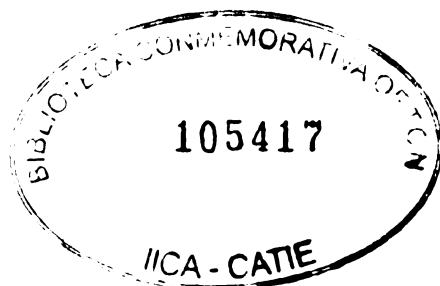




# Bi-annual Report **2003-2004**

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The Tropical Agricultural Research and Higher Education Center (CATIE) is a regional center dedicated to research and graduate education in agriculture and the management, conservation and sustainable use of natural resources. Its Regular Members include the Inter-American Institute for Cooperation on Agriculture (IICA), Belize, Bolivia, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay and Venezuela. CATIE's core budget is strengthened by generous annual contributions from these members.



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# Contents

<b>1. Introduction</b> .....	5
<b>2. Executive Summary</b> .....	6
<b>3. Upper-level Management</b> .....	7
Governing Council of Ministers .....	7
Board of Directors.....	7
General Direction.....	7
<b>4. Summary Of Achievements By Operational Entities</b> .....	10
Education Program for Development and Conservation .....	10
The Master's Program .....	10
The Doctorate Program .....	10
Scholarship-loan program for graduate students .....	10
Other sources of funding.....	10
Integration of Research and Graduate Education.....	10
Cooperation with institutions in the Region.....	11
Graduates Association.....	11
Students.....	11
Training and Conferences .....	12
Scientific and Technical Workshops and Congresses .....	13
Research Program.....	13
Departments and Thematic Groups.....	14
Department of Agriculture and Agroforestry .....	15
Department Directorate .....	15
T.G. Modernization and Competitiveness of Latin American	
Cacao Plantations .....	16
T.G. Coffee-Quality, Profitability and Diversification .....	17
T.G. Livestock and Environmental Management .....	18
T.G. Management and Sustainable Use of Plant Genetic Resources .....	19
T.G. Agro-ecological Production of Annual Crops .....	20
T.G. Research and Development of Clean Technologies in Musa .....	21
Department of Natural Resources and Environment .....	22
Department Directorate .....	22
T.G. Forests, Protected Areas and Biodiversity .....	23
T.G. Integrated Watershed Management.....	24
T.G. Center for the Competitiveness of Eco-enterprises.....	25
T.G. Socio-Economics of Environmental Goods and Services .....	27
T.G. Global Change .....	28

Outreach Program .....	30
Regional Outreach – National Technical Offices .....	30
<b>Planning, Monitoring and Evaluation</b> .....	<b>32</b>
<b>Communication/Información</b> .....	<b>32</b>
Journals .....	32
Institutional (Website).....	32
Internet communications system.....	33
Geographic Information .....	33
<b>Administration and Finance</b> .....	<b>34</b>
Finances.....	34
<b>5. Conclusions</b> .....	<b>37</b>
<b>6. Acronyms</b> .....	<b>39</b>

## Tables

Table 1. Classification of master's students according to study emphasis.....	11
Table 2. Master's students by country (2003 – 2004).....	11
Table 3. Country of origin of doctorate students, December 2004.....	12
Table 4. Distribution of doctorate students by area, December 2004.....	12
Table 5. Training activities held in 2003 – 2004 (countries and Headquarters) .....	12
Table 6. Distribution of training events by country and at Headquarters in 2003 – 2004 (countries and Headquarters).....	13
Table 7. Research partners in CATIE's Member Countries (2003 – 2004).....	14
Table 8. International research partners (2003 – 2004) .....	15
Table 9. Publications and presentations by CATIE (2003 – 2004) .....	15
Table 10. Subscription to CATIE's journals (2003 – 2004) .....	32
Table 11. Distribution of Logistic, Administrative and Financial Services at CATIE .....	34
Table 12. Specific contributions to core budget.....	34
Table 13. Distribution of funds in custody .....	34
Table 14. Assets, liabilities and combined statements of balance of funds for 2003 and 2004.....	35
Table 15. Balance of Income and Expenditures for the Core and Project Budgets for 2003 and 2004.....	36

## Annexes

Annex 1. Relationship IICA – CATIE .....	43
Annex 2. Government Authorities.....	44
Annex 3. Technical personnel at the Headquarters 2003-2004.....	45
Annex 4. CATIE Publications 2003-2004.....	47

# 1. Introduction

**T**he Tropical Agricultural Research and Higher Education Center (CATIE) is a non-profit civil institution created in 1973 through an agreement between the Inter-American Institute for Cooperation on Agriculture (IICA) and the Government of Costa Rica.

CATIE is a renowned regional organization dedicated to research, education and technical assistance; the latter is normally developed through the execution of development projects in agriculture and natural resource management in the American tropics. The Center's headquarters are in Turrialba, Costa Rica and the following are regular members: Belize, Bolivia, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Dominican Republic, Venezuela and the Inter-American Institute for Cooperation on Agriculture (IICA). CATIE also has a portfolio of affiliated members, including Spain, the first European country to become a member.

CATIE's long term vision for its region of mandate is:

“The rural sector is consolidated as a key element of the process toward sustainable development, contributing to social equality and improvements in the quality of life in the American Tropics.”

Toward this end, CATIE organizes its actions in two technical departments: “Agriculture and Agroforestry” and “Natural Resources and the Environment”. These Departments are each comprised of various thematic groups that develop research, graduate education and outreach activities.

The institution is directed by the Inter-American Agricultural Board (JIA) that acts as the Constituent Assembly; the Governing Council of Ministers, made up of the Ministers of Agriculture or Environment of CATIE Member Countries and the General Director of the IICA; and the Board of Directors, which includes representatives from the public and private sectors, and consists of members from the region and the rest of the world. Their guidelines are applied by the Director General with the support of personnel specialized in different fields and themes developed by this international organization.

This report, in accord with Article Nine of the Constitutive Contract of CATIE, presents the Center's most relevant results and progress during the 2003 – 2004 biennium.



## 2. Executive Summary

This report summarizes the main activities and achievements during the 2003 – 2004 period of the Directive Bodies (Board of Directors and Council of Ministers), the General Directorate, and the technical and scientific programs. Information is included on education, research, outreach, administration and finances of the Tropical Agricultural Research and Higher Education Center (CATIE).

The 2003 – 2004 period constitutes the first two years of implementation of the new 2003-2012 Strategic Plan, and the 2003-2005 Medium-Term Plan. The success and limitations of the new strategies are becoming evident and diverse projects and initiatives meant to achieve the determined goals are starting to be consolidated.

Progress on the consolidation of the new structure, based on thematic groups and their leadership as fundamental motors of CATIE's work, was an important achievement in this period. Change in the institution's structure, creating two departments and a horizontal structure of thematic groups (TG) with much autonomy and responsibility, is a strategic response to the new international setting in a panorama of weakening of contributions to CATIE's core budget. This change has raised levels of creativity and innovation, and has favored growth in the projects budget and in the group of scientific and academic partners with CATIE.

The Graduate School experienced a slight drop in the number of enrolled students in 2004 and in the number of candidates enrolling in the master's program in 2005, after three consecutive years of growth in this study program. However, the doctorate program continued growing and consolidating steadily through agreements with global partners. In the master's program in particular, there has been less demand from Central American countries and increased demand from South American countries, especially Andean nations. Difficulties with scholarship financing explain these tendencies to a large extent. Stricter rules and requirements have been put into place for accessing the scholarship-loan program, which may be affecting the number of students that apply. On the other hand, a large number of requests are still being received for the doctorate program. These tendencies warrant a detailed analysis and, in particular, strengthened program promotion and a review of the recruitment procedures.

CATIE's presence in most of the member countries and the interactions between the headquarters and the field operations, in general terms, remained at good levels in this period. In particular, some high profile research and development projects have created new opportunities, as has been the case with the livestock production, adaptive co-management of watersheds, coffee, cacao and Musaceae thematic groups.

At the same time, progress has been made on the process of self-financing the national offices and cooperative relationships with the IICA offices (see Annex 1). However, there are still difficulties with developing projects in some South American and Caribbean countries, and with charging membership fees in these regions.

The end of 2004 brought a series of encouraging news and a group of new projects, closing out the year with a highly positive perspective. Perspectives have improved for the livestock production, climate change, cacao, forests and biodiversity, coffee and Musaceae groups.

Successive annual reductions in the core budget have negatively affected the core activities of the central headquarters and the National Technical Offices (NTO), and continue to create instability in the personnel. At the beginning of 2004, we saw the closure of the Direction of Strategic Planning and at the end of the same year, a reduction in the funds allocated to the Outreach Directorate (DPE) and the NTOs in the countries was approved for 2005. The response to these reductions has been an increase in fundraising and acquisition of funds for projects and consultancies. CATIE has shown a great capacity for innovation and various new and traditional donors are now contributing to new strategic projects of regional importance. In this way, the total budget has remained quite stable, with drops in the core budget compensated by increased project funds.

At the same time, good financial management and control have led to a positive close-out for the third consecutive year, again with positive perspectives for the future, in particular due to the participation of new donors and the recent approval of funds for regional programs in which CATIE expects to play a strategic role.

# 3. Upper-level Management

## Governing Council of Ministers

During the 2003 – 2004 period, the Governing Council of Ministers of CATIE held two ordinary and one extraordinary meetings. The main products of these meetings were the following:

- Approval of CATIE's Strategic Plan for the 2003 -2012 decade.
- Approval of CATIE's 2004-2005 Medium-Term.
- Approval of regulations for the election of the CATIE's Director General.
- Adhesion of the State of Chiapas of Mexico and CONAFOR (Mexico) and removal of the PALMAVEN firm (Venezuela) and the Department of Natural Resources and the Environment of Puerto Rico as affiliated members.
- Reelection of CATIE's Director General for a second four-year term.
- Ratification of CATIE budgets for 2003 and 2004.
- Ratification of the naming of six members and reelection of two members of the Board of Directors.
- Creation of a tripartite IICA-CATIE-Government of Costa Rica commission to carry out an analysis of technical, political, governability and financial impact aspects of a possible transformation of the CATIE-IICA relationship.

## Board of Directors

During 2003 - 2004, CATIE's Board of Directors and its committees met on four occasions to analyze various activities of the main institutional programs. The principal results generated in these meetings are presented below.

- Approval of CATIE's Strategic Plan for the 2003 - 2012 decade and remission to the Higher Council for approval.
- Approval of the 2004 – 2005 Medium-Term Plan and remission to the Governing Council for approval.
- Placement of the CATIE germplasm collections under the auspices of the FAO.
- Recommended to the Governing Council that the Director General be reelected for a second two-year period.
- Approval of the 2003 – 2004 programs budget.
- Approval of the new structure of Departments and

Thematic Groups (TG).

- Election of new members to the Board and reelection of others.
- Analysis of the CATIE – IICA relationship.

## General Directorate

During the 2003 - 2004 biennium, CATIE has substantially modernized its research and technical assistance agenda to contribute to poverty reduction and sustainable natural resource management. Its new Strategic Plan, approved in 2003, clearly shows the new tendencies that are already being implemented in the institution within the three basic strategic axes for the next decade, which are agricultural diversification and competitiveness, sustainable forestry, and sustainable management of lands and waters.

In 2003, institutional structure was modified to increase efficiency and promote group work on strategic themes. The new thematic groups have replaced the area and unit structure and department chairs now carry out a function more like the one formerly carried out by the sub-direction.

Interactions with national and local governments have been strengthened, in particular with the Ministries of Agriculture and Environment, and with the municipal sector, and the portfolio of donors has been diversified. In the near future, greater support from multilateral donors is expected, particularly from the World Bank, GEF, IDB, BCIE and FIDA.

Positive and negative aspects are beginning to be seen in decentralization processes, manager empowerment, implementation of partial salaries, modularization in teaching, scholarship-loans instead of full scholarships, "outsourcing", and in general, the change of institutional culture toward a more proactive institution, oriented toward impacts and with a greater sense of financial responsibility and self-sufficiency. All these innovations are changing the *modus operandi* of CATIE slowly but surely.

Staff contracts with partial financing, a strategy that is common in some North American universities (that offer contracts for nine months per year), have had a positive

effect in terms of activating the participation of personnel in works outside the headquarters, cooperating more with projects and consultancies, and in the search for financing in general. At the same time, they have created a greater feeling of instability, more individualism, and a greater degree of commitment to the Center's core activities.

The maintenance and strengthening of the core budget depends on a series of variables, including the quotas of regular and affiliated member countries, the IICA quota, the contributions from foundations and the funds finance the professorships, the benefits obtained from the productive activities, donor contributions to the core budget and overhead from projects.

The General Directorate has negotiated new agreements for support to the core budget with the two most important donors, SIDA (Sweden) and NORAD (Norway). In the case of NORAD, the agreement provides a sum of around 400,000 dollars per year for five years, beginning in 2003, presently MFA. In the case of SIDA, there is a new support agreement for 10, 8 and 6 million Swedish crowns for 2003, 2004 and 2005. Both agencies have shown interest in supporting the CATIE trust funds but they want to see a more proactive approach and the interest of member country governments.

The support of the ministers and of organizations such as the CCAD and CAC to CATIE has been obvious in terms of recognizing its technical capabilities and calling upon the institution to support the preparation, negotiation and execution of projects. This is demonstrated by the enormous number of requests from the governments to CATIE for support, using our institution as a technical arm for fundamental initiatives. However, we cannot ignore the difficulties inherent in negotiations for the payment of membership quotas or for the recovery of late quotas. Some countries have responded positively to our request to bring their payments up to date. Panama, Costa Rica and recently Guatemala and Colombia are on the list. However, difficulties continue with several countries, including the Dominican Republic and Venezuela. Political changes and financial difficulties in these countries in the 2003-2004 period have confounded efforts to find a quick and easy solution to this problem.

During 2003, an important effort was made in the field of institutional image, taking advantage of the thirtieth anniversary. National authorities, ministers, rectors, directors, ambassadors and ex-students participated in meetings held in Costa Rica, Nicaragua, Honduras, Colombia, Guatemala and the United States. This effort culminated in 2004 with a meeting of CATIE's European partners held in Oslo, Norway.

With the increase in project funds, scientific and academic productivity have been maintained and even increased (i.e. publications in international and regional journals) in a period when the core budget was reduced, which shows a clear increase in the efficiency of the Center.

The interdisciplinary and inter-departmental thematic groups are showing "hybrid vigor" and impressive adaptability to the increasingly competitive conditions of the region. Truly regional programs are being established with multiple donors and actions linked in several countries.

CATIE's international connections and outreach continue to expand. The number of international institutions providing 'associate' personnel to CATIE increased; personnel who are co-financed or fully financed by partner institutions. The number of universities that maintain high level relationships with CATIE also increased. Relationships were strengthened with CGIAR (CIFOR, IFPRI, INIBAP-IPGRI, ILRI, etc.) and with quality international institutes and organizations (CABI, NRCS-USDA, IDRC, ETH, ICRA, NORAGRIC-Plateforsk, Bioforsk, COPAL, etc.) and with the IICA (see Annex 1).

In 2003, the first doctorate *honoris causa* was awarded to Nobel prize recipient Dr. Oscar Arias and in 2004, the second doctorate *honoris causa* was awarded to Dr. Víctor Villalobos, honoring his outstanding scientific career and his contributions at the regional level to the field of biotechnology and biosafety, as well as his contributions to CATIE as a professor-investigator, Department Director and, most recently, as President of the Board of Directors. The first merit medal in natural resources and the environment was awarded to M.Sc. Lorena San Román and the first merit medal in agriculture was



awarded to Engineer Willy Loria. Dr. Luko Hilje and Dr. Jochen Heuveloop were distinguished with nominations as professors emeritus of CATIE after brilliant careers.

In financial terms, the 2003 -2004 period was difficult for the central activities of the institution due to reductions

in the core budget, continuing the tendency of prior years. Even so, the final financial balance of each year end was positive, due to good cost control. At the same time, the projects budget, funds in custody and total funds grew in 2004 in comparison with 2003, as did the trust funds managed by the foundations.

# 4. Summary of Achievements by operational entities

## Education Program for Development and Conservation

CATIE's Graduate School has been offering study programs for master's degrees since 1946 and for doctorates since 1996, in specialties related to agriculture, conservation and sustainable natural resource management. The objective of the school is to prepare professional leaders and investigators capable of successfully conducting their professions in difficult and changing environments, but strongly aware of their social responsibility. The main achievements during this period were:

### The Master's program

1. The Graduate School launched a new study plan structure, implementing a new block system (courses given in 6-week modules) that give the Master's Program greater flexibility. In this period, master's programs were offered in Ecological Agriculture, Tropical Agroforestry, Watershed Management, Tropical Forest Management and Biodiversity and Environmental Socio-Economics.
2. The number of students remained high in relation to prior years, but declined somewhat due to scholarship funding difficulties.

### The Doctorate program (Ph.D.)

The number of students enrolled in the Doctorate Program continued to rise. Students come from CATIE's regular member countries as well as from others such as Argentina, Ecuador, Peru, the United States, Japan, the United Kingdom, Spain, and others, creating a completely international environment. Most of the students study in the joint diploma programs with the universities of Idaho (USA) and Wales (United Kingdom).

## Scholarship-loan program for graduate students

A process to supervise this program (analysis and approval or rejection of applications, payment oversight, analysis of norms and procedures) was launched with the Administration and Finance Directorate. Incentives were also created to attract outstanding students lacking adequate financial resources to enter the program. In the case of biotechnology, institutions that work in this field were approached to find students with institutional backing.

In general, the scholarship-loan program has been highly successful, favoring more than 65 students per year. This initiative has created an account receivable of nearly a million dollars and has shown a high rate of recovery to date.

## Other sources of funding

During the period reported, there has been financial support from various international and national entities such as the OAS, IDB, World Bank, ITTO, Ford Foundation, ASDI (through the Watersheds and Focuecas project), Danida, NORAD, GTZ, JICA, AID, USDA, DAAD (Germany), CONACYT (Mexico), FundAyacucho (Venezuela), CORPOICA (Colombia), FONACIT (Venezuela), IDIAP (Panama), Fundatrópicos, AVINA Foundation and the British Embassy.

Greater contact was made with various foundations seeking to create new scholarship programs. Unfortunately, a new scholarship program was begun with the Ford Foundation only. However, negotiations with COSUDE to establish a multi-year strategic program to fund students from the region are noteworthy.

## Integration of Research and Graduate Education

Graduate students are being increasingly incorporated into CATIE projects, taking advantage of the opportunities offered by the thematic groups and the R&D projects in member countries.

CATIE continues to be a leader in innovation (e.g. environmental services and climate change), due to its new approaches, methodologies and results. This leadership has not yet been fully exploited in the graduate programs and should be reflected in new specialties to be offered soon.

### Cooperation with Institutions in the Region

There was active cooperation with diverse universities of the region and with national institutes. The programs executed with the UNA and UNAN-León of Nicaragua, and the UNAH and ESNACIFOR of Honduras with Swedish funding stand out. EARTH and the ZAMORANO supported this program. At the same time, the bid for a program (CIEBREG) to cooperate with different universities and research centers in Colombia was accepted.

### Graduates Association

In 2003, the first regional meeting of CATIE graduates was held. More than 70 people participated in this activity from a considerable number of countries. The bylaws of the recently constituted CATIE – AG, i.e. CATIE Graduates Association were analyzed and the Board of Directors was chosen. Dr. Héctor Fabio Libreros will preside over the Board.

CATIE graduates continue to be provided with information about job and scholarship opportunities. They are also sent information of institutional interest using electronic mail accounts created for the graduates.

### Students

#### Master's Program

In the 2003-2004 period, 132 students from 21 American nations were graduated. The number of students in this program grew more than 10% with respect to 2002. Tables 1 and 2 show the distribution of students according to their study emphasis and nation.

Table 1. Classification of master's students according to study emphasis

Master's program	2002-03	2003-04	2004-05
I. Ecological Agriculture	12	11	9
II. Tropical Agroforestry	11	13	18
III. Watershed Management	16	16	13
IV. Tropical Forest and Biodiversity Management and Conservation	19	15	12
V. Environmental Socio-economics	11	8	9
TOTAL	69	63	61

Table 2. Master's students by country (2003 – 2004)

Country	02-03	03-04	04-05
Argentina		1	
Belize			1
Bolivia	3	7	4
Brazil	1	2	1
Colombia	10	14	8
Costa Rica	8	2	2
Dominican Republic	1		
Ecuador	7	8	3
El Salvador	2		1
Guatemala	5	1	4
Honduras	4	1	7
Italy		2	
Japan	1	1	
Mexico	2	4	6
Nicaragua	12	6	15
Panama	8	6	
Paraguay		2	1
Peru	5	5	4
Santa Lucia			1
United States		1	
Venezuela		1	2
Total	69	63	61

Table 3. Country of origin of doctorate students, December 2004 Students by country of origin

Countries	Students
Belize	2
Bolivia	1
Colombia	3
United States	9
El Salvador	1
Guatemala	1
Honduras	1
Mexico	5
Paraguay	1
Portugal	1
Puerto Rico	1
Dominican Republic	2
United Kingdom	1
Venezuela	3
<b>TOTAL</b>	<b>32</b>

### Doctorate Program

At the end of 2004, the program had 32 students from 14 countries, as detailed in Table 4.

Table 4. Distribution of doctorate students by area and type of program, December 2004

Area of study	U. Wales*	CATIE Ph. D	U. Idaho*	Others	Total
Tropical Agroforestry	6	4	3	1	14
Tropical Forestry	1	3	5	1	10
Ecological Agriculture	1	5	6		
Environmental Sociology and Economics	2	2			
<b>Total</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>2</b>	<b>24</b>

\* Joint diplomas CATIE-U. Wales and CATIE-U. Idaho

### Training and Conferences

In 2003 and 2004, 1558 training events were given benefiting 39,067 participants, of which approximately one-third were women. These include events ranging from field days to part-time courses and Congresses. Most of the events were held in member countries (89% in 2003 and 91% in 2004), compared to events held at the Headquarters in Costa Rica (11% in 2003 and 9% in 2004). Of this total, 344 events correspond to short courses (strategic courses). The other 1,214 events correspond to workshops, seminars, forums, lectures, in-service training, symposia, field days, working meetings and technical assistance. In the following tables, the number of activities and participants as well as the distribution of training events in the countries of the region are presented.

Table 5. Training activities held in 2003 – 2004 (countries and Headquarters)

Type of event	Events			Participants		
	2003	2004	total	2003	2004	total
In-service Training	69	10	79	1.707	11	1.718
Lectures and Conferences	107	36	143	2.652	3.451	6.103
Short Courses	176	168	344	4.030	4.983	9.013
Modular Courses	21		21	495		495
Fairs	3		3	1.202		1.202
Forums	5	1	6	228	180	408
Field trips and field days	52	5	57	2.188	102	2.290
Working meetings	266	9	275	3.927	152	4.079
Seminars	2	1	3	89	150	239
Symposia	1	2	3	47	550	597
Workshops and Demonstrations	383	241	624	6.884	6.039	12.923
<b>Total</b>	<b>1.085</b>	<b>473</b>	<b>1.558</b>	<b>23.449</b>	<b>15.618</b>	<b>39.067</b>

Table 6. Distribution of training events by country and at Headquarters in 2003 – 2004

Country	2003	2004	Total
Belize	2	5	7
Bolivia	70	159	229
Brazil		5	5
CATIE/Turrialba	32	36	68
Colombia	6	6	12
Costa Rica	116	42	158
Dom. Republic	2	1	3
Ecuador		6	6
El Salvador	620	135	55
Guatemala	15	21	36
Honduras	112	14	126
Mexico	4	4	8
Nicaragua	97	19	116
Panama	2	8	10
Peru	7	2	9
Othes		10	10
Total	1.085	473	1.558

## Scientific and Technical Workshops and Congresses

Many scientific and technical conferences and events were held in this period. Outstanding among them was the Scientific Week of March 2004, in which the 11 new thematic groups had a highly relevant role.

Three sessions were conducted under the heading “Scientific and Technological Opportunities and Challenges for Integral Natural Resource Management in the American Tropics”:

- Production and trade challenges for the agricultural and forestry sectors in globalization processes
- Innovation in production for improving competitiveness in environmentally-friendly production
- Strategies and tools for environmental service payments and natural resource management.

Two key lectures were given, “*Reflections on the current context and future tendencies in natural resource management*”. Dr. Ronnie de Camino. University for Peace. and “Science today: goals and challenges”. Dr. Eugenia Flores/UNESCO, who spoke about changes in agriculture and the natural resource sector; sustainable development; changes in extension services and their relationship to globalization phenomena and future commercial agreements and science today.

Also noteworthy in 2003 was the International Conference dedicated to Henry Wallace (USDA-CATIE-IICA) on the subject of Financing Sustainable Rural Development in Tropical America, and in 2004, another conference in the same series on Water, Agriculture and Food Equality in Mesoamerica.

In 2004, an international conference was offered jointly by KSLA, MISTRA and IFS (Sweden) on “semiochemicals and microbial antagonists” that convened global experts from the scientific sector and from the pest control products industry.

## Research Program

CATIE is strengthening its research program through collaborative and complementary efforts with its partners in and outside of the region, to generate information, technologies and sustainable management systems aimed at innovation for rural development.

In 2003 and 2004, CATIE developed an important cooperative effort for regional research with key institutes in the rest of the world. This included work carried out with international centers, universities and advanced research institutes such as CIRAD and IRD-France, CABI–United Kingdom, NINA–Norway, Beijer–Sweden, the IDRC–Canada and the USDA.

The internal coordination body of the research program is CATIE’s Scientific Committee headed by Dr. José J. Campos, General Sub-Director. Department directors and heads of thematic groups participate on this committee. Its main function has been discussing the institution’s research strategies and priorities, serving as a discussion forum for the leaders of the different thematic groups.

At the level of the Board of Directors, the Scientific-Academic Committee is the higher body that discusses the progress of the program and offers recommendations regarding strategies and policies.

Funding for research was obtained from many sources, including contributions from the core budget and important donors such as Sida – Sweden, MFA – Norway, USDA, European Union, Fontagro and multilateral agencies such as the GEF, World Bank and others.

## Departments and Thematic Groups

Beginning in 2003, the Research Program concentrated its management in two technical-scientific Departments with their respective Thematic Groups:

### *Department of Agriculture and Agroforestry (DAAF).*

This Department, under the leadership of Dr. John Beer, is composed of the following six Thematic Groups.

- Modernization and Competitiveness of Latin American Cacao Plantations (Cacao); leader: Dr. Eduardo Somarriba.
- Coffee-Quality, Profitability and Diversification (Coffee); leader: Dr. Jeremy Haggar.
- Livestock and Environmental Management (GAMMA); leader: Dr. Muhammad Ibrahim.
- Management and Sustainable Use of Plant Genetic Resources (MURF); leader: Dr. Andreas Ebert.

- Agro-ecological Production of Annual Crops (PAECA); leader: Dr. Vera Sánchez.
- Research and Development of Clean Technologies for Musa (Musa); leader: Dr. Galileo Rivas.

### *Department of Natural Resources and Environment (DNRE).*

This Department, under the leadership of Dr. José Joaquín Campos, is comprised of five Thematic Groups.

- Forests, Protected Areas and Biodiversity; leader: Dr. Bryan Finegan.
- Integrated Watershed Management (MICH); leader: Dr. Francisco Jimenez.
- Center for the Competitiveness of Eco-enterprises (CeCoEco); leader: Dr. Dietmar Stoian.
- Socio – Economics of Environmental Goods and Services (SEBSA); leader: Dr. Guillermo Navarro.
- Global Change (GCG); leader: Dr. Lucio Pedroni.

Research at CATIE is developed jointly and with many contributions from the master's and doctoral student theses. It is also enriched by numerous contributions from institutions of the region and the rest of the world.

According to CATIE's database, more than 170 partner institutions from member countries are involved in joint research projects (see Table 7). Various North American, European and international centers are also involved in research with CATIE (Table 6).

Table 7. Research partners in CATIE's Member Countries (2003 – 2004)

Partners	BE	CO	CR	DR	ES	GUA	HO	ME	NI	PA	VE	Others	TOTAL
Ministry		1	12		2	5	12		12	3	1	2	50
University	1	11		1	2	2	3	4	1	2			27
Research institute	2					2		2	1	1		4	12
NGO			10		1	3	3	1	4	1	3		26
Private company			16	1		1			3	3	1	2	27
Producers org.	1		14				5	1	4	2			27
International org.	1								1	2			4
<b>Total</b>	<b>5</b>	<b>12</b>	<b>52</b>	<b>2</b>	<b>5</b>	<b>13</b>	<b>23</b>	<b>8</b>	<b>26</b>	<b>14</b>	<b>5</b>	<b>8</b>	<b>173</b>

In 2003 and 2004, CATIE technicians produced 496 articles in regional and international publications (journals, books, congresses, proceedings, presentations, etc.) as can be seen in Table 9. Annex 4 presents a detailed list of publications.

## Department of Agriculture and Agroforestry (DAAF)

### Department Directorate

This department, created in 2003, was formed by joining the former areas of Sustainable Agriculture and

Agroforestry. This implied reorganizing the placement of technical personnel, logistic resources and infrastructure, the responsibilities of support personnel and the technical staff. This integration was carried out to achieve greater efficiency, in part due to the reduction of the core budget.

In 2004, most of the TG (thematic groups) achieved greater stability with harmonized plans, projects and other activities, strengthening the collaboration of specialists and students around strategic themes. Acceptance by leaders and members of the TG of the challenge to create regional programs and generate resources, even for salaries, was a big step that pointed to maturity in the process to decentralize management responsibilities toward new thematic groups. In general there was an

Table 8. International research partners (2003 – 2004))

Partners	Latin America	Europe	USA	Africa	Asia	Total
University	1	18	2			21
Research Institutes	3	6	2	1	1	13
Regional centers	3					3
International centers	1	2		1		4
CG Centers					1	1
NGO	1	2				3
<b>Total</b>	<b>9</b>	<b>28</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>45</b>

Table 9. Publications and presentations by CATIE (2003 – 2004)

Type of publication	2003	2004	Total
<b>Scientific</b>			
Articles in scientific journals	22	8	30
Books and monographs	2	6	8
Chapters in books	19	5	24
<b>Proceedings</b>	<b>60</b>	<b>90</b>	<b>150</b>
Conferences, seminars and others	36	43	79
<b>Technical</b>			
Articles in technical journals	24	10	34
Technical Series (CATIE)	5	3	8
Informative bulletins and publications	44	25	69
<b>Academic</b>			
Academic and educational texts	10	3	13
Theses	62	11	73
Software	5	3	8
<b>Total</b>	<b>289</b>	<b>207</b>	<b>496</b>

encouraging level of pro-activism in the personnel and the leaders of the different groups. However, all the TG confronted various problems with funding, which especially affected job security for their personnel for the medium term. The role of a TG and its leader, affiliations of personnel from CATIE (and other organizations) to the TG, personnel management aspects (i.e. evaluations) and individual responsibilities for institutional activities including coordination, education and the preparation of databases/reports still need to be defined in more detail. It is noted that organizational change of CATIE toward TG has led to more interdisciplinary and inter-departmental work, a goal that was actually achieved in 2004 after years of discussion. In general, efficiency in the use of infrastructure, human resources and logistics increased in 2004 and almost all the technicians were able to complement their salaries with new income.

A synthesis of the main achievements of each TG within DAAF is shown in the following sections.

#### *T.G. Modernization and competitiveness of Latin American Cacao Plantations (Cacao)*

Much progress was made in 2003 and 2004 on the negotiation and implementation of projects and agreements; therefore, this report emphasizes these activities.

The project for the Modernization of Organic Cacao Cultivation of Alto Beni, Bolivia (CICAD/OEA, FAO/USAID, 2001 – 2004, USD 2 million, 2000 homes) began the last semester of its three-year duration. This year, two possibilities were explored for interesting the Government of Bolivia and international donors in financing a second phase of the project for consolidating and expanding changes in all links of the chain of production, organization of producers, certification, industrialization and commercialization of organic cacao products in national and international markets. We partnered with a qualified international consultant so that we could submit a bid to channel resources from USAID's Alternative Development Program to Alto Beni; and we took advantage of the project's Inter-institutional Technical Committee meetings to propose ideas about what to do in the near future with the cacao from Alto Beni and to make the government

and USAID aware of the need to finance a second phase. Perception of the current project by producer families, local organizations, the government and donors is very favorable. At the end of 2004, USAID had still not selected a consortium from among the bids for the 2005-2010 Yungas Program; but the government officially requested that CATIE prepare a proposal for Phase II of the cacao program, which was presented in January 2005.

The project on Organic Cacao and Biodiversity on Indigenous Cacao-producing Farms of Talamanca, Costa Rica was concluded (World Bank, USD 750,000, 2001- 2004), which stimulated the production of certified organic cacao. A continuation of this project was negotiated, focusing now on carbon sequestration in cacao plantations and allowing an ongoing presence in the zone.

An agreement was signed with COPAL (global headquarters in Nigeria) that foresees the designation of a high level representative in CATIE who would promote COPAL membership among the governments of cacao-producing Latin American countries, propose joint activities to facilitate scientific and technical exchange, and cooperate with proposal preparation.

Support was provided to local organizations from Talamanca and Alto Beni on the preparation of various proposals to leverage support for cacao-growing projects underway in these zones. The initiatives include two presented to the Embassy of Japan's Support Program for Community Development; one in Costa Rica to improve artisanal chocolate processing by micro-businesses of the Talamanca indigenous women's group (COMUITA), and the other in Bolivia to improve cacao quality through the construction of artisanal fermentation chambers for 2000 cacao-growing homes of Alto Beni. A third proposal was funded by PRODOMA (USAID funds) to disseminate new artisanal chocolate production techniques in various indigenous communities of Talamanca.

Four new project ideas were developed: 1) a binational Costa Rica – Panama project, with GEF funding, that would continue and expand the processes begun in Phase I of the project for Cacao and Biodiversity in Talamanca, Bocas del Toro; 2) a regional Mesoamerican proposal for cacao production by poor indigenous



and rural farming people, with a strong environmental component, poverty reduction and integrated approaches throughout the production chain to be presented to the Norwegian Embassy in Managua in the first quarter of 2005; 3) a proposal to the Government of Bolivia to transform the Sapecho experimental station (Alto Beni) into a germplasm conservation center for the cacao and fruit tree species of Bolivia's Amazonian tropics; and 4) a proposal for the validation and implementation of improvements to the rice and corn production system using the slash, burn, cultivate, leave fallow system in Alto Beni and other regions of Bolivia. The preparation of these last two proposals was requested by Bolivia's Ministry of Rural Farmer Affairs (MACA) to request resources from the Millennium Challenge Fund (United Nations).

The group also participated in various key meetings, where CATIE's cacao production initiatives were presented, internationally showcasing the work of the Cacao Group and attracting new resources and collaborators. Four are important to mention: the European meeting of the WCF partners in Brussels and the meeting of this organization in Washington, D.C., the world agroforestry congress in Orlando where special attention was given to agroforestry systems with cacao, and the meeting of CATIE's donors and Nordic friends in Oslo.

Under the CABI-CATIE Agreement, research continued on the integrated management of cacao pathogens, principally moniliasis. The USDA funded research on biological control using endophytic fungi, chemical control, and the compatibility of antagonists with chemicals in various space-time combinations. Optimal ecological conditions for two prioritized agents were determined, and the formulation of biocontrollers was improved with adherents. Funding was also obtained from Plant Impact Bioscience for the evaluation of two of this company's non-chemical products.

The cacao production projects in Talamanca and Alto Beni maintain a healthy training program for 18 cacao-producing agronomists, 48 local promoters and 19 grafters, 2000 homes, and 500 upper level students from the seven agricultural high schools of the zone. Six annual training

events were held, covering themes appropriate for the cacao production development program and the local agronomic cycle. In Talamanca, five technicians and 10 promoters were trained and recently, a training program aimed at 500 indigenous farmer homes was begun. Both projects received six exchange students from the Agroforestry Engineering Faculty of the Universidad de Nariño, Colombia (50 months; in-service training student) and contacts were reactivated with Canada's Laval University, whose agroforestry Master's program CATIE helped establish in the 1990s. In 2005, we will also have a Master's student carrying out her thesis in Talamanca.

Twenty-four students are conducting their thesis research in cacao production projects; of these, eight are from CATIE's Master's program, ten are from the Agronomy Faculty of Bolivia's Universidad Mayor de San Andrés, and six are from the Universidad de Nariño, Colombia. The topics encompass production aspects of grafted cacao in nurseries, germplasm, management, agroforestry, etc. An agreement with MACA was signed that facilitated USDA-ARS approval of USD 60,000 to finance applied research in Bolivia. These funds are financing four Master's theses and two agroforestry engineering theses with co-financing from the Modernization of Organic Cacao Production project and CATIE.

#### *T.G. Coffee: Quality, Profitability and Diversification (Coffee)*

The most important achievement during these years has been the formation of a multidisciplinary group including the disciplines of agroecology, integral pest management, genetics, biotechnology, agroforestry, economics, and geography, involving personnel from CATIE's two departments. During these years, the TG has achieved:

*Research on the ecology and economy of sustainability.* The CIRAD-CATIE project on Coffee Agroforestry Systems in Central America (financed by INCO-UE) in its third year of execution had significant results in greenhouse gas production, carbon sequestration, dynamic nutrient and water models, and production physiology and coffee quality. Articles with the results from several of these studies have been presented to the RAFA, in international journals, and in the World

**Agroforestry Congress.** The trials and long term research on the ecological processes of sustainability in Costa Rica and Nicaragua received support from the USDA through the University of Maryland, to study the effects of shade and organic management on soil characteristics and nutrient dynamics.

*Strengthening coffee organization capacity for producing and marketing quality.* A study was completed on the multisectorial capacity for developing innovative strategies in the production and marketing of quality coffee in northern Nicaragua and eastern Honduras. This study formed the basis of a proposal presented to the MFA of Norway. The FUNDECOOPERACION project in Costa Rica renewed the experience of the MIP-AF Program and continued its training program for technicians and producers on the diversification, production and marketing of organic coffee. The collaboration with ICAFE to create a GIS for the identification of coffee origins continued with new funding from USGS. The coffee project with World Bank did not begin during the year because the contract between CATIE and the Bank was not signed until November. During the year two integral courses on coffee were given, one with the participation of seven countries and the other in Bolivia.

*Development of foundations for the diversification of coffee-producing farms.* An evaluation of the *Red de Ensayos Agroforestales* (Network of Agroforestry Trials) was presented by the *Institutos de Café de Centroamérica* (Coffee Institutes of Central America) to PROMECAFE, the entity that assumed the oversight of this network that was originally promoted by the Coffee TG. In collaboration with CIRAD and with funding from the IDB, we produced a prototype Information System to Support Diversification that guides users in finding electronic information about diversification options and provides criteria for decision-making. We participated in a FAO-MAGFOR project to propose and evaluate diversification options for marginal coffee zones in Nicaragua. Colleagues in the Forest Economics group developed economic-financial models for evaluating the potential impacts of diversification.

*Coffee conservation and genetic improvement.* CATIE's participation in the validation of new coffee hybrids

created under the agreement between CATIE, CIRAD and PROMECAFE was strengthened. We expect to wait at least one more year before being able to release the most promising materials. This activity was led by the MURF TG colleagues.

*Appraisal of environmental services from coffee farms.* Collaboration was begun with the GCG on the evaluation of environmental services from coffee farms and the potential to compensate these services. We are advising a study in Guatemala with ANACAFE on this topic and we prepared a pre-proposal that was presented to the IDB.

#### *T.G. Livestock and Environmental Management (GAMMA)*

Through the negotiation and launching of diverse projects, this group has renovated the technical staff and CATIE's capacity in silvopastoral system management under an environmental livestock production approach. Five projects comprise the GAMMA group today (silvopastoral-GEF, Rehabilitation of degraded pastures-NORAD, Carbon Network, Fragment and the Platform on Livestock and the Environment-LEAD). The main achievements consist of:

- Organization of the group and its legitimacy in the institution.
- Vinculation with other CATIE groups, especially with investigators from other TGs, e.g. Climate Change, Cacao and CeCoEco.
- Preparation of a medium-term plan.
- 4 research and development projects and an outreach project launched.
- Key personnel have been hired who will strengthen research on the theme.

Pilot areas in Panama and Bolivia have been identified for expanding GAMMA's target zones in the region. In Panama, environmentally degraded landscapes dominated by livestock have been identified in the Panama Canal watershed. Funds were negotiated with the AED to train technicians in the field of environmental ranching and we are advising the FUDIS about implementing a silvopastoral project financed by the AED.

Innovative results were generated for the impact of different land use systems on the conservation of biodiversity in livestock-producing countries of Central America (FRAGMENT project). The results show the importance of having a combination of different land use systems (e.g. living fences, trees in pastures, riparian forest, thickets or secondary growth areas) for optimizing the conservation of biodiversity on livestock-producing farms and rural landscapes. A workshop was organized with the Ministry of the Environment and the technicians from MINAE in Costa Rica to present the results; this Ministry is using the data to develop a biodiversity conservation strategy in Costa Rica.

The group collaborated on the organization of two international symposiums on silvopastoral systems and on a satellite workshop in the World Agroforestry Congress, where the results developed by GAMMA were disseminated. More than 800 experts from around the world participated in these events. GAMMA also published a special edition of the RAFA (16 technical articles) to disseminate results from the FRAGMENT and GEF-SSP projects.

FONAFIFO has adapted the methodology developed for environmental service payments (ESP) in the GEF project to formulate an ESP proposal, including the SAF and SSP. This is being reviewed by technicians from the GEF, MINAE and MAG project.

In 2004, three strategic courses were provided for training technicians in the field of environmental livestock production. A total of more than 100 technicians received training in Latin America.

The group collaborated with the Master's program by contributing scholarships for students; during 2004 six scholarships were given (three from the NORAD project and three from NINA). Funds were also contributed from the GEF project, FRAGMENT and NMBCA for five Master's students to conduct their research studies.

### *T.G. Management and Sustainable Use of Plant Genetic Resources (MUS-RFG)*

This group support regional efforts on improvement, conservation and utilization of germplasm from crops and forest species, coordinating actions with key institutes such as the IICA, IPGRI and CINVESTAV.

Some DRNA members have been incorporated into the group to strengthen activities on forest genetic resources along with a member of the Biometry Unit and an economist from DAAF, to support the group's activities in their specialized fields.

This TG is interacting with other TGs, such as cacao and coffee. This is a horizontal interaction for integrating efforts that are carried out in the different TGs. The MUS-RFG group has an Annual Operations Plan and a Medium-Term Plan (2003-2005), both prepared using exercises to prioritize the group's strengths, the activities in execution in the framework of the current structure, and the needs of the region. The group has five projects in execution and eight in negotiation.

The first achievement refers to the use of cacao genetic resources by the Genetic Improvement Program, which is oriented toward the acquisition of highly productive genotypes resistant to moniliasis (*Moniliophthora roreri*) and black pod (*Phytophthora palmivora*), diseases that cause fruit loss higher than 40% in the area. Based on the evaluations of several field trials over the last seven years, superior genotypes with high production capacity and moniliasis resistance have been identified. This information was complemented with studies on quality conducted in collaboration with the chocolate industry. The superior genotypes are being established in clone gardens prior to continuation with the next step which is their validation in regional trials in different countries under contrasting agro-ecological conditions. Under the framework of different international projects, a trial with hybrid families, a clonal trial, and two segregant populations for molecular studies were established. Classic improvement was complemented with the use of molecular tools that allowed corroboration of the identity of key genotypes in the Program, as well as studies on different aspects of cacao and the fungi that attack this crop.

Micro-propagation and cellular regeneration are means of asexual multiplication that allow the provision of better quality vegetative stocks to farmers for selection and validation. The MURF is initiating this technique for cacao, perfecting it for coffee, banana and plantain and validating regenerated varieties under farming conditions. As part of the FONTAGRO Project "Development of black sigatoka-resistant plantain and banana cultivars for local consumption for Latin America," all the objectives proposed for development by CATIE were achieved. In this project embryogenic cellular suspensions of the 'Curraré' cv were subjected to particle bombardment for the insertion of genes with anti-fungal capacity. Cellular suspension regeneration and embryo germination were achieved, which survived the presence of the antibiotics used as selection agents, indicating that the antibiotic-selected genes were inserted and expressed in the regenerated material. A total of 93 transgenic plantain plants of the 'Curraré' cultivar were obtained for the acclimation and phytopathological evaluation phase in the greenhouse.

In 2004, 99 orthodox seed accessions corresponding to 9 genera conserved in cold chambers were regenerated and characterized. Twenty accessions of *Physalis philadelphica* were characterized morphologically and molecularly in the thesis project of a student from the Technological Institute of Costa Rica (ITCR). In the last two years the distribution of germplasm was substantially increased, with 648 samples distributed to national (12%) and international (11%) research institutions, universities (13%), producers (15%), companies (38%), NGOs (6%), and projects (5%) (fourth achievement).

Regional cooperation mechanisms were strengthened by seeking new ties and/or strengthening existing ones with national and international institutions such as FAO, IPGRI, Crop Diversity Trust, IICA, USDA, AVRDC, HARC, WGF and WCF. Under the auspices of the FAO, CATIE's collections were designated as part of the *Red Internacional de las Colecciones Ex Situ de los Centros Internacionales* (International Network of *Ex Situ* Collections in International Centers) of CGIAR, opening the door for international financing. In July 2004, the General Direction named Carlos Astorga

as the Secretary *Pro Tempore* of REMERFI-Red *Mesoamericana de Recursos Filogenéticos* (Mesoamerican Network of Phylogenetic Resources), for which CATIE is a co-sponsor along with the IICA and IPGRI. The most relevant aspects developed by the Secretary *Pro Tempore* were consolidating the Network, ratifying the country members in the Directive Council, holding the VI Ordinary Meeting of the Directive Council in CATIE, and supporting project negotiations with the World Bank-GEF for the *Conservation and Sustainable Use of Neotropical Native Crops and Wild Relatives of Crops*.

The second International Course on "Applications of Molecular Tools in Agricultural and Forestry Sciences" was held from May 17-28, 2004, a collaboration of CATIE and Purdue University (sixth achievement). Many training sessions were also held for students from other universities, technicians and producers about the controlling moniliasis on cacao, genetics, molecular biology, tissue culture and histology.

The MURF offered various courses in the Graduate School and provided guidance to undergraduate, Master's and Doctoral students, contributing to the education of new leaders for Central and South America.

#### *T.G. Agro-ecological Production of Annual Crops (PAECA)*

The production of annual crops in protected environments under roofing is a productive modality that is gaining ground in Central America and the Caribbean, due to increased productivity in those environments, greater price stability in the market, reduction of production costs and the penetration of important market niches. The PAECA group has proposed making contributions in this field, which is new for the region and for CATIE, becoming involved in the theme of diversified commercial agriculture, trying to reconcile the poverty reduction and natural resource conservation approaches.

In the field of microbial control of pests, two prototype formulas of entomopathogenic fungi aimed at white fly control were developed. This development is part of the goal of the CATIE/CORPOICA cooperative project,

financed with funds from FONTAGRO. These formulas are being evaluated in the field to determine their effectiveness prior to their release for use by the farmers.

Among the main achievements of the PAECA group we have the MIP-NORAD Program based in Nicaragua, which successfully completed all the proposed products, including the books “*MIP en Manos de familias Rurales*” (IPM in the Hands of Rural Families) and “*Conceptos Básicos MIP*” (Basic IPM Concepts). Electronic guides were finished and distributed on agroecology and training on sweet pepper and cucurbit plant management. To support the development of new programs, the staff finished a study on “Multi-sectorial capacity for the reduction of pesticide use in Trifinio”. The study was presented to the Trinational Commission - Plan Trifinio and collaborators in the region. As a result of this study a proposal has been presented to MFA-Noruega to facilitate identified priority actions.

The group continued collaborating at the national level with PITTA-the *Red de Investigadores en Producción Orgánica* (Network of Investigators in Organic Production), to hold the *IV Encuentro de Agricultores Experimentadores e Investigadores en Producción Orgánica* (IV Meeting of Experimental Farmers and Investigators in Organic Production) at CATIE in August 2004, with the participation of 125 of the nation’s producers and investigators.

The project to develop non-synthetic phytosanitary products (NOQ) promoted the development of two regulations, one for the registration of pesticides of microbial origin and another for those of botanical origin. For this purpose a workshop was held with the Central American heads of registration. In Costa Rica, Nicaragua and Honduras, both regulations are in effect as national law since September 13, 2004, under decree No. 31961 Comex-MAG. With the support of CATIE/GTZ NOQ and the NORAD MIP-AF Project, we published *Control Biológico de Plagas Agrícolas* (Biological Control of Agricultural Pests), a book that contains up-to-date information on bio-pesticides.

Also with the support of the NOQ project, the group worked on the theme of organic fertilizer production in Costa Rica and Nicaragua, emphasizing production and

marketing aspects. Workshops were held about fertilizer production, and visits were made to producers to give them recommendations for improving quality aspects. In Costa Rica, CATIE coordinated the development of the Regulation on Organic Fertilizer Production. The legislation is the result of consensus among the nation’s organic fertilizer producers and State institutions.

The availability of non-chemical pesticides and organic fertilizers continued to increase in Nicaragua, Honduras and Costa Rica, thanks to the support given local production. In 2004, we began updating the second production group, which is substantially larger (26 companies). The supply has doubled in Costa Rica since the project began in 2000; in Honduras and Nicaragua, it has nearly quadrupled. The four countries began exporting these products, therefore we assume that the CATIE/GTZ Project will attain and probably exceed its proposed goals.

With support from the NOQ Project, the group consolidated CANIAN - the Cámara de Insumos Agropecuarios No Sintéticos (Chamber of Non-synthetic Farm Inputs) in Costa Rica. In Honduras and Nicaragua associations were created for this purpose: APROCABI - the Asociación Hondureña de Productores and Comercializadores de Abonos Orgánicos and Biopesticidas (the Honduran Association of Producers and Marketers of Organic Fertilizers and Bio-pesticides) and ANPROCAB - the Asociación Nicaragüense de Productores and Comercializadores de Abonos Orgánicos and Biopesticidas (the Nicaraguan Association of Producers and Marketers of Organic Fertilizers and Bio-pesticides), respectively. These are now in the process of becoming legally constituted.

#### *T.G. Research and Development of Clean Technologies in Musa (MUSA)*

This is an inter-institutional CATIE – INIBAP (IPGRI) group where researchers from both institutions collaborate. The Musa TG began a new FONTAGRO regional project, “Use and development of bio-products for the control of nematodes and Sigatoka” and received approval for another new FONTAGRO regional project, “Technological innovations for improvement of soil quality and health”.

**Understanding of the *Musa*-Black Sigatoka (*Mycopshaerella fijiensis*) pathosystem** has helped us become acquainted with the evolutionary mechanisms of the pathogen and understand how gene flow plays an important role in genetic differentiation of populations of the causal agent of the disease. The population structure of *M. fijiensis* was described in a continental setting, noting that the geographic regions studied (Latin America, the Caribbean and Africa) are different epidemiological units and that genetic differentiation increases as distance increases. For the management of Black Sigatoka, products of plant origin were evaluated; ten extracts looked promising. The evaluations of these materials are conducted in the field for their epidemiological evaluation. Leachates from compost obtained various materials (cow manure, coffee pulp and banana wastes) were also evaluated. Aerobic and anaerobic fermentations of the materials were made. Foliar applications of some leachates showed set-backs in the disease, and these are believed to have promise for its management. Methodologies were also developed to evaluate the resistance of banana plants to Black Sigatoka detailed protocols for epidemiological studies of the disease in the greenhouse are available.

In collaboration with Bonn University of Germany and the Del Monte Company, studies were made of the soil's potential to suppress the burrowing nematode *Radopholus similis* on the Atlantic coast of Guatemala. The results of this research indicated that commercial plantings of bananas from suppressive farms presented infestation levels of phytonematodes statistically lower than those on non-suppressive farms. Similarly, we have a photo collection of endophytes with more than 150 isolates. Four of these isolates are considered elite because they showed capacity for reducing the *R. similis* population by more than 84% in comparison with control plants. The potential of these fungi is being evaluated in the Dominican Republic, Venezuela, Panama and Costa Rica.

In collaboration with the University of Florida, research was conducted on the current status of the wilt caused by *Fusarium oxysporum* f.sp. *cubense* (FOC) in organic banana production systems associated with coffee in the Cantón of Turrialba and cacao in the Talamanca zone.

The prevalence of the disease is higher in Turrialba (90%) than in Talamanca (50%). The lower incidence in Talamanca may be associated with the antagonistic effect of biocontrollers present in the rhizosphere. Early selection studies of vitroplants of banana resistant to strain 1 of the wilt causal agent have also been developed. The method helps detect plants susceptible and resistant to the wilt in the nursery stage; raw extracts of FOC are used in concentrations of 40% and 60%. In bioassays of pathogenicity it was determined that the pre-selected plants showed lower incidence than the controls. The resistant plants have been distributed to the farmers of Turrialba so they can replace the susceptible materials.

These themes overlap one another and are integrated for developing technology transfer and training activities. The research group on *Musa* also has specific support from specialized centers such as INIBAP (International Network for the Improvement of Banana and Plantain) (Montpellier, France), CIRAD (French Agricultural Research Centre for International Development), Montpellier, France, CORBANA (National Banana Corporation, Costa Rica), FHIA (Fundación Hondureña de Investigación Agrícola) and universities such as the University of Bonn (Germany), Leuven Catholic University (Belgium), University of Florida (USA), University of Tolima (Colombia) and the (Plantain and banana research and development network for Latin America and the Caribbean) MUSALAC.

The research developed allowed two of CATIE's Graduate School students to complete their Master's program studies, supported four students from the CATIE-U. Tolima (Colombia) agreement, and incorporated exchange students (doctoral) from Germany (Bonn University) and Colombia. This year one additional student (CATIE Graduate School, class of 2004-05) has begun activities in the endophytic fungi project.

## **Department of Natural Resources and Environment (DRNA)**

### ***Department Directorate***

DRNA came into being in 2003 with the fusion of two former departments (Forestry, Rural Development and

the Environment). This new department is made up of five thematic groups, which reflect the larger strategic themes of the DRNA. This fusion has been very positive because it has made the managerial structure more efficient and effective, but mainly it has fostered a renovation of approaches and strategies, based on a strengthening of work in interdisciplinary teams, with a holistic and more integrated vision of the problem of natural resource management, in order to contribute to increasing production, natural resource conservation and poverty reduction in the rural environment.

#### *T.G. Forests, Protected Areas and Biodiversity*

The TG's research activities are carried out with initiatives that range from projects to thesis research in the M.Sc. and Ph.D. programs of the institution. Projects concluded during 2003 were Guadua Bamboo, Smilax project (coordinated by the professorship on Diversified Management of Tropical Forest, known hereafter as Professorship II), and two projects coordinated by the Professorship of Ecology in Tropical Forest Management (hereafter, Professorship I); the project funded by FINNIDA (Research Fund) on Information and Human Resources for the Sustainable Management of Natural Forests in Mesoamerica (hereafter, Finnida Project), and the project on Management of Forest of High Value for Certified Conservation (hereafter, monitoring project), a collaboratin with WWF-Central America and Oregon State University.

Research on genetic diversity has important implications for landscape management. Three new initiatives coordinated by the professorships – the Reventazón Model Forest (Professorship II), the project on Strengthening Local Capacity in the Conservation of Biodiversity in Nicaragua and Costa Rica (hereafter known as the Darwin Project, funded by the Darwin Initiative, United Kingdom, and administrated by INBio and Professorship I) and the sub-project 1 of the project on Ecological elements for the management and sustainable use of biodiversity in anthropogenic landscapes (Professorship I) will advance this approach, defined as strategic by the head of the Department. The Darwin Project represents the first formal collaboration of the TG with investigators from the University of Wales,

a partner in the doctorate program, as well as INBio and national NGOs of the two countries, and it is hoped that this is the beginning of new fruitful relationships. On the other hand, an investigator with a Ph.D. from the forestry research institute of Finland is currently working in a third of the projects mentioned and it is hoped that this is the first of many collaborative relationships.

**Regional cooperation** is a key activity for the group, in which one of the implicit goals should be the maintenance of the institution's leadership and impact in management and conservation of forests and biodiversity over the last twenty-five years. This year, the group has been leading the preparation of many proposals, implementing Web pages (Guadua Bamboo Project) and advancing the consolidation of regional research networks (Finnida Project); the preparation of a training strategy for the management of protected areas in Latin America was led by CATIE and presented at the Mesoamerican Congress of Protected Areas and the World Parks Congress. Finally, the group facilitated CATIE's incorporation into the Global Forestry Information Service (GFIS) that IUFRO will launch at the next World Forest Congress; CATIE will be the main source of Mesoamerican forest information for GFIS.

As a party to international groups, the group generated funds: 1) for work on the appropriate use of germplasm from tree species in the reforestation and restoration of forests through secondary natural succession (*SeedSource* Project, EU); and 2) to carry out a target analysis and synthesis of research results about biodiversity in agro-landscapes, approved by the prestigious National Council for Ecological Analysis and Synthesis (US), which will be executed in collaboration with GAMMA.

The group maintained high productivity in the area of research results during the year. The information was disseminated in international journals and books, in the journal *Recursos Naturales y Ambiente* (Natural Resources and Environment) as a strategic regional medium, and through the SIGUA information system of the Bamboo project. Outstanding publications led by personnel from the group include book chapters on "A holistic approach to forest ecosystem services" and "The biodiversity and conservation potential of shifting

agriculture landscapes” (another product in collaboration with GAMMA), the book *Monitoreo Ecológico del Manejo Forestal en el Trópico Húmedo: una guía para operadores y certificadores con énfasis en Bosques de Alto Valor para la Conservación*” (Ecological Monitoring of Forest Management in the Humid Tropics: a guide for operators and certifiers with an emphasis on Forests of High Conservation Value) (in collaboration with WWF-Central America and Oregon State University) and the first of a series for decision-makers called *Recursos, Ciencia y Decisión* (Resources, Science and Decision).

During the year, we began to implement new formal work relationships at various levels with highly important partners: the *Red Regional de Bosques Modelo de AL y el Caribe* (Regional Network of Model Forests of LA and the Caribbean) (RRBM-LAC), the prestigious ODI (see the Medium Term Objective 3), TNC and other partners of the alliance on the definition of an ecoregional conservation agenda, the *Alianza para el Aprendizaje* (Alliance for Learning) formed with the World Wildlife Fund, UCI, UPaz and other institutions; and nationally and locally with entities in charge of natural resource management, municipalities and community organizations of various countries. At the same time, the group supported important initiatives for the management of forestry plantations in countries of the region.

During the year, the group advanced in supporting the dialogue on environmental policies, showcasing a new step in the use of appropriate mechanisms to communicate research results (the publication of the *Recursos, Ciencia y Decisión* series, mentioned above) the acquisition of EU funds to participate in a project headed by the ODI; the insertion of the Ecosystemic Approach, an operational axis of the Department of Natural Resources and Environment, into the inter-institutional work agenda CATIE-MAG-MINAE (Costa Rica) and the adoption of recommendations from a research project for the authorities in charge of managing the San Juan La Selva Biological Corridor (reported under the Research heading).

The group had four flagship activities for these objectives: two strategic training courses: *Management of Protected Areas* and *Diversified Management of Tropical Forests*;

the Master’s program in Management and Conservation of Tropical Forests and Biodiversity, and support to the Doctoral Program. Work in each one of these activities was very satisfactory in 2004. The demand for these two strategic courses (XXVI and XVI, respectively) that were given successfully is still high. The Master’s program courses were, in general terms, very well evaluated by students of the 2004-2005 class and the thesis research projects of the 2003-2004 class were completed, although this class (through the five Master’s programs) had an unusually high rate of delay in presenting their final theses, a situation that should be analyzed. The number of admission requests to this Master’s program increased over prior years. The number of doctoral students advised by the group’s professors continued to increase and progress on the fulfillment of the program requirements (dissertation defense, research implementation) was satisfactory. Finally, among other training activities, the group successfully executed two courses for the project to Strengthen Local Capacity in the Conservation of Biodiversity in Costa Rica and Nicaragua (a collaboration with INBio and the University of Wales).

#### *T.G. Integrated Watershed Management*

After the finalization of the Focuecas Project I in 2003, in 2004 the group took on the task of the participatory and methodical preparation of a Program for “Innovation, learning and communication for the adaptive co-management of watershed” with many local, national and institutional stakeholders and CATIE itself; this process was completed with the negotiation of the final approval of the proposal by SIDA. This is a strategic program for CATIE, which has, among other challenges, the multi- and interdisciplinary integration of the TG around the innovative theme of watershed adaptive co-management. The development and start of this Program’s implementation was the main achievement of the MICH TG in 2004, for its objectives, challenges, approaches, and importance for CATIE.

In the development and support of **environmental policies**, the watershed group participated in the development of a regional strategy proposal for the integrated management of hydric resources in Central America (at the request of the ministers of environment



and agriculture), which was approved in a meeting of the ministers held in Guatemala on August 29, as well as the preparation of the action plan based on the proposal for an environmentally adjusted rate for the Birris River watershed, Costa Rica. The group has also been participating actively in discussions about the proposed water law for Costa Rica.

In 2003, CATIE's role through the Watershed TG has been relevant in achieving the institutionalization of watershed management in the INTA (Nicaragua), the organization of the national network of watershed organizations of Nicaragua (RENOC), support to groups of municipalities for the management of watersheds in Honduras, the adoption by the SAG of Honduras, through its watershed programa MARENA, of CATIE's planning and implementation of watershed management approach and technical assistance services, as well as the creation of 20 producer micro-enterprises in Honduras and Nicaragua.

The group prepared a volume of the journal *Recursos Naturales y Ambiente*, with research results from the students that graduated in 2002, as well as other experiences in watershed management developed by the group. It also supervised progress on the research studies of the master's program students, class of 2002-2003, and the research proposals of students in the 2003-2004 class.

The group has also contributed successfully to the Master's program in Watershed Management, one of the graduate programs in high demand.

The support to 10 municipalities, six in Honduras and four in Nicaragua, and the consolidation of watershed committees for Copán, Aguas Calientes and Jucuapa, despite not having a specific project for this purpose, was another achievement in 2004. This allowed the Focuecas II program to find an institutional base and work actively to begin its activities. Another relevant achievement was the consolidation of INTA's adoption and internalization of the watershed management approach and the watershed as a planning unit in Nicaragua.

The organization and realization of the 2004 Wallace Conference on the theme of Water, Food and Food

Security, with the participation of experts and technicians from CA and North America, allowed the analysis and discussion of priority themes for the countries of the region and for CATIE, in light of current challenges.

#### *T.G. Center for the Competitiveness of Eco-enterprises (CECOECO)*

Rural enterprise development (RED) represents one of the most promising options for reducing rural poverty. Our focus on eco-enterprises, or rural enterprises committed to environmentally-friendly production and socially responsible marketing, ensures that RED does not compromise the natural resource base. Eco-enterprises have competitive advantages in specialized markets, which are growing rapidly, given the small scale of their operations and the relatively low costs of labor. To position themselves effectively in these markets, the eco-enterprises must provide quality products in sufficient volume at competitive prices in a timely fashion.

Regarding **investigation**, in collaboration with the CIFOR project on "An International Comparison of Cases of Forest Product Development", a joint effort of more than 60 scientists from around the world, two case studies on non-timber forest products (NTFP) in the Bolivian Amazon have been submitted. These will be published in the Latin American Volume of an NTFP series of three volumes. A (peer-reviewed) article was presented at the CIFOR Conference on "Rural Livelihoods, Forests and Biodiversity" in May 2003 and was submitted for publication in a special volume of "World Development."

A research proposal titled "*Fortifying the competitiveness of eco-enterprises in tropical America: Towards successful integration into global value chains*," was submitted to FONTAGRO in May 2003. It anticipates research collaboration with the universities of Georgia and Freiburg, and Biocomercio/Instituto von Humboldt in Colombia.

Regarding **regional outreach**, under the title "Design and Facilitation of a Sustainable Forestry Alternatives Network for Key Stakeholders in Latin America (SAnet-Forestry)," financed by the Sustainable Alternatives Network and GTZ, an interactive bilingual Web site

was created in November 2003, called “EcoNegocios Forestales – Forest EcoBusiness”. It includes a portal for buying and selling certified timber and non-timber forest products, a virtual store for direct marketing and an interactive consulting service with experts, among other things. Within the framework of the project for “Improvement of Competitiveness and Environmental Performance of Small and Medium-size Forestry Enterprises” financed by IDB-FOMIN, innovative alliances are stimulated among various stakeholders in forestry product productive chains in Guatemala, Honduras and Nicaragua.

Three new **training** courses were offered. Two courses have been conceptualized as strategic courses: “International Course on Coffee: Organization, Production, and Trade Strategies for the Global Crisis in Coffee Prices” and “Bamboo as an Under-utilized Resource in Latin America: Cultivation, Management, Processing and Trade.” The second was organized jointly by CeCoEco and the International Network for Bamboo and Rattan (INBAR). Another course – “Market Analysis and Development” – was organized jointly by the FAO, GEF-RUTA and CeCoEco as a result of the collaboration between the FAO and the CATIE-FOMIN Project. The strategic course “Linking Small Rural Producers with Productive Chains: Design of strategies for Competitiveness” will be offered for the second time in Sept/Oct with more than 20 participants. The course will also serve to reinforce collaboration with CIAT’s Agro-enterprise Development Project. Due to the high demand, other courses will be given, including advanced courses in the member countries. Basic and advanced courses are being designed that will serve as modules for the regional training program, which will lead to certificates in Rural Enterprise Development. Strategic alliances for training have been established with CARE Guatemala (“Diversification of Coffee in the Polochic Watershed”) and the CATIE-MIP-AF/NORAD/ICAPE program in Costa Rica (“Economic Guidelines for Agricultural Diversification: Methodological Application for Coffee Cultivation”).

CECOECO has been a pioneer in offering interdisciplinary **graduate** courses. Examples are the coordination and collaboration with the following

courses: “Development of Small and Medium-size Rural Enterprises”, “Rural Economy”, “Rural Development and Community Participation”, “New Rural Institutions”, “Ecological, Economic and Social Considerations of Agricultural Production and Natural Resource Management”, “Quantitative Methods for Socio-economists”, and “Design and Analysis of Environmental Policies”. Negotiations have been initiated with INCAE and the University of Purdue to offer a course related to “Eco-enterprise Development”.

CECOECO helps eco-enterprises increase their competitiveness in specialized markets through its outreach, research and graduate education programs. We maintain close relationships with international renowned partners (e.g. CIAT, BID-FOMIN, FAO, GTZ, Cosude, UNEP/GEF-SANet), diverse players in the productive chains (producers, transformers, traders and consumers) and technical service providers, entrepreneurs and funders (NGOs, projects, private firms). We are eager to create value chains that will ensure greater economic and social benefits for rural enterprises, particularly those of small organized producers, based on competitiveness and sustainable natural resource management. In 2004, we had 13 achievements in research, outreach and education:

Five research projects were successfully concluded, including two international projects and three master’s research projects; two book chapters, five articles in conference proceedings and one article in a technical journal were published and ten new research projects were begun, including one at the doctorate level, eight at the master’s level and one under a local project framework.

The FOMIN project has progressed successfully, creating tools for the administrative management of private enterprises in the forestry sector of Guatemala, Honduras and Nicaragua. Their application will help raise the level of development of the sector and the competitiveness of local forestry enterprises. The group promoted the participation of small transformers in local fairs for the promotion of the star product “Mueble”; and a marketing strategy was designed for the El Ceibo cooperative, Bolivia, to obtain a larger quota in the national chocolate market. The “*Alianza de Aprendizaje en la Organización*

*y el Desarrollo de Empresas Forestales*” (Learning Alliance for the Organization and Development of Forestry Enterprises) begun as a CeCoEco initiative, includes FAO, BID-FOMIN, WWF-CA and local partners in Nicaragua’s North Atlantic Autonomous Region and Guatemala’s Petén; two *Alianzas de Aprendizaje sobre el DER* (Learning Alliances for DER) (Central America; Andean nations) were integrated with CIAT, CRS, CARE, SNV and local partners in the countries. DER concepts and strategies were widely disseminated through 21 presentations in five national events and 16 international events (attended by approx. 2,500 people); two bilingual systems of market intelligence were designed, programmed and installed on the Internet: EcoNegociosForestales – Forest EcoBusiness and EcoNegocios Agrícolas – AgriEcoBusiness; and an innovative methodological guide was prepared for DER regarding entrepreneurial organization for small producers.

A new strategic course was developed, beginning the first cycle of the Degree in Rural Enterprise Development, granted jointly by CATIE and CIAT.

More than 75 Master’s students attended four graduate courses given by members of CeCoEco.

#### ***G.T. Socio-economics of Environmental Goods and Services (SEBSA)***

The concentration of activities in a limited number of **research** areas has increased outreach by this TG toward other CATIE groups, facilitating joint investigation. Collaboration has been guaranteed with the AVINA Foundation and CIAT. New key partners for research, FONAFIFO and MINAE in Costa Rica and the University of Gotemburgo in Sweden, were identified and there are now joint projects. Much progress has been made on the collaboraton with the outreach program, the FOCUENCAS project and the GEF-Silvopastoral project. Research and consulting proposals have been prepared, such as: Project for the Evaluation, Documentation and Training in Central American PES, CNFL-NORAD Consulting Project, Project for a Latin American Network of Environmental Economists, SILVIA-FONAFIFO Project, JASEC Project, FEMICA

Project, FONAFIFO-Environmental Service Certificates Project, etc. The JASEC, FONAFIFO-CSA, and FEMICA Projects are now in execution. The other projects are in advanced discussion phases.

The **training courses** “Economic Baselines for the Management and Appraisal of Environmental Goods and Services” and “Identification, Preparation and Evaluation of Forestry Projects” were improved and updated. SEBSA members have participated actively in courses of other TGs (forests, protected areas, ecological agriculture) and are now designing a module on environmental and forestry economics that may be included in CATIE’s courses at the request of the course coordinators. A short course was given with the NTO-Colombia and there are plans to continue offering it in the future and even to extend it in other places in Colombia. There are similar plans in the Dominican Republic.

Work has been done to improve the programs of the graduate courses as well as the complete master’s program in order to have fewer courses with higher quality and depth. Additionally, work was done with other master’s programs to give interdisciplinary courses and our professors participate in courses of other master’s programs. A workshop was organized with everyone involved in the master’s program, professors, students and collaborators to define priority action areas. We worked closely with the Graduate School to prepare a new professor evaluation manual.

SEBSA has worked on the financial technical analysis of the production systems associated with coffee-producing farms that have few market perspectives and are representative of the communities of El Tuma-La Dalia and Rancho Grande, Nicaragua, as part of the strategic plan for productive transformation of Nicaraguan coffee production. The objective of the study is to explore sustainable and diversified production alternatives to increase the income of small and medium coffee producers.

SEBSA left its mark on the preparation of studies for the purpose of formulating policies that would promote the sustainable management of natural resources through the design, implementation and verification of innovative

environmental service payment mechanisms and promotion of diversified production systems. For example, SEBSA has worked with state institutions, as in the case of the study of the environmentally adjusted tariff for the Administrative Board of the Cartago Electrical Service (JASEC), which intends to use the income to implement integrated watershed management and ESP in the watersheds of the Birris hydroelectric system. This study is unique in Latin America and will spearhead a mechanism that will help state institutions and local governments conduct tariff studies that try to internalize the management costs of some externalities of the service provision process. SEBSA works with Costa Rica's FONAFIFO – the *Fondo Nacional de Financiamiento Forestal* (National Fund for Forestry Financing) to consolidate a new purchase-sales instrument for environmental services called the Environmental Service Certificate (CSA). The CSA is a financial instrument developed to capture private funds for the payment of environmental services at the local level, mainly for the protection and regeneration of forests for the continuous production of water in quantity and quality through the protection of soils and aquifers under forest cover. CATIE operates as a verifier of environmental services in order to guarantee the transparency of the CSA program as a financial instrument. CATIE designed a system of standards for effective forest protection. Another SEBSA achievement was collaboration in the external advisory group of SINAC that has designed a strategy for combating illegal tree cutting (ECTI). ECTI is an entity that dictates policies and executes actions to combat illegal tree cutting. Decrees and directives have been formulated for the management of forest resources and the control of the forests that are disappearing due to illegal cutting and the conversion of forests into pastures where the trees are later extracted with cutting permits.

#### *G.T. Global Change (GCG)*

The Global Change Group (GCG) reaffirms CATIE's effort to contribute to environmental issues of international importance. It has a nucleus of four people and occasional collaborators. The core personnel work exclusively on group activities. The occasional collaborators support specific activities in and outside of the institution and include high level professionals. The

group is internationally recognized for its expertise in CDM (Clean Development Mechanism). In 2003, CATIE was invited on three occasions to support discussions on forestry projects in CDM among Latin American negotiators.

The Group also participated with a report to the XVIII meeting of the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the UNFCCC. Important NGOs, such as The Nature Conservancy, CIFOR, and BirdLife-Las Américas have requested the Group's support on the subject of climate change and CDM. CATIE's affiliation with the UNFCCC is being promoted and in Latin America we are promoting the idea of mobilizing a *think tank* on the subject of climate change and land use.

The GCG page is one of the most information-packed pages on CATIE's Web site. Besides basic information about the group, it aims to document CATIE institutional memory on global change. The outreach strategy consists of technical presentations about hot topics being discussed internationally. This year the group made presentations at several international conferences. One of the presentations has been placed on the Web page of the UN Framework Convention on Climate Change (UNFCCC). This year, two scientific articles have been approved by peer-reviewed journals. Two projects are producing software tools for plantation management (SILVIA) and carbon flow modelling (CO2Fix).

Most activities focus on research and technical assistance. The CASFOR II, ECOMAN (funded through the INCO program of the European Union) and PABID (funded by Finland) projects were concluded this year. The project on sustainable biomass and renewable bioenergy (SUBBE) began in April 2004 and will conclude in May 2005. A expert in technology for the conversion of biomass into bioenergy of the University of Jyväskylä made a technological evaluation for Costa Rica with the GCG. In 2004, collaboration continued with other research projects such as CASCA (of INCO) of the Coffee TG; the silvopastoral project (of the GEF) with GAMMA; and environmental services (of ZIL, Switzerland in collaboration with ETH). Work also continued on subjects for which we have no financial support such as the

subjects that are being negotiated under the UNFCCC (i.e. non-permanence) as well as with our M.Sc. and Ph.D. students at CATIE, and exchanges (design of financial mechanisms, development of software for carbon monitoring, spatial analysis of environmental services, among others). In 2004, we prepared five new research proposals and, a proposal that we presented jointly with CIFOR to the EU for research on adaptation to climate change and forests was approved that will result in more job stability.

Research results have been disseminated at conferences, in scientific articles and technical and electronic publications. Technical assistance and cooperation with national, regional and international entities are also important pillars of the group's strategy. In this way we have been able to develop strategic alliances, disseminate our work, and become aware of research topics and needs for strengthening capacities that we should work on. Technical assistance has helped obtain some of the funds we need for our core personnel. Various initiatives were attended related to the promotion of CDM and similar mechanisms in LA that are motivating important reforms in environmental policies.

We helped raise CATIE's profile in the theme of modalities and procedures for MDL project activities of forestation and reforestation. Results from our research helped support the Latin American negotiators reinforce their position on the theme. CATIE is already a member observer of the UNFCCC, providing concrete methodological contributions to support political agreements, as well as analysis of the implications of the texts in negotiation.

In 2004, we gave the fifth international course on climate change and MDL project design. COSUDE contributed resources for granting 15 complete scholarships or their equivalent as partial scholarships. More than 200 people wanted to participate in the course, 29 of which were able to attend. Given the high demand from many Latin American countries for training in the theme of MDL project design, we made a proposal to the Ministry of the Environment of Spain to give courses in South America with partners from Uruguay and Argentina. On the other hand, we also played an active role in courses on the

same theme organized by entities other than CATIE. Similarly, to the extent allowed by our possibilities, we continued assuming protagonist roles in initiatives to strengthen capacities favored by organizations such as IUCN, FAO and UNEP. Finally, in 2004 we obtained funding to coordinate a new course on innovative tools (i.e. Silvia) that simulate growth and management of forest plantations.

In 2004 we again gave the course on "Global Change" to support the course on Environmental Economics. We had assistance from CIRAD and CIFOR for teaching, technical assistance, training and software design activities for work on forest plantations.

Given that consultancies continued to be a mechanism for protecting ourselves in 2004, we maintained an adequate level of this kind of activity. On the other hand, the consultancies limited our capacity to participate in activities important for the institution, such as graduate education.

One difficulty in 2004 was the work overload, which often resulted in some products not attaining the qualitative level that we like to maintain to be able to grow and achieve the impacts expected. For example, with the current structure it is difficult to attend to the requirements of our software users or to the many requests for training and project execution related to the estimation of the carbon removal environmental service, which we receive continually. We estimate that for 2005, this work overload could increase given that we are undertaking a new theme within climate change -- the adaptation to climate change.

We are very strong in climate change mitigation, but we are still weak in the theme of adaptation and we feel we are still beginners in the theme of biodiversity. We celebrate the achievement of having won the proposal on adaptation and forests and with it we hope to take advantage of the opportunity for growth in the theme of vulnerability and adaptation. We feel a need to integrate the themes of adaptation to climate change, environmental service payments, estimation of the reduction of carbon emissions and biodiversity protection. Even though other groups from CATIE cover the biodiversity theme, it hasn't had a focus on global change and the Convention

on **Biological Diversity** that we would give it in the GCG. This integration is already being requested by individuals who want integrated evaluations to be able to sell environmental services, as well as research areas such as the Focuecas program.

We also believe that it is important to continue with the efforts we initiated in the theme of bio-energy. The potential MDL project developers within the energy sector of Costa Rica and other nations positively viewed our initiative to strengthen capacities for the formulation of these kinds of projects. Having among us one of Latin America's foremost experts on this theme, Dr. Oscar Coto, was highly advantageous because he served as a link between knowledge about biomass generation and global change processes at CATIE and the technological evaluations needed for the conversion of biomass into bio-energy, as well as all the experience in methodological approval of MDL project activities.

## Outreach Program

### Regional Outreach - National Technical Offices (NTO)

In the 2003-2004 period, the Outreach Directorate conducted different activities to strengthen project management, which included the identification of opportunities for proposal formulation and negotiation as a fundamental element.

This Directorate is responsible for the conduction, coordination, supervision, and support to the NTO, of work that helps strengthen the two main functions assigned to these offices: outreach (institutional relations and technical cooperation) and project management. As part of this work, at least three monthly visits were made to the different NTOs where management tasks, institutional relations (visits to ministers, directors, etc.), identification of opportunities and project management were assisted. It worked closely with the NTO to expand and spread opportunity identification and fund acquisition activities for the fulfillment of the institutional mission. Key people were visited periodically in ministries of the environment and agriculture in the countries, donor/

cooperating institutions, multilateral organizations, and strategic alliances were established with institutions similar to CATIE. Around 25 agreements for technical cooperation were signed with different institutions in the countries. During 2004, 51 project proposals were formulated and presented to different donors/cooperants and multilateral agencies. As part of this, six projects and twelve consultancies were obtained (Guatemala 3, Honduras: 3, El Salvador: 2, Nicaragua: 6, Panama: 1 and Colombia: 3). Thirty-eight training courses were also held in the countries, involving the NTO and development projects, and 50 working meetings were held with the participation of project leaders and technicians, and DPE and NTO staff members for the coordination of CATIE's actions in the nation. One of the main limitations faced was the thematic group technicians lack of available time (due to their job commitments) to serve as advisors to the national organizations on the formulation and execution of their proposals. For 2005, there will be work on a participation strategy for the thematic groups on regional initiatives and programs that back the management and implementation of country-level projects, which will help make institutional expertise available for this work. The lack of consistent capital investment for project management as well as a full-time technical team for this work is evident in all the member countries of the institution.

After the changes were made in the personnel of the NTOs in 2002 and the adjustments made in the strategies and activities, the offices in Guatemala, Nicaragua, Honduras, El Salvador and Colombia performed favorably. In general terms, the offices improved their performance on the following aspects:

- Support to CATIE training, graduate education and research/development in the countries: 2003 was a key year for improving NTO participation in supporting projects operating in the countries that depend on the technical departments and STR. Some projects -PDS PRODOMA and FEMICA- were assigned to the respective NTOs.

Various projects that began their activities in 2003 (e.g. degraded pastures, NORAD) and others such as SETEDER received strong support from the NTOs

for operational and administrative management and for convening negotiation events and support with the counterparts/national institutions and donors. This change began in part because of the ongoing process of administrative and human resource decentralization (Nicaragua, Guatemala, El Salvador) that helped improve response to the needs of projects operating in the countries. It should be emphasized that this decentralization has not implied an increase in financial resources (operational) from the core budget to the NTOs. It means that the NTOs are taking on more responsibility for resources generated/negotiated in the country. To continue this process, it will be necessary to institutionalize i) the contributions of projects to the NTOs as is happening in the case of the FOCUENCAS project in its new phase, and ii) guarantee that each project explicitly allocates resources for its technical and institutional supervision. With this, direct project supervision and CATIE's technical presentation in the region will be strengthened.

The Offices increased their efforts to involve and support master's program students more in their respective countries. As a new modality, efforts were also made to involve master's program students in carrying out their research with beneficiary institutions that co-finance such research (a case in Guatemala).

- Development of national training programs. The achievements obtained in Colombia should be emphasized (support to a diploma from UTP on the themes of Economic appraisal of environmental services; Planning, monitoring and evaluation; and territorial management for rural development). The NTOs organized and developed some 25 courses for more than 550 participants. Course instructors were mainly staff from the Headquarters, from projects and CATIE graduates. The main themes were: appraisal of environmental services, watershed management, plantation management and project planning, monitoring and evaluation. The growing demand for training at the national level means that a person partially responsible for organizing these short courses will be assigned to the offices in Nicaragua, Colombia and Guatemala.
- Financial sustainability: the NTOS nearly duplicated the funds assigned to them from the core budget. Thus, besides covering the assigned support, they generated new resources. From these funds, more than 50% correspond to services provided in the countries by staff members from different CATIE entities.
- Support/generation of new opportunities and projects. The NTOs began negotiations for more than 20 new projects/activities, some of which involve other CATIE entities (RTS, technical departments). Similarly, another 15 new initiatives are in preparation; these initiatives address national demands and opportunities on the following themes: risk management, watershed management, irrigation, agricultural diversification and plantations.
- Outreach about CATIE actions in the region: The most outstanding achievement was the celebration of CATIE's 30th Anniversary in Nicaragua, Honduras, Colombia and Panama during 2003. The NTOs, in close coordination with the Communications Area, continued disseminating CATIE information and news through bulletins, the Web site, and at events and different national forums. On the other hand, the Board of Directors meeting in Guatemala in 2003 and another in Honduras in 2004 were opportunities to disseminate Center activities to National Authorities in these countries.
- Administrative and financial operations. Thanks to close collaboration between the Direction of Administration and Finances and the Direction of Regional Outreach, the application of norms and regulations continued to improve. This was a milestone, because it allowed the institution to consolidate institutional transparency. It should be emphasized that the greatest achievement occurred in Honduras: the audit reports emphasize significant improvements in one year since changing the National Representative in Honduras. Similarly, the NTOs showed excellent performance in using the designed planning and monitoring tools for the reporting schedule.

## Planning, Monitoring and Evaluation

The major achievements of the period were:

- **PME Tools** coordinated at different levels: Approval of the 2003-2012 Strategic Plan, preparation and approval of the first Medium-term Plan for CATIE for 2003-2005 and preparation and approval of CATIE's AOPS for 2003 and 2004. The last two tools involved preparation of their respective plans by the TGs and other CATIE entities. These documents will be the basis for developing monitoring and evaluation of the performance and impacts of each entity and of CATIE as an institution.
- **Positioning of CATIE:** CATIE contributed, together with the IICA and other international organizations, to the preparation of the hemispheric agricultural agenda agreed upon for the Summit of the Americas; CATIE advised INTA/Costa Rica in the definition of its priorities in the context of tendencies and demands and CATIE was asked to support SICTA in the preparation of its strategic plan.
- **Training in PME:** a training course in PM&E on CD has been created. This material is a product of the documentation of methodologies and tools applied in

the last four years, when the incorporation of PM&E actions was begun with the M&E project funded by Danida. This material will be the basis for training actions and in-service training to be developed starting in 2004, particularly in the countries.

- Preparation of professionals in PME at the Graduate School: the course on PM&E in conservation and development projects was given successfully.

## Communication/Information

### Journals.

In 2003 – 2004, publication and distribution of the journals *Manejo Integrado de Plagas y Agroecología (MIPA)*, *Agroforestería en las Américas (RAFA)* and *Recursos Naturales y Medio Ambiente* continued, in print and electronic versions. These data are shown in Table 10.

Approximately 500 journals, per issue, per year were distributed.

### Institutional Website

In 2003, CATIE's Web site was modernized and then relaunched during the celebration of the thirtieth anniversary of CATIE in the Republic of Nicaragua; the activity was attended by more than 150 people

Table 10. Subscription to CATIE's journals (2003 – 2004)

Journal	MIPA		RAFA		RRNA		Total
	2003	2004	2003	2004	2003	2004	2004
Donations*	127	143	212	-	-	346	828
Exchanges*	47	60	94	-	-	47	248
Subscriptionss	252	207	290	-	-	262	1.011
Electronic subscriptions	22	30	9	-	-	33	94
Total	448	440	605	-	-	688	2.181

\*The greatest amount of exchange is done through the Orton Library. This figures are not included.



including governmental authorities, ambassadors and representatives of donor institutions and higher education centers.

Since 2003, CATIE has had a more interactive Web site, in English as well as Spanish with possibilities for creating information nodes for each thematic group, project or training course. Besides the new presentation, the Web site offers the possibility of making a large number of full text materials available through the Virtual Bookstore of the Orton Commemorative Library. For 2005, other possibilities will be expanded on CATIE's Web page and more search engines for books, personnel and projects will be created.

### **Internet communications system**

In the area of Information Systems, beginning in 2004, a change toward systems based on client/server technology to a three-stage Web platform will begin, allowing full transportability, centralization of applications and data, and a single interface with the final user, whether at the central headquarters or in the national technical offices.

More than 90% of the administrative processes have been automated with the present systems, allowing greater control of transactions, reducing process time and avoiding the consumption of resources such as paper.

The local computer network was updated with the installation of new Switches or data commutators that allow greater transmission velocity and a more efficient network. Most of the links on the network run at 100 Mbps (millions of bytes per second).

The connection with the Internet was expanded to 2 Mbps to support current remote traffic. This velocity will allow more rapid downloading from the Internet as well as better access to our servers, Web, Library Catalog applications, etc. To obtain this band width a wireless hookup for a maximum capacity of 9 Mbps was installed.

In the area of information science security, servers dedicated to the detection of unwanted e-mail (spam) and viruses were installed. All e-mail received or sent are verified to be free of these kinds of problems to keep the network more reliable and secure.

A new server was installed for the CATIE Web site that allows both local and remote maintenance of the content.

### **Geographic Information**

CATIE's GIS laboratory has capacity for resolving problems in the implementation of municipal registered surveys and for territorial planning.

In the 2003 – 2004 period the Geographic Information System worked on the following projects:

- FOCUENCAS – the GIS developed geographic data for this project (donor – Sida).
- USDA and the GIS Laboratory developed a regionally homogenized statistical system. The GIS is carrying out the Regional Agricultural Statistical System (donor – USDA).
- USDA – MINNESOTA. Conducting research on Hydrology of Tropical Agroforestry Systems (donor – USDA).
- GEOCAFE, updating the map of coffee distribution in three regions of CR, as a result of the Coffee Census project executed in 2004.
- IGERT, develops activities on the use of remote sensing, landscape change, and change in plant cover.
- JASEC, working on processes to prioritize zones for mapping land use and for environmental service payments, for sustainable watershed management.
- CARTA, PRIAS, groups a series of projects (NASA, CENAT, UCR, UNA) to prepare the carta por año through flights funded by all the participants, whose data are useful to different projects. CATIE is a member of the technical advisory committee for CARTA.

Support was also given to the municipality of Turrialba for the sound management of the river channel, through recommendations for reducing the costs of management and vulnerability.

Work is being done on the fiscal surveys of the Tejar district, El Guarco and the Cantón of Jiménez.

## Administration and Finance

CATIE has areas and units responsible for providing logistic, administrative and financial support services to the Center's own activities. These areas and units are classified into three types: those dedicated to resource (financial and human) administration, those in charge of generating resources to support the core budget (productive activities) and finally, those dedicated to logistic support and infrastructure (Table 11).

Table 11. Distribution of Logistic, Administrative and Financial Services at CATIE

Administration of resources (financial and human)	Productive Activities	Logistic/legal support and infrastructure
<ul style="list-style-type: none"> <li>Accounting and finance Area</li> <li>Human Resources Area</li> </ul>	<ul style="list-style-type: none"> <li>Farms</li> <li>Lodging</li> <li>Transportation</li> </ul>	<ul style="list-style-type: none"> <li>General services</li> <li>Computer Center</li> <li>Maintenance</li> <li>Legal office</li> </ul>

## Finances

The activities developed by CATIE in this period were funded from five funds that are managed separately according to their origin and the application of the resources.

- Core Fund:** This is comprised of income from membership quotas of the member countries (14 countries in 2003 and 2004. US\$50,000 per year per country), the regular contribution from the IICA (US\$900,000 and US\$1,000,000 per year in 2003 and 2004 respectively), tuition and fees, sales of goods and services (project administrative costs, journals, books and contributions of productive activities) and finally, specific contributions to support the basic budget from the honorable governments of Sweden and Norway (Table 12).

Table 12. Specific contributions to core budget

Source	2003	2004
IICA	900.000	1.000.000
Member Countries	700.000	700.000
Tuition and Fees	310.366	273.454
Goods and Services	903.172	939.418
Norway	498.013	464.214
Sweden	1.315.668	1.079.977
TOTAL US \$	4.627.219,	4.457.063

- Productive Activities Fund.** This consists of the administration of agricultural and ranching activities (farms) and infrastructure (lodging and vehicles), which support the core budget through income generation and cover their operational costs. Contributions of US\$308,294 and US\$291,297 were made to the core budget for 2003 and 2004 respectively.
- Funds in Custody:** These are small funds negotiated by CATIE to support research and graduate scholarships. They are managed independently because greater agility and effectiveness is needed in their accounting. These funds are classified as educational, institutional and specific (Table 13).

Table 13. Distribution of funds in custody

Classification	2003	2004
Education	786,240	607,446
Institutional	521,133	503,153
Specific	1,673,676	2,005,921
TOTAL US\$	2,981,049	3,116,519

- Projects and Agreements Fund.** These are **restricted funds** that have specifically defined conditions for use established by the donor. During 2003 and 2004, 69 projects were executed with US\$7,920,025 and US\$7,643,444 respectively.
- Plant Fund.** This is an accounting record that allows administration to properly control and record institutional assets.

CATIE is audited annually by an external firm of internationally renowned auditors. This firm is chosen by the Inter-American Board of Agriculture (JIA) through an external bid process for auditing the financial statements, of CATIE as well as the IICA. Additionally, special agreements and projects are audited periodically by other external firms hired by the donors.

CATIE also conducts an internal audit for the Board of Directors, which includes fund management revision, expenses executed by the projects, institutional accounts and control procedures, and more in the annual work program.

Table 14 and 15 below present CATIE financial statements for 2003 and 2004, based on the audit reports from those years.

Table 14 presents the balance of funds for the years indicated. As can be seen, in general terms the level of assets from one year to another has been maintained, with no relevant differences requiring comment.

In Table 15, basically the reduction in income obeys the specific contributions from Sweden. On the other hand, expenses increased under the General Direction and Higher Bodies heading, due to various aspects; the Board of Directors stipulated that one meeting per year should be carried out in a country where CATIE actions are developed and this increased expenses; on the other hand, some expenses were incurred for Foreign Relations, Communications and Fundraising.

Table 14: Assets, liabilities and combined statements of balance of funds for 2003 and 2004 (\$US)

	2003	2004
<b>ASSETS</b>		
Circulating Assets:		
Cash	5,056,729.00	4,229,942.00
Negotiable securities	115,000.00	439,258.00
Accounts and documents receivable		
CATIE Members	1,897,541.00	2,281,951.00
Other accounts	2,790,928.00	3,037,455.00
Total accounts receivable	4,688,469.00	5,319,406.00
Inventory	178,965.00	260,691.00
Total circulating assets	10,039,163.00	10,249,297.00
Buildings, machinery and equipment	6,081,831.00	5,994,004.00
Other assets	378,721.00	310,311.00
Funds in trust	750,000.00	900,000.00
<b>TOTAL ASSETS</b>	<b>17,249,715.00</b>	<b>17,453,612.00</b>
<b>LIABILITIES AND BALANCE OF FUNDS</b>		
Circulating liabilities:		
Accounts payable and accumulated expenditures	2,494,767.00	3,324,517.00
Funds in custody	2,626,797.00	2,355,977.00
Donors – agreements and contracts	2,321,306.00	1,907,808.00
Deferred income and other liabilities	135,408.00	121,366.00
Total circulating liabilities	7,578,278.00	7,709,668.00
<b>TOTAL LIABILITIES</b>		
Balance of funds	9,671,437.00	9,743,944.00
<b>TOTAL LIABILITIES AND WORK FUND</b>	<b>17,249,715.00</b>	<b>17,453,612.00</b>

**Table 15. Balance of Income and Expenditures for the Core and Project Budgets for 2003 and 2004**

Amounts expressed in US\$.		
	2003	2004
<b>INCOME</b>		
Membership quotas	1,600,000.00	1,700,000.00
Technical support service	212,341.00	214,256.00
Tuition and fees	310,366.00	273,454.00
Productive activities	1,347,165.00	1,233,093.00
Administrative and logistic support	368,942.00	249,178.00
Exchange rate difference	4,110.76	3,320.38
Other income	9,482.24	181,366.62
Specific donations and contributions	1,813,681.00	1,544,191.00
Subtotal	5,666,088.00	5,398,859.00
Income from Agreement funds and contracts	7,920,025.00	7,643,444.00
Income from funds in custody	2,981,049.00	3,116,519.00
<b>TOTAL INCOME</b>	<b>16,567,162.00</b>	<b>16,158,822.00</b>
<b>EXPENDITURES</b>		
General Directorate and Governing Bodies	507,812.00	785,586.00
Administration and services	1,268,663.00	1,244,655.00
Technical programs	2,374,747.00	2,077,942.00
Productive activities	1,038,869.00	941,795.00
Others	179,457.00	186,860.00
Subtotal	5,369,548.00	5,236,838.00
Expenditures from Agreement funds and contracts	7,920,025.00	7,643,444.00
Expenditures from funds in custody	2,981,049.00	3,116,519.00
<b>TOTAL EXPENDITURES</b>	<b>16,270,622.00</b>	<b>15,996,801.00</b>
Excess of income over expenditures	296,540.00	162,021.00

# 5. Conclusions

Significant progress was made during this period on the institutional restructuring process with the consolidation of two departments and the thematic groups being the greatest achievements of the biennium. Increases in efficiency also stand out: e.g. maintaining scientific productivity in publications and the number of students with a smaller core budget and increasing the budget for projects and consultancies; therefore, 2003 and 2004 are considered to be very productive years.

All the Thematic Groups contributed to the modernization of CATIE's agenda in agriculture and in natural resources and the environment. At the same time they achieved important diversification of donor sources, with the GEF, World Bank, CIDA and IDRC-Canada and Japanese funds complementing generous European support, mainly from the Nordic countries, and United States support. This is an important fact that confirms CATIE's unique character as a Center that adapt to regional needs in its research, education and outreach

operations, maximizing efficiency to serve its member countries.

In this period, CATIE continued to play a crucial role in regional dialogue on relevant themes such as biosafety, droughts, desertification, food security, water, illegal tree cutting, etc., supporting the council of ministers of Central America, the CAC and the CCAD.

At the same time it continued strengthening interactions with many national and global institutions. The joint work with the IICA in distance training and projects (see Appendix 1), and the joint doctorate programs with the University of Wales and the University of Idaho are noteworthy. In research, works on monilia in cacao with the USDA, CABI and WCF represented a strategic effort of singular importance, as well as the finalization of the regional trials of new coffee hybrids obtained in collaboration with PROMECAFE and CIRAD-France.

# 6. Acronyms

ACOMUITA	Talamanca Indigenous Women Association
ACP	Panama Canal Watershed Authority
ADITIBRI	Indigenous Bribrí Integral Development Association of Talamanca
ADITICA	Indigenous Cabecar Integral Development Association of Talamanca
AGCATIE	CATIE's Alumni Association
AL	Latin America
ANACAFE	Coffee National Association, Guatemala
ANPROCAB	Asociación Nicaragüense de Productores y Comercializadores de Abonos Orgánicos y Bioplaguicidas
APOT	Association of Organic Producers of Turrialba
APPTA	Talamanca Small Producers Association
APROCABI	Asociación Hondureña de Productores y Comercializadores de Abonos Orgánicos y Bioplaguicidas
AVRDC	Asian Vegetable Research and Development Center
BE	Belgium
BMR	Reventazon Model Forest
CA	Central America
CAC	Central American Council for Agriculture
CABEI	Central American Bank for Economic Integration
CAM	Master Academia Council, CATIE's Graduate School
CANCAFE	Comisión Andina de Productores de Café
CANIAN	Cámara de Insumos Agropecuarios No Sintéticos, Costa Rica
CASFOR	Project "Carbon Sequestration in Afforestation and Sustainable Management
CCAD	Central American Commission on Environmental and Development
CCT	Scientific Tropical Center
CECOECO	Center for the Competitiveness of Eco-enterprises Thematic Group
CFE	Common Fund for Commodities
CGIAR	Consultative Group on International Agricultural Research
CI	International Conservation

CIAT	International Center for Tropical Agriculture
CICAD	The Inter-American Drug Abuse Control Commission
CIDA	Canadian International Development Agency
CIFOR	Center for International Forestry Research
CINVESTAV	Center of Research and Advanced Studies (Mexico)
CIRAD	Center for International Cooperation in Agricultural Research for Development
CLUSA	Liga de Cooperativas de Estados Unidos
COPAL	Cocoa Producers Alliance
CORBANA	Nacional Banana Corporation (Costa Rica)
CORECA	Regional Council for Agricultural Cooperation in Central America, Mexico, Panama and the Dominican Republic
CORECAF	Ecuadorian Coffee Producers Corporation
COSUDE	Swiss Development Corporation
CSA	Certificate of Environmental Service
CQI	Coffee Quality Institute
CR	Costa Rica
CREL	Centro de Recolección y Enfriamiento de Leche
CRS	Catholic Relief Services
CUSO	Canadian University Service Overseas
DAAF	Agriculture and Agroforestry Department
DANIDA	Danish International Development Agency
DEFC	Desarrollo de Empresas Forestales Comunitarias
DER	Rural Enterprise Development
DFID	Department for International Development
DG	Directorate General
DPE	Outreach Directorate
DRNA	Natural Resources and Environment Department
EARTH	Agricultural College of the Humid Tropic Region
ECOMAN	Project "Decision Support System for Sustainable Ecosystem Management in Atlantic Rain Forest Rural Areas"
ECTI	Strategy for Attack the Illegal Felling

ETH	Swiss Federal Institute of Technology Zurich
EU	European Union
FAO	United Nations Food and Agriculture Organization
FOMIN	Project for the Multilateral Investment Fund/IDB
FONAFIFO	National Fund for Forest Financing
FONTAGRO	Regional Fund for Agricultural Technology
FSC	Forest Stewardship Council
GAMMA	Livestock and Environmental Management Thematic Group
GEF	Global Environment Facility
GCG	Global Change Thematic Group
GRIN	Germplasm Resources Information Network
GT	Thematic Group
GTTA	Generation and Transference of Agricultural Technology
GTZ	German Agency for Technical Cooperation
HARC	Hawaii's Agriculture Research Center
HN	Honduras
ICAPE	The Costa Rican Coffee Institute
ICRA	International Center for the Development of Agricultural Research
ICRAF	International Council for Research in Agro-Forestry
IDB	Inter-American Development Bank
IDRC	International Development Research Centre (Canada)
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IGERT	Integrative Graduate Education and Research Traineeships Program
IICA	Inter-American Institute for Cooperation in Agriculture
ILRI	International Livestock Research Institute
InBio	National Biodiversity Institute
INCO-UE	International Cooperation with Developing Countries of the European Union
INIA	National Agricultural Research Institute (España)

INIBAP	International Network of Investigation on Banana and Plantain
IPGRI	International Plant Genetic Resources Institute
ITCR	Technological Institute of Costa Rica
IUFRO	International Union of Forest Research Organizations
JASEC	Administrative Meeting Electrical Services of Cartago
JICA	Japanese International Cooperation Agency
JNC	National Meeting of the Coffee of the Peru
LEAD	Livestock, Environmental and Development Initiative
MACA	Minister of Agriculture, Livestock and Rural Development
MAG	Ministry of Agriculture and Livestock, Costa Rica
MAGFOR	Ministry of Agriculture, Livestock and Forestry, Nicaragua
MDL	Mecanismo de Desarrollo Limpio
MICH	Integrated Watershed Management Thematic Group
MINAE	Ministry of Environment and Energy, Costa Rica
MIP / AF	Integrated Pest Management / Agroforestry
MURF	Management and Sustainable Use of Plant Genetic Resources Thematic Group
MUSALAC	Plantain and Banana Research and Development Network for Latin America and the Caribbean
MX	Mexico
NARS	National Agricultural Research Systems
NI	Nicaragua
NINA	Instituto Noruego para Investigación sobre la Naturaleza
Nitlapán	Instituto de Investigación y Desarrollo Nitlapán, Universidad Centroamericana, Nicaragua
NORAD	Norwegian Ministry of Development Cooperation
NSF	National Science Foundation

OAS	Organization of American States
ODI	Overseas Development Institute
OG	Governmental organization
OIRSA	International Regional Organization for Agricultural Health
ONG	Non-governmental Organizations (NGOs)
OTN	CATIE's Regional Technical Office
OTS	Organization for Tropical Studies
PAECA	Agro-ecological Production of Annual Crops Thematic Group
PITTA	Red de Investigadores en Producción Orgánica
PRODOMA	Small Grants Program for Environmental Management
PROMECAFE	Regional Cooperative Program for the Technological Development and Modernization of Coffee Cultivation in Central America, the Dominican Republic and Jamaica
PSA	Service Payment Mechanism
PYME	Small and Medium Rural Enterprises
BAAN	North Atlantic Autonomous Region
RAFA	Agroforestry in the Americas Magazine
REMERFI	Mesoamerican Network of Plant Genetic Resources
RRBM-LAC	Regional Latin American and Caribbean Network of Model Forests
RUTA	Regional Unit for Technical Assistance
SAF	Agroforestry system
SAG	Agricultural and Livestock Service
SANet	Sustainable Forestry Alternatives Network
SBSTA	Subsidiary Body for Scientific and Technological Advice

SCAA	Specialty Coffee Association of America
SEBSA	Socio-economics of Environmental Goods and Services Thematic Group
SICTA	Central American Integration System
SIDA	Swedish International Development Authority
SNITTA	National System for Agricultural Investigation and Technology Transfer
SNV	Dutch Cooperation for Development
SSP	Silvopastoral System
STR	Regional Technical Services
SUBBE	Project "Sustainable Biomass and Bio-Energy in Central America: CDM Project Preparation Assistance Facility"
TNC	The Nature Conservancy
UCR	University of Costa Rica
UICN	World Conservation Union
UK	United Kingdom
UNA	National University of Costa Rica
UNED	Distance Learning National University, Costa Rica
UPAZ	University for Peace, United Nations
US	United States
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VE	Venezuela
WCF	World Cocoa Foundation
WGF	Wallace Genetic Foundation
WWF	World Wildlife Fund
ZIL	Swiss Centre for International Agriculture



# Annex 1. IICA-CATIE Relations

For three decades, since CATIE was created in 1973, IICA and CATIE have been closely linked in their joint efforts to promote rural development. These joint actions have been conducted within the established legal framework and have been characterized during the past few years by a willingness to intensify the inter-institutional collaboration between them.

In fact, during the 2003-2004 period, an intense dialogue was initiated on the modalities that could bring about a drawing together of the two institutions to improve services to member countries. Both Directors General have presented reports to the governing authorities, with the most important one being the joint report presented to the CAC in Miami in October, 2004.

Within the activities conducted, the joint support given by both institutions to the Councils of Ministers of Central America, i.e. CAC and CCAD, must be highlighted. Technical teams from IICA and CATIE together supported the formulation of a regional bio-security and biotechnology strategy, in a proposal of an agenda for water and in a plan to conduct a regional inventory of biodiversity.

Both institutions also cooperated to improve the joint management and financing of the ORTON Commemorative Library, established by the Inter-American Institute for Cooperation on Agriculture (IICA) in 1942 and located at CATIE Headquarters. During the period 2003-2004 the Library has improved the services offered electronically, and has advanced toward becoming a modern electronic library. Work to construct a virtual Library that sells and disseminates the documents produced by IICA and CATIE is underway.

Also deserving special mention are the efforts made to achieve a drawing together at the national office level, with multiple joint technical cooperation actions, such as through the PAES project in El Salvador, which is executed by both institutions in the Tenancingo and Guazapa regions to support the Ministry of Agriculture and Livestock.

In the area of science and technology, both institutions have interacted in fora such as Foragro and SICTA. The technical and financial support that IICA and CATIE have contributed to SICTA is outstanding. In particular, CATIE and IICA have collaborated in the formulation of the national component of SICTA's Regional Technology Transfer Plan, through the development of specific studies to analyze the status of the ITT. Joint efforts to strengthen the Mesoamerican Network of Genetic Resources, REMERFI, should also be mentioned. In the field of education, for the first time in history, a multi-media training course in Agroforestry, where CATIE was in charge of the contents and IICA was in charge of the technology and didactics to produce these CDs, was formulated and co-financed. CATIE also co-financed the meeting of ALEAS held in Belize in June 2004.

Both institutions also participate together in several conferences and fora, with the most important one being the technical and financial cooperation given to strengthen the Scientific Conference Series in honor of Henry A. Wallace.

# Annex 2. Government Authorities

## Governing Council of Ministers (January 20, 2003)

Ing. Rodolfo Coto,  
Minister of Agriculture and Livestock, Costa Rica,  
President.

Ing. Mariano Jiménez,  
Secretary of Agriculture and Livestock, Honduras.

Ing. Augusto Navarro,  
Minister of Agriculture, Livestock and Forests, Nicaragua.

Hon. Sérvulo Baeza,  
Minister of Agriculture and Fisheries, Belize.

Mr. Javier Usabiga,  
Secretary of Agriculture, Livestock and Rural  
Development, Mexico.

Lic. Efrén Andrade,  
Minister of Agriculture and Land, Venezuela.

M.B.A. Salvador Urrutia,  
Minister of Agriculture and Livestock, El Salvador.

Ing. Eligio Jáquez,  
Secretary of State for Agriculture, Dominican Republic.

Lic. Lynette Stanziola,  
Minister of Agricultural Development, Panama.

Lic. Edén Barrientos,  
Minister of Agriculture, Livestock and Food, Guatemala.

Ing. Arturo Liebers,  
Minister of Agriculture, Livestock and Rural  
Development, Bolivia.

Ing. Menandro Grisetti,  
Minister of the Environment, Paraguay.

Hon. Roger Clarke,  
Minister of Agriculture, Jamaica (representative of the  
IABA).

Dr. Chelston Brathwaite,  
Director General of IICA.

Dr. Pedro Ferreira,  
Director General of CATIE, Ex – Officio Secretary.

## Board of Directors (May, 2003)

Dr. Victor Villalobos (Mexico)  
President (also President of the Executive and Finance  
Committee) (1998-2004).

Dr. Bjorn Lundgren (Sweden),  
Scientific-Academic Committee (2001 - 2004).

Dr. Evon Z. Vogt (USA)  
IICA delegate, Executive and Finance Committee,  
(indefinite).

M.Sc. Lorena San Román (Costa Rica),  
Scientific-Academic Committee (2002 - 2005).

Dr. Jochen Heuveldop (Germany),  
Scientific-Academic Committee (1998 - 2004).

Dr. Richard Rortvedt (USA),  
Executive and Finance Committee (2002 - 2005).

Dr. Floyd Horn (USA),  
Scientific-Academic Committee (2003 - 2006).

Dr. Fiona Wilson (Denmark),  
Scientific-Academic Committee (2003 - 2006).

M.Sc. Juan Carlos Godoy (Guatemala),  
Scientific-Academic Committee (2003 - 2006).

Ing. Luis Osorio (Nicaragua),  
Executive and Finance Committee (2003 - 2006).

M.Sc. Sergio García (Belize)  
(Scientific-Academic Committee), representative of the  
Governing Council of Ministers on the Board of Directors  
(1999 - 2005).

Ing. Salvador Monge (Costa Rica),  
Executive and Finance Committee, representative of  
the Costa Rican Ministry of Agriculture and Livestock  
(indefinite).

Dr. Pedro Ferreira,  
Director General of CATIE and Ex – Officio Secretary.

# Annex 3. Technical personnel at the Headquarters 2003-2004

Name	Country		
Aguilar Vega Maria Elena	Costa Rica	Leandro Montoya Patricia	Costa Rica
Alpizar Rodriguez Francisco	Costa Rica	Locatelli Bruno	France
Alpizar Ugalde Karol	Costa Rica	López Perez Gustavo	Costa Rica
Ammour Tania S.	France	Louman Bastiaan	The Netherlands
Astorga Domian Carlos	Costa Rica	Meneses Martinez Allan	Costa Rica
Beer John William	United Kingdom	Mora Delgado Jairo Ricardo	Colombia
Benjamin Tamara	USA	Mora Quirós Antonio	Costa Rica
Campos Arce José Joaquín	Costa Rica	Moreno Raul Alb Erto	Chile
Cannavo Patrice	France	Moslemi Ali	USA
Carballo Vargas Manuel	Costa Rica	Muschler Reinhold	United Kingdom
Carrera Gambetta Fernando	Peru	Navarro Carlos Manuel	Costa Rica
Casanoves Boschetti Fernando	Argentina	Navarro Guillermo	Costa Rica
Casasola Coto Francisco	Costa Rica	Navarro Monge Guillermo	Costa Rica
Chacón León Mario Alberto	Costa Rica	Navarro Pereira Carlos	Costa Rica
De Melo Virginio Elias	Brazil	Nieuwenhuyse Andreas	The Netherlands
Delgado Rodriguez Luis Diego	Costa Rica	Orozco Vilchez Eva Lorena	Costa Rica
Diaz Visquerria Mario Eddy	Guatemala	Ortiz Kreis Spencer Dempsey	Guatemala
Donovan Jaison	USA	Ortiz Vargas Juan Luis	Costa Rica
Drews Carlos	Colombia	Pedroni Lucio	Sweden
Durán Mora Joaquín	Costa Rica	Pérez Ramírez Alicia Noemi	Mexico
Ebert Andreas Wilhelm	Germany	Pezo Quevedo Danilo A.	Venezuela
Faustino Jorge	Peru	Phillips Mora Wilbert	Costa Rica
Ferreira Rossi Pedro	Uruguay	Piniero Maricel C.	Philippines
Finegan Bryan Gerald	United Kingdom	Pocasangre Enamorado Luis	Honduras
Galloway Glenn	USA	Powell George Van Nostrand	USA
Giannace Donato	Canada	Rivas Gonzalo G.	Costa Rica
García Carlos	Mexico	Rivas Platero Gonzalo G.	El Salvador
García Cordoba Johnny	Costa Rica	Riveros Alba Stella	Colombia
Gobbi José Alberto	Argentina	Robles Valle Gabriel	Guatemala
Gómez Flores Manuel Angel	Costa Rica	Rodríguez Roduel	Honduras
González Alan	Guatemala	Rosales Franklin	Honduras
Gretzinger P. Steven	USA	Rottger Ulrich	United Kingdom
Guharay Falguny	India	Salazar Liendo Leonardo	Venezuela
Haggar Jeremy Phillip	United Kingdom	Salazar Salvatierra Sebastian	Costa Rica
Harmand Jean-Michael	France	Salinas Vallecillo Zenia María	Honduras
Harvey Celia	USA	Sánchez Garita Vera	Costa Rica
Hebert Marc Khory	USA	Sánchez Vera	Costa Rica
Hidalgo Jaminson Eduardo	Costa Rica	Santos López Cesar Alejandro	Guatemala
Hilje Luko	Costa Rica	Solano Sánchez William	Costa Rica
Holguin Castaño Vilma	Colombia	Solis Bolaños Hermán Antonio	Costa Rica
Ibrahim Muhammad	Guyana	Somarriba Eduardo	Nicaragua
Imbermon Jacques	France	Soto Muñoz Gabriela Maria	Costa Rica
Jiménez Burgos Jorge	Costa Rica	Staver Charles Paul	USA
Jiménez Otarola Francisco	Costa Rica	Steuten Cathar	Ina Diana
Johnson Elizabeth Shirla	Trinidad & Tobago	Stoian Dietmar	The Netherlands
Jones Jeffrey R.	USA	Ten Hoopen Gerben Martijn	United Kingdom
Kammerbauer Johann	Germany	Topart Patrick	The Netherlands
Krauss Ulrike	Germany	Ugalde Luis Alberto	France
		Vaast Philippe Jacques	Costa Rica
			France

Vallejo Rendon Alvaro	Colombia	Villalobos Rodríguez Marilyn	Costa Rica
Vargas Ortega Eliecer	Costa Rica	Villalobos Soto Róger	Costa Rica
Vásquez Carballo William	Costa Rica	Villanueva Najarro Cristobal	Guatemala
Vásquez Morera Nelly	Costa Rica	Viquez López Edgar	Costa Rica
Velásquez Mazariegos Sergio	Guatemala		
Venegas Villegas Geoffrey	Costa Rica		

# Annex 4. Publications

## PUBLICATIONS 2003 Scientific Journals

- Aguilar, V; Staver, C; Milberg, P. 2003. Weed vegetation response to chemical and manual selective ground cover management in a shaded coffee plantation. *European Weed Research Society. Weed Research* 43:68-75.
- Alice, F; Montagnini, F; Montero, M. 2004. Productividad en plantaciones puras y mixtas de especies forestales nativas en la estación biológica La Selva, Sarapiquí, Costa Rica. *Agronomía Costarricense* 28(2):61-71.
- Alpizar, F; Requat, T. 2004. Collective versus Random Fining: an experiment. *Environmental and Resource Ec.*
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