

Biannual Report **2005-2006**

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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1. Introduction

The Tropical Agricultural Research and Higher Education Center (CATIE) is a nonprofit 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, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, 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 as follows:

“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 composed 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 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 2005–2006 biennium.

2. Executive summary

During 2005 and 2006 important progress was made in CATIE's different institutional activities and processes were begun to ensure a smooth transition toward a new administration of the center.

The Governing Council of Ministers met under new leadership and achieved, among other decisions, the approval of a significant renovation of the center's Board of Directors.

With respect to research programs and regional cooperation, CATIE signed agreements for several strategic projects for a total amount greater than U.S.\$25 million. Important inroads were made with key partner institutions like IICA, Global Mechanism, CUSO, CIRAD, CIM, COPAL, FAO, CIFOR, ICRAF, IDRC, IFAD, Bioversity International (IPGRI), Conservation International and several prestigious universities.

In the case of the Department of Agriculture and Agroforestry (DAAF), a joint research platform, or PCP, was created together with CIRAD-France; INCAE, CABI and PROMECAFE also contribute to this initiative. Again with CIRAD, CATIE agreed on a plan to renew the group of associated experts who cooperate with CATIE and to begin the new project CAFNET, a worldwide initiative in environmental services and agroforestry focused on coffee. CABI outposted a new expert at CATIE.

Another important achievement was the strengthening of the technical team and of work related to the International Model Forest Network, funded by IDRC/CIDA Canada, through CUSO's assignment of several Canadian experts. CATIE's Department of Natural Resources and Environment (DNRE) welcomed five Canadians and Latin Americans people funded by CUSO to support this initiative.

CATIE also negotiated an agreement with IUFRO to represent that organization in Latin America and the Caribbean (LAC) and hired a forestry expert to be in charge of the coordination of the office headquartered at CATIE.

The TROFFCA project, an important CIFOR-CATIE initiative, began in 2006. This project, funded through

European support, analyzes adaptation to climate change and forest management issues, with a focus on improving policies; it works on three continents.

The training program continued to perform well, especially through the various strategic courses offered, including the protected areas course, the watershed management course and the CDM projects design course.

International participation in conferences organized by CATIE was excellent for both the Small and Medium Forest Industries Conference and the International Conference on Cacao Research (COPAL-CATIE).

The Graduate School received positive news regarding scholarship funding. The Japan/World Bank (JJ/WBGSP) regular scholarship program included CATIE in its list of universities to receive financing for graduate students for 2007-2008. This is a distinction that places our center side by side with some of the best universities in the world. Also, the International Fellowships Program of the Ford Foundation and the EQUITAS Foundation continued to support CATIE's graduate programs.

Negotiations were completed with INCAE Business School for a joint master's in International Agribusiness Management. CATIE began student recruitment and the search for funding sources for scholarships. This master's program is expected to begin in July 2007.

The demand for CATIE's doctoral programs continued at a good level and the agreement with the University of Wales (U.K) for a joint diploma was renewed. A small increase was also noted in the number of master's students.

Honorary doctorates were awarded to Dr. Jorge Soria, Dr. Kenton Miller and Dr. Frank Wadsworth for their contributions to the region.

Regional interinstitutional relations

During this period, CATIE continued to support ministerial councils and other organizations in key areas. IICA and CATIE supported the Central American agricultural and environmental ministerial councils, CAC and CCAD, respectively,

in issues such as biosafety and biotechnology. It also supported CCAD in discussions on such topics as water, environmental services and biodiversity.

CATIE played a notable role in preparing a report requested by IDB on the state of the art related to payment for environmental services. IDB has used the report in different ministerial forums and it has created an impact throughout Latin America.

The center also contributed to the dialog on the Central American agroenvironmental agenda, where organizations including CATIE, IICA, RUTA, IUCN, etc., support the environmental, agricultural and health ministerial councils. CATIE's experience in this area places it in a key position to support future regional plans.

CATIE strengthened its relationship with IICA, with the approval of a medium-term plan for joint actions and through new initiatives and projects to be shared by both institutions.

Planning, monitoring and evaluation

CATIE began the implementation of its Medium-Term Plan for 2006-2009 and the implementation of the Gender Policy for that same period.

At the same time, the center initiated a reflection phase regarding its positioning vis-à-vis poverty and progress was made in the formulation of a plan that will orient CATIE's actions in that area.

Governing bodies

CATIE's Governing Council of Ministers met for the first time under the presidency of Ing. Alfredo Volio, Costa Rica's new Minister of Production, in its ordinary meeting on Sept. 5, 2006.

The Governing Council asked CATIE's member countries to formulate a Payment Plan for their membership quota debts in arrears, in a period of no longer than one year. This action has already shown positive results; CATIE has received letters of intention and signed payment agreements with Colombia and the Dominican Republic. In addition, the government of Venezuela paid four membership quotas in arrears. In 2006, CATIE's Board of Directors underwent

a significant change. A new president, Dr. Helmut Eger, a staff member of GTZ-Germany, assumed the leadership of this important governing body, replacing Dr. Richard Rortvedt, a staff member of the USDA.

The Governing Council also elected Dr. Benjamín Figueroa (Mexican), Dr. Rosalía Arteaga (Ecuadorian), Dr. Geoffrey Hawtin (British citizen) and Dr. Marcelino Avila (Belizean) as new board members. The Board of Directors showed great interest in discussing strategic issues, creating greater interaction with thematic groups and encouraging relationships with other international organisms. Climate change and land degradation were two issues covered in detail.

Internal organization

More progress was made in the consolidation of CATIE's Thematic Groups (TGs) and in the National Technical Offices (NTOs). The decision was made to combine the PAECA and Musa thematic groups (TGs) creating a new TG dedicated to Agroecology.

Among the NTOs, greater consolidation can be seen, in particular in Colombia, Bolivia and Panama, while in others, such as El Salvador, financial and self-sustainability difficulties are noted.

As far as CATIE personnel, there have been no significant quantitative changes in personnel categories. However, some qualitative tendencies are evident with the growth of some TGs and difficulties in others to respond to regional and international priorities. The number of national staff members who have retired through Costa Rica's national Magisterio pension plan has increased.

Dissemination

Several visits, meetings and seminars were realized in different countries. CATIE made important presentations in 2005 in Sweden at the Royal Academy for Agriculture and Forestry (KSLA) and at the headquarters of Nestlé located in Vevey, Switzerland. In 2006, the center hosted a seminar at WWF headquarters to award an honorary doctoral degree to Dr. Kenton Miller. Dr. Eduardo Somarriba received the award for the best Latin American work in cacao, a recognition given by the World Cocoa Foundation. Both events were held in Washington, D.C.

Finance and administration

The years 2005 and 2006 showed a recovery or increase in funding, with an increase in the total executed budget. Nevertheless, the core budget based on membership quotas, overhead from projects and donations remains static.

The outlook with different donors and partners is good; especially noteworthy is the recent negotiations with the government of Norway for a new cacao project and for the creation of a long-term regional program that brings together the different initiatives presently under execution.

The endowment funds managed by the Fundatropicos foundation continued to grow. CATIE was able to finalize its counterpart payment toward the Chair II in Diversified Forest Management, which has become an endowment fund worth more than U.S.\$3 million. In addition, the center was able to register two properties in Chile donated by the Weyerhaeuser Foundation to the Tropics Foundation (TTF). The foundation has now received the first offers for this property.

A new farm (XA farm) was purchased in Buenos Aires, Puntarenas, Costa Rica. It is an important forest seed source for *Gmelina arborea* and will provide material to CATIE's Forest Seed Bank.

3. Upper-level management

During the 2005-2006 period, the Governing Council of Ministers of CATIE held two ordinary meetings. These meetings were chaired by the Ministers of Agriculture and Livestock of Costa Rica, Lic. Rodolfo Coto (2005) and Ing. Alfredo Volio (2006). The main products of these meetings were the following:

- Approval of CATIE's Medium-Term Plan for 2006-2009.
- Member countries owing more than two membership quotas were asked to sign a payment agreement with CATIE. This decision was linked to what is stipulated in CATIE's General Bylaws, which states that countries in this condition will lose their right to vote in the Council.
- The new Master's in International Agribusiness Management, to be developed with the INCAE Business School, was declared to be of regional interest.
- The Kenton Miller Chair in Protected Areas Management was declared to be of regional interest.
- New members were named to the Board of Directors: Goeffrey Hawtin, United Kingdom, Marcelino Avila, Belize, Benjamin Figueroa, Mexico and Rosalía Arteaga, Ecuador. Directors Bjorn Lundgren, Sweden, and Luis Osorio, Nicaragua, were reelected as members of the Board of Directors.
- Progress in joint IICA-CATIE actions and a new chapter covering the medium-term plans for both institutions were presented.
- The plans and timetable for the election of CATIE's new Director General were presented.
- CATIE's Budgets for 2006 and 2007 were approved.
- Panama was designated to represent the Governing Council in CATIE's Board of Directors for a three-year period, beginning on Aug. 8, 2005.
- The affiliated membership of the Municipality of Zamora (Ecuador) and the Costa Rican Electricity Institute (ICE) was terminated.
- The Directors General of IICA and of CATIE were asked to analyze and identify possible actions to improve the coordination of activities between the institutions.
- CATIE's Director General was asked to explore mechanisms to improve communication and dissemination of new technologies and other knowledge to its member countries.

During 2005-2006, CATIE's Board of Directors and its committees held four ordinary meetings. The meetings were chaired by Dr. Richard Rortvedt (2005) and Dr. Helmut Eger (2006). The principal resolutions generated in these meetings were the following:

- CATIE's 2004 and 2005 Annual Reports were approved.
- The center's 2006 and 2007 budgets were approved.
- Election of new board members was held and reelection of others. These elections are ratified by the Governing Council.
- CATIE's 2005 and 2006 Annual Operative Plans were approved.
- The recommendations set forth in the Gender Policy for CATIE's work with rural families were endorsed.
- The Board requested an evaluation of the performance of CATIE's Director General. This evaluation was conducted, with outstanding results.
- The present evaluation system for the performance of key personnel at the institution was improved.
- Honorary doctorates were awarded to Drs. Jorge Soria, Gerardo Budowski, Kenton Miller and Frank Wadsworth.
- Modifications to the International Professional Personnel Bylaws were approved and the National Personnel Bylaws were approved.
- The election process for CATIE's next Director General was approved.
- CATIE's Medium-Term Plan for 2006-2009 was approved and submitted to the Governing Council for its ratification.
- CATIE was asked to make provisions to have an external evaluation conducted of the center's activities during 2001-2006.
- CATIE was asked to explore strategies for the center to strengthen its role in International Conventions.
- CATIE was asked to proposed an incentive system for its thematic groups.

4. Summary of achievements by operative area

Education Program for Development and Conservation

Beginning in 2004, this program, under the leadership of Dr. Glenn Galloway, includes the following entities: the Graduate School, Training Area, Orton Commemorative Library and the Biostatistics Unit.

Graduate School

Since 1946, CATIE's Graduate School has offered studies toward master's degrees and since 1996 toward doctoral degrees in areas related to tropical agriculture and the conservation and sustainable management of natural resources. The objective of the school is to train professional leaders and researchers who are capable of successfully conducting their activities in difficult and changing environments but with a firm sense of their social responsibilities. The principal actions during this period follow.

Master's degrees

The following master's programs were offered: Ecological Agriculture, Tropical Agroforestry, Integrated Watershed Management, Management and Conservation of Tropical Forests and Biodiversity, and Environmental Socioeconomics. CATIE offers doctoral programs in: Tropical Forest Sciences, Tropical Agroforestry, Ecological Agriculture and Watershed Management.

Besides these programs, CATIE negotiated an agreement with the INCAE Business School to launch a new master's program in International Agribusiness Management, which will begin in mid-2007.

Taking into consideration various consultations with students and professors and course evaluations, the Academic Master's Committee decided to return to the quarterly system beginning in 2006. From a pedagogical standpoint, the six-week blocks, in general, are not considered appropriate for CATIE's program.

Doctoral degrees

Most of the doctoral students come to CATIE through joint programs with the Universities of Idaho (USA) and Wales (UK). These programs offer a joint diploma signed by both institutions. The official language of this program is English. A historic achievement during

2006 was the fact that seven students, including the first students under the joint program with the University of Idaho, successfully completed their doctoral studies.

Scholarship-Loan Program for graduate students

The Scholarship-Loan Program continues to evolve. This program waives the payment of more than 50% of the study costs and awards a nine-year loan for the remaining costs.

In 2006 the procedures to select beneficiaries of the program were refined to ensure better recovery of loans. The Credit Committee was formed to develop and apply procedures and to make decisions with respect to the approval or rejection of applications. Incentives were offered to ensure the admission of students with outstanding files but with considerable financial limitations.

Approximately 35 new students benefit from the Scholarship-Loan Program each year; in other words, 70 first-year and second-year students are participating in the program at one time. In 2006 there was a slight increase to 41 students.

The loans awarded to date total U.S.\$1.64 million. The account receivable is U.S.\$1.3 million and the rate of recuperation has been excellent with approximately U.S.\$275,000 recovered.

Other funding sources

During this period, CATIE has received financial support from international and national entities such as the Ford Foundation, the Swedish International Development Cooperation Agency (SIDA) through the implementation of the Focuecas II project, the National Science Foundation of the United States (NSF-IGERT), the Organization of American States (OAS), the International Timber Trees Organization (ITTO), the Norwegian Cooperation Agency (NORAD), Belgian Cooperation, the National Council for Science and Technology of Mexico (CONACYT, for its Spanish acronym), the German Academic Exchange Service (DAAD, for its acronym in German), the Kellogg Foundation, the U.S. Department of Agriculture (USDA), the ornamentals *Dracaena* Project (MAG-Costa Rica/Purdue University), the Colombian

Agricultural Research Corporation (CORPOICA, for its Spanish acronym), the National Science, Technology and Innovation Fund of Venezuela (FONACIT, for its Spanish acronym), Fundatropicos, AVINA Foundation, the British Embassy, the World Wildlife Fund (WWF), CIAT and the Japanese International Cooperation Agency (JICA).

Several of these sources complement the Scholarship-Loan Program, by covering living costs or by paying the loan in part or totally. Two North American families donated fund through the Tropic Foundation to cover the living costs of master's students. With a contribution of U.S.\$300 per month, it is possible to finance a low-income student from the region.

Important efforts were made to bring in additional sources of scholarships and funding. The selection of CATIE by the Inter-American Development Bank (IADB) to participate in its Graduate Studies Scholarship Program in Latin America for mid-level public workers in Latin America and the Caribbean, specifically in the area of Environmental Socioeconomics, was an important achievement. CATIE was also selected to participate in the Joint Scholarship Program (Japan/World Bank), beginning in the 2007-2008 academic year. Contributions from the Ford Foundation continue to be significant for master's students.

CATIE has expanded its efforts with institutions and companies to promote scholarship-loans among their personnel and negotiate support to cover living costs.

Integration of research and postgraduate education

Most of the students in the Master's and Doctoral Programs are involved in CATIE projects for the research phase of their theses. This link results in the research being more applied, while contributing scientific and technical information for the processes developed within the projects. Since the projects are conducted in different countries and regions, the formation of our students is not restricted to headquarters in Costa Rica, which enhances their knowledge regarding sociocultural and economic realities in the region.

Students

A total of 113 students were admitted to the Master's Program during the 2004-2005 and 2005-2006 study periods (Tables 1, 2). The number of students in the Doctoral Program was stable, even though 11 students successfully completed their studies (Tables 3, 4).

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

Area	2004-2005	2005-2006	2006-2007
Ecological Agriculture	10	10	10
Tropical Agroforestry	18	12	9
Integrated Watershed Management	13	9	9
Management and Conservation of Tropical Forests and Biodiversity	12	14	15
Environmental Socioeconomics	9	7	11
TOTAL	62	52	54

Table 2. Master's students by country

Country	2004-2005	2005-2006	2006-2007
Argentina		1	
Belice	1		
Bolivia	4	3	6
Brazil	1	1	1
Colombia	8	9	8
Costa Rica	2	5	6
Ecuador	3	1	2
El Salvador	1		1
Estados Unidos	1		
Guatemala	4	2	2
Honduras	7	4	6
Mexico	6	5	8
Nicaragua	15	10	6
Panama		3	
Paraguay	1	2	
Peru	4	4	7
Puerto Rico			1
Santa Lucia	1		
United States	1		
Venezuela	2	2	
TOTAL	61	52	54

Table 3. Doctoral students' countries of origin, as of December 2006

Country of origin	Number of Students
Belice	1
Bolivia	1 (graduated)
Colombia	5 (1 graduated)
Costa Rica	1
Dominican Republic	2 (1 graduated)
El Salvador	1
Guatemala	1 (graduated)
Honduras	1 (graduated)
Japan	1
Mexico	8 (2 graduated)
Paraguay	1
Portugal	1 (died)
Puerto Rico	1
United Kingdom	1 (graduated)
USA	12 (3 graduated)
Venezuela	3
TOTAL	40 (11 graduated)

Exchange students and interns

Each year, CATIE receives many students from different universities all over the world that come to the center to conduct their thesis research and other research work. For the period covered by this report, 73 students came to CATIE to work with our researchers. The following table shows the number and countries of origin of these students.

Table 4. Distribution of doctoral students by study area

Area of study	U.Wales*	CATIE Ph.D	U.Idaho*	Otros	Total
Tropical Forest Sciences		4	6	2	12
Tropical Agroforestry	9	5	3		17
Ecological Agriculture		3	4		7
Watershed Management	1				1
Environmental Socioeconomics			1		1
Total	10	12	14	2	38

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

Joint master's with INCAE

The Graduate School continues to seek ways to innovate its ability to respond better to the needs of young professionals who wish to pursue their postgraduate education in themes related to CATIE's mission. For this reason, it is working with INCAE to offer a joint Master's Program in International Agribusiness Management. This program is directed toward professionals who wish to work effectively with and within forestry and agricultural enterprises in Latin America in an increasingly globalized world. During the period of this report, the program was developed, funding was sought, and promotion and recruitment were carried out. The program is expected to begin in July 2007.

Table 5. Universities of students who have done research with CATIE

COUNTRY (universities)	Number of students/country
Germany (Humboldt University Berlin), University of Bonn, University of Hamburg, George August University)	8
Antilles (University of the Antilles and Guyana, Campus of Fouillole)	2
Brazil (College of Agronomical Sciences-Unesp, Rural Federal University of the Amazonia, University of Sao Paulo, Federal University of Santa Catarina, Federal Veterinarian School, Federal University of Minas Gerais)	6
Canada (Laval University)	2
Colombia (University of Nariño, UNISARC, University of Tolima)	15
Costa Rica (National University of Costa Rica, University of Costa Rica, TEC)	3
Denmark (Royal Veterinary and Agricultural University of Copenhagen)	1
France (University of Nancy, University of Montpellier, National Agronomical Engineering School)	3
The Netherlands, (Wageningen University)	3
Honduras, (National Agricultural University of Honduras)	2
United Kingdom University of Wales, Bangor, Bath University	3
Mexico (Autonomous University of Chapingo)	5
Norway (Norwegian Agricultural University, University of Oslo, University of Life Sciences, University of Science and Technology)	6
Switzerland (Polytechnic University)	1
USA (Purdue University, University of Arkansas, Yale University, University of Idaho, Berea College, AETNA (Chickering Group, ANTHEM, San Diego State University, University of California, Santa Cruz)	13
Venezuela (Agricultural Research Institute (INIA))	1
TOTAL	74

Chairs

Despite various efforts to create new Chairs at CATIE to join the two already established by the Government of Switzerland, none was established in 2006. CATIE worked with The Nature Conservancy (TNC) and Conservation International (CI) to develop a proposal to create a Chair in Protected Areas Management. Once created, the hope is to establish an interinstitutional orientation committee to guide and monitor planning and performance of this Chair. Our partners at the University of Idaho believe that the creation of shared Chairs is a priority to consolidate and enhance cooperation between CATIE and the UI.

Promotion of the Graduate School

Great efforts were made to promote the Graduate School, including the distribution of printed and digital materials (interactive CD, catalogs and brochures) to the NTOs, alumni and other strategic actors in different countries. The school participated in promotional fairs (Mexico and Colombia, for example), with support from the Communication Unit. The Dean of the Graduate School and representatives from the NTOs gave lectures at universities and other forums in several countries. Coordination with NTOs bring in more students from member countries improved. The dean participated in promotional activities in some countries. The NTOs interviewed many candidates as part of the admission process. The Graduate School's promotional materials were improved. A promotional document that better reflects the relation between the Graduate School and the Thematic Groups was prepared, but has not been officially published. The Communication Unit collaborated with the Graduate School to improve its promotion in the institutional Web page.

Joint programs

Relations with our partners in the joint doctoral programs continue to be strong and fruitful. In the case of the University of Idaho, an annual meeting of the IGERT Program was held at CATIE and included visits to the program's research sites. Interdisciplinary groups of master's and doctoral students presented posters about their collective work, which the visitors greatly appreciated. Five students from the joint Ph.D. program with the University of Idaho finished their doctorates in 2006. In the case of the joint program with the University of Wales, three

students finished their doctorates and four new students entered this program. Representatives from the University of Wales, the dean and the director of DAAF conducted a review of this joint program. Finally, a new joint program was initiated with the University of Freiburg in Germany, in which agreements will be signed for each student to define the formation of advisory committees, funding sources, dissertation theme and other pertinent details. Students participating in this program will receive diplomas signed by CATIE and by the University of Freiburg.

Professors

Efforts were made with the Department of Administration and Finance (DAF) to establish consistent remuneration for external and internal professors for the services that they render to the Graduate School: classes, participation in advisory committees and as principal advisors. Thus, CATIE seeks to enhance the remuneration to professors who contribute more to graduate activities. In order to improve the performance of professors, an exploratory evaluation was conducted of their work as principal advisor and/or member of an advisory committee.

Accreditation

CATIE continues working to achieve accreditation of its academic programs. The director of DAF and the Education Program director participated in a workshop of the Southern Association of Colleges and Schools (SACS) to learn about the steps necessary to initiate an international accreditation process with that association. A professional was hired half-time to compile the information required by SACS. She is aided by a master's student. Besides this effort, CATIE is also analyzing the requirements for accreditation with SINAES in Costa Rica. These efforts to achieve accreditation will continue in 2007.

Student life

With respect to the management of student residences, a Residence Commission was established to handle matters concerning this important service at CATIE. Great efforts were made to attend to students' problems and needs, in many cases personal problems, in an efficient, discreet and helpful manner, ensuring the quality of CATIE's attention. A psychologist was hired to offer this important service. A multi-use room is being conditioned for their use.

Routine administration activities, such as management of the Registrar's Office, residence maintenance (the Administration is responsible for this service), security in these areas and other aspects related to student life, continued. A new version of the Graduate School Information System (SIEP) was developed to support these and other services at the Graduate School.

Alumni Association

Support to the Alumni Association (AGCATIE) was strengthened to facilitate the functioning of its board of directors and provide alumni with more access to available services. The board of directors of this association held a meeting at CATIE headquarters with the support of the Graduate School. A greater number of alumni now have a lifetime CATIE electronic mail address.

CATIE alumni were given information regarding employment opportunities and scholarships for graduate studies. Through the lifetime electronic mail system, they are kept informed about matters of institutional interest. The second alumni meeting and General Assembly of AGCATIE was held in October 2005. Free electronic access to CATIE's journals is another of the services provided to our graduates since 2006.

In the case of alumni who have not finished their theses, the School has offered them a Diploma of Specialization, in recognition of the successful completion of their postgraduate studies plan. Some of the NTOs supported and strengthened the alumni associations in the countries, as was

the case in Honduras (AHECATIE). The NTO supported this association in the preparation of the AOP and in the organization of meetings. The NTO in Nicaragua has facilitated support to ANIECATIE in meetings, discussions regarding work plans and strategic planning of the association.

Training

Some training needs in the region were identified together with some TG and NTOs, and the need to develop some new strategic courses was seen. These include: 1) Territorial Ordering; 2) Specialization in Watershed Management; and 3) Modernization and Sustainability of Latin American Cacao Production.

During 2005, 152 short courses, of which 16 were strategic courses (generally held at CATIE) and another 136 special courses were held throughout Latin America (Tables 6, 7, 8). Excellent participation in the courses and funding for a variable proportion of the participants was achieved through collaboration with course committees and their coordinators. Thus, all programmed training activities for the year were held. Work with the coordinators and technical committees of the courses allowed CATIE to improve and update training materials used, but more resources and time are still needed to continue to develop and improve more adequate materials.

A total of nearly 1,093 training events, including courses, workshops and conferences, in which some 12,787 people participated, were held in 2006 (Tables 9,10). The majority of these participants were producers, with a distribution by gender of 66% men and 34% women.

Table 6. Distribution of training events by type (2005)

Type	Number of Events	Men	Women	Total
Strategic courses	16	190	85	275
Special courses	136	1,847	855	2,702
In-service training	4	7	3	10
Field trips and field days	187	374	114	488
Workshops and demonstrations	212	2,196	742	2,938
Seminars	1	45	11	56
Forums	1	66	35	101
Lectures, Conferences	54	585	241	826
Working meetings	1	75	25	100
Total	612	5,385	2,111	7,496

Of all of these activities, the greatest participation was through activities developed for producers/farmers and were organized and implemented by CATIE's projects in the countries (workshops, demonstrations). More than 32 short courses (strategic and special) were given with more than 622 participants (among technicians from different levels and producers). CATIE's professors provided important participation in these events, which included meetings, forums, symposiums and seminars. As has occurred in the past, the Training Area has faced the problem of delays or cancellation of courses due to the lack of economic resources to finance the participation of interested participants (both at

headquarters as well as in the countries) despite the growing demand for continuation of the courses. Some donor agencies in the countries have shown keen interest in funding courses, such as is the case of Bolivia, Peru, Colombia and Nicaragua. Below is a distribution of the training events by type, country and organizing entity.

Virtual education

In 2006 the Training Area continued with several initiatives: development of new courses (traditional and virtual) and the integration of courses for the development of Training Programs (diplomas and specializations, for example) to increase CATIE's offering of training and education.

Table 7. Distribution of training events by country (2005)

Country	Number of events	Men	Women	Total
Bolivia	118	1,664	749	2,413
CATIE, Costa Rica	26	371	152	523
Colombia	3	45	13	58
Costa Rica	287	1,115	463	1,578
El Salvador	142	1,426	607	2,033
Guatemala	17	347	45	392
Honduras	6	136	22	158
Mexico	1	4	6	10
Nicaragua	9	172	11	183
Panama	2	39	8	47
Venezuela	1	66	35	101
Total	612	5,385	2,111	7,496

Table 8. Distribution of training events by theme (2005)

Theme	Number of events	Men	Women	Total
Agroforestry	506	3,914	1,469	5,383
Biotechnology	4	3	6	9
Management and Conservation of Natural Resources and Environment (Forests, Protected Areas, Plantations, Biodiversity)	51	629	261	890
Watershed Management	5	85	24	109
Information Management (Computer Center, Statistics, GIS, Library, Documentation)	7	32	18	50
Others (Management, Planning, Enterprises, etc.)	30	642	297	939
Sustainable Production	7	66	28	94
Socio-economics	2	14	8	22
Total	612	5,385	2,111	7,496

Table 9. Distribution of training events by type (2006)

Type	Number of events	Men	Women	Total
Strategic courses	10	79	31	110
Special courses	22	312	200	512
In-service training	2	2	1	3
Field trips and field days	21	393	230	623
Workshops and Demonstrations	886	6.212	2.876	9,088
Conferences and Teleconferences	140	1.160	841	2,001
Working meetings	12	349	101	450
Total	1,093	8,507	4,280	12,787

Table 10. Distribution of training events by country (2006)

Country	Number of events	Men	Women	Total
Argentina	1	17	9	26
Bolivia	3	105	25	130
Canada	1	20	10	30
CATIE	15	132	42	174
Costa Rica	15	281	301	582
Cuba	1	12	7	19
Dominican Republic	2	58	15	73
El Salvador	1,009	7,007	3,500	10,507
Guatemala	8	103	43	146
Haiti	1	15	2	17
Honduras	31	566	247	813
Nicaragua	4	101	29	130
Panama	1	40	30	70
United States	1	50	20	70
Total	1,093	8,507	4,280	12,787

The interest to integrate graduate studies and training in a process of continuing education resulted in the desire to assign graduate credits to training courses. To do this, after reaching internal agreements and a request by the board of directors, a detailed relation of the different components of each course (academic credit, class hours, practices, laboratories, etc.) was included on certificates for strategic courses so that the participants' own institutions can determine the number of credits that the course represents in its programs.

CATIE is working with a group of consultants to produce virtual modules of watershed management with teaching materials made available by the Watershed Thematic

Group. This work constitutes part of a proposal begun in 2005 that seeks to create a semi-participatory professional master's program in integrated watershed management. In the area of virtual education, CATIE continues to work with IICA to develop new virtual courses and in particular, the Introduction to Agroforestry Systems course as well as in the development of three other virtual courses that function on line (Silvopastoral Systems, Research Techniques in Agroforestry and Agroforestry Systems with Perennial Trees). The center has also begun to work with other specialized organizations in this area. One of these is LatinCampus, where we were able to have four CATIE professionals participate in a virtual education course, using a virtual

methodology. The four people completed this course satisfactorily and this will strengthen CATIE's work team to develop distance education. Discussions are being held with that organization regarding the possibility of developing a virtual training program (for rural populations) in conjunction with the United Nations, to begin implementation in Colombia but with the hopes of expanding it to the regional level.

Alliances

The international course Widening the Impact of Sustainable Livelihoods Based on Natural Resource Management at the Landscape Scale: New Schemes for Development was held in alliance with the USAID GreenCom project for environmental education.

Two training modules that complete a series of four within the course in Rural Enterprise Development (RED) that is offered with CIAT were conducted with the CeCoEco TG. The replication of the course was begun in Bolivia with the implementation of the two modules.

CATIE has continued working to strengthen cooperation alliances in training and thus be able to attend to increasing demands and new priorities in natural resources management.

A committee was formed to work together with ICRA in the development of a proposal of a course (looking to develop a professional master's program) that combines participatory and virtual modules in rural development. A first proposal developed is presently under analysis and discussion. In 1995 CATIE formed an alliance with the Mesoamerican Biological Corridor that aided in the development of a proposal for a training plan. CATIE was hired to help prepare materials for six of the modules contemplated in this plan (for national and local decision makers) and the implementation of the first regional training activities of the plan. CATIE negotiated the use of leftover funds from the contract to develop at least six more modules with the donor agency (UNDP).

Dissemination

Dissemination of the available courses has been conducted efficiently through printed material, electronic mail (databases and networks) and CATIE's Web

site; the last two have become the principal sources for dissemination. Nevertheless, despite efforts by the Training Area, there is still no marketing strategy.

Training materials

Within CATIE's participation in the Alliance for Biodiversity Conservation in Tropical America, the center produced a document on CD-Rom titled: *Training for Protected Areas Management in Latin America: an Approximation of Demand*; 2,500 copies were produced for distribution in Latin America.

Library

The Orton Commemorative Library (OCL) is a synonym for excellence and experience, a school for forming librarians and an active outreach agent for CATIE and IICA, as well as a crucial link with the rest of the libraries in the area. It is also an indispensable component for CATIE's Graduate School to support education and research in Latin America and the Caribbean.

These were the conclusions of an external evaluation conducted by an expert from the National Agricultural Library (Washington, D.C).

The library has benefited from the joint IICA/CATIE administration through coordination by the Administrative Committee (CABCO), improving its working and operations.

The administrative management of the OCL has experienced great achievements in the development of internal projects, among them the efforts to construct a virtual library with the retrospective digitalization of a catalog of theses and other institutional documents. centers of specialized resources, such as Inforesta and atmospheric carbon, as well as a virtual library that offers publications from IICA and CATIE, have also been developed through the promotion of its services.

Alliances

As far as external projects are concerned, the digitalization of the *Turrialba Journal*, with funding from the U.S. National Agricultural Library can be mentioned. Services such as access to electronic collections (with support from the University of Idaho) and the acquisition of the TEEAL Electronic Library were strengthened through agreements with other

institutions. CATIE maintains its strategic relations with USDA/NAL and FAO in the development of the Integrated Library Administration System (LISAGR).

Fundraising efforts included actions with Harvard University to implement a project to preserve unique collections for an amount of U.S.\$20,000. Also, a project to preserve library collections with the USDA/NAL was negotiated for U.S.\$70,000.

More agile mechanisms have been implemented for purchasing publications. New technologies were used to transform a system for loaning technical materials into an electronic library. The technological equipment for users was renewed, including the installation of a wireless network and improvement in the band width.

Among the principal actions for information management, we can mention the technical coordination of SIDALC, the updating of databases of complete texts, maintenance of the Web page, incorporation of new publications and editorials in the virtual library, attention to users at the library and potential increase in virtual clients. CATIE participated with a booth in national and international events and offered technical lectures for library users as well as courses for librarians to encourage the culture of information. Technical advice to institutions in the sector were important to create national capacities.

Biostatistics Unit

The unit has been involved in the execution of the project Functional Biodiversity Effects on Ecosystem Processes, Ecosystem Services and Sustainability in the Americas: an Interdisciplinary Approach” funded by the Inter-American Institute for Global Change Research – IAI. The unit has collaborated with the following projects: Clean Stock Program funded by the Government of Costa Rica; Biodiversity in Fragmented Livestock-Dominated Landscapes funded by the World Bank and Bank of the Netherlands and Using Geographic Information Systems to Enhance Phytosanitary Conditions and Trade Capacity of Small Growers of Tropical Ornamental Crops, funded by USDA-FAS.

Four courses-workshops were offered (Application of Mixed Linear Models in Agriculture and Forestry; Introduction to the use of R Software, Linear Models in R.; Multivariate Data “Classic Analysis and New

Methodologies”; and Data Analysis and Interpretation of Results); one module (Analysis of Molecular Data) in the framework of the Molecular Tools course; and a course (Tools for Monitoring Carbon Sequestration in Land Use Systems) were offered.

Research Program

Since 2003, the Research Program has continued carrying out its work through two technical scientific departments: the Department of Agriculture and Agroforestry (DAAF) chaired by Dr. John Beer, and the Department of Natural Resources and Environment (DNRE), headed by Dr. José Joaquín Campos. The departments are integrated into research units called thematic groups.

Department of Agriculture and Agroforestry (DAAF)

This department is composed of five thematic groups (TG), as detailed below:

- 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
- Agroecology (GAE); leader: Dr. Galileo Rivas
- Management and Sustainable Use of Plant Genetic Resources (MURF); leader: Dr. Andreas Ebert

An important achievement of the 2005-2006 period has been agreeing with CIRAD to create a platform for joint research for Mesoamerica (a PCP) in the thematic area of Agroforestry Systems with Perennial Crops, in which INCAE, CABI and PROMECAFE would also participate. In the context of the PCP, especially with the Cacao and Coffee thematic groups, a plan has been agreed upon to expand and renovate the group of associated experts from CIRAD that cooperate with CATIE. The beginning of the new CAFNET project (EU - Environment), a global initiative focusing on environmental services and agroforestry with coffee, to be executed jointly with CIRAD, is of major importance. Another advance with great potential has been approaching the private sector (e.g., Nestlé and Mars).

It should be noted that in October 2005, CATIE's Board of Directors approved the formation of a new group called Agroecology, resulting from the fusion of the PAECA (Agroecological Production of Annual Crops) and MUSA (Research and Development of Clean Technologies for Musa) thematic groups. It will incorporate initiatives on ornamental plants, fruit trees and organic agriculture. Through this new thematic group we expect to revitalize CATIE's work in integrated pest management, organic agriculture and protected agriculture, among other topics.

Another of the important achievements of the period has been the organizing of much closer relations among the TGs, including between the different departments. This partnering has involved the joint execution of projects and the successful postulation of new contracts. Some examples are 1) a contract with SIDA to systematize FondeAgro, initially developed by the Agroecology TG, but after the first phase it was ceded to the SEBSA Thematic Group of DNRE; 2) cooperation of the groups to execute the Focuencas II watershed management project; 3) management of the components and activities of the Innovations project with coffee and horticulture.

A proposal was also prepared for a project to modernize cacao production chains in Central America that received funding from the Ministry of Foreign Relations of Norway. This project is expected to give significant assistance to cacao clusters (or their equivalent) in the countries for at least five years beginning in September 2007.

The proposals negotiated by the end of this period that will be implemented in coming years include:

- a. Extension of the agreement for a joint Ph.D. with the University of Wales, Bangor (UWB) for five years.
- b. Consultancy on lessons learned from the FondeAgro Project, Nicaragua (SIDA; 17 months; U.S.\$140,000).
- c. Preparation of an agricultural-environmental program and the baseline of the cacao project (MFA-Norway; 6 months; U.S.\$450,000).
- d. Consultancy for a Committee of Standards Assessment (COSA) (IISD; 10 months; U.S.\$12,000).
- e. CAFNET, environmental services in agroforestry coffee, EU. 4 years; amount for Central America U.S.\$820,000 of a total of approximately U.S.\$3 million).
- f. Wafila, management of freshwater resources, (EU, amount for Central America 70,000 euros).
- g. Global Crop Diversity Trust (3 years; U.S.\$210,000; Bill Gates Foundation).
- h. Cacao Central America Project (MFA Norway; 5 years; U.S.\$5 million).

Training

A conference was held in Stockholm, Sweden, in 2005, about CATIE's programs and its cooperation with European partners. The event was held at the Royal Swedish Academy of Agriculture and Agroforestry. The head personnel of the department also made progress on the preparation of a series of electronic agroforestry courses, in close collaboration with IICA. For example, based on the chapter about agroforestry in the book on Central American trees, an interactive course was prepared on CD-ROM and tried out successfully in Ecuador (32 trainees), and content for a second interactive course on Silvopastoral Systems was prepared with the GAMMA Thematic Group, which IICA will edit at the beginning of 2007. In this period DAAF coordinated 23 courses on the use of the AdeC Manual to train 379 people in six countries. In Colombia, a two-week short course was given on agroforestry systems, funded by CORPOICA.

Dissemination and Scientific Publications

In 2005 and 2006, DAAF personnel and students produced a total of 329 publications; of these, 34 were in international scientific journals and 43 in regional technical journals. To ensure that technicians in the region would have access to CATIE research results, the DAAF published several issues of its own regional journals: *Manejo Integrado de Plagas y Agroecología* and *Revista Agroforestería en las Américas*. Over the two years, the effort in scientific dissemination also included more than 100 presentations in national and international congresses. Also noteworthy are the 91 theses finished with support from DAAF projects in 2005-2006.

Recognition

The high quality and impact of CATIE's research on cacao (genetics and agroforestry) was recognized with awards from the World Cocoa Foundation and the Government of Costa Rica (MICIT) to Dr. Eduardo Somarriba and Dr. Wilbert Phillips, respectively. The silvopastoral project on payments for environmental

services in livestock production systems, with activities in Nicaragua, Costa Rica and Colombia, has also been identified by the donors (GEF / World Bank) as “exemplary” and it has been used as a model for the preparation of future projects worldwide.

Modernization and Competitiveness of Latin American Cacao Plantations Thematic Group (Cacao).

Cacao production is relevant to the well-being of thousands of rural families and for natural resource conservation in key zones of Latin America. At present there is a special interest at the international level in cacao production, due to the sustained increase in demand and interest in cacao’s medicinal properties.

The objective of the Cacao Thematic Group is to support the modernization of cacao production in Latin America. The experiences of this thematic group in Costa Rica and Bolivia have shown how to modify substantially the way in which cacao is cultivated and traded. These experiences have marked the way for the implementation of initiatives in Mesoamerica; for example, with a new regional cacao production project that will work to enhance the competitiveness of national cacao production chains. In the formulation of this project, feasibility studies were carried out in six countries as the basis for preparing a proposal to MFA-Norway. Proposals were also developed in Alto Beni (Bolivia) to continue work with cacao (presented to ARCo; USAID initiative administered by Chemonics) and for studies of alternative land uses presented to the Government of Bolivia / USDA. The cacao production expansion programs of Central America and the global genetic research and integrated pest management programs are incorporating germplasm from CATIE. Many use agroforestry technologies and methodological approaches for participatory formulation and implementation of sustainable production and environmental conservation projects in cacao production landscapes developed by the Cacao group in the last 10 years.

In 2005 and 2006, this thematic group conducted outstanding regional and international work to develop technical capacities and facilitate access to information. At the national level it has also worked to support development agendas and influence political dialogue; i.e., support to the cacao cluster

of Nicaragua and its equivalent in other countries. Described below are other principal achievements and actions of the Cacao TG in the last two years:

Training

Training actions have been developed at several levels, involving technicians and investigators and then producers and students. Annually, the Cacao TG (together with the CeCoEco TG) offers the Cacao international course Opportunities for Sustainable Production, which is directed at technicians, instructors and investigators of the Americas for the objective of disseminating concepts, methodologies and new practices. Furthermore, it offers the international course on Tools for Monitoring Carbon Sequestration in Land Use.

At the level of producers and students, the thematic group has trained some 3,000 people in Talamanca (Costa Rica) and Alto Beni (Bolivia) in the last five years. In the case of the Cacao-Carbon Capture Project of Talamanca, Costa Rica, (World Bank-MINAE), it held a large number of workshops, field days and meetings to disseminate the results and recommendations produced by CATIE and its partners to more than 500 indigenous farmers. The initial training program in Alto Beni reached 2,000 farmers.

Outreach

Global and regional outreach has been improved through the co-organization of the International Cacao Research Conference with the Cocoa Producers Alliance (COPAL), Costa Rica, 2006, strategic alliances and new projects. The most relevant in this field is the cooperation that continues with COPAL and with the Mesoamerican Scientific Partnership Platform for Agroforestry with Perennial Crops (PCP with CIRAD, CABI, INCAE and PROMECAFE). CATIE leads a new global group, INAFORESTA, a joint initiative of CATIE, Mars, IITA, ICRAF and CIRAD, dedicated to the analysis and use of the information available on relations between cacao, people, trees, forests and the environment; in this context, a global workshop of experts in cacao agroforestry systems was organized (for INAFORESTA) immediately after the International Cocoa Research Conference. In 2006 a special effort was made to establish new collaboration links for research and education with the private sector, e.g.,

with the World Cocoa Foundation (WCF), Yara and Mars. This effort included active participation in WCF meetings in Washington and Europe. The Cacao thematic group offers technical support to the Andean cacao production initiative, ACCESO, led by IICA with funding from WCF and USAID.

Publications

One special achievement was the publication of a special issue of the journal *Revista Agroforestería en las Américas* (RAFA) about *Modernizing the Cacao Chain in Alto Beni, Bolivia*, with 11 scientific and technical articles on the results obtained in Alto Beni (funding from FAO and World Bank). Furthermore, a special issue of RAFA on agroforestry systems, cacao and carbon in Talamanca, Costa Rica, is well on the way to publication. This issue will include at least 14 scientific and technical articles, most of them written by thematic group personnel. The Cacao Thematic Group appears in several areas of the WCF Web page, which is widely consulted.

Undergraduate and graduate research and education

Eight master's and six doctoral students conducted the research for their theses with the Cacao Thematic Group. In Bolivia, the projects of 16 undergraduate and graduate students from national universities were supported in conducting their thesis work. Another four students have begun master's theses and three doctoral students are continuing their work in this field.

Program for the Genetic Enhancement of Cacao: Establishment and Maintenance of a Network of Parcels (activity of the MURF Thematic Group)

The Cacao Thematic Group has been working jointly with the Management and Sustainable Use of Plant Genetic Resources Thematic Group (MURF) for the dissemination and validation of cacao genetic material developed by CATIE. The joint actions encompass the collection, characterization and distribution of cacao germplasm and the implementation of cacao production development projects in several countries of the region. MURF has continued with the maintenance and evaluation of the second-largest cacao germplasm collection in the world.

Policy

In Costa Rica, the Cacao TG has given key information for the formulation of new forestry policies for logging timber from indigenous cacao farms and for the design of payment mechanisms for carbon capture and other environmental services using agroforestry systems on indigenous cacao farms. It has also become a key ally in the investigation and development programs of CATIE member country governments, as well as the new Central American Cacao Project.

There are great expectations for a regional initiative for Latin America like ACCESO in the Andean region (Colombia, Ecuador, Peru and Bolivia).

The Cacao TG has also made important global alliances such as PCP with CIRAD, CABI, INCAE, PROMECAFE (see the DAAF section and above) and with other international organizations, regional projects, and important donors such as the World Bank and MFA-Norway.

Coffee: Quality, Profitability and Diversification Thematic Group (Coffee)

In these two years the Coffee Thematic Group has sought to integrate entrepreneurial concepts and processes and value chains with its traditional strengths in participatory ecological management of coffee and training for coffee-producing technicians and families. It has also developed actions and proposals for the appraisal of environmental services from coffee agroforestry.

Project Linking Central American Small Producers with Special Coffee Markets (Japanese funds; World Bank)

This project is executed in collaboration with ANACAFE, IHCAFE and CAFENICA in Guatemala, Honduras and Nicaragua, respectively. Directors and personnel from 45 grassroots cooperatives and nine trade cooperatives have been trained in strategic and business planning, financial management and marketing. Their technicians were trained in ecological management of quality coffee and they in turn trained some 2,000 producing families. In general, 50% of the producers implemented practices or trials for ecological coffee management. Support was given to three cooperatives in Honduras to undergo the certification process with Rainforest Alliance and

two with Café Practices, two with Utz Kapeh, one in fair trade in Guatemala, and others to maintain their organic certification. Finally, the group facilitated the formation of a new coffee trading cooperative in eastern Honduras that unites six grassroots cooperatives.

Innovation of Value Chains Project (Norway)

This project was approved at the end of 2005 for U.S.\$5 million (5 years; approx. U.S.\$3 million in coffee). However, it was in 2006 when the diagnostic and project launch phase was completed. A strategy for participation in coffee value chains for producer organizations was developed based on the principles of quality, certification, contract fulfillment and communication. Small projects were designed for institutional strengthening for eight producer organizations and three service providers in the municipalities of Jinotega and Jalapa in Nicaragua and El Paraíso in Honduras.

Research

The *Coffee Agroforestry Systems in Central America* Project (CASCA-INCO-EU), carried out in collaboration with CIRAD and PROMECAFE, was completed at the end of 2005 with a workshop in CATIE, where the results and models of ecological processes that affect productivity and coffee production sustainability were presented.

During 2006, the results of six years of research on organic and conventional production systems that were analyzed in workshops were presented to multi-institutional collaborators in Nicaragua and Costa Rica, and it was possible to show that organic production can be as productive as conventional production.

Proposals

Connecting and Sustaining Environmental Services and Markets for Agroforestry Coffee (CAFNET).

This project dedicated to the appraisal of agroforestry coffee environmental services was approved by the European Union. It is a global project in Central America, East Africa and India in collaboration with CIRAD, ICRAF, UWB, University of Bangalore and the Indian Coffee Board.

The group also participated in the preparation of a proposal (to FONTAGRO) with the Livestock Thematic Group GAMMA on the integration of livestock-coffee farms, which was approved.

Consultancies and publications

At the request of ANACAFE of Guatemala, technical advice was given on an evaluation of the impact of the coffee crisis on the conversion of coffee to other land uses and the environmental services of coffee farms. One product of this evaluation is the *Manual for the Evaluation of Environmental Services*.

Technical assistance was given on diversification processes in collaboration with CIRAD to publish the Information System to Support Diversification (SIAD) on the Internet, funded by the IDB. The group also participated in a study led by FAO and requested by MAGFOR to analyze diversification alternatives for zones that are marginal for coffee in Nicaragua.

Alliances

During 2005 and 2006, CATIE was invited to participate in the Support Platform–Common Code for the Coffee Community, which seeks to help producer groups comply with minimum standards of sustainability.

In addition to training sessions and joint projects, participation continued on the PROMECAFE board of directors and technical committee. A forum was used to share challenges and solutions for the coffee production sector of Central America.

In the context of integration of regional coffee programs, a workshop was held in Costa Rica with CATIE, CQI, Rainforest Alliance, Conservation International, Starbucks and CIRAD on the concepts of Best Practices.

Training

In addition to the training offered under the Special Coffees Project, 250 Costa Rican producers were trained and advised on diversification and ecological management of quality coffee (Project FUNDECOOPERACION). Moreover, a workshop was held to present project results to decision makers of participating institutions including MAG, IDA and ICAFE. The international course on Coffee was given in 2005 for 18 participants from Latin America.

Education and theses

Content about coffee management was incorporated into master's courses for the graduate degree in Agroforestry and Agroecology.

In 2005, three master's and two doctoral students enrolled whose thesis research will focus on coffee. In 2006 two master's thesis projects were developed with support from the TG (Behavior of trees in Agroforestry Systems and Biomass and Nutrient Contributions from Coffee AFS); a large number of thesis studies from CASCA were published and practical recommendations were developed for coffee growers based on these.

Livestock and Environmental Management Thematic Group (GAMMA)

The GAMMA group continued strengthening its work on silvopastoral systems with a broad focus on environmental problems, through research, education technical assistance actions. The actions were carried out via field projects and the group worked on advanced themes of policy design, payments for environmental services, incentives for conservation, recovery of degraded pastures, biodiversity conservation in fragmented landscapes with dominant livestock production activity, and improvement of livelihoods in communities dependent on this activity. GAMMA actions were carried out in different countries, with an especially strong presence in Nicaragua, Honduras, Guatemala, Costa Rica, Panama and Colombia.

Silvopastoral Project

The results of the Silvopastoral Project (GEF-World Bank) indicate that payments for environmental services (PES) to small- and medium-size producers were greater per unit area compared to those for large producers. The amount of labor employed on farms increased under the PES system due to an increase in the percentage of area in forage banks that require management, in comparison with monoculture pastures. The results of the Silvopastoral Project (GEF) and FRAGMENT (EU-INCO) show that plant cover and tree species richness are the most important variables in ranching landscapes, which explains the biodiversity of species (e.g., birds, ants, bats and butterflies). With these variables and results for biodiversity of the different schemes evaluated, the Biodiversity Index for PES (IBSA) was developed.

The CO₂ FIX tool was also developed for modeling of carbon over time in silvopastoral systems. These tools for biodiversity and carbon constitute contributions for research and decision making in public environmental policy.

The results obtained from research in two regional development projects (GEF-Silvopastoral (SSP) and Degraded Pastures (PD) and six research projects (FRAGMENT, Red Carbono, PACA, FONTAGRO, BNPP-Biodiversity and CORRIDOR) allowed the preparation and implementation of an environmental services payment methodology (Colombia, Costa Rica, Nicaragua), a program for land recovery of degraded pastures (PD) in Central America in collaboration with local and regional institutions, the development of an environmental livestock management program and expansion of the focal area for activities in Colombia (Quindío), Panama (Darién), Central America (e.g., Copán, Honduras) and Mexico (Chiapas).

The Degraded Pastures Project (funding MFA-Norway) made progress on the development and implementation of methodologies for investigation-learning with producers, their families and local institutions for the recovery of degraded lands in three pilot areas (Nicaragua, Honduras, Guatemala). Local groups were organized for learning, evaluating and decision making about sustainable management of land use; each one had a curriculum with the events or specific themes.

Preparation of new proposals

The CORRIDOR project with the University of Wales was negotiated with the EU to systematize results from the patterns of trees in coffee and livestock production systems and the impacts of those trees on biodiversity and productivity in these production systems. ECOSUR of Mexico and CORPOICA of Colombia also participated in this project. The Agrosilvopastoral Project is funded by FONTAGRO through the IDB. The objective is to evaluate options that would increase environmental, social and economic sustainability of agrosilvopastoral systems in zones with integrated coffee and livestock production and to strengthen local capacities for the design and management of those systems articulated with markets in Costa Rica, Nicaragua and Colombia. Progress consists of the determination of farm clusters according to the provision of capital under the framework of the livelihoods approach inputs needed for pilot farm planning strategies and training through the adaptation of field schools. Furthermore, a study is being developed on the standardization of value chains for principal farm products and their coherence

with the participatory planning of the farms and the field schools. It seeks a design for coffee and livestock farms with a potential to generate different products that will facilitate their entry into niche markets, taking advantage of the benefits of value chains.

Workshops

Four national workshops were organized in Colombia, Nicaragua, Costa Rica and Guatemala to present to political decision makers the results and tools developed by the group. Ministers of the environment and agriculture and actors from the government and the private sector participated in these workshops.

Policy

GAMMA has had an impact on the policies of international donors such as the GEF and the World Bank, which have identified silvopastoral systems as a strategic option for sustainable land management and the generation of environmental services.

Livestock producer organizations, agricultural banks and the rural microfinance sector have incorporated policies for promoting sustainable ranching. In Colombia with FEDEGAN (Federación de Ganaderos), in Nicaragua, the Fondo de Desarrollo Local, and in Panama, the Banco Desarrollo Agropecuario.

It should be noted that the results generated by the group are being used by key institutions (TNC and GEF) to formulate policies about conservation strategies in agricultural landscapes. The strengthening and certification of the focal institutions (for example CIPAV, NITLAPAN, ECOSUR, CEDECO and SNV) were also supported.

Education and theses

The staff participated in giving courses for the master's degree in Agroforestry. Ten students finished their master's studies under the supervision of the group's technicians. Scholarships were assigned to five master's and two doctoral students. Scholarships were obtained for conducting research studies in the field of environmental livestock production (PACA, Degraded Pastures, FRAGMENT, GEF-SSP and others). In the period 2005-2006, 20 students were assisted: 18 CATIE master's students and two exchange students with other universities (60%

men and 40% women) and three doctoral students (two from CATIE and one from the University of Göttingen). The graduate students have been integrated into the projects and key institutions.

Alliances

Contacts were maintained and renewed with other research and education centers. In the case of universities and research centers: UCR, UPAZ, EARTH, UNA, UNACH, U Caldas, Purdue, ILRI, University of Wales, Yale, SLU and University of El Salvador; students and investigators were attended to during their visits. The group also collaborates with Cocibolca, Nitlapan, UNA, University of Wales, University of Göttingen / FRAGMENT, Ecoagriculture / IUFRO, etc.

Dissemination

Different strategies have been used to disseminate results. Use of the LEAD-FAO Spanish language platform was continued to facilitate electronic conferences and discussions (3,000 registered users) and electronic conferences of high relevance for the region were organized. More than 700 participants, including local decision makers and national authorities, were involved.

Training

Training modes *in situ* were innovated in project implementation sites, reaching at least 140 producers in Guatemala, Honduras and Nicaragua. Strategic courses were also given on sustainable ranching, training more than 700 technicians from different institutions in collaboration with local actors (support from LEAD-FAO, Red carbono, GEF Silvopastoral, Degraded Pastures).

Management and Sustainable Use of Plant Genetic Resources Thematic Group (MURF)

Plant genetic resources constitute key elements for diversification, improvement of agricultural production and genetic adaptation of crops to biotic (pests and diseases) and abiotic stress, which is important in climate change (drought, excessive rainfall, heat, cold). Since the 1950s, CATIE has been the depository of germplasm collections of regional and international relevance such as coffee, cacao, fruit trees, vegetables and legumes. CATIE also maintains a forest seed bank that provides services to the region and distributes seeds of the highest quality. The interdisciplinary staff that comprises the

Management and Sustainable Use of Plant Genetic Resources thematic group (MURF TG) contributes through conservation, characterization and use of germplasm from CATIE for strengthening sustainable, diversified and environmentally friendly agriculture. The cacao and coffee collections are the basis of successful genetic enhancement programs that have allowed the selection of superior genotypes for high production, quality and resistance to pests and diseases. The materials selected are profiled as promising options for improving production systems and livelihoods of the region's farmers. Biotechnology tools have been used for propagation, conservation of germplasm and selection defined by molecular markers. All activities are carried out in close collaboration with other thematic groups, campesino communities, local organizations, municipalities, and national and international institutions. Some of the most relevant achievements of MURF at regional and international levels are mentioned below.

Research

An important achievement has been the use of genetic resources from the international cacao collection through the Cacao Genetic Enhancement Program (USDA-CATIE), which aims to attain three principal objectives: (1) the acquisition of genotypes for high production; (2) resistance to moniliasis (*Moniliophthora roreri*) and black pod (*Phytophthora palmivora*), diseases that cause losses of fruit higher than 40% in Latin America; and (3) high industrial quality. Superior genotypes have been identified with elevated productivity and resistant to or tolerant of the fungal diseases mentioned, whose industrial quality is being evaluated jointly with chocolate production companies in the United States and Europe. Within the context of different international projects, assays of hybrid families, clonal assays and two segregant populations for molecular studies have been established. Molecular tools are being used to corroborate the identity of key genotypes in the program, and carry out studies on distinct aspects of cacao and the fungi that attack this crop.

Through the sequencing of specific DNA fragments, it was verified that *M. roreri* belongs to the basidiomycetes group and genetic affinity was demonstrated molecularly between the two most important cacao pathogens

in tropical America, *M. roreri* and *C. perniciosa*, leading to the latter being renamed *M. perniciosa*.

To obtain useful information for producers about diversification of shade trees used for cacao, several fruit trees are being planted in the new cacao collection such as cas (*Psidium friedrichstalianum*), jackfruit (*Artocarpus heterophyllus*) and zapote (*Pouteria sapota*). The new cacao materials generated and selected by MURF are considered promising options for improving production systems and the livelihoods of Central American farmers and they form the central axis of a new Central American cacao production project carried out by the Cacao group with support from the government of Norway. Moreover, the evaluation of innovative parameters such as the determination of antioxidants in cacao seeds or the chemical and organoleptic profiles open new possibilities for selecting elite genotypes that increase the added value of such products.

Another important achievement has been the research carried out with materials from CATIE's international coffee collection, which contains the highest genetic diversity of *Coffea arabica* in the Americas and serves as the basis for successful regional genetic enhancement programs that have allowed the generation and selection of outstanding F1 hybrids with high production, quality and resistance to pests and diseases. In regional trials in Central America, some of these F1 hybrids appear to be very promising and they are about to be officially released by the Coffee Institutes of Central America.

The elite materials will be propagated via cutting-edge techniques such as somatic embryogenesis, for the establishment of new trials and for the distribution to producers for commercial or experimental purposes.

The INCO-EU research project Nema Coffee Resistance was completed, achieving the identification of accessions of wild *Coffea arabica* genotypes resistant to *Meloidogyne exigua* and tolerant to *M. arabicida*. Through studies on hypersensitivity, three molecular markers linked to *M. exigua* resistance were identified, thus opening new horizons for the creation of *C. arabica* lines resistant to the predominant nematodes in Central America. Similarly, the MURF group is working on the

optimization of the somatic embryogenesis technique for banana and plantain, for the purpose of validating the regeneration of different cultivars in field conditions. Research on micropropagation of forest species and some ornamentals is also being carried out jointly with the private sector.

Training

Numerous training actions were conducted, not just at the CATIE headquarters but also in the countries. In collaboration with Purdue University, United States, the international course on Applications of Molecular Tools in Different Disciplines of the Agricultural and Forestry Sciences was given for three consecutive years (2003 - 2005) at CATIE and the international course on Applications of Mixed Models in Agricultural, Forestry and Environmental Sciences was also given in 2005. The international course on Plant Genetic Resources: Strategic Assets for Genetic Enhancement and Agricultural Diversification in the Context of Agrobiodiversity was given in 2006.

In 2005, decision makers and technicians from Belize, Nicaragua, Mexico and the Dominican Republic were supported in the adoption of a national action plan that will help halt the expansion and the negative effects of cacao moniliasis in those countries. Simultaneously, three international meetings were held on control and evaluation of disease resistance and genetic enhancement of cacao, which had 60 participants from nearly every continent. Numerous training sessions were also held for students from other universities, technicians and producers on the control of cacao moniliasis, genetics, molecular biology, tissue culture and histology.

Outreach

Co-organization of the International Cocoa Research Conference (COPAL) and the organization of the International Workshop of INGENIC in October 2006 in San José, with more than 200 investigators from around the world, substantially improved regional and international outreach of the cacao genetic enhancement program of the MURF group. The strategic displacement of moniliasis-resistant cacao genotypes from CATIE to countries in Africa and Asia that are major cacao producers globally is also being discussed.

Alliances

The group is strengthening regional cooperation mechanisms with national and international institutions such as FAO, IPGRI, Global Crop Diversity Trust, IICA, USDA, HARC, WGF and WCF. In 2006, collaborations were solidified with some institutions such as the University of Reading (England), University of Guayaquil (Ecuador), PROMECAFE, CIRAD and NESTLÉ (Tours-France), which helped advance and validate results from the group's research. In 2005, CATIE successfully concluded an agreement with ICAFE for the reproduction of 100,000 F1 hybrid coffee plants via somatic embryogenesis for their testing and validation in representative sites in Costa Rica.

REMERFI

In July 2004 the General Directorate designated a member of MURF as secretary pro tempore of the Mesoamerican Network of Plant Genetic Resources (REMERFI), in which CATIE is a co-sponsor along with IICA and IPGRI. The most relevant and outstanding aspects developed by the Secretariat pro tempore to date include the consolidation of the network, the ratification of country representatives on the Directorate Council, and support in the formulation and negotiation of regional projects.

Project on Agrobiodiversity (WB-GEF)

MURF is contributing to the formulation (PDF-B block) of the project on Conservation and Sustainable Use of Neotropical Native Crops and Wild Relatives of Crops to the World Bank-GEF, with IICA and CIAT as legal signatories for this project.

Germplasm exchange and database

Germplasm was distributed to actors interested in research and production at local, regional and international levels, increasing the distribution of germplasm in the last four years, with 1,721 samples distributed to international research institutions (33%), universities (22%), large producers (18%), small producers (15%), national research institutions (7%) and NGOs (3%). Another important work was the strengthening of the germplasm bank information system through the installation of DBGERMO software and the purging and updating of the database on the diverse collections for users of CATIE germplasm.

Education and theses

Each year the graduate course on Conservation and Use of Plant Genetic Resources is given and three elective courses for the Graduate School are offered. Guidance was given to 15 master's students, 2 doctoral students and four students.

Policies, strategies and international agreements

The MURF group collaborated on a strategy with the Global Crop Diversity Trust directly with the Area of Biotechnology and Biosafety of IICA, which is the coordinator for the development of a hemispheric strategy for the conservation of plant genetic resources *ex situ*. Furthermore, it supported a proposal on agrobiotechnology and biosafety for Central America. Support to the countries was begun for the implementation of international agreements: i.e., Seminar/Workshop on the International Treaty on Plant Genetic Resources Related to Food and Agriculture, organized by FAO, CONARFI, MAGA and IICA in May 2006 in Guatemala.

Agroecology Thematic Group (GAE)

This thematic group develops research focusing mainly on *Musa*, annual crops, ornamentals, organic agriculture, and in the future, fruit trees. It also supports other thematic groups that work on different crops. The group also benefits from the support and cooperation of the office and the research staff of INIBAP/Biodiversity, which is based at CATIE.

Projects

- Research on plantain and banana for the control of black Sigatoka (*Musaceae*) with funds from FONTAGRO. Studies were made for the management of black Sigatoka via the use of bioproducts.
- Multisectoral innovation in conditions of ecological and economic uncertainty in Central America. CATIE signed an agreement with MFA-Norway (U.S.\$5 million; five years) to begin the Innovations Project that includes research on coffee and an agro-environmental component in the El Trifinio zone.
- Health and Quality of Banana Soils with funds from FONTAGRO. Activities were begun with cooperation from regional research institutions in Costa Rica, Panama, the Dominican Republic and Venezuela. This will generate indicators for

soil health and quality that will lead to appropriate recommendations for pest management and the conservation of banana agroecosystems in the tropics.

- Biological control of Nematodes in *Musa*, with funds from FONTAGRO. In the case of nematodes, isolates of endophytic fungi have shown high levels of parasitism on these pest organisms. One protection strategy has been the activation of the rhizospheric system of vitroplants with biological pest control agents.
- Research on biological insecticides, with funding from FONTAGRO. The Agroecology Thematic Group had achievements in the field of alternatives to pesticides or biopesticides. Research was carried out on micoinsecticides for the integrated management of white flies (*Bemisia tabaci*) in tomato, cantaloupe, eggplant, bean and watermelon crops in different localities of Colombia and Costa Rica.
- Focuecas II with financial support from SIDA-Sweden. Using the action-investigation approach, a work plan was prepared and its execution initiated in Matagalpa, Nicaragua, in the Focuecas II Program. GAE made its contribution in the first phase of this project providing guidelines for the agroecological management of watersheds.
- Proposal for Ornamentals, with financial support from CNP-Costa Rica. This is a new project (U.S.\$75 million), in alliance with Purdue University, APHIS-USDA, MAG and CNP (the latter two of Costa Rica), to resolve pest problems and mitigation of interceptions occurring in U.S. ports of ornamental plants produced in Costa Rica.

Consultancies

Consultancy PRODESES-EU. Development of Sustainable Production Systems, Microenterprises and Financing Systems in the State of Chiapas, Mexico (Agroecology component), a bid that was won in 2007 by the CIRAD-IICA-CATIE consortium. The GAE expects to lead the Lote 2 Agroecology component in this consultancy (budget of approx. U.S.\$1 million) for the Lacandone Forest of Chiapas, Mexico. The objectives being pursued are poverty reduction in the project execution zone, reducing pressure on forest natural resources and mitigation of environmental degradation in the zone. The group also expects to reformulate and apply diverse social development policies toward participatory and sustainable territorial development. This will help create capacities in agricultural promoters

through training on diverse subjects, such as participatory rural development, agroforestry, silvopastoral systems, marketing of agricultural products, natural resource management, coffee, cacao, annual and commercial crops.

Policy

The Organic Fertilizer Law was finalized in participatory fashion with the Ministry of Health of Costa Rica and all the actors of the sector. At the same time regulations were made for the production of organic fertilizers and their impact on the environment. Chamber associations for nonsynthetic agricultural inputs in Nicaragua, Honduras and Costa Rica were consolidated and will continue fieldwork on the use of biopesticides and organic fertilizers following project end in March 2006.

Alliances

Some actions and results obtained from the alliances with national and international organizations include:

- Plantain and Banana Research and Development Network for Latin America and the Caribbean (MUSALAC), which has support from and linkages with the University of Costa Rica, University of Tolima and the National University (Colombia), University of Bonn (Germany) and the University of Lovaina (Belgium).
- The integration of the GAE as a consultant group for the Central American Integration System (SICTA).
- Support to the process of systematization of the Agricultural Development Fund (FONDEAGRO) with support from SIDA (Sweden) in Nicaragua, with a view toward heading up PRORURAL coordinating actions with the SEBSA and Coffee thematic groups.
- Links with universities of the United States (Purdue, Texas A&M, Ohio State University); Germany (Bonn and Berlín); Colombia (Tolima); Honduras (National University); Nicaragua (León) and research centers (CIRAD-France, CABI-UK).
- Contacts were maintained and promoted with the National Banana Corporation (CORBANA-Costa Rica) and the Colombian Agricultural Research Corporation Agropecuaria (CORPOICA-Colombia).
- Continued supporting the group of organic producers of APOT, in the area of Turrialba, Costa Rica.
- Also continued the alliance with CIRAD and IICA for the implementation of the PRODESIS-EU consultancy in Chiapas, Mexico, which is highly important and has much potential for the region.

Education

- The academic coordinator of the Master's in Sustainable Agriculture has begun to carry out strategic changes in this program, some of them implemented starting in 2006. However, concerns regarding the viability of this master's program continue since requests and the number of students enrolling each year have fallen to minimum levels. For example, in 2006 only 10 students enrolled in this program.
- Five doctoral students were incorporated into the development of research on biological control, agroecological production and integrated pest management.

Training

- More than 150 technicians were trained in diverse subjects related to agroecological pest management, sustainable production and environmental protection.
- More than 200 producers were trained in agroecological subjects to promote organic production of *Musaceae*.
- An international course on agroecology was offered to the Mesoamerican Biological Corridor (MBC).
- The training given by the group has contributed to the continuation of courses (six courses in four countries; 122 trainees) on the use of the manual about the trees of Central America.
- In November 2005 the Contest for Organic Agriculture was held in San José, Costa Rica, to motivate and recognize the farmers that conduct investigation and innovation in organic production.
- Training and advisory services were given on the use of biopesticides and organic fertilizers in collaboration with institutions in Costa Rica, Nicaragua and Honduras to companies that produce biopesticides and organic fertilizers.

Department of Natural Resources and Environment (DNRE)

The 2005-2006 period characterized by the strengthening of DNRE and the thematic groups and by greater interaction and multidisciplinary work. Greater self-management and proactivity of the groups was observed, which resulted in an expanding project portfolio and an increase in the funds in custody and project funds.

The lines of DNRE research were consolidated, as can be seen below:

- payment for ecosystemic services
- promotion of rural community enterprises
- conservation biology and its contribution to biological corridors
- management of natural resources on a landscape scale (watersheds, model forests, biological corridors)
- multifunctional forest management

The department also continued developing experiences in other fields such as adaptive co-management of watersheds, mitigation and adaptation to climate change, value chains and competitiveness of small and medium-size ecoenterprises, and governability of natural resources.

In 2005, an agreement was signed for the coordination from CATIE of IUFRO activities related to its Special Program for Developing Countries in LAC. Thus an IUFRO office was created at CATIE headquarters.

Furthermore, a cooperative agreement was signed with the Global Mechanism, and an office was created for this mechanism at CATIE to address issues related to the UN Convention to Combat Desertification (UNCCD).

A total of 253 publications were published in the two years, including books, journal articles, book chapters, manuals and congress proceedings, as detailed in Table 13. The group participated in the publication of a book about Forests in Global Equilibrium – Changing Paradigms. It also prepared the Spanish version of several chapters and a compact disc of the book on the IUFRO-WFSE Special Project on Forests in Global Equilibrium–Changing Paradigms.

In the area of communications, work continued on the publication of the journal *Recursos Naturales y Ambiente* and work was done on improving the electronic portals for Watersheds, Model Forests (LACNet), the Research in Environmental Economics Network (LACEEP) and Agricultural and Forestry (ecobusinesses (CeCoEco), which reach tens of thousands of users in the region and the world.

Training

The courses of greatest importance given in this period focused on climate change, diversified

forest management; protected area management; multifunctional plantation management; economic appraisal of environmental services; and watershed management, as well as the degree program in Rural Enterprise Development given jointly with CIAT.

In the area of payment for environmental services, a course with a field visit was given for high level decision makers of the U.S. Forest Service and the National Forest Office of France.

The department also participated in organizing and holding the Youth Encounter on Sustainability program, developed in collaboration with ETH-Zurich and INCAE and directed at more than 30 youth leaders from around the world.

Congresses, seminars and conferences

International conferences were organized on the topics of Ecosystemic Environmental Services (2005 USDA-CATIE Wallace Conferences), Development of Small and Medium-Size Forestry Enterprises for Rural Poverty Reduction (2006) and the Global Model Forests Forum (2006), held at the CATIE site in Turrialba.

Conferences were given at the Royal Swedish Academy of Agriculture and Forestry (KSLA) in Stockholm in 2005 and at a seminar with the private sector held at the Nestlé headquarters in the city of Vevey, Switzerland, in 2005, the Conference on Biodiversity Conservation in Human-Dominated Landscapes in Mesoamerica, given at the WWF site in Washington, D.C., in 2006.

Support was given to the organization and development of events for the II Latin American IUFRO Forestry Congress. The department also participated in several academic conferences, including those of the University of Costa Rica and the University of Victoria, Canada, organized by IUFRO to prepare a publication for decision makers.

Support to ministerial councils and policy dialogue

The forest policy team was consolidated within the Chair for Diversified Tropical Forest Management on topics such as illegal logging and mechanisms for the verification of sustainability and ecosystemic services from forests.

A study was made about the state of the art of the subject of ecosystemic environmental services and green markets for agriculture and natural resources, via a contract with the IDB. This study was used by the bank as a fundamental element in discussions on the topic carried out at the IDB offices in Washington and in Lima, Buenos Aires and San José with the vice ministers of the environment of the region.

CATIE, through DNRE, helped in advising the CCAD (Council of Ministers of the Environment of Central America) along with other institutions in dialogue about the establishment of policies for water, environmental services, illegal logging and biodiversity inventories, among other subjects. Communications were strengthened with CCAD. The DNRE participated in the CCAD Donors Forum and its Executive Secretary visited CATIE to discuss opportunities for collaboration. There was a reciprocal visit to the offices in El Salvador at the beginning of 2007 to discuss opportunities for cooperation.

The International Conference about Forestry SMEs (2006) produced a policy brief that was widely distributed with support from FAO, IDB-FOMIN, ODI, CIFOR and others.

CATIE has been invited to participate in several regional forums about forestry policy, such as PUEMBO II, and to form part of the Inter-Agency Consultative Committee for the preparation of the Regional Agroenvironmental Strategy for Central America (ERA), requested by the ministers of agriculture, environment and health to CCAD, CAC-CORECA and COMISCA. This is a firm step for strengthening CATIE's impact on regional policies.

International cooperation

Cooperation was strengthened with CUSO (Canada) and in 2006 CUSO contributed seven people to DNRE to support the Model Forests Network.

The DNRE participated actively on the FAO Forestry Commission for Latin America and the Caribbean (COFLAC), where the concept note that CATIE prepared for the Secretariat of the Convention on Biological Diversity (CBD) was presented, which sought to establish a regional alliance in LAC on

the topic of forest biodiversity. It also answered the invitation to give a presentation on model forests.

Funds from UNESCO for the course on protected area management and partial funds for several LAC-Net model forest representatives to participate in CATIE training events were negotiated.

Financial support from INIA (Spain) was successfully negotiated for the regional FORMA Project (CDM projects), which is being executed in Latin America in collaboration with INIA and CIFOR; two project proposals were presented (Ecomarkets in Model Forests on Three Continents; ESP in LAC) in the call for proposals by the EU.

CATIE's participation in the VERIFOR and EFORWOOD forestry projects, also funded by the EU, was negotiated.

Regional Model Forest Network for Latin America

Model Forests focus on improving the sustainable management of natural resources on a landscape scale. They emphasize aspects of harmonization such as joint planning, cooperation, dialogue and conflict resolution among institutions, communities and persons, creating and strengthening alliances, and seeking equality and peace. They aspire to increase opportunities for sustainable human development, improvement of livelihood strategies and rural poverty reduction.

The Model Forest Network for Latin America and the Caribbean (LAC-Net) provides a forum for preventing and managing environmental conflicts between diverse actors and diverse sectors, sharing solutions in the network.

LAC-Net is the regional affiliation of the International Model Forest Network (IMFN) led by the IDRC of Canada and now by Natural Resources Canada. Its regional coordination office is based at CATIE. LAC-Net is made up of 16 model forests in nine countries of the region and Spain, which work together to consolidate innovative initiatives in environmental governability.

In the 2005-2006 period the managerial staff was consolidated and several agreements were signed

with IDRC and AVINA to finance network activities; Honduras, Spain, Bolivia (Chiquitano Forest) and Guatemala were incorporated; discussions were begun for the possible incorporation of Puerto Rico and Colombia, and negotiations for the reincorporation of Mexico were reinitiated. The presidency and the management LAC-Net were strengthened with an office at CATIE and activities of its directorate were supported, and contributions to the systematization of LAC MF were made.

LAC-Net cooperated with the IUFRO-WFSE project called Forests for the New Millennium, which was launched in the United Nations Forum on Forests meeting in June. At this same forum a presentation was made about the Model Forests Network, as well as at prior event in Costa Rica.

Forests, Protected Areas and Biodiversity Thematic Group (Forests)

The group supports regional, national and local efforts on conservation and sustainable use of tropical forests and their biodiversity. Guided by the link between human well-being and conservation—through ecosystemic services—established by the Millennium Ecosystems Assessment, and catalyzed by its protagonism in the activities of the Latin America and Caribbean Model Forest Network (LAC-Net), the Forests group maintains its emphasis on the implementation of innovative lines of work and approaches, sustaining its regional leadership in the integrated management of natural resources on a landscape scale. The focus of the TG begins not so much with biophysical studies but rather with the facilitation of negotiation processes to integrate the actions of people, organized groups and institutions, tending to build models of sustainable development. Within an interdisciplinary framework, this central line of work continues to be combined with the application of original biophysical research.

Proposed projects

In research, principal efforts have been carried out the following: 1. Interdisciplinary Approaches to Analyze the Impacts of Policies on the Management of Natural Resources on a Landscape Scale (IGERT/National Science Foundation project, in association with the University of Idaho); 2. Functional Ecology of Plants and Their Relation to Global Change, Human Impacts

on Ecosystemic Services and Human Well-being (the DiverSus Project); 3. Sustainable Management of Timber Production Forests (based on a long-term research effort that is unique in the region); 4. the Prioritization of Lands for Ecological Connectivity Between Protected Areas, the validation of that function, the design of tools for the design and implementation of biological corridors, and the genetics of conservation and sustainable use on a landscape scale; 5. Forest Restoration Through Secondary Natural Succession in Mexico, Costa Rica and Brazil (international network funded by the National Science Foundation); 6. Illegal Logging in Trans-Boundary Areas, part of the work of the Forestry Policy and Economics Program, already consolidated within the TG.

Supported by The Nature Conservancy and MINAE of Costa Rica, the group led the preparation of the proposal for the National Monitoring Program of Protected Areas and Biological Corridors of Costa Rica (PROMEC-CR), which besides representing an essential tool for the adaptive management of those territories is a decisive contribution to the fulfillment of the commitments acquired by the nation under the Convention on Biological Diversity. The proposal is being implemented at present.

The group supported the preparation of a proposal about management of the Chiquitano Dry Forest (Bolivia), presented by the Fundación del Bosque Chiquitano and financed by the EU, as well as three proposals about model forests presented to diverse sources. It also participated in the proposal for the LAC regional alliance on forest biodiversity negotiated with the Secretariat of the Convention on Biological Diversity.

Graduate School and Education

The Chairs in Ecology in Tropical Forest Management and Diversified Forest Management cooperated in an effort to oversee and renovate the education programs. Significant progress was made in graduate research on different technical aspects and the administration of landscape and biodiversity management in fragmented landscapes, as well as tools for sustainable forest management.

A seminar was held on leadership for all the students of the school. The Master's Program in Management and Conservation of Tropical Forests and Biodiversity has maintained a level of approximately 14-16 new students

each year and graduated a similar number at the end of each year.

In this period guidance was given to six doctoral theses (joint programs with U. Idaho and UWB) and from nine to 11 master's theses per year, related principally to biodiversity management and conservation at the landscape level and sustainable management of forestry resources in wet tropical forests in Costa Rica, Nicaragua and Colombia.

The group has collaborated decisively in administering scholarships, assisting support for students and complementary funds for research projects, to complement the funding that most of the students receive from the Scholarship-Loan Program.

Training

The personnel of the group coordinated and gave the XVII International Course on Diversified Management of Natural Tropical Forests and the XXVII International Course on Protected Areas. They supported the course on Multifunctional Management of Forestry Plantations given by the Global Change Thematic Group and the SCALE and YES courses. There were also training activities aimed specifically at producers and local technicians in Costa Rica, Nicaragua and Guatemala, supported by the Training Alliance for Biodiversity Conservation in the American Tropics in consortium with INBio, U. Wales, CODEFORSA and the Araucaria Project. Also of note were the events for model forest networks held in Argentina and funded by AVINA, the development of the Rural Invest training program for the economic evaluation of projects, and the proposal approved for activities in the Lacandon Forest, Mexico.

Publications

Several articles have been published in prestigious international scientific journals such as *Philosophical Transactions of the Royal Society* and *Biotropica*, mainly to provide information about our projects in international networks and the joint Ph.D. programs. Extensive contributions to the dissemination of research results in articles in Spanish were maintained through the journal *Revista Recursos Naturales y Ambiente*.

Two chapters were prepared for the book *Confronting Sustainability: Forest Certification in Developing and Transitioning Countries*, edited by the Yale School of Forestry & Environmental Studies, and one chapter was prepared for the book *Forests in Landscapes; Ecosystem Approaches to Sustainability*, EARTHSCAN, 2005.

Other noteworthy publications were the *Proceedings of the Global Forum on Model Forests* (CATIE, Costa Rica November 2005), the book *Forests in the Global Balance—Changing Paradigms* and the CD in Spanish of the same publication from IUFRO; the TG is part of IUFRO's Steering Committee.

Events

At the global level, the group participated on the Steering Committee of the World Forests, Society and Environment (IUFRO) special project, in the IUFRO World Congress (2005); the I International Congress on Wildlife Management; and the Annual Meeting of the Society for Conservation Biology. It also organized the Global Forum on Model Forests in 2005 at CATIE, with 130 participants from around the world.

The group participated in the organization of diverse events and gave conference presentations and talks.

- II Latin American IUFRO Congress on Forestry (La Serena, Chile, October, 2006): participation on the scientific committee, organization of two parallel events and presentation of six invited works, including the keynote address on “Forest Management on a Landscape Scale ” and talks on “The Ecosystemic Approach in Forest Management in Central America,” and “Diversification of Forest Management in the Geotropics, Dawn of the 21st Century”;
- II Mesoamerican Congress on Protected Areas (Panama City, April, 2006).
- National Agronomy Congress (San José, Costa Rica, September 2006).
- Meeting of the Forest Commission of Latin America and the Caribbean (COFLAC, Dominican Republic, June 2006), with two presentations invited by the FAO.
- Seminar in Washington in September 2006, WWF headquarters, on the management and conservation of biodiversity in forest and agricultural landscapes.
- Organization of the national meeting on monitoring the ecological integrity of the national parks and biological corridors of Costa Rica (GRUAS II project).

Alliances

The Forests group is a key member of diverse research consortiums including Seedsource, DiverSus, Biodiversity and Conservation Value of Agricultural Landscapes of Mesoamerica and Successional Pathways and Rates of Change in Tropical Forests of Brazil, Mexico and Costa Rica, with global partners and funding from the EU, the National Science Foundation (directly and through the National Centre for Ecological Analysis and Synthesis (U.S.) and the Inter-American Institute for Global Change Research (IAI).

Different entities of the group coordinate their efforts with key partners at all levels: internationally, for example, with LAC-Net, CIFOR, University of Wales, and IUFRO; regionally with TNC, WWF, INBio, CODEFORSA and other partners of alliances formed with those NGOs; and nationally and locally.

Integrated Watershed Management Thematic Group (MICH)

Studies on payment for ecosystemic hydric services, the role of riparian strips as biological corridors, ecological sustainability of coffee production systems and risk management of hydro-meteorological threats have been of relevance in the 2005-2006 period.

Technical assistance was provided to multiple projects in the Central American region and the group participated in a large number of national and international events with priority reports on topics of interest such as co-management of watersheds, territorial management as the basis of watershed management, watershed committees, PES in watersheds, etc., which demonstrate CATIE's leadership and regional recognition as the most experienced entity in watershed management of tropical America.

Activities have been developed to address an agenda for research, education and modernized technical cooperation in accord with regional demands.

Projects

The Innovation, Learning and Communication for the Adaptive Co-Management of Watersheds (Focuecas II) Project funded by the Swedish agency SIDA has consolidated four demonstration

sub-basins (Copán and la Soledad in Honduras; Aguas Calientes and Jucuapa in Nicaragua). The preparation and consensus of common agendas of the diverse thematic groups for their participation in Focuecas in one or more of the demonstration sub-basins showed CATIE's capacity and potential for working in a multi- and interdisciplinary fashion.

Microcredit schemes were launched, with responsibilities for environmental conservation and sustainable natural resource management, implemented in Valle de Ángeles, Honduras, with support from small local funding sources (*cajas rurales*).

Progress was also made on the consolidation of a regional think tank on administration, management and co-management of watersheds in accord with biophysical, environmental and socioeconomic characteristics of the region. This achievement is also supported in the functioning of a reflection group with outstanding and renowned technicians, scientists and decision makers of the region.

Within this same focus an electronic portal was created on watershed management, and electronic forums were held on topics relevant to the subject.

Proposals

The group participated in the preparation of more than 10 proposals for consultancy studies on watershed management, of which five were awarded and resolution of the others is pending; three have initiated implementation.

Graduate School

In general, research-action studies have taken shape under a common agenda, most of them under the modality of master's student theses carried out in Latin America, principally Central America, but with a strong integration and interaction of the CATIE thematic groups and national and local actors in the sub-basins.

At the regional level, there was a notable master's thesis research project that led to a methodological proposal for the certification of micro-basin management in Central America, the first study of this kind to be carried out in Latin America, which has aroused great interest among different sectors related to the field of watersheds.

Twenty-three specialists in integrated watershed management were graduated in these two years at the master's level, making a total of around 140 Latin American specialists graduated from the CATIE Master's Program in Integrated Watershed Management since its establishment.

Another nine students developed their thesis projects in demonstration watersheds of the Focuecas Program. The topics have been defined in participatory fashion with the principal local actors and they address the research-action needs identified and the lines of investigation in administration, management and co-management of watersheds. Sixteen new students are expected to enroll in January 2007 for the Master's Program in Watershed Management.

Training

During these two years a novel mechanism was incorporated into the training courses. This allows students who pass the evaluation to accumulate credits for future graduate studies.

Through training efforts, the group has contributed to the preparation and consolidation of a critical mass of local actors, technicians and professionals (human capital) in watershed management. Promotion and partnering in the application of knowledge, abilities, skills, attitudes, values, methodologies, technologies, experiences, lessons and practices are truly contributing to a paradigm shift in the current anthropic vision for confronting the degradation of natural resources and in clear reinforcement of CATIE's strategic focus on natural resource management at the landscape level.

The group has contributed to the establishment and application of baseline indicators and a monitoring system of administration, management and co-management of watersheds.

Training has been given under distinct modalities to address the needs and demands of different clients: 1) short courses for updating and specialization courses given at the headquarters; 2) short courses in the countries in cooperation and coordination with the NTO and other institutions and organizations; 3) courses-workshops and exchanges with local actors in demonstration sub-basins; 4) events for exchange and dissemination of national and regional experiences.

There was broad participation of professionals from different countries of Latin America in the international courses for updating and preparation in watershed management and territorial management. Although courses were given in all the countries of the region, the demand was not satisfied. Around 400 people were trained (women and men) including technicians, community leaders, educators, decision makers, local actors, students and producers, added to the nearly 10,000 people trained in prior years.

Publications

Two publications were made in the journal *Recursos Naturales y Ambiente* with condensed articles about the thesis research of master's students in the Integrated Watershed Management Program and the most relevant results from the research of students and technicians of the thematic group.

Alliances

The group collaborated with the preparation and discussions of Costa Rica's draft Water Law and the Central American Strategy for Integrated Hydric Resource Management. There was active participation in these processes that are still in development. CATIE is part of the inter-agency group (CATIE, CAD, CCAD, IUCN, GWP, CRRH, FANCA, RUTA) that was assigned the responsibility of preparing the latter strategy by the region's Council of Ministers of Agriculture, Environment and Health.

Center for the Competitiveness of Ecoenterprises Thematic Group (CeCoEco)

CeCoEco has continued to position itself as one of the leading entrepreneurial service providers in tropical America for the development of agricultural and forestry ecoenterprises committed to environmentally friendly and socially responsible production.

In these two years, innovative concepts, methodologies and methods were developed for the respective research-action with the support of 12 master's and doctoral students.

Projects

Execution of the CATIE-FOMIN project was continued, aimed at improving competitiveness and environmental performance of small- and medium-

size forest enterprises in Nicaragua, Honduras and Guatemala. This project has developed tools and technical guides for marketing timber products and has cooperated with numerous communities on the development of value chains. A value chain for highly finished furniture has been integrated between Central America and the United States, with exports equivalent to U.S.\$300,000 per year, with good perspectives for growth.

A new CATIE-FOMIN project was approved with a focus on novel services and tools related to new information and communication technologies for businesses (ITC4BUS). This project will help update and significantly expand the two bilingual market intelligence systems based on the Internet (EcoNegocios Forestales and EcoNegocios Agrícolas).

In a prestigious international and highly competitive contest, the Ford Foundation put CeCoEco in charge of the Global Review of Rural Community Enterprises, based on around 40 case studies executed in 12 countries of Africa, Asia, Latin America and North America.

The group contributed with key conceptual contributions and co-execution of projects jointly with other thematic groups, for example Rural Innovations and Cacao in Central America (both MFA-Norway), Special coffees (World Bank) and Focuecas II (ASDI), .

Other activities were carried out related to rural enterprise development in the framework of the Learning Alliances for Biodiversity Conservation (COSUDE-FAO-WWF) and Rural Enterprise Development (CIAT, CRS, CARE, SNV, Oxfam, Thematic Group Z and national universities in El Salvador, Guatemala, Honduras and Nicaragua).

Proposals

The group led the preparation of several proposals, including Development of Rural Ecoenterprises (EU); Value Chain Development in Model Forests (FONTAGRO, together with CIFOR), Information and Communication Technologies for Businesses (IDB-FOMIN), Development of Community-Based Forestry Enterprises in Central America (DFID-ESRC) and Guatemala (IDRC); Coffee Competitiveness Report (SAI-SECO, together with INCAE).

CeCoEco collaborated with the preparation of several development project proposals, including: Caribtrees (EU; proposal led by OFI and DAAF, CATIE); Dairy product chains (FONTAGRO with GAMMA), Central American Markets for Biodiversity Products (UNDP-GEF-BCIE), Inter-Model Forest Trade (IDRC), Strengthening rural competitiveness in los Yungas, Bolivia (USAID, with DAI and the Cacao TG), Competitiveness of Community-Based Forest Enterprises for Xate in Guatemala (IDB-FOMIN, with INCAE), Communities and Biodiversity (IUCN-INBio-CATIE) and Financial Services for Differentiated Coffees (IFC-ECOM-Nestlé, with INCAE); Rural Innovations (MAF-Norway, with the Coffee TG), Cacao in Central America (MAF-Norway, with the Cacao TG).

Graduate School

Leadership in the conceptualization and negotiation of the new joint master's program International Agribusiness Management (INCAE-CATIE). In 2006 this new program was officially launched in the presence of Costa Rica's Minister of Production. The new master's program will begin in July 2007 and it will prepare leaders for the development of sustainable rural businesses.

The Master's Program in Environmental Socioeconomics is providing instruction to build capacities for the development of productive chains from the perspective of rural livelihoods, based on innovative concepts and methodologies and participatory methods for research-action.

During 2005 and 2006, more than 30 master's students were educated and three doctoral and seven master's students were given guidance. The group also collaborated with the Steering Committee of the IGERT Project of CATIE and the University of Idaho.

Training

The first term of the degree program in Rural Enterprise Development given jointly by CATIE and CIAT was concluded, and the second term was begun with Modules 1 and 2 of the degree program.

The first term of the degree program in RED was decentralized, with Modules 1, 2 and 3 given in Bolivia (in collaboration with CEPAC, a local NGO).

The international courses on coffee, cacao and rural development in Central America were coordinated jointly with other groups and the regional course on High Quality Management (CATIE-FOMIN) was given.

Diverse specific courses were given in the countries according to demand (e.g., CATIE-FOMIN in Nicaragua, Guatemala and Honduras; FAO/CATIE-FOMIN in Nicaragua and Guatemala; Special Coffees in Guatemala, Honduras and Nicaragua).

Publications

Findings from research-action have been disseminated via 87 publications (29 in 2005; 58 in 2006), including articles in international and technical journals, books, chapters in books, policy briefs, bulletins, methodological guides and manuals.

Under CeCeEco's leadership, a discussion paper was prepared on CATIE's approach to reducing rural poverty.

Seminars and conferences

CeCoEco organized the International Conference "Rural Poverty Reduction in Central America" (April 2005, 120 participants from more than 20 countries) and the International Conference on "Development of Forestry SMEs for Rural Poverty Reduction" (May 2006, 180 participants from 35 countries), both held at CATIE.

More than 40 reports were presented in diverse international (Brazil, Chile, Spain, United States, Phillipines, Guatemala, Honduras, Panama, Peru and Switzerland) and national conferences.

Alliances

CeCoEco has consolidated a broad network of internal and external collaborators through strategic alliances with CIAT, INCAE, CIFOR, RUTA, FAO and the Ford Foundation.

CeCoEco is currently a member of the Learning Alliances in Rural Enterprise Development in Central America and South America, along with CIAT, Thematic Group Z, CARE, CRS, SNV, Oxfam, WWF, FAO and several national universities.

With support from the CATIE-FOMIN project, the Mesoamerican Furniture Group was founded, a

strategic network of wood transforming businesses for the production of highly finished furniture in Guatemala, Honduras and Nicaragua.

The group collaborated with several multi-institutional platforms linked to productive chains for coffee, cacao, vegetables and lumber that combine producers, transformers, traders and consumers, as well as their service providers (technicians, enterprisers and financiers). Internal collaboration was also provided to the other CATIE thematic groups and to the International Model Forest Network and Biodiversity International (formerly INIBAP).

Consultancies/Advising

Diverse high-level consultancies were executed, including: Development of Agro-Food Chains in Honduras" (PROMOSTA/BID-SNITTA), Added Value Through Banana Processing (INIBAP, at the global level), Integration of Microfinance and Health Services (ProMujer-SEEP Network/ USAID), Development of the Cacao Production Sector in Belize (RUTA, with the Agroecology Thematic Group), Training and Technical Assistance Program for the Management of Community-Based Forestry Enterprises in Guatemala and Nicaragua (Rainforest Alliance), Analysis and Development of Markets for Non-Timber Forest Products (FAO), Two Case Studies of Community-Based Forestry Enterprises in the Petén, Guatemala (Forest Trends-ITTO), Development of Community-Based Forestry Enterprises at the Global Level (CIFOR), Entrepreneurial Farm Management and Development of the Xate Chain (FAO), Global Review of Rural Community Enterprises (Ford Foundation), Added Value Through Banana Processing" (INIBAP), Environmental Goods and Services: Non-Traditional Markets, Financing Mechanisms and Best Practices in Latin America and the Caribbean" (IDB), as a basis for exchange between the ministries of the environment of the region beginning with the project, with contributions about "green markets" for agricultural and forestry ecoproducts (with SEBSA).

CeCoEco has collaborated on the revision and simplification of regulations for charging overhead to the Administrative Committee, the Web Committee and Communication Strategy Committee of CATIE.

Socioeconomics of Environmental Goods and Services Thematic Group (SEBSA)

At the scientific level the group has made a substantial contribution to the development and gradual application of new concepts, approaches and methodologies such as: action-research; systematization of experiences to make effective new strategies for intervention in the countries; developing and evaluating financial mechanisms for sustainable natural resource management. Members of SEBSA participated in obtaining funds from SIDA (Sweden) for the creation of five research centers in environmental economics. Each center will work in the interface between academia and decision makers at the local and central government level. One of these centers will be at CATIE and will cover the Central American region. SEBSA has completed most of the AOP for that period. The coordination of the group changed in August 2005.

Projects

The LACEEP Project (Environmental Economics Program for Latin America and the Caribbean) based at CATIE, whose director general is the SEBSA TG, has the goal of preparing the professionals specialized in environmental economics of Latin America and the Caribbean in the area of research. It is an initiative that has support from SIDA-Sweden and CIDA-Canada. Work continued with the Focuecas II program with the Action-Research-Systematization and PES components. At the same time an analysis was made of mechanisms for the sustainable funding of best agricultural and forestry practices, with an emphasis on ESP and markets for ecoproducts (IDB project to support Ministries of the Environment of Latin America and the Caribbean), Regional Model Forest Network, Analysis of Governance at the Landscape Level in Focuecas, LAC-Net and Biological Corridors; Induction of New Concepts and Approaches in Rural Development. At this time initiatives are being developed to coordinate actions with other DAAF groups (Cacao and Agroecology).

Proposals

A proposal was approved, prepared at the request of SIDA for 2007, in cooperation with DAAF, on the systematization of FONDEAGRO, a rural productive development project in Nicaragua supported by the Swedish government. This work will help CATIE insert itself into a new modality (sectoral) of international cooperation.

Conferences

The IV Wallace Conference (2005), coordinated by a member of SEBSA, achieved the objectives of interrelating CATIE with other institutions and investigators and also disseminated the importance of Environmental Services and CATIE's capacity in this subject.

At present, most of the members of SEBSA are working to contribute to develop the 2007 Wallace Conference on Sustainable Livelihoods and are supporting the editing of a CATIE position document the topic of poverty.

Graduate School

SEBSA leads the Master's Program on Environmental Socioeconomics, with an increasingly consolidated education program. All the members of the group are involved in this program with support from the Global Change and CeCoEco thematic groups. The Inter-American Development Bank (IDB) has distinguished this program with scholarships for mid-level Latin American professionals from public institutions. The Master's Program (10 years), with an average of 10 students per year, has contributed professionals specialized in environmental issues of diverse disciplines to the region. During 2006, the tenth course on Rural Development with an Institutional and Territorial Focus was given to 20 students from all the master's programs.

Training

In the realm of training, SEBSA gives the international course on Economic Bases for the Management and Appraisal of Environmental Goods and Services, which has been carried out for five years with an increasing number of attendees. In the first semester of 2006, part of this course was given in Argentina, aimed at the Model Forests of Argentina. A course was given in Antigua, Guatemala, derived from the LACEEP program that has full funding for those who want to participate. In Mexico, dissertations on PES were presented. SEBSA is making progress on the initiative for the Creation of Secure and Sustainable Livelihoods and on the gender initiative that falls under the broad principle of equality and poverty reduction, demonstrating the importance and transcendence of the themes that are the basis of SEBSA's work and linkages with other areas. The training course on Appraisal of Environmental Services, in which several members of the

thematic group participate, has a larger audience each year and is developing satisfactorily.

Publications

With respect to the dissemination of scientific and technical works of the thematic group, publication of the book *Innovation Processes in Central America; Reflections, Lessons and Learning* is noteworthy. The book is widely used as didactic material in training and graduate courses.

Advising/Consultancies

Through a consultancy with the IDB, policy instruments related to ecosystemic services were made available to the viceministers of the environment of Latin America and the Caribbean.

Global Change Thematic Group (GCG)

During 2006 the Global Change Group (GCG) has carried out scientific and technical activities, education and training, and service provision. It carries out non traditional tasks for CATIE, such as facilitating technical and political dialogue on Forests and Climate Change in Latin America and internationally. It organizes two to three Latin American workshops each year to discuss and develop proposals for the region on forestry topics that are being discussed in the agenda of the United Nations Framework Convention on Climate Change (UNFCCC). With this work new topics have been introduced into the agenda of the UNFCCC and alliances are being promoted among the countries of the region in the process for the UNFCCC.

Through providing services to the World Bank, the group has contributed to the development of methodologies for the forestry projects of the Clean Development Mechanism (CDM). Those methodologies were the first and they constitute the majority of those that were approved by the Board of Directors of the CDM, which is an institution of the United Nations. Calculation tools have also been developed (TARAM and MAIA) for the application of the approved methodologies. TARAM is in the process of certification. Annually the GCG organizes a course on the design of CDM projects in the forestry and bioenergy sectors. This course is globally recognized and has a growing demand to the extent that institutions like UNEP want to take it to Africa. Modules of this course have been

given in several Latin American countries, the United States, Gabon, the Philippines and Vietnam. The GCG also offers a course on plantation management and supports the training courses of other thematic groups. Finally, the GCG organizes and gives a graduate course on global change and it supports other graduate courses.

Projects underway

- **FORMA Project.** The GCG coordinates the FORMA project whose objective is to strengthen projects of the CDM in the forestry and bioenergy sectors through technical and financial support to project proponents. FORMA identified the projects it is supporting through a competitive call open to all Latin America. Support is being given to 10 projects in collaboration with: CIFOR (Indonesia), INIA (Spain), ECOSUR (Mexico), and MGAP (Uruguay) and technical guides and calculation tools (TARAM, MAIA) are being developed. The donor is INIA of Spain.
- **TROFCCA Project.** This project funded by the European Commission will be carried out through 2009 in collaboration with CIFOR. CIFOR coordinates activities in África and Asia while the GCG does so in Central America (Costa Rica, Nicaragua and Honduras). The TROFCCA project objective is to develop and validate methodologies for the evaluation of the vulnerability of forests and their ecosystemic services to climate change and propose measures for adaptation in collaboration with sectors of society and the economy that could suffer negative impacts.
- **ENGAGE Project.** Through this project the GCG supports forestry experts and negotiators to the UNFCCC on technical topics and climate change policy through regional workshops, research and participation in UNFCCC meetings. The work carried out in the context of ENGAGE earned GCG a nomination to be the secretariat of the Latin American Discussion Group on Forests and Climate Change (GLAD-CC, www.glad-cc.net), the network of experts and negotiators to the UNFCCC on the topic of Land Use, Land Use Changes and Forestry (LULUCF). ENGAGE has financial support from the government of Switzerland and French Cooperation and it works in collaboration with the National Forestry Office of France.
- **Project on Forest Plantations for Timber Production and Ecosystemic Services.** In this project CIFOR is the donor and technical partner. Tools have

been made available to reforesters that will help them improve the quality of their information on environmental goods and services.

Projects recently concluded

- Silvia Project. In collaboration with CIFOR, the GCG has developed some tools (Silvia software) on growth and yield models for forest plantations. A second phase of this project is now being negotiated with CIFOR.
- ECOMAN Project. With this project funded by the European Commission a DSS (Decision Support System) for ecosystem management and an SDSS for the Cordillera Volcánica Central Conservation Area of Costa Rica were prepared. The products were delivered to FUNDECOR-Costa Rica.
- CASFOR Project. Through this project funded by the European Commission a model and software (CO₂Fix) were developed to estimate carbon flows in forest ecosystems.
- SUBBE Project (Sustainable Use of Biomass and Bioenergy in the Context of CDM). This project was funded by the government of Finland through an alliance between this nation and Central America on the theme of energy. With SUBBE the potential for energy generation from biomass residues in Costa Rica was analyzed and training was conducted on the topic.
- ETH-ZIL Project. With this project the demand and supply criteria of forest environmental services were studied. The project was funded by ZIL (Switzerland) and carried out with the collaboration of ETH. The project generated publications and supported master's projects at CATIE and doctoral projects at the Swiss Federal Polytechnic Institute (ETH).

New proposals

- FORMA-2. Conversations were initiated with INIA of Spain for a second phase of the FORMA Project. At the beginning of 2007 a new proposal was prepared and sent to INIA.
- PRERED (Preparing Latin America for Reducing Emissions from Deforestation). Conversations were begun with possible donors to develop a support program for Latin America on the topic of emissions caused by deforestation, a highly current topic on the CMNUCC agenda.
- Forest Plantations. CIFOR is interested in continuing collaboration with the GCG on the topic of growth and yield models for forest plantations.

Graduate School

The GCG organizes and gives the graduate course on Global Change and Natural Resource Management. It also supports the courses on Environmental Economics and Natural Resources and Economic, Ecological and Social Considerations for Sustainable Human Development.

Some 20 master's students at CATIE and exchange students mainly from Europe have carried out their thesis work with scientific, logistical and occasional financial support from the GCG. Some of these theses have resulted in publications in international scientific journals or in products for decision making.

Last year one outstanding product was a system based on GIS that defines priority areas for the payment of environmental services in Costa Rica. This system was submitted to FONAFIFO and presented to the World Bank during a meeting to develop the Ecomercados II project.

Training

For seven years the GCG has been organizing the international course on Climate Change and Formulation of CDM projects in the Forestry and Bioenergy Sectors, which have been attended by more than 150 people from 27 countries, representatives of the National Designated Authorities for CDM, academia, banks, businesses, GOs and NGOs, among others.

Since 2005, the GCG has been organizing a course on Multifunctional Management of Forest Plantations. It regularly supports three training courses organized by other thematic groups (Environmental Services, Forest Management, Protected Areas).

In the field of CDM the GCG has organized or collaborated on diverse CDM training events in several countries of Latin America (Argentina, Chile, Costa Rica, Colombia, Cuba, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay), Asia (the Philippines, Vietnam), Africa (Gabon), and the United States (Washington, D.C.).

Publications

With the SUBBE Project, an evaluation of biomass resources and their potential for energy generation

in Costa Rica was published. There are also other works related to climate change and bioenergy and the topic of biofuels is being explored.

With the CASFOR and SILVIA projects, software and scientific articles about the models and tools developed were published.

With the ENGAGE project an international workshop was organized about forests and adaptation to climate change that resulted in the publication of a book. Diverse research was carried out on forest CDM that resulted in publications in technical and scientific journals and numerous presentations in courses and seminars. The GCG participated in the development and evaluation of the triple standard Climate, Community and Biodiversity Alliance (www.climate-standards.org). From this work came theses and publications. All GCG's publications are on the group's Web page.

Advising/Consultancies

The GCG has advised the governments of Latin America on topics related to climate change and forestry CDM, on aspects related to international negotiations as well as themes for national decisions such as the definition of forest for the CDM, among others.

In the CDM field, the GCG has provided consultancy services to development banks (ADB, IDB, WB), the United Nations, international cooperation entities, nongovernmental organizations, private businesses and some Latin American governments, helping them to position themselves against the challenges of the carbon market and the international agenda for climate change. International consultancies were developed on biodiversity, and for the government of Switzerland on the analysis of possible synergies and conflicts between the conventions on climate change and biodiversity. The GCG also participated in the characterization of freshwater ecosystems of Mesoamerica and is selecting priority sites for the terrestrial and aquatic portfolio of The Nature Conservancy (TNC).

Alliances

The GCG has diverse alliances, including: BAFU (Switzerland), ONF (France), INIA (Spain), CIFOR (Indonesia), MGAP (Uruguay), ZEF (Germany), ETH (Switzerland), ECOSUR (Mexico), World Bank (USA). The group maintained interaction with more than 20 research institutes and universities of Latin America and Europe, principally as partners in the projects and courses of the group. The GCG also interacts regularly with the institutions of Latin America involved in the fields of forests and climate change (National Designated Authorities for CDM, promoter institutions of CDM, Focal Points of the UNFCCC). New alliances are being explored with TNC, Conservation International, Environmental Defense, FONAFIFO, CCAD and some private enterprises (TerraCarbon, Climate Focus).

Technical Support Unit (TSU)

The main objectives of the TSU are to collaborate in the development of research and teaching activities and support institutional dissemination and promotion work.

Dissemination work has been conducted that includes visitation by tourists to the Botanical Garden. Actions to improve the infrastructure of the garden, maintain germplasm collections and establish nurseries containing ornamental and medicinal plants, fruit and forest tree species and palms were developed.

The TSU helps in the characterization, evaluation and distribution of CATIE's germplasm and supports the maintenance of the databases of inventories, evaluations and identification of the field collections and those kept in cold chambers. These inventories are for guava, zapote, peach palm, cedar and laurel, selected fruit species of CATIE's collections and crops.

CATIE's analytical laboratories continue to support sample analysis for the center's students and staff members, offering prices generally lower than market prices. The program to ensure quality control of analyses and deactivation of toxic wastes continued during this period.

The TSU continued to train elementary and high school teachers from Turrialba, as well as tour guides and promoters. Plants and seeds are distributed through direct sales.

Attention to visitors, including charges, improved during this period. This allowed for an increase in 190% in income in this line item from U.S.\$3,912 in 2004 to U.S.\$11,358 in 2005. These resources are used to improve general maintenance of the collections and to support the recovery and electronic inclusion of germplasm evaluations and of the introduction accessions log book.

The TSU worked on maintaining equipment and acquired additional equipment essential for quality analysis.

Forest Seed Bank

The Forest Seed Bank continued to strengthen its consulting activities and sales. In 2006 it generated 100% of its personnel and operative budgets, invested in a new vehicle and made improvements to the building. A significant percentage was paid to CATIE to cover administrative costs. This translated into a savings of U.S.\$120,000 for the core budget.

La Lola Farm

The area on La Lola experimental farm in Matina that had been abandoned was reduced from 70% to 15%, thanks to the emphasis placed on cacao research and reforestation activities. The percentage of abandoned land is relative, since areas must be set aside for new activities for CATIE researchers and students.

Cabiria Farm

Through financial support from the Wallace Genetic Foundation, CATIE was able to change the external and internal gateways to the collections, completely renovate the large building and construct an area for visitors and institutional activities in the Cabiria Farm in Turrialba. A new cafeteria was created and a souvenir shop was set up at the entrance of the Botanical Garden. Other small improvements were also made to the infrastructure. New paths were created for visitors and significant work in labeling and promotion of the Botanical Garden was conducted.

Regional Outreach

Outreach-National Technical Offices (NTOs)

Outreach was headed by Dr. Alan González until August 2006. Currently, M.Sc. Jorge Jiménez is the head of this Directorate.

Program activities are related to the areas of institutional cooperation with member countries, supervision of offices in the countries and the management and negotiation of projects and consultancies, both at the regional level. These activities are conducted in El Salvador, Guatemala, Honduras, Nicaragua, Panama and Bolivia through National Technical Offices (NTOs) in coordination with CATIE's Thematic Groups and other bodies, and through IICA offices and other partner institutions in the remaining member countries. Many other actors, including donors, international cooperation agencies, financial entities, national institutions, NGOs, universities and private companies linked to the agriculture and natural sectors support and participate in CATIE's activities.

Outreach staff participate in the formulation of proposals and negotiation of new projects in agriculture and natural resources, in the coordination of consultancies and projects under implementation that are generating funds and counterparts contributed by international cooperation, national institutions and local organizations. Other functions include the coordination of institutional support and dialog with national entities and authorities, the preparation of consultancy reports, progress and end reports of projects and the preparation and negotiation of agreements, letters of understanding, technical cooperation agreements, coordination of technical and institutional cooperation services, charging of membership quotas and offers of services to member countries. Outreach also promotes strategic alliances with institutions similar to CATIE.

Regional Outreach also promotes training courses and technical meetings, in coordination with the ministries, public organizations and other organisms.

Training activities conducted in the countries amounts to more than 300 courses and workshops (92 of them in Honduras), involving the NTOs and development projects.

During 2005-2006, the Outreach directorate conducted more than 60 visits from headquarters to member countries and national offices. These visits helped to strengthen the work of the NTO, interinstitutional relations (visits to ministers, directors, etc.), the

identification of opportunities and agricultural and natural project management. Also the Outreach directorate took part in some 50 working meetings with the participation of national authorities, project leaders and staff, DO staff and NTOs.

Thirteen national bulletins were prepared and distributed to disseminate important aspects of the work of CATIE and the NTOs.

More than 40 projects and consultancies were negotiated and begun, some of which will continue to be developed over the next few years.

National Technical Office (NTO) in El Salvador

CATIE offered logistical, technical and administrative support to five national projects obtained through bids or consultancies (PAES, FIAES, PLAN, AID and ISDEM) as well as to five projects from headquarters (PRODOMA, PTCARL, SETEDER, Gulf of Fonseca (GEF) and Central American Trees). Two consultancies were conducted (AID and PLAN) for a total of U.S.\$1.6 million. The final report was prepared for FIAES, about the Identification of Biological Diversity Indicators in the Los Volcanes Complex. CATIE collaborated in the definition of research priorities for CENTA.

A series of projects was developed in collaboration with MAG, with technical assistance in planning of microwatersheds, conifer management and use of GIS. Technical assistance was given to MAG and MARN. Through contacts with Chemonics, the DO was able to win a bid for Phase III of the Water Project (USAID).

Follow-up has been given to the formulation of the Sustainable Land Management Project in the Gulf of Fonseca. Five project proposals or consultancies were negotiated, for a total of U.S.\$358,000.

Proposals for the preparation of the strategic plan for the protected areas network in El Salvador were presented and an expression of interest was prepared for the training project within the Ministry of Education. CATIE participated in the initiative to present projects to the Millennium Challenge program with IICA and INCAE.

A training plan consisting of eight events (130 professionals) and 587 training actions (4,968 producers) was executed.

Also in EL Salvador, CATIE's experience in natural resources was confirmed, when the center received 500 queries annually from the public interested in this area. CATIE's technical capacity and its influence in the country were shown through its participation in eight high-level meetings related to national policies.

National Technical Office (NTO) in Guatemala

CATIE participated in different activities with government authorities, including the Ministers and Vice Ministers of Agriculture, Livestock and Food and Environment and Natural Resources. Nearly 15 projects from different organizations received technical assistance from the office, including MAGA, INAB, CONAP, PROSA, APESA, SESAN, GUATE-INVIERTE, CENTRO MAYA, FIRA, FONAGRO, and INE. CATIE supported the implementation of national and regional projects:

- Support Mechanism to the Oxlajuj Tzi'kin Indigenous People (CATIE-IIDEMAYA/SIDA)
- Sustainable Development Project in Peten (PDS-CATIE-MAGA/IDB)
- Participative Development of Sustainable Alternatives for Land Use for Degraded Pastures in Central America (PD-CATIE/Norway)
- Development of Links among Small Central American Producers with Specialty Coffee Markets (CATIE-WB-ANACAFE)
- Multisectorial Innovations for Reducing the Use of Agrochemicals in Vegetable Production (CATIE/Norway-Trifinio National Plan Commission)
- Project proposal for the Trinational Mexico-Belize-Guatemala Area under the Regional Public Goods Framework, backed by IDB-Washington (Approved by the IDB Loan Committee and under review by the Executive Directorate)

National Technical Office (NTO) in Honduras

During 2005-2006, CATIE played an important role in technical assistance to national institutions in different subjects such as sustainable watershed management, environmental services, science and technology, etc. Several training courses were

organized and technical services to cooperators and national institutions were promoted through the sending of journals and other printed materials prepared at headquarters and at the NTO.

The NTO in Honduras focused its work on the following areas of action: 1) institutional relations and technical cooperation, 2) negotiation of resources, and 3) support to the Graduate School and to the projects that CATIE implements in the country.

Principal actions conducted:

- Three consultancies with the MARENA program were concluded: Humuya Medio Sub-Watershed, April 2005 to June 2006; Baseline Study of the Investment Component, July 2005 to August 2006; Mejocote Sub-watershed, June 2005 to August 2006.
- Technical support and positioning of CATIE projects in Honduras, including the Focuecas (Copán and Valle de Angeles); Degraded Pastures (Jurcal and Olanchito); Innovations (Trifinio); and Markets for Specialty coffees (Paraíso, Olancho, F. Morazán).
- Organization and attention, together with project coordinators, to visits to national authorities and related institutions: SDC, EC, SNV, FAO, IDB, USAID, SAG, COHDEFOR and ESNACIFOR.

National Technical Office (NTO) in Nicaragua

Follow-up has been given to strategic alliances with partner institutions like IICA, UNA and INTA to coordinate joint actions. Two courses were given in strategic alliances with partner organizations. There was an exchange of experiences, concepts and work agreements among projects participating in GAT. CATIE participated in a course for administrative training, rural development and management and five missions from headquarters and/or CATIE projects were assisted.

Administrative assistance was given regularly to the following CATIE projects: Focuecas (Aguas Calientes-Somoto and Jucuapa-Matagalpa), Degraded Pastures (Muy Muy), Markets for Specialty Coffees (Matagalpa, Jinotega, Boaco, Nueva Segovia), Support to Small and Medium Forest Industries (IDB-MIF).

The Technical Support Group gave follow-up to work by the thematic groups, in project execution and strategic oversight, coordinating exchanges of experiences among projects. Information was also given to project leaders and outreach staff on CATIE's progress in the country.

National Technical Office (NTO) in Panama

During these two years CATIE has become better positioned in Panama, offering technical support to new projects in the country.

Courses and workshops with support from the DAAF and the DNRE were held in the following areas: Trees in Central America (two), and Territorial Ordering and Watershed Management. Administrative support was given to the project funded by PRODOMA and executed by ADEPESCO in the province of Bocas del Toro, as well as to other projects and consultancies under execution. A project proposal was prepared and negotiated in conjunction with the GAMMA group, for the Arco Seco region in 2006.

More than 15 project proposals were prepared and negotiated, of which four are currently under execution: Validation of Sustainable Agricultural Practices in Priority Areas of the Panama Canal Watershed (USAID); Environmental Livestock and AFS in Priority Areas in the Darien Province (USAID); Pilot Plan for Managing the High Watershed of the Santa Maria River, in the Noble Bugle Area (Natura Foundation); and Management and Use Study of Teak Plantations and advising, conferences and manuals on Sustainable Livestock Production (USAID).

National Technical Office (NTO) in Colombia

CATIE began its participation as associated center to the Center for Research and Education in Biodiversity and Genetic Resources (CIEBREG) Project, within the National Program of Higher Research Centers, COLCIENCIAS. The office supported the development of the Forestry Plan and the Agreement of Forest Competitiveness for the Risaralda Department, the latter financed by the government of Risaralda and the Regional Autonomous Corporation of Risaralda, CARDER.

Watershed management courses were held in Cali and Manizales, with collaboration from the Regional

Autonomous Corporation of the Cauca Valley, CVC, and with the PROCUENCA project of Infi-Manizales - FAO, and the Classic Multivariate Data Analysis and New Technologies course. Insofar as the joint negotiation of projects is concerned, CATIE has achieved the following: development of the Valuation of Environmental Goods and Services Derived from Biodiversity in the Andean Ecoregional Complex. CATIE participates within CIEBREG in this project, which has a total of U.S.\$1.7 million for five years of execution. Negotiations were begun for Social Monitoring of Biodiversity. The Nature Conservancy, Conservation International, Ecociencia Ecuador and CIPAV are among the main participants. This project aims to develop the Manabi-Tatama biological corridor along the Choco Biogeographical area and will be funded by the Conservation Ecosystem Partnership Fund, CEPF, for a total of U.S.\$150,000.

Three projects involving CATIE are being prepared. Two of these include:

- FONTAGRO project to strengthen value chains of specialty coffees with Colombian and Costa Rican producers; 200 Colombian producers will be involved.
- FORMA project for CDM. The proposal is being prepared to participate in a forestry project.

The NTO began the identification of candidates to enter CATIE's Graduate School, to conduct their thesis research within this project. We hope that at least two students will be doing their research in Colombia beginning in 2007. Progress is being made in a cooperation agreement between COLCIENCIAS and CATIE, to finance 20 Colombian students to conduct their doctoral studies at CATIE.

The following agreements and letters of understanding were signed:

- COLCIENCIAS for scholarships for Colombians to pursue doctoral studies at CATIE
- Agreement with the Pontificia Javeriana University
- Letter of Understanding with the Biodiversity Network, REDBIO, which brings together 40 public and private institutions
- Special Agreement with the University of Tolima for a joint research and education program

National Technical Office (NTO) in Bolivia

During these two years, activities have been conducted that have brought about the negotiation and execution of projects, as well as support to the signing of letters of understanding and agreements.

- The following projects were negotiated:
 1. Improvement of the Applied Production of Coffee. Belgian Technical Cooperation, March 2006 to March 2007;
 2. Modernization of Cacao Production in the Alto Beni Area CICAD-OAS;
 3. Assistance and Training in Sustainable Coffee Production and Strengthening of Business Aspects of Campesino Organizations in Bolivia;
 4. Development of the Value Chain of Organic Cacao, Alto Beni, Bolivia, USAID;
 5. Coffee pilot plan project Biological Control and Integrated Management of the Coffee Berry Borer in Sustainable Diversified Shade Systems;
 6. Execution of a Nationwide Pilot Plan for Protected Areas (CATIE-SERNAP).
- Negotiations for future projects in 1) Forest conservation and development of the Chiquitano Dry Forest Ecoregion (Bolivia and Paraguay), European Union, for execution beginning in 2007; 2) Integrated Project for the Santa Cruz Department, Pailon Area; and 3) Integrated Project for the Tarija Zones of O'Connor, Gran Chaco and Arce.

Letters of understanding and agreements:

- Letter of Understanding with the Ministry of Agriculture, Livestock and Fisheries
- Agreement with the Autonomous University of Beni, Agreement with the Holzindustrieberatung (HIV) Consulting Company
- Agreement with the Forestry Chamber of Bolivia
- Agreement with the Tropical Agricultural Research Center (CIAT-Santa Cruz)
- Agreement for an SDC contribution to the diploma program at CATIE
- Agreement with the Foundation for the Conservation of the Chiquitano Dry Forest (FCBC). Support is being negotiated for the Noel Kempff Mercado Park and support and technical training to the National Protected Areas Service (SERNAP)
- Framework Agreement with Spanish Cooperation (Bolhispania) and negotiation for signing the Letter of Understanding with the Vice Minister of Rural Agricultural Development
- Framework Cooperation Agreement with the Humid Tropics Foundation

Actions in Belize

The Network of El Pilar Forest Gardens Project was executed with the Belizean NGO Help for Progress in 2003-2005 through the Small Donations for the Environment Program (PRODOMA), administrated and supported by CATIE. This donation of U.S.\$80,000 allowed CATIE to train producers in the El Pilar buffer zone and strengthen alliances to support agrotourism, study and re-create the Mayan forest gardens and contribute to the preparation of a promotional video for El Pilar and Selva Maya.

The Management of the Gladden Split and Silk Keys Marine Reserve Project (2003-2005) was also developed with funds from PRODOMA, administrated by CATIE. This donation of U.S.\$80,000 was managed by the Belizean NGO Friends of Nature. The project facilitated the establishment of a geographical information system (GIS) for the scientific management of the reserve and the monitoring of species through the study of the evolution of the biodiversity in the area.

Another project executed with PRODOMA funds for an amount of U.S.\$40,000, supported by a second donation from PROARCA/APM, developed a management plan for the Payne's Creek National Park. This project was implemented by the Belizean NGO TIDE.

In April 2006, CATIE staff visited Belize to participate in the inauguration of the Documentation Center at the Agronomy School of the University of Belize in Central Farm. CATIE and IICA worked together to make a donation of publications and computers and financed a two-day course on access to information and databases of the Orton Library.

Three large projects that include activities in Belize were negotiated. These were as follows:

- Central American Cacao Program, donation from the Norwegian government (U.S.\$5 million for all Central America). Waiting for approval.
- Mayan Jungle Project, donation from IDB (U.S.\$1 million for Selva Maya in Belize, Mexico and Guatemala). Approved.
- GEF Project for the Belize-Mopan River Watershed (U.S.\$5 million). Under negotiation.

Actions in Mexico

The principal activities were conducted in the state of Chiapas, where the Capacity Development and Mainstreaming for Sustainable Land Management Project was negotiated and will be funded by GEF funds from the IDB, for a total amount of U.S.\$5 million. The objective is to contribute to sustainable livestock production policies in Chiapas through the design and implementation of an incentive strategy that encourages the development of integrated silvopastoral systems for sustainable livestock production. CATIE hopes to contribute to the transformation of production systems, human resources, and mechanisms and methods to sell cattle and forest products that will increase income for producers, recover degraded lands and generate environmental services.

CATIE won the bid to execute the consultancy: Formation and Training for the Development of Agroecological, Agroforestry and Agrosilvopastoral Systems and the Conservation of Natural Resources through the CIRAD-IICA-CATIE Consortium, which receives with funding of 1 million Euros from the European Union.

The consultancy that manages training processes in agroforestry in the Lacandon Forest is conducted within the activities funded by the Integrated and Sustainable Social Development Project, Chiapas, Mexico (PRODEISIS), which is supported by the European Union and the state of Chiapas. The fundamental objective of the consultancy is the creating the technical capacities of agricultural promoters in the Lacandon Forest. These include a series of themes related to agroecology, agroforestry, sustainable production and marketing of agricultural products. The development of capacities to facilitate formation and training processes is a key activity for the development of agroecological and agrosilvopastoral production systems. Also, the insertion of actors in a marketing process will be a determining factor in improving income and the economy of small producers in the area.

CATIE also worked in the preparation of a proposal to train agricultural promoters in the forest's communities in sustainable animal production systems through use of silvopastoral systems and good practices that favor natural resource conservation.

The Promotion of the Management of the Trinational Ecosystem of the Selva Maya Project was approved by the IDB and will encompass work in Belize, Guatemala and southern Mexico, including the states of Chiapas and Quintana Roo.

Training and technical assistance

- A group of professionals from the Autonomous University of Chiapingo and from the INIFAB were trained in silvopastoral systems as a strategy to recover degraded pastures and transform them into sustainable animal production systems. A workshop was held in Tuxtla, Chiapas, and a study trip was made to the pilot zone of the Degraded Pastures Project in Petén, Guatemala, as a part of this activity.
- The Degraded Pastures Project organized a field trip with representatives from different institutions in Chiapas (Autonomous University of Chiapas, College of the Southern Frontier (Ecosur), SDR, etc.) to visit Petén and present the project's participative methodologies and train technicians in the recovery of degraded lands. Presently, field schools are being held in Chiapas using the methodology of the Degraded Pastures Project.
- Participation in an international course on Forage Technologies for the Intensification of Livestock Production in the Tropics, which was organized by the Autonomous University of Chiapas. During this event, CATIE made a presentation and presented an article on its experiences in the area of silvopastoral systems as a strategy to intensify livestock production and generate environmental services.
- The GAMMA group collaborated with the Autonomous University of Chiapas in the organization of a workshop in Chiapas on Technologies for the Intensification of Livestock Production, with participation of 200 people from Chiapas and other states. A book was published on *Forage Technologies for the Intensification of Livestock Production*.

Services

- Between May and June 2006 CATIE conducted a Technical Mission led by Dr. Luis Pocasangre, who was accompanied by Dr. Luis H. Jacome, expert in Sigatoka management. They visited commercial banana farms in the municipalities of Tapachula, Suchiate and Mazatán. The objective of

the mission was to make a review of the Sigatoka management program in the Soconusco region as well as modify and adjust the program for Sigatoka control in the State of Chiapas, Mexico.

- CATIE, in conjunction with INIBAP, conducted technical missions to support the Association of Plantain Producers of Soconusco. CATIE made a plant health diagnosis on plantain production, prepared an integrated management plan for black Sigatoka and implemented a project in Integrated Management of Sigatoka that was successfully financed for U.S\$1.5 million. Also, CATIE carried out an emergency plan against black Sigatoka due to the increase and severity of the disease after Hurricane Stan.

Actions in Venezuela

Joint research activities were conducted by CATIE and INIBAP (now Bioversity International) personnel in cooperation with the Venezuelan Institute for Agricultural Research (INIA) in Trujillo, La Ceiba, Maracay, San Mateo and Santa Cruz as part of the Banana Soils Health and Quality Project funded by FONTAGRO. The Central University of Las Villas, Maracay and the Graduate School of Barquisimeto also collaborated. This project will generate indicators for soil health and quality that lead to recommendations for pest management and the conservation of banana agroecosystems in the tropics.

A second FONTAGRO project executed by CATIE and INIBAP was related to bioproducts for banana plantations. The principal partner in Venezuela was again INIA, but the Central University of Venezuela also provided important cooperation. Work was developed in different locations, including Barinas and Yaracuy.

Cooperation with INIA and other Venezuelan institutions was also established through the training program between CATIE and the International Centre for Development Oriented Research in Agriculture - the Netherlands (ICRA) under the leadership of Dr. Leonardo Salazar, a CATIE-INIA staff member. Two important agreements were implemented during 2005-2006. The agreement with Fundayacucho facilitated joint support for students at CATIE's Graduate School, and the agreement with the National Parks Institute of Venezuela covered joint training activities.

Three Venezuelans are enrolled in the doctoral program at CATIE. Two of them benefited from the CATIE-University of Idaho Program and the third was sent to Purdue University as part of this program.

Communication

Journals

Between 2005 and 2006, CATIE continued to publish the *Integrated Pest Management and Agroecology* (MIPA), *Agroforestry in the Americas* (RAFA) and *Natural Resources and the Environment* journals, both in printed and electronic format (Table 11).

Table 11. Subscription to CATIE's journals (2005-2006)

Journal	IPM and Agroecology	RAFA	Natural Resources and Environment
Donations	174	201	600
Exchanges	65	65	300
Subscriptions	190	152	496
Electronic subscriptions	33	41	35
TOTAL	462	459	1431

In 2006 CATIE decided to offer free access to the electronic versions of these journals to its alumni.

Institutional Website

CATIE's institutional Web page was renewed in 2006. The new Website has modified the structure of navigation from the former Website in order to improve the organization of contents to achieve more efficient and user-friendly access to information. This page offers greater interaction, both in English and in Spanish, has a renewed image, offers the possibility to fill out forms on-line, has search engines and facilitates the perusal of journals. It also has animated images, a centralized media bank and allows access to the contents created by each user to that user.

Thematic Websites

Under the leadership of different thematic groups and with the support of different projects during 2005-2006, several portals and Websites were constructed for specific thematic areas.

These successful portals are Watersheds (www.portalcuencas.net), Model Forests (www.bosquesmodelo.net), Agricultural EcoBusiness (www.catie.ac.cr/

www.catie.ac.cr/econegociosforestales), Latin American and Caribbean Environmental Economics Program LACEEP (www.laceep.org), LEAD Platform (www.virtualcentre.org) and Orton Library (orton.catie.ac.cr/bco).

Publications

Table 12. Publications by category (2005-2006)

CATIE Publications 2005-2006 DRNA- DAAF			
Categories (13)	2005	2006	TOTAL
Academic and educational texts	20	6	26
Articles in bulletins, journals, etc.	14	4	18
Books and monographs	5	1	6
Chapters in books	9	9	18
Proceedings	7	13	20
Articles in refereed scientific journals	26	24	50
Articles in technical journals	48	42	90
Presentations in conferences, seminars and others	59	75	134
Reports and other publications	15	33	48
Scientific Week	0	0	0
Technical Series	10	6	16
Software	1	1	2
Theses	70	84	154
TOTAL	284	298	582

Promotional Events

Besides events held in member countries, CATIE has participated in these promotional events and presentations held outside the region:

- May 2005, Seminar at the Royal Swedish Academy of Agriculture and Forestry, Stockholm, Sweden
- September 2005, Seminar with European private sector, Vevey, Switzerland
- September 2005, Presentation at the central headquarters of Swiss Cooperation, SDC, Berne, Switzerland
- September 2005, Presentation at FAO headquarters, Rome
- September 2005, Presentation in IUFRO World Congress, Brisbane, Australia
- September 2005, Seminar organized with The Tropics Foundation, Atlanta, Georgia, USA
- September 2006, Presentations organized with group of "Friends of CATIE", Santa Fe, New Mexico, USA
- October 2006, Conference in honor of Dr. Kenton Millar, WWF headquarters in Washington, D.C., USA

Geographical Information Laboratory (GIS)

The GIS Laboratory develops many of its activities in support of the thematic groups in areas related to GIS and teledetection.

It offers technical assistance to graduate students and supports them with GIS programs and equipment, and teledetection for data processing, which are fundamental for their research work. Laboratory personnel offered two graduate courses in GIS applied to natural resources and hydrological bases for watershed management and four special topics in more specific applications. An international course in territorial ordering was offered in conjunction with the MICH group at headquarters and a national course in El Salvador.

Support to projects and consultancies

- A methodology to formulate groundcover maps was developed, as a case study for the Aguas Calientes River watershed in Somoto, Nicaragua, to support the Focuecas project.
- CATIE continued to work with the USDA-Minnesota project. Research on the hydrological cycle in tropical agroforestry systems was conducted.
- Activities were developed in the use of remote sensors and GIS in landscape ecology within the IGERT Project.
- Work was done in fiscal cadastres for Jiménez County and the first district of El Tejar de Guarco in Cartago, Costa Rica.
- A geographical database was set up for the management plan for the high watershed of the Santa Maria River, Santiago de Veraguas, Panama.
- Graduate courses were given in GIS subjects and tele-detection at the University of Guayaquil and the University of Loja, in Ecuador.
- Advising and training to melon producers in Guanacaste in the area of precision agriculture through the Alternatives to Methyl Bromide funded by the UNDP.

Administration and Finance

CATIE has areas and units that are responsible for offering logistical, administrative and financial services to support the center's activities. These

areas and units are classified into three types: those dedicated to the administration of resources (financial and human), those in charge of generating resources to support the core budget (productive activities) and those in charge of logistical support and infrastructure (Table 13).

Table 13. Distribution of CATIE's logistical, administrative and financial services

Resource administration (financial and human)	Productive Activities	Logistical/legal support and Infrastructure
<ul style="list-style-type: none"> • Accounting and finance • Human resources 	<ul style="list-style-type: none"> • Farms • Housing • Transportation 	<ul style="list-style-type: none"> • General services • Computer center • Maintenance • Legal services

Funding

The activities conducted by CATIE during this two-year period were financed from five funds that are managed separately according to the origin and application of resources: 1) Core fund, 2) Productive activities, 3) Funds in custody, 4) Project and agreement fund and 5) Institutional funds.

- *Core Fund.* This fund comes from membership quotas from CATIE's 13 member countries, IICA's regular contribution, teaching activities, sales of goods and services (administrative costs of projects, journals, books and contribution from productive activities) and specific support to the core budget from the governments of Sweden and Norway.
- *Productive Activities Fund.* This fund contains resources from the administration of agricultural and livestock activities (farms) and services (housing and vehicles) that support the generation of income for the core budget and cover operation costs. Net support to the core budget from these activities was U.S.\$315,160 and U.S.\$425,603 during 2005 and 2006, respectively.
- *Funds in Custody.* These are funds negotiated by CATIE through its technical programs and the Graduate School to support research and higher education. They are managed independently since they require greater agility and effectiveness in their accounting. These funds are classified: education, institutional and specific.
- *Project and Agreements Fund.* These are restricted funds that have specifically defined conditions

established by the donor. During 2005, 68 projects were executed for a total amount of U.S.\$8.7 million, while in 2006, 98 projects were executed for a total amount of U.S.\$ 9.1 million.

- *Institutional Fund.* This is an accounting tool that allows the administration to control and register institutional assets adequately.

CATIE is audited annually by an internationally recognized firm of external auditors. This firm is chosen by the Inter-American Board of Agriculture (IABA) through an external bidding process to audit the financial statements of CATIE and IICA. In addition, many individual projects and agreements are audited periodically by other external firms hired by the donors.

In addition to this, CATIE has an Internal Auditor that reports directly to the center's Board of Directors. Each year this audit covers a review of funds management, expenditures executed by the projects, institutional accounts and control procedures, among other aspects.

Tables 16 and 17 show CATIE's financial statements for 2005 and 2006, based on the audited reports for those years.

Table 16 shows the balance of funds for the years indicated and Table 17 shows the balance of income and expenditures for 2005 and 2006. As can be seen in both tables, in general terms, financial stability has been maintained during both years. There are no important variations. Besides all the efforts to maintain this stability in income, it is important also to point out the success that the technical areas have had in project negotiation, since income from projects and funds in custody continued to grow.

Table 14. Specific contributions to core

Source	2006	2005
IICA	1,000,000. ⁰⁰	1,000,000. ⁰⁰
Member countries	700,000. ⁰⁰	700,247. ⁰⁰
Teaching activities	252,140. ⁰⁰	252,467. ⁰⁰
Goods and services	1,057,997. ⁰⁰	1,078,193. ⁰⁰
Norway	523,017. ⁰⁰	498,219. ⁰⁰
Sweden	770,904. ⁰⁰	790,193. ⁰⁰
TOTAL U.S.\$	4,304,058.00	4,319,319.00

Table 15. Distribution of funds in custody

Classification	2006	2005
Education	1,067,523	659,561
Institutional	713,409	599,946
Specific	2,711,909	2,765,617
TOTAL U.S.\$	4,492,841	4,025,124

Table 16. Assets, liabilities and combined statement of funds for 2005 and 2006 (U.S.\$)

	2006	2005
ASSETS		
Current Assets:		
Cash	7,794,648	8,135,946
Negotiable instruments	72,839	142,763
Accounts and documents receivable		
CATIE's Members	2,422,338	2,400,073
Other accounts	2,214,015	2,455,602
Total accounts receivable	4,636,353	4,855,675
Inventories	138,386	148,330
Total current assets	12,642,226	13,282,714
Buildings, machinery and equipment	5,599,781	5,758,558
Other assets	374,832	242,964
Trust funds	1,250,000	1,050,000
TOTAL ASSETS	19,866,839	20,334,236
LIABILITY AND BALANCE OF FUNDS		
Current liabilities:		
Accounts payable and accumulated expenditures	1,976,998	3,558,237
Funds in custody	3,108,058	2,979,835
Donors – projects and contracts	4,638,472	3,818,166
Deferred income and other liabilities	285,010	145,000
Total current liabilities	10,008,538,00	10,501,238
TOTAL LIABILITIES		
Balance of funds	9,858,301	9,832,998
TOTAL LIABILITIES AND WORKING FUND	19,866,839	20,334,236

Table 17. Balance of income and expenditures for the core budget and projects for 2005 and 2006 (U.S.\$)

	2006	2005
INCOME		
Membership quotas	1,700,000	1,700,247
Technical Support Services	180,160	194,114
Teaching activities	252,140	252,467
Productive activities	1,393,603	1,359,272
Administrative and logistical support	439,655	499,791
Miscellaneous	12,579	69,128
Donations and specific contributions	1,293,921	1,288,412
Subtotal	5,272,058	5,363,431
Income from projects and contracts funds	9,069,556	8,660,980
Income from funds in custody	4,492,841	4,025,124
TOTAL INCOME	18,834,455	18,049,535
EXPENDITURES		
General Directorate and governing bodies	590,602	564,707
Administration and services	1,128,028	1,261,172
Technical programs	2,391,346	2,090,624
Productive activities	968,000	1,044,112
Others	10,000	78,316
Subtotal	5,087,976	5,038,931
Expenditures for projects and contracts funds	9,069,556	8,660,980
Expenditures for funds in custody	4,492,841	4,025,124
TOTAL EXPENDITURES	18,650,373	17,725,035
Excess Income over Expenditures	184,083	324,500

5. Acronyms

ACOMUITA	Indigenous Women's Association of Talamanca	CANCAFE	Andean Coffee Producers Commission
ACP	Panama Canal Authority	CANIAN	Chamber of Nonsynthetic Agricultural Products, Costa Rica
AdeC	Central American Trees	CARDER	Regional Autonomous Corporation of Risaralda
ADB	Asian Development Bank or African Development Bank	CASFOR	Carbon Sequestration in Aforestation and Sustainable Management Project
ADEPESCO	Association for the Development of Fishing and Conservation of the Bocas del Toro Archipelago	CASCA	Coffee Agroforestry Systems in Central America Project
ADITIBRI	Integrated Development Association of the Bribri Indigenous Territory	CATIE-WB-ANACAFE	Project to Develop Links between Small Central American Coffee Producers with Specialty Coffee Markets
ADITICA	Integrated Development Association of the Cabecar Indigenous Territory	CATIE-IIDEMAYA/SIDA	National and Regional Projects: Support Mechanisms for the Oxlajuj Tz'ikin Indigenous Community
AED	Academy for Educational Development	CATIE/Norway-National	Commission for the Trifinio Plan: Multisectorial innovations for the reduction of pesticide use in vegetable production
AF	Agroforestry	CBM	Mesoamerican Biological Corridor
AFS	Agroforestry System	CBSJLS	San Juan-La Selva Biological Corridor
AGCATIE	CATIE Alumni Association	CCAD	Central American Commission for the Environment and Development
AHECATIE	Honduran CATIE Alumni Association	CCT	Tropical Scientific Center
AID	Agency for International Development	CDB	Secretariat of the Convention on Biological Diversity
ANACAFE	National Coffee Association, Guatemala	CDM	Clean Development Mechanism
ANIECATIE	Nicaraguan CATIE Alumni Association	CeCoEco	Center for the Competitiveness of Ecoenterprises thematic group
ANPROCAB	Nicaraguan Association of Producers and Sellers of Organic Fertilizers and Biopesticides	CENTA	National Agriculture Technology Center – El Salvador
APOT	Organic Producers Association of Turrialba	CEPAC	Center for the Promotion of Campesino Agriculture
AP	Protected Area	CEPF	Conservation Ecosystem Partnership Fund
APESA	Assistance to the Special Program for Food Security	CFC	Common Fund for Commodities
APPTA	Small Producers Association of Talamanca	CGIAR	Consultative Group of International Agricultural Research
APROCABI	Honduran Association of Producers and Sellers of Organic Fertilizers and Biopesticides	CI	Conservation International
AVRDC	World Vegetable Centre	CIAT	International Center for Tropical Agriculture
BCIE	Central American Economic Integration Bank	CICAD	Inter-American Commission for the Control of Drug Abuse
BCO	Orton Commemorative Library	CIDA	Canadian International Development Agency
BMR	Reventazon Model Forest	CIEBREG	Center for Research and Education in Biodiversity and Genetic Resources
BNPP	Bank of Netherlands Partnership Program	CIFOR	Center for International Forestry Research
BOLHISPANIA	Spanish Cooperation in Bolivia	CINVESTAV	Center for Research and Higher Education of the National Polytechnical Institute, Mexico
CA	Central America	CIRAD	International Center for Research and Development, France
CABCO	Administrative Committee of the Orton Library		
CABI	CAB International		
CAC	Central American Agriculture Advisory Board		
CAD	Doctoral Academic Committee		
CAFTA	Central America Free Trade Agreement		
CAFNET	Connecting and Sustaining Environmental Services and Markets for Coffee in Agroforestry Systems Project		
CAM	Master's Academic Council, CATIE Graduate School		

Clusa	League of Cooperatives of the United States
CNP	National Production Council, Costa Rica
CODEFORSA	Forestry Development Commission of San Carlos
COFLAC	Forestry Commission of Latin America and the Caribbean
COHDEFOR	Honduran Forestry Development Corporation
CONAP	National Protected Areas Council -- Guatemala
CONARFI	National Plant Genetic Resources Commission
CONACYT	National Science and Technology Council, Mexico
CONPES	National Economic Policy Council
COPAL	Cocoa Producers Alliance
CORBANA	National Banana Producers Corporation, Costa Rica
CORECA	Regional Agricultural Cooperation Council for Central America
CORECAF	Ecuadorian Coffee Producers Corporation
CORPOICA	Colombian Agricultural Research Corporation
COSA	Committee of Standards Assessment
CQI	Coffee Quality Institute
CREL	Center for Milk Collection and Refrigeration
CRRH	Regional Hydraulic Resources Committee
CRS	Catholic Relief Services
CUSO	Canadian cooperation NGO
CVC	Regional Autonomous Corporation of the Cauca Valley
DAAD	German Academic Exchange Service
DAAF	Department of Agriculture and Agroforestry
Danida	Danish International Cooperation Agency
DEFC	Development of Community Forestry Enterprises
DFID	Department for International Development (United Kingdom)
DG	General Directorate
DNRE	Department of Natural Resources and Environment
DP	Degraded Pastures
DP-CATIE/Norway	Degraded Pastures Project in Central America
DPE	Outreach Directorate
DSS	Decision Support Systems
EARTH	Agricultural School of the Humid Tropical Region, Costa Rica
EC	European Community
ECOMAN	Decision Support System for Sustainable Ecosystem Management in Atlantic Rain Forest Rural Areas Project

ECTI	Strategy to Combat Illegal Logging
ESC	Environmental Service Certificate
ESNACIFOR	National Forestry Science School - Honduras
ETH	Swiss Federal Institute of Technology Zurich
EU	European Union
FAN	Friends of Nature Foundation -Bolivia
FANCA	Central American Network for Water Action
FAO	United Nations Food and Agriculture Organization
FAS	Foreign Agricultural Service (USA)
FCBC	Foundation for the Conservation of the Chiquitano Forest, Bolivia
FECAFEB	Federation of Coffee Exporters of Bolivia
FEDEGAN	National Cattlemen's Federation of Antioquia
FAIES	Initiative Fund for the Americas -- El Salvador
FIRA	Rural Agricultural Investment Fund
FONAFIFO	National Forest Fund, Costa Rica
FONACIT	National Science Technology and Innovation Fund of Venezuela
FONAGRO	State trust for the Development of Agricultural, Livestock, Wildlife and Fishing Activities, Mexico
FONDEAGRO	Agricultural Development Fund
FONTAGRO	Regional Agricultural Technology Fund/IDB
FORMA	Regional CDM project in collaboration with CIFOR
FSC	Forest Stewardship Council
GAE	Agroecology Thematic Group
GAMMA	Livestock and Environmental Management Thematic Group
GAT	Technical Support Group
GCG	Global Change Group
GEF	Global Environmental Facility, World Bank
GIS	Geographical Information System
GLAD-CC	Latin American Discussion Group on Forests and Climate Change
GRIN	Germplasm Resources Information Network
GTTA	Generation and Transfer of Agricultural Technology
GTZ	German Technical Cooperation Agency
GU	Guatemala
GUATE-INVIERTE	Trust for the Economic Reactivation of the Agricultural Sector, Guatemala
GWP	Global Water Partnership
HARC	Hawaii's Agriculture Research Center
IHCAFE	Honduran Coffee Institute

IAI	Inter-American Institute for Global Change Research	JASEC	Administrative Board of Electrical Services of Cartago
IBSA	Biodiversity Index for PES	JICA	Japanese International Cooperation Agency
ICAFE	Costa Rican Coffee Institute	JNC	National Coffee Board of Peru
ICRA	International Centre for Development Oriented Research in Agriculture, The Netherlands	JSDF	Japanese Social Development Fund
ICRAF	International Center for Research in Agroforestry	KSLA	Royal Swedish Academy for Agriculture and Forestry
IDB	Inter-American Development Bank	LA	Latin America
IDIAP	Institute for Agriculture Research of Panama	LAC	Latin America and the Caribbean
IDRC	International Development Research Centre, Canada	LACEEP	Network of Environmental Economics Research
IFAD	International Fund for Agriculture Development	LEAD	Livestock, Environment and Development
IFPRI	International Food Policy Research Institute	LISAGR	Integrated Library Administration System
IGERT	Integrative Graduate Education and Research Traineeships Program	LULUCF	Land Use, Land Use Change and Forestry
IICA	Inter-American Institute for Cooperation on Agriculture	MACA	Ministry of Campesino and Agricultural Affairs
ICCO	International Cacao Organization	Mars	Mars, Inc.
IIDEMAYA	Mayan Institute of Research and Development	MAG	Ministry of Agriculture and Livestock, Costa Rica
IITA	International Institute of Tropical Agriculture	MAGFOR	Ministry of Agriculture, Livestock and Forests, Nicaragua
ILRI	International Livestock Research Institute	MARN	Ministry of the Environment and Natural Resources (El Salvador)
IMFN	International Model Forests Network	MARENA	Ministry of the Environment and Natural Resources (Nicaragua)
INAB	National Forest Institute	MGAP	Ministry of Livestock, Agriculture and Fisheries (Uruguay)
INAFORESTA	International Voluntary Group that works with cacao, trees and people worldwide	MICIT	Ministry of Science and Technology
INBio	National Biodiversity Institute, Costa Rica	MICH	Integrated Watershed Management Thematic Group
INCAE	Central American Institute for Business Administration	MIF	Multilateral Investment Fund / IDB
INE	National Statistics Institute	MINAE	Ministry of the Environment and Energy, Costa Rica
INCO-UE	International Cooperation for Developing Countries, European Union	MURF	Management and Sustainable Use of Plant Genetic Resources Thematic Group
INIA	National Institute for Agricultural Research, Spain	MUSALAC	Network of Research and Development in Bananas and Plantains for Latin America and the Caribbean
INIBAP	International Network for Improvement of Bananas and Plantains (now Bioversity International)	NARS	National Agricultural Research Systems
INTA	Nicaraguan Institute of Agricultural Technology	NGO	Nongovernmental Organization
IPGRI	International Plant Genetic Resources Institute	NINA	Norwegian Institute for Nature Research
IPM / AF	Integrated Pest Management / Agroforestry	Nitlapán	Research and Development Institute, Central American University, Nicaragua
ISDEM	Institute for Municipal Development (El Salvador)	NORAD	Norwegian Ministry of Development Cooperation
ITCR	Costa Rican Institute of Technology	NSF	National Science Foundation
IUFRO	International Union of Forest Research Organizations	NTO	National Technical Office of CATIE
		OAS	Organization of American States
		ODI	Overseas Development Institute, UK
		OIMT -ITTO	International Tropical Timber Organization
		OIRSA	International Regional Plant and Animal Health Organism

OTS	Organization of Tropical Studies
Oxfam	Oxford Committee for Famine Relief
PAECA	Agroecological Production of Annual Crops Thematic Group
PAES	Environmental Program of El Salvador
PCP	Specialized Platform for Agroforestry in Cacao and Coffee in Mesoamerica
PDS	Sustainable Development Project in Petén
PDS-CATIE-MAGA/IDB	Sustainable Development Program in Petén (PDS)
PES	Payment for Environmental Services
PITTA	Network of Researchers in Organic Production
PLAN	El Salvador International Plan
POA	Annual Operative Plan
PRODOMA	Small Donations Program for the Environment
PROMECAFE	Regional Cooperative Program for the Technological Development and Modernization of Coffee Cultivation in Central America, the Dominican Republic and Jamaica
PROMOSTA	Modernization of Technical Agricultural Services Project
PROSA	Food Security Program
PTCARL	Trinational Program of the High Watershed of the Lempa River
RAAN	Autonomous North Atlantic Region
RAFA	<i>Agroforestry in the Americas</i> Journal
RED	Rural enterprise development
REMERFI	Mesoamerican Network of Plant Genetic Resources
RRBM-LAC	Regional Network of Model Forests in Latin America and the Caribbean
RUTA	Regional Unit for Technical Assistance of the World Bank
SACS	Southern Association of Colleges and Schools
SAG	Secretariat of Agriculture and Livestock, Honduras
SANet	Network of Sustainable Forestry Alternatives
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCAA	Specialty Coffee Association of America
SDC	Swiss Development Agency
SEBSA	Socioeconomics of Environmental Goods and Services Thematic Group
SEEP Network	Small Enterprise Education and Promotion Network
SESAN	Secretariat of Food Security and Nutrition (Guatemala)
SERNAP	Technical Training to the National Protected Areas Service

SETEDER	Rural Development Technical Services
SIAD	Information System to Support Diversification
SICTA	Central American Agricultural Technology Integration System
Sida	Swedish International Development Cooperation Agency
SIDALC	Agricultural Information and Documentation System for Latin America and the Caribbean
SIEP	Information System of the Graduate School
SINAES	National Higher Education Accreditation System
SINAC	National Conservation Areas System
SLU	Agriculture University of Sweden
SME	Small and medium enterprise
SNITTA	National Agricultural Research and Technology Transfer System
SNV	Stichting Nederlandse Vrijwilige (Dutch Cooperation for Development)
SSP	Silvopastoral system
STR	Regional Technical Services Office
SUBBE	Sustainable Biomass and Bioenergy in Central America: CDM Project Preparation Assistance Facility
TG	Thematic Group
TIERRAS	Sustainable Management in the Gulf of Fonseca Project
TNC	The Nature Conservancy
U Caldas	University of Caldas, Colombia
UCR	University of Costa Rica
IUCN	International Union for the Conservation of Nature
UK	United Kingdom
UNA	National University, Costa Rica
UNCBD	United Nations Convention on Biological Biodiversity
UNDP	United Nations Development Program
UNED	National Distance Education University, Costa Rica
UNFCCC	United Nations Framework Convention on Climate Change
UPAZ	University for Peace, United Nations
USA	United States of America
USAID	U.S. Agency for International Development
USD	U.S. Dollars
USDA	Department of Agriculture of the United States
USFS	United States Forest Service
UTA	Technical Support Unit
UWB	University of Wales, Bangor
VERIFOR	Institutional Options to Verify Legality in the Forestry Sector

WB	World Bank
WAFLA	Integrated Water Resource Management
WCF	World Cocoa Foundation
WFSE	World Forest, Society and Environment

WGF	Wallace Genetic Foundation
WWF	World Wildlife Fund
ZEF	Center for Development Research
ZIL	Swiss Centre for International Agriculture

6. Governing Authorities

Board of Directors (2005-2006)

- Richard Rortvedt (USA), President (2005)
- Helmut Eger (Germany), President (2006)
- Luis Osorio (Nicaragua), Vice President (2005/2006)
- Hans Jöhr (Switzerland) (2005/2006)
- Bjorn Lundgren (Sweden) (2005/2006)
- Ana María Majano (El Salvador) (2005/2006)
- Sergio Abarca (Representative of the Costa Rican Ministry of Agriculture, 2005)
- Guillermo Flores (Representative of the Costa Rican Ministry of Agriculture, 2005)
- Lionel Peralta (Representative of the Costa Rican Ministry of Agriculture, 2006)
- Godfrey Eneas (The Bahamas)
(Representative of the IABA, 2006)
- Floyd Horn (USA) (2005)
- Juan Carlos Godoy (Guatemala) (2005)
- Manuel Guariguata (Venezuela) (2005)
- Fiona Wilson (Denmark) (2005)
- Rosalía Arteaga (Ecuador) (began in 2006)
- Marcelino Avila (Belize) (began in 2006)
- Geoffrey Hawtin (United Kingdom) (began in 2006)
- Benjamín Figueroa (Mexico) (began in 2006)
- Michael Tewes (Belize, Representative of the Governing Council, 2005)
- Olmedo Espino (Panama, Representative of the Governing Council, 2005)
- Erick Santamaría (Panama, Representative of the Governing Council, 2006)
- Mariano Olazábal, IICA (2005/2006)

Governing Council of Ministers (2005-2006)

Belize

Michael Espat (2005)
Vildo Marin (2006)

Bolivia

Guillermo Rivera (2005/2006)

Colombia

Andrés Felipe Arias (2005/2006)

Costa Rica

Rodolfo Coto (2005)
Alfredo Volio (2006)

Dominican Republic

Amilcar Romero (2005)
Salvador Jiménez (2006)

El Salvador

Mario Salaverría (2005/2006)

Guatemala

Alvaro Aguilar (2005/2006)

Honduras

Mariano Jiménez (2005)
Héctor Hernández (2006)

Mexico

Javier Usabiaga (2005)
Francisco Javier Mayorga (2006)

Nicaragua

Augusto Navarro (2005)
Mario Salvo (2006)

Panama

Laurentino Cortizo (2005)
Guillermo Salazar (2006)

Paraguay

Alfredo Molinas (2005/2006)

Venezuela

Antonio Albarrán (2005)
Elías Jaua (2006)

IICA

Chelston Brathwaite, Director General

Annex 1. International, Associated and National Technical Personnel 2005-2006

NAME	SPECIALIZATION
AGUILAR VEGA MARÍA ELENA	TISSUE CULTURE
ALPIZAR RODRÍGUEZ FRANCISCO	ENVIRONMENTAL ECONOMICS
ASTORGA DOMIAN CARLOS	BIOTECH, GENETIC RESOURCES
BEER JOHN WILLIAM	AGROFORESTRY
BERMÚDEZ CRUZ GERARDO ENRIQUE	FORESTRY
BEKKER MIRJAM	PLANT PATHOLOGY
BENJAMIN TAMARA JO	AGROFORESTRY
CAMPOS ARCE JOSÉ JOAQUÍN	FORESTRY
CARBALLO VARGAS MANUEL	CROP PRODUCTION, ENTOMOLOGY
CARRERA GAMBETTA FERNANDO	FOREST MANAGEMENT
CASANOVES BOSCHETTI FERNANDO	BIOMETRY
CASCANTE CARVAJAL CAROLINA	FORESTRY
CASASOLA COTO FRANCISCO ROLANDO	SILVOPASTORAL SYSTEMS
CHACÓN LEÓN MARIO	TROPICAL FORESTS, BIODIVERSITY CONSERVATION
CORRALES CASTRO OLGA MARTA	ENVIRONMENTAL POLICY
DELGADO HERNÁNDEZ EDUARDO JOSÉ	SUSTAINABLE AGRICULTURE
DELGADO RODRÍGUEZ LUIS DIEGO	NATURAL FOREST ECOLOGY
DE MELO VIRGINIO ELIAS	FORESTRY DEVELOPMENT
DONOVAN JASON	AGRICULTURAL ECONOMICS
DURÁN MORA JOAQUÍN	PLANT PRODUCTION
EBERT ANDREAS WILHELM	PLANT GENETIC RESOURCES
FAUSTINO MANCO JORGE	WATERSHED MANAGEMENT
FERREIRA ROSSI PEDRO	BIOMETRY
FINEGAN BRYAN GERALD	FORESTRY
GALLOWAY GLENN	FORESTRY
GIANNACE DONATO	FORESTRY AND MODEL FORESTS
GOBBI JOSÉ ALBERTO	AGRICULTURAL ECONOMICS
GÓMEZ FLORES MANUEL ANGEL	AGRICULTURAL ECONOMICS
GONZÁLEZ FIGUEROA ALAN	NATURAL RESOURCES
*HAGGAR JEREMY PHILIP	TROPICAL AGRO-ECOLOGY
HARVEY CELIA	ECOLOGY AND BIOLOGY
HIDALGO JAMINSON EDUARDO	APPLIED ENTOMOLOGY
HOLGUIN CASTAÑO VILMA	ZOOTECNOLOGY
IBRAHIM MUHAMMAD	SILVOPASTORAL SYSTEMS
*JIMÉNEZ BURGOS JORGE	AGROFORESTRY
JIMÉNEZ OTÁROLA FRANCISCO	PLANT PRODUCTION
JOHNSON ELIZABETH SHIRLA	PLANT PATHOLOGY
*KAMMERBAUER JOHANN	ENVIRON. SCIENCES-NATURAL RESOURCES
KRAUSS ULRIKE	ENVIRONMENTAL ECONOMICS
LEANDRO MONTOYA PATRICIA	CHEMISTRY
LOCATELLI BRUNO	PLANT REPRODUCTION
LÓPEZ PÉREZ GUSTAVO	INFORMATION SYSTEMS

MADRIGAL BALLESTERO RÓGER	ENVIRONMENTAL SOCIOECONOMICS
MENESES MARTÍNEZ ALLAN	BIOTECHNOLOGY
*MONTEVERDE PENSO EDGARDO JOSÉ	PLANT REPRODUCTION
MORA DELGADO JAIRO RICARDO	RURAL DEVELOPMENT
MORA QUIRÓS ANTONIO	PLANT SCIENCES
MORENO MARTÍNEZ RAÚL ALBERTO	ECOLOGY
NAVARRO MONGE GUILLERMO	ECONOMICS AND FOREST ORDERING
NAVARRO PEREIRA CARLOS MANUEL	FORESTRY
NIEUWENHUYSE ANDREA	SOILS
*ORTIZ KREIS SPENCER DEMPSEY	FORESTRY
ORTIZ VARGAS JUAN LUIS	AGROECOLOGY
OROZCO VILCHEZ EVA LORENA	ECOLOGY AND SILVICULTURE
PEDRONI LUCIO	GEOGRAPHICAL INFORMATION SYSTEMS
PÉREZ ALEMÁN CARLOS	AGRICULTURAL DEVELOPMENT
*PÉREZ RAMÍREZ ALICIA NOEMÍ	COMMERCIALIZATION OF FOREST PRODUCTS
*PEZO QUEVEDO DANILO	NUTRITION AND PASTURES
PHILLIPS MORA WILBERT	AGRONOMY- CROPS
*PINIERO MARICEL C.	ENVIRONMENTAL ECOLOGY
POCASANGRE ENAMORADO LUIS ERNESTO	PATHOLOGY/NEMATOLOGY
POWELL GEORGE VAN NOSTRAND	BIODIVERSITY
RIVAS PLATERO GONZÁLO G.	PLANT PATHOLOGY
RIVEROS ANGARITA ALBA STELLA	AGRONOMICAL SCIENCES/PLANT PATHOLOGY
ROBLES VALLE GABRIEL	AGRONOMY
ROSALES IZAGUIRRE FRANKLIN EDM	PLANT BREEDING
*ROTTGER ULRICH	PLANT PRODUCTION
*SANTOS LÓPEZ CÉSAR ALEJANDRO	ENVIRONMENTAL ECONOMICS
SALAZAR SALVATIERRA SEBASTIÁN	GENETIC RESOURCES AND ECOTOURISM
SALAZAR LIENDO LEONARDO ALBERTO	COMMUNICATION
SALINAS VALLECILLO ZENIA	ENVIRONMENTAL ECONOMICS
SÁNCHEZ GARITA VERA	PLANT PATHOLOGY/BIOLOGICAL CONTROL
STOIAN DIETMAR	FORESTRY
SOTO MUÑOZ GABRIELA MARÍA	SOILS ECOLOGY
SOMARRIBA CH. EDUARDO	AGROFORESTRY
TEN HOOPEN GERBEN MARTIJN	ECOLOGY
UREÑA RIVERA ANA GABRIELA	PLANT SCIENCES
VAAST PHILIPPE JACQUES	SOILS AND PLANT NUTRITION
VALLEJO RENDON ALVARO	FORESTRY
VÁSQUEZ CARBALLO WILLIAM	FOREST MANAGEMENT
VÁSQUEZ MORERA NELLY	AGRICULTURAL SCIENCES AND NATURAL RESOURCES
VELÁSQUEZ MAZARIEGOS SERGIO	GEOGRAPHICAL INFORMATION SYSTEMS
VENEGAS VILLEGAS GEOFFREY	FORESTRY
VILLALOBOS RODRÍGUEZ MARILYN	PUBLIC ADMINISTRATION FOR THE RURAL SECTOR
VILLALOBOS SOTO RÓGER	NATURAL FORESTS
VILLANUEVA NAJARRO CRISTOBAL	TROPICAL AGROFORESTRY
VÍQUEZ LÓPEZ EDGAR	FOREST GENETICS

*staff in the countries

Annex 2. Publications

PUBLICATIONS 2005

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