, which has requested that a formal application be presented in the format required by the Embassy's fund to support community projects. These proposals have the technical support of CATIE, at no cost to the indigenous groups who must take responsibility for implementing those micro-projects that receive financing. The amount of financing requested is US$ 120,000, for one year for two micro-projects.

Sustainability through dissemination of information
At the very start, the project was inserted into the Talamanca institutional panorama through several cooperation and joint planning workshops, as well as information exchange with neighboring organizations. A large volume of technical information was published (theses, Journal of Agroforestry in the Americas, Congressional acts), as well as popular information (calendars, biodiversity pamphlets, posters and electronic presentations about the Project), which was massively disseminated in the indigenous territories (to producers, indigenous leaders, technical schools, and local technical teams), and before numerous audiences (courses, conferences, external financing agencies, etc.). The project leaves 23 communal leaders well-trained for sustainable production in biologically diverse cacao agroforestry systems.

(3) Replicability

During implementation, the project interacted with a large number of neighboring organizations. For example, research advances and results were regularly presented to the Talamanca organizations and technical teams, including two high schools, the central government, and local NGOs (see chart in Section II(1)(b) for specific organizations). The Project became a destination for many groups of producers, professionals and academics that wanted to understand the experiences and results from Talamanca, in order to adapt them to their own areas of expertise. The project has been presented at regional and international fora, including two annual meetings of the Mesoamerican Biology Society (2001 and 2002), the Annual Conference of the American Society for Conservation Biology, two annual meetings of the World Cacao Foundation, the world's leading chocolate manufacturers, and is included in the cocoa educational web page of the Chocolate Manufacturers Association of America.

Some of the political, technical and operational strategies of this project are clearly recommended for new initiatives:

- Clearly target actions toward improving family farms. A field project, on the farms, with the families.
- Strengthen local processes (for example, certified organic cacao production in Talamanca was developed by APPTA 10 years ago) and use local cultural practices as work methodology. For example, the project carried out the rehabilitation of 334 farms through collective work groups, a longstanding local tradition. The project strengthened the role of indigenous women in the fermentation, drying and processing of artisanal chocolate for household consumption.
- Design, negotiate and implement a technical strategy to simultaneously improve sustainable production and biodiversity conservation in the cacao plantations and indigenous farms of Talamanca.
- Incorporate into the project a dynamic program of applied and strategic research to provide up-to-date and relevant information for the Project management, the Project Advisory Council, the technical team and the dissemination and training activities.
- Massive and periodic dissemination of Project's results and achievements to all actors in the Territory: producing families, local leaders, local high schools, local technical teams (government, NGOs, Projects), territory managers and international scientific and academic community.
- Carry out the maximum possible expenditure within the indigenous territories (Project action zone) to stimulate the family economy and capitalize on (and train) local human resources.
- Offer numerous training, research and exchange opportunities to technicians, students, promoters and producers from many sources who wish to work with the Project, on topics of interest to the Project.

Conditions for replicability are ripe. The Project's successful results and strategies (organizational, political, technical and administrative) are applicable to other groups in Mesoamerica who also work organized in associations or cooperatives, and who sell certified cacao to niche markets (organic, fair trade, etc.). The list of possible target groups includes several indigenous groups (3,000 Ngabe producers in Panama, 2,000 Mayagnas and Miskitos in Nicaragua and Honduras and 12,000 Mayas—500 in Belize, 1500 in Guatemala, and 10,000 in Chiapas) and poor farmers (2,000 producers in Waslala, Nicaragua; 4,000 on the northern coast of Honduras; 2,000 on the western coast of Guatemala; and 40,000 in Tabasco, Mexico). Some 250 Belizean farmers now carry out "Talamancan pruning," and the exchange of technicians and promoters has stimulated cacao cultivation among the 500 small producers of organic cacao certified by CACAONICA and ProMundo Humano, Waslala, Nicaragua. Technical training provided by the Project regularly reached the COCABO technical team in Bocas del Toro, Panama that comprises 2,500 indigenous Ngabe producers and farmers from Chiriqui.

The results are also easily adaptable to organized small producers in other Latin American countries. For example, the CATIE-OEA/CICAD project to modernize cacao cultivation in Alto Beni, Bolivia, was designed and implemented following several operational strategies perfected in the Talamanca cacao project. Several Talamancan strategies are used there: rehabilitational pruning, use of grafted cacao, intervention of shade canopy, etc., use of local promotional teams to reach a large number of producing farms, administrative and financial procedures, the philosophy of incorporating research, training professional human resources and the need for information, training and dissemination of information of development projects. "Talamanca pruning" is now being used by 1,300 organic cacao producers in Alto Beni, Bolivia.

The Bank has also engaged in a comparative study on indigenous biodiversity conservation and sustainable use in poor indigenous communities, comparing experience from Talamanca, Costa Rica with the Bio-Itza Indigenous Biodiversity Conservation GEF-MSP Project in Guatemala, and the "Community Managed Sarstoon Temash Conservation Project" GEF-MSP in Belize. Results will allow for scaling up based on lessons learned mainly from the socio-organizational aspect, where limitations to replicability are most likely to be encountered. Lessons learned from this project that affect replicability are presented below in Section III**.**

(4) Stakeholder Involvement

Involvement has grown from planning to implementation
All activities were developed in substantial compliance with the agreed action plan prepared for project implementation. As programmed, the project has carried out activities to improve the cacao farms and biodiversity conservation. The project is considered to be a community-executed project, working closely in the family-run cacao farms and with the indigenous families to strengthen local processes (for example, the production and trading of certified organic cacao in Talamanca) and to incorporate local socio-cultural practices and work methodologies in the technical process. For example, the project rehabilitated 334 farms through participatory-collective work based on local decision-making processes. (see also Section (1), on impacts)

Gender aspects recognized and women take leadership role in important activities
The project has also strengthened the political and technical role of indigenous women (cacao fermentation, cacao drying and elaboration of handcrafted chocolate for household consumption and sale to local markets). The women's organization (COMUITA) took the lead in introducing improvements in fermentation, drying and manufacture of homemade chocolate on 200 indigenous families. This improves marketing options for high-quality cacao, and the families consume higher quality chocolate in the home as well.

Implementation was guided by consultation between co-implementing organizations.
Project execution included producers, co-implementing agencies (APPTA, ADITIBRI, ADITICA, COMUITA, CATIE) and neighbor organizations (NGOs, Projects, government institutions, local high schools, groups of producers from other regions and countries.).

There are structures and consistency in decision making on project matters.
The leaders of the co-implementing organizations formed the Project Advisory Council to discuss all strategic and operational aspects of the project implementation; more than 30 monthly meetings were held during project's life. The Council provided the political support to Project activities in the indigenous territories, oriented actions so that they did not clash with indigenous cultural customs or values, and provided a permanent forum for information exchange, operational coordination, and facilitated the interaction between APPTA (primary trader of indigenous cacao) and the indigenous organizations.

Synergistic interaction with neighbor organizations
The Project actively interacted with a large number of neighbor organizations. For example, project's results were regularly presented to several Talamancan organizations, including two high schools, government institutions (in Costa Rica MINAE, CNP, MAG; and in Panama ANAM, MIDA, IDIAP), local NGOs (in Costa Rica ANAI, Talamanca-Caribbean Biological Corridor Association, ACAPRO, UCANEHU; and in Panama ASAP, COCABO, Biological Corridor). The project attracted a long list of universities, whose students developed their research in topics of immediate interest to the project and tripled the technical and operational capacity of the project at minimum cost. By supporting students in the completion of their theses, the Project facilitated the graduation of 16 new professionals.

(5) Monitoring and Evaluation

Annual operational plans
The Project has a complete logical framework, which includes its M&E tools. Three annual operational plans were prepared, revised and adjusted in 25 monthly meetings during project's life.

Staff performance
CATIE's Human Resources office carried out three yearly evaluations of the Project staff contracted by CATIE; the Project's technical team annually reviewed the performance of its team of promoters.

Internal and external audit
Three external annual audits, one internal audit by CATIE and one World Bank final audit followep up the administrative and financial performance of the project.

World Bank Supervision
Six follow up missions by the WB Project Manager, a mid-term review with outside consultants selected by the WB, two visits by World Bank acquisitions specialists and two GEF and WB-Washington missions.

Project closure
Upon Project completion, an extensive, participatory a technical self-evaluation process was carried out, with the participation of outside specialists contracted by the World Bank, 150 producers from four communities, the co-implementing agencies and their boards of directors (some 40 members), the team of promoters (23) and several neighbor organizations (20 participants).

(6) Cost Effectiveness

Operational costs were low because mostly local labor, goods and services were used; salaries were austere; mobilization of Project staff (technicians and promoters) was minimized by contracting local promoters and conducting all training events directly in farms of each community. The project purchased and maintained a small motor pool (one 4x4 pick-up and two motorcycles).

The many students in the Project tripled (or more) the technical capacity of the Project. Their contributions included: direct support in field operations, systematization of information, training and dissemination. The majority of students brought their own operational budget as a contribution to the project.

Farmers made a great in-kind contribution by participating in the rehabilitation of the cacao plantations in a collective mechanism of labor sharing.

(7) Special Project Circumstances (optional)

Initial implementation subject to negotiation
APPTA and the Talamancan indigenous organizations rejected the initial project proposal, developed by IICA, with Block A financing from the World Bank, and CATIE had to quickly renegotiate and adapt Project goals to the needs of the local actors (ADITICA, ADITIBRI and APPTA).

Consolidation of indigenous women's participation during implementation
The participation of indigenous women (COMUITA) in the Project as co-implementing agencies and members of the Project Advisory Council only took shape at the end of the second year of the Project's implementation.

Participation of indigenous organizations without financial support
The indigenous development associations (ADIs) did not participate in the execution of the Project budget. APPTA, on the other hand, received a technical assistance contract for US$ 140,000 over three years. The late participation of women in the project, and the limited participation of the ADIs in the budget implementation have been the source of constant complaint.

(8) Institutional Capacity / Partner Assessments

CATIE's technical and managerial capacity was appropriate for the negotiation, implementation and finalization of the Project. The reconciliation of the World Bank's and CATIE's administrative and financial procedures, and the field conditions in the work zones was necessary in two senses:

- *Management of disbursements:* The management of disbursements from WB to CATIE took more time than anticipated and caused serious problems in field operations during three months of the third year of the Project;

- *Communication and follow-up format:* Procedures, reports (and formats), monitoring plan and project follow-up by the World Bank are ambitious and need more clarity for project staff. More World Bank administrative provisions were necessary for efficient communication and advisory support to project implementation.

Technical assistance to producers subcontracted to a local organization
APPTA was able to manage and utilize Project resources designated for technical assistance to producers. Fieldwork in cacao plantation rehabilitation and in establishing a market for fresh banana was satisfactory. Nevertheless, APPTA could improve its agricultural capabilities by including a permanent agriculturalist or agroforestry specialist in its technical team, to handle the technical aspects of production and free up time from the production manager who can dedicate himself to planning production and marketing support.

Managerial capabilities of indigenous organizations
The indigenous organizations (ADIs) have a limited managerial capacity, incipient administrative capacity and very few operational resources to implement their strategic plans. The presence and leadership of the ADIs in the communities remains limited. The indigenous leaders have difficulty in taking full advantage of external aid, and in taking responsibility for their decisions throughout the management of a project.

(9) Incremental Cost Analysis Evaluation
At the beginning of the Project, it was put forward that, in the absence of GEF resources, the benefits of the basic biodiversity conservation activities:

- would be limited only to indigenous reservations, excluding the afro Caribbean coastal zones of Talamanca and Latin mestizo farmers between Limon-Siquirres.

- would continue to employ production management methods and practices that do not ensure biodiversity resource sustainability (hunting, extraction of useful plants, transformation of cacao cultivation into low diversity plantain/banana cultivation, inadequate agricultural management of cacao).

- would not address managerial capacity of local organizations, would not increase interaction between APPTA and indigenous organizations, and these organizations would not include biodiversity conservation in the management scheme for their territories.

- Talamanca agricultural products would continue to be marketed only in organic and fair trade markets.

The GEF resources and co-financing invested in Talamanca improved the situation of these indicators of the basic scenario:

Although resources were concentrated in the indigenous territories (initially there were more ambitious goals of extending the Project's action zone to coastal Talamanca and to the Limon-Siquirres corridor, an excessively large territory for the available financial resources), the Project had direct impact on producers in neighboring Bocas del Toro, Panama, in Alto Beni, Bolivia, the Toledo District of Belize, and CACAONICA, Waslala, Nicaragua. Other initiatives brought to Talamanca by the Project (research projects by the universities of Wisconsin and Idaho, APPTA's fresh banana program) reached the Sixaola Valley and the coastal zone.

The actions and results of the Project introduced improvements in agricultural management practices on cacao farms (new pruning methods and shade canopy enrichment with native timber and commercially valuable fruit trees, of great value to wildlife), the impact of which was recognized by the local population, and was easy to adapt to their farms. Overexploited biodiversity resources have been identified and quantified (such as Spanish cedar [*Cedrela odorata*] wood, and Suita palm fronds [*Geonoma congestaI*] for roof building). The magnitude and severity of hunting, and regrettable status of populations of large land mammals has been recognized. There is now scientific information that allows for sustainable extraction of the copious regeneration of white laurel (*Cordia alliodora)* on cacao and banana farms—white laurel is the primary source of timber in indigenous territories.

The co-implementing agencies APPTA, ADITIBRI, ADITICA and COMUITA now interact more fluidly among themselves, which may improve production and marketing of indigenous agroforestry products. The leaders acquired greater managerial skills and are in better positions to negotiate for the interests and priorities of Talamanca with other external cooperation projects that may work in the indigenous territories. Biodiversity conservation, the need for pesticide-free, healthy agriculture and the preeminence of the environmental and ecological topics are a regular items in the political discussion among these leaders.

The ability of indigenous cacao farms to conserve biodiversity of flora and fauna has been scientifically documented and published in written form, so that it may be utilized in new local initiatives (PROARCA) that seek to introduce a new label ("Organic +"), which recognizes, in addition to considerations of human health and environmental contamination of the organic labels, other environmental goods and services (biodiversity conservation, carbon capture, soil and water conservation, etc.) that these cacao farms and agroecosystems provide to society at large.

The currently available information about the biodiversity in the Talamanca indigenous farms will facilitate the producers' entry into new certification schemes. APPTA has already used the biodiversity information from the Project to market cacao to companies interested in supporting biodiversity in cocoa plantations (Green & Black, UK).

III. Summary of Main Lessons Learned

(1) Participation

Get the women involved
Gender participation at the community and institutional levels is needed throughout all stages (planning, implementation and evaluation); women should be involved early in Project development.

Information and local awareness
Large initial community meetings, radial programs and public information centers were local inhabitants become informed about project objectives and activities can improve participation.

Local didactic leadership
Schools and their teachers could play a vital role in transferring knowledge and technical skills between generations.

Budgets
Project budget should support, as appropriate, activities conducted by all co-executing organizations.

(2) Sustainability

Market assessment
Conservation through market mechanisms: Emphasis on making participants proactive in developing and accessing markets rather than merely connecting products to markets.

Diversity
Sell more than once: Combining cacao–chocolate with other eco-tourism attractions, integrate exchange with colleges, neighboring projects.

Keep eye on hazardous attitudes
Think about how to stop hunting: raise animals (i.e., iguana hatcheries), change assets and conditions.

Make use of local academic professionals
Integrate existing university professionals originating from the territories and assist indigenous graduate students with their theses.

(3) Replicability

Success begets success
Execute plans with immediate or short-term impacts, monitor dynamic closely with stakeholder criteria, and take care of local culture.

Multiple perspectives senses realities better
Multiple partners and integration into ongoing projects improves realism, replicability, and sustainability.
Openness to project designers
Proactive knowledge dissemination and focus on concrete results created demand for other development practitioners.

(4) Management capacity of implementing agency

Facilitate, don't promote
CATIE could emphasize three processes of change for their outreach programs:

from knowledge based systems to enterprise decision systems
from lecturing and teaching practices to innovation environments
from promotion of techniques to facilitating social learning processes based on local experience with traditions and innovations.

Improve conditions
Care for well-represented organizations with mandated leadership for project formulation and implementation.
Mediate conflicts by bringing conflicting parties together pronouncing their higher interest and potentials for cooperation (or separate parties at least temporarily).

Get the cash flow
Greater administrative staff capacity is required at CATIE in accounting, financing and acquisitions procedures in regards to the World Bank. More direct contact with the directors of these areas at the World Bank would ensure complete compatibility and to expedite the presentation of reports and disbursements.

IV Financial Management Status

Disbursement:

Three disbursementes: US$319,000.00 (May 18, 2001); US$211,500.00 (October 24, 2002) and US$194,500.00 (October 30, 2003). A total of US$725,000.00 in three years.

Annual expenditures

Year one (February 21, 2001 to September 30, 2002) US$324.965.47
Year two (October 1, 2002 to May 30, 2003), US$201.611.13
Yean three (June 1, 2003 to February 29, 2004) US$198,413.40.
Total expenditures: US$725,000.00.
CATIE's expenditure: US$10,226.59

Interests earned: US$1835.67.

External Audits

Three annual audits: May 31, 2002; May 31, 2003 and February 29, 2004.