



Solutions for environment and development
Soluciones para el ambiente y desarrollo



Biennial Report

2014-2015





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Executive Summary

This report presents the Center's most important actions in the period 2014-2015. These two years posed major challenges for CATIE; however, the institution has had its foundations well-grounded and a clear action plan for the way forward to continue efforts to fulfill its mission of achieving sustainable and inclusive human wellbeing in Latin America and the Caribbean, promoting education, research and outreach for the sustainable management of agriculture and natural resource conservation.

During this period, the institution promoted the development of climate-smart territories as a tool to achieve sustainable and inclusive human welfare and the effective integration of actions of education, research and innovation for development, in partnership with multiple public and private partners.

CATIE continued to strengthen itself as a regional research and development platform by strengthening its alliances and establishing new initiatives and partnerships.

In the period 2014-2015, CATIE made significant progress on its strategic objective of strengthening scientific and professional training in systemic approaches by developing innovative products in graduate, professional and technical, classroom and distance education.

Finally, the National Offices have become highly valuable allies in meeting the most urgent needs of the member countries. In 2014-2015, CATIE addressed the needs of its member countries through strengthening strategic alliances, technical assistance and capacity building, among other actions.

Despite the achievements mentioned above, the financial indicators at the end of 2015 show a weakness in the institution's financial system. This year there was a deficit of more than USD 500,000; for that reason, it is necessary to implement a plan to consolidate the Center's finances.

During the period 2014-2015, CATIE continued to strengthen itself as a regional research and development platform. As a result of this consolidation, CATIE launched new initiatives and partnerships, while strengthening the existing ones.

Strategic pillar



**CATIE as a regional
scientific platform**



Some examples of the recognition of CATIE as a regional scientific platform (2014-2015) are the following:

The Scientific Cooperation Platform (PCP) Agroforestry Systems with Perennial Crops

The PCP platform has contributed to research on coffee and cocoa agroforestry systems. Its main approaches are ecosystem services, agro-ecological control of pests and diseases, and value chains.

CIRAD, CATIE, Bioversity International, ICRAF, CABI, Promecafé and INCAE¹: Scientific Cooperation Platform (PCP) Agroforestry Systems with Perennial Crops

In 2014-2015 CATIE, CIRAD and Promecafé were part of a consortium with the Inter-American Institute for Cooperation on Agriculture (IICA) for the purpose of developing and managing funding for the project on Technical Assistance for Formulating the Central American Program for Comprehensive Coffee Leaf Rust Management (PROCAGICA). This aim was achieved and PROCAGICA will initiate operations in 2016 in four Central American countries: Guatemala, Honduras, Nicaragua and El Salvador. This project has a total budget of 15 million euros and a five-year life span for implementation.

In 2015, the Platform for Scientific Cooperation (PCP) Agroforestry Systems with Perennial Crops underwent an external evaluation and because the results were positive, it was proposed that the commitment of the platform partners be extended for another 10 years, starting in 2017. Also in 2015, a concept note and a work plan were developed to prepare the terms for the new phase (2017-2027) of this platform.

Cooperation with Institutions of the Consultative Group on International Agricultural Research (CGIAR)

The Forests, Trees and Agroforestry consortium (FTA)

Thanks to CGIAR's recognition of CATIE's contribution as a scientific platform in Central America, the FTA-CATIE component began operations in 2012. Based on the progress shown by this cooperation, CATIE and CIRAD were accepted as full FTA members in 2014. The same year, the FTA-CATIE initiative completed

¹ French Agricultural Research Centre for International Development (CIRAD); Central American Institute for Business Administration (Spanish acronym INCAE); Centre for Agricultural Bioscience International (CABI); World Agroforestry Centre (ICRAF); Regional Cooperative Program for the Technological Development and Modernization of Coffee Cultivation (Spanish acronym PROMECAFE).

the baseline studies initiated in 2012 in four key Nicaragua Honduras sentinel landscape sites (NHSL), including biophysical and socioeconomic studies of households, communities and institutions. The databases from these baseline studies are available to the public at: (<http://thedata.harvard.edu/dvn/dv/N-H-SL>; <http://thedata.harvard.edu/dvn/dv/CATIE>).

In 2013-2015, CATIE received USD 680,000 for the implementation of the FTA-CATIE initiative.

Research Program on Climate Change, Agriculture and Food Security (CCAFS)

In 2014, CATIE began its collaboration with the Mesoamerican Agroenvironmental Program (MAP) and CCAFS, with the implementation of the baseline studies for CCAFS in three communities in Central America, located in Santa Rita (Honduras), Olopa (Guatemala) and Tuma La Dalia (Nicaragua). Eight biophysical and socioeconomic baseline studies were conducted for CCAFS (two household, three community and three institution studies), which are available at: <https://dataverse.harvard.edu/dataverse/CCAFSbaseline>.

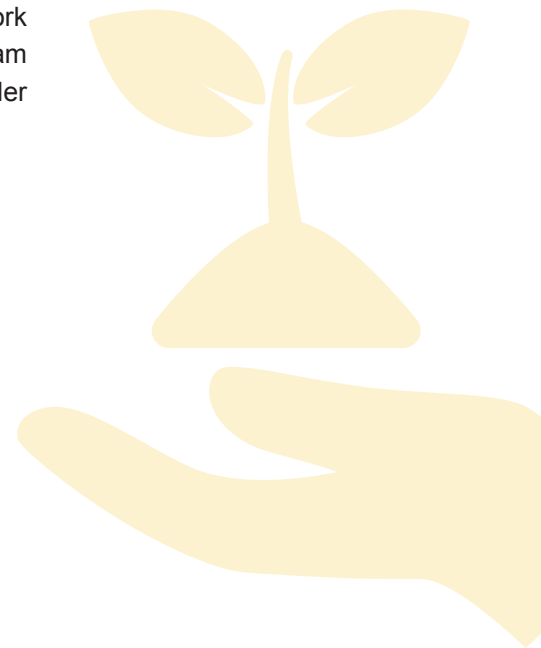
In 2015, CATIE/MAP and CCAFS signed a cooperative agreement that encompasses four areas of work:

- 】 Strategic Area 1: Sustainable Climate-Adapted Territories (TeSAC)
- Strategic Area 2: Climate Change and Gender
- 】 Strategic Area 3: Joint publications and harmonization of databases
- 】 Strategic Area 4: Coordination in support to regional, national and local actors

Between 2014 and 2015, CATIE received USD 172,000 to fund the implementation of joint CATIE-CCAFS activities. In this same period, joint work was also done on the CCAFS-CATIE/Climate Change and Watersheds Program (Spanish acronym PCCC). The outcomes of this cooperation are reported under the actions of the PCCC.

Sentinel Landscapes

Sentinel Landscapes is a global scientific initiative of the FTA consortium. There are currently seven sentinel landscapes in the world, which were competitively selected from a list of more than 40 candidates.



2 The original term was *Climate-Smart Villages* (CSVs).

Bioversity International

In 2015, CATIE/MAP and Bioversity International, with financial support from USAID, jointly initiated the project “Systematic comparison of different approaches for the participatory evaluation of annual crop varieties for climate adaptation”. Initially, a baseline with socioeconomic and production information was prepared on 2,358 bean farming families in 148 communities of Trifinio (112 in Guatemala, 16 in Honduras and 20 in El Salvador).

Later, seeds of black and red bean varieties were provided to the 2,099 families participating in the project (1,097 families in Trifinio and 1,002 in NicaCentral). Field trips were made to gather information on the development of the seedlings, flowering and pest resistance of the different varieties. Project implementation will continue in Trifinio and Nicaragua until the end of 2017.

Other initiatives

20x20 Initiative

During the period 2014-2015, CATIE, through the Forests program, was positioned as one of the main promoter organizations of the 20x20 initiative. In 2014, CATIE actively participated in the launch of the 20x20 initiative at the Global Landscape Forum and in a side event at COP 20³ held in Lima, where national commitments for the restoration of 21.6 million hectares were achieved. In 2015, CATIE, together with the World Resources Institute (WRI) and the International Center for Tropical Agriculture (CIAT), became an active member of the technical group that leads the 20x20 initiative to support the consolidation of national restoration plans in Mexico, Costa Rica, Colombia, Peru and Chile.

In this context, two projects were approved: the first with WRI and CIAT for the coordination of the initiative and support to countries in Latin America, including Mexico, Guatemala, Costa Rica, Colombia, Chile and Peru. The second project is an innovative CATIE project to channel funds from impact investors to secondary forest restoration projects in Central America. This project will begin in 2016 in Guatemala, Nicaragua and Costa Rica.

3 Conference of the Parties to the United Nations Framework Convention on Climate Change

Collaboration with Korea

Since 2013, CATIE and the National Institute of Forest Science (NIFoS) have been conducting a project with a budget of USD 207,500 (USD 41,500 per year) to develop clonal propagation systems using biotechnology; the collaboration will continue through 2017. The project is using clonal propagation to improve the wood quality of three forest species (teak - *Tectona grandis* - VERBENACEAE, melina - *Gmelina arborea* – VERBENACEAE, and Spanish cedar - *Cedrella* sp. - MELIACEAE). In addition, during the same period the two institutions have been implementing a project through the CATIE Forests program, which evaluates the effects of climate, soil and vegetation in forest ecosystem processes at different altitudinal belts.

In 2015, CATIE, the Rural Development Administration (RDA) and the Korea-Latin America Food and Agriculture Cooperative Initiative (KoLFACI) signed a collaboration agreement. This agreement focuses on research and capacity building for the development and evaluation of germplasm techniques for tropical crops (coffee and cocoa) as well as cocoa cultivation techniques, including improved post-harvest techniques.

The Climate Technology Centre and Network (CTCN)

CATIE is a strategic partner of the CTCN and as a member of this consortium, it is able to provide technical assistance to member countries in the areas of water, agriculture and forests. As a member, CATIE worked on two initiatives in 2015, one in Chile and one in Colombia. In Chile, technical assistance was focused on building a biodiversity monitoring and evaluation system for climate change in three types of ecosystems: terrestrial, freshwater and coastal-marine. Moreover, assistance in Colombia centered on monitoring and the assessment of the country's adaptation to climate change using a multisectoral approach. In addition, during the same year CATIE was co-organizer of the CTCN Regional Forum for National Designated Entities of Latin America and the Caribbean, held in Costa Rica in October 2015.

World Vegetable Center (AVRDC)

CATIE, together with the AVRDC, is evaluating horticultural varieties in the AVRDC and CATIE germplasm banks. The evaluation is done in a participatory manner with rural families of Trifinio and Costa Rica. As part of this initiative, which will end in 2016, CATIE students conducted two master's theses to morphologically characterize and evaluate germplasm from AVRDC, CATIE and commercial suppliers under different environmental and management conditions. They also evaluated yields and the incidence of diseases in the respective germplasm. In addition, taste tests were conducted and the preferences of sellers and consumers of the corresponding products were determined.

The results of this research show a significant interaction between variety and elevation, as well as between variety and type of management. In addition, the data from the participatory evaluation indicate that, in terms of yield, disease resistance and taste qualities, farmers consider the germplasm from AVRDC and CATIE to be superior, in comparison with the commercial varieties.

Main scientific and technical contributions of DID programs in the period 2014-2015

CATIE's Research and Development Division (Spanish acronym DID) is mandated to contribute to the scope of Objective 1 of the CATIE Strategic Plan 2013-2010, which is "Achieving sustainable livelihoods, agricultural and forestry systems, territories and value chains through systemic and transdisciplinary research". Progress towards achieving this goal is reflected in the actions taken by DID programs in the period 2014-2015.

The scientific contribution of the DID programs is evident in the growing number of scientific publications in peer-reviewed journals. In the period 2014-2015, 80 scientific articles were published in peer-reviewed journals (23 in 2014 and 57 in 2015). These scientific articles were published in 55 journals including: Agroforestry System, Annals of forest science, Environmental and Development Economics, World Development, PLoS One, Agriculture, Ecosystems and Environment, among others (Figure 1).

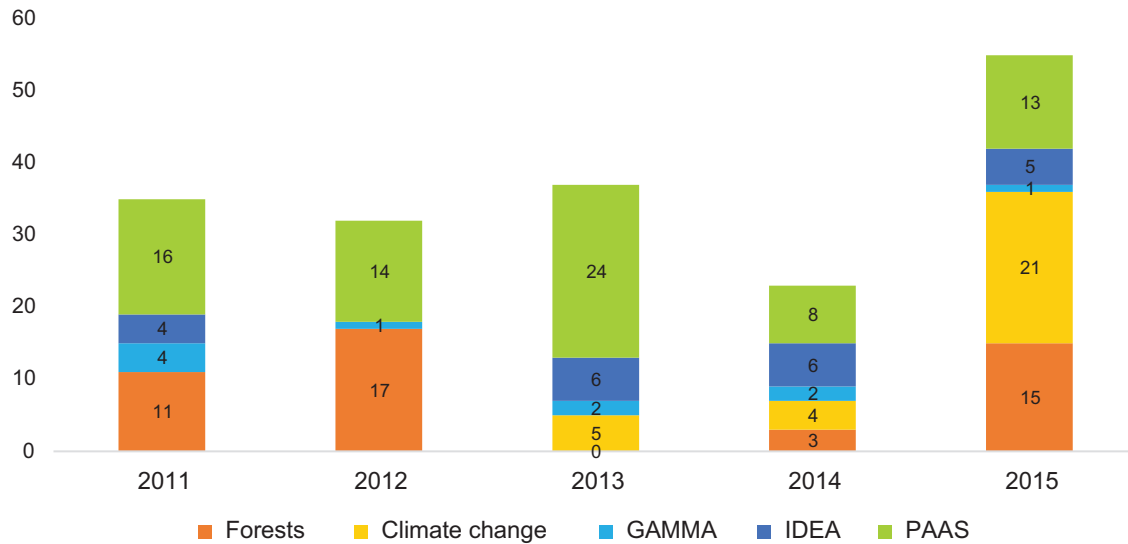


Figura 1. Number of DID program publications in peer-reviewed journals in the period 2011-2015

Investigation on Development, Economy and Environment Program (IDEA)

In 2014, the IDEA program included topics in its research agenda such as: marine and terrestrial protected areas, energy efficiency, water and community organizations, adaptation to climate change and agriculture. In addition, it worked closely with government organizations in Costa Rica, such as MINAE, SINAC, FONAFIFO, AyA, CNFL⁴, among others. Its participation consisted of advising and providing critical analysis of policies and programs. The outcome of this scientific work was six scientific articles published in peer-reviewed journals including: Environmental and Resource Economics, Ecological Economics, Plos One, Journal of Water and Climate Change, Global Environmental Change, Agriculture, Ecosystems and Environment. In the same year, CATIE's Agribusiness Development Unit (UDA) submitted 21 proposals, five of which were approved, notably two projects funded by the USAID Regional Project for Trade and Market Alliances (PRUCAM) in the area of honey (Guatemala and El Salvador) and cocoa value chains (Nicaragua, Honduras and El Salvador),

Progress of some IDEA Program initiatives (2014-2015)

Water for human consumption, communities and climate change: Expected impacts and adaptation in Central America (AC3 project): conducted interviews and workshops in 180 communities, as well as 5500 household surveys in poor rural communities of the dry zones of Guatemala, Nicaragua and Costa Rica.

CASCADA, conducted 1000 household surveys to learn about the reality of the agricultural systems and the people who live in them. Subsequently, 300 farms were characterized.

⁴ Ministry of Environment, Energy and Telecommunications (MINAET); National System of Conservation Areas (SINAC); National Forest Financing Fund (FONAFIFO); Acueductos y Alcantarillados (AyA, the national water company); Compañía Nacional de Fuerza y Luz (CNFL, the national power and light company).

for a total amount of USD 550,000. In addition, the UDA gave the first virtual diploma program for the development of rural enterprises to 17 participants from seven countries, of which 12 (71%) were women.

In 2015, due to the creation of the Association of Environmental Economists for Latin America and the Caribbean that had generous support from the International Development Research Centre (IDRC) as well as the commemoration of the first 10 years of the Latin American and Caribbean Environmental Economics Program (LACEEP), CATIE positioned itself through IDEA as a reference institution in the field of environmental economics in Latin America and the Caribbean. In the same year, five renowned professors (Erin Sills, Subhrendu Pattanayak, Jo Albers, Pam Jagger, and Rodrigo Arriagada) visited CATIE and the IDEA team participated in three international conferences (2015 IWRA World Water Congress, Fourth ICARUS Global Meeting and Climate Smart Agriculture 2015).

Production and Conservation in Forests Program

Specific contributions of the initiatives led by the Forests Program (2014-2015)

Territorial Governance Platform, led by the Ibero-American Model Forest Network, 15 member countries, 35 million hectares of forest and 32 model forest processes. Relevant partner of the 20x20 initiative.

CLIMIFORAD Project, consolidated the line of research for long-term forest monitoring in environmental gradients for climate change.

Latin American Chair for Forest Policy and Economics, assumed the coordination of the International Professional Masters in Administration and Development of Sustainable Businesses. Also consolidated the forest product value chain line of work (charcoal-Nicaragua-, forest species-Guatemala, Honduras and Costa Rica) and jointly supported the preparation of the National Restoration Master Plan for Costa Rica with the Chair for Territorial Management.

During 2014, the Production and Conservation in Forests Program focused on strengthening two lines of research: (i) impacts of climate change on highland forest ecosystems and development of tools to improve forest management, and (ii) systematization of experiences to improve cash flow from forest (secondary and/or primary) and forestry plantation systems, through the incorporation of crops, products and intermediate services that generate income prior to the timber harvest.

In 2015, studies were initiated within the line of research on biomass and biofuels production as a result of previous joint work with the Forest Research Institute of Korea. Under the framework of the same project, a first diploma course was given to 11 people from the energy ministries and universities of Mesoamerica on tools for assessing bioenergy potential at the country level. In the same year, three studies were completed in the forestry for sustainable income line of research.

In addition, it actively participated in the launch and consolidation of the 20x20 initiative in Latin America in the same period.

Livestock and Environmental Management Program (GAMMA)

In 2014, GAMMA's work agenda was focused on research topics related to livestock and greenhouse gas emissions (GHG), as well as the effects of land use on bird communities.

With respect to advising and capacity-building matters, GAMMA in conjunction with the US Forest Service organized an exchange of experiences and lessons learned regarding Payment for Environmental Services (PES) in Costa Rica for the forestry department of India. It also developed two training events with 60 agricultural producer leaders on agro-ecological soil management and forage production using local resources.

In 2014, cooperation with the National Institute of Agricultural Technology of Costa Rica (INTA) was consolidated for the implementation of the Fontagro-NZ project, whose goal is to develop competitive livestock production systems with low GHG emissions in Central America.

With funding from UNEP, GAMMA is leading the project Integral Manure Management Systems for Livestock Production Systems in Latin America and the Caribbean. The aim is to systematize state of the art practices, technologies, policies and institutional frameworks for integrated manure management. In the context of the project in 2015, the backing of the Central American Agricultural Council (CAC) was attained for the initiative to improve regional policy of the Central American Integration System (SICA) for exploiting the integral value of manure. Because of its leadership role in the field of manure management, CATIE serves as a scientific reference center for Latin America and the Caribbean within the framework of the Climate and Clean Air Coalition (CCAC).

During 2015, GAMMA's work was focused on strengthening relations with strategic partners in Costa Rica (CORFOGA, MAG and INTA⁵), Nicaragua (Ministry of Agriculture and Forestry), Honduras (Secretariat of Agriculture and Livestock), Colombia (FEDEGAN) and Mexico. It continued to strengthen cooperation with international institutions such as the Clean Air Coalition (CCAC), the United States Fish and Wildlife Service, the Nordic Climate Facility, University of Bangor, the United States Department of Agriculture (USDA), the Korea Rural Economy Institute (KREI) and the International Institute for Environment and Development (IIED), among others.

Launching of the CSA initiative

In 2015, CATIE through GAMMA supported the launching of the regional initiative Climate Smart Agriculture (ACI, Spanish acronym) under the Global Forum Landscape (GLF) during the COP (Paris, 2015). At that event the ministers of agriculture and livestock in Central America and the Dominican Republic signed a declaration in which they pledged to promote the ACI initiative.



⁵ Corporación Ganadera (CORFOGA, livestock producer corporation); Ministry of Agriculture and Livestock Costa Rica (MAG); Federación Colombiana de Ganaderos (FEDEGAN-Colombian Federation of Cattle Producers)

Climate Change and Watersheds Program (PCCC)

Some achievements of the Climate Change and Watersheds Program (2014-2015)

CATIE positioned itself on the Latin American node of the FAO GlobAllomeTree platform. CATIE hosted a workshop of world experts on the development of allometric equations.

In 2014, the MU contributed to the International Blue Carbon Initiative, which continued conceptual and methodological development for consolidating a Central American and Caribbean Blue Carbon network. In that year, studies were conducted in mangroves of Costa Rica, Panama and El Salvador, with funding from Conservation International, USAID and the Swedish lottery.

The Latin American Chair on Environmental Decisions (CLADA) conducted a study for the World Bank entitled Methodology for the Assessment of the Political, Socioeconomic and Environmental Setting for a Green and Inclusive Growth Program: case study in the productive landscapes of Costa Rica (available at: http://repositorio.bibliotecaorton.catie.ac.cr/bitstream/handle/11554/8247/Metodologia_para_la_evaluacion_del_entorno_politico.pdf).

In 2014, the PCCC's work was directed to the formation and strengthening of strategic alliances with CGIAR and other global programs in specific research projects. As an outcome of these alliances, the PCCC, CCAFS and the United Nations Environment Programme (UNEP-REGATTA⁶) conducted an analysis of the vulnerability of the agricultural sector to climate change in Central American countries that led to the publication of six data sheets (one per country).

In 2015, CATIE was notably positioned as a leader in the Latin American region on capacity building in hydrological modeling with SWAT (Soil and Water Assessment Tool) and tools for watershed administration and management. In the period 2014-2015, 27 people from 10 countries and 12 institutions have been trained in SWAT. In addition, CATIE stands out as a regional leader in methodological development and policies to incorporate marine and coastal ecosystems into climate change mitigation and adaptation initiatives, and under this framework it has provided technical assistance to at least 60 government officials, non-governmental organizations (NGOs), local organizations and independent professionals, specifically on methodologies for measuring blue carbon in mangroves.

CATIE has positioned itself as a leader in the provision of technical assistance and capacity building for the implementation of national strategies for REDD+⁷ and forest monitoring, in close collaboration with governments, forest monitoring units, NGOs from the eight countries of Central America and the Dominican Republic, and other regional technical platforms such as FAO, UN-REED, SilvaCarbon, the World Bank and IDB⁸. In the same year the article "Climate Smart Territories (CST): An integrated approach to food security, ecosystem services, and climate change in rural areas" was prepared by experts from CATIE under PCCC leadership and published.

⁶ Regional Gateway for Technology Transfer and Climate Change Action in Latin America and the Caribbean (UNEP-REGATTA).

⁷ Reducing Emissions from Deforestation and Forestry Degradation (REDD+).

⁸ United Nations Food and Agriculture Organization (FAO); the United Nations Program on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD).

Agroforestry and Sustainable Agriculture Program (PAAS)

In October 2014, CATIE commemorated the 70th anniversary of the establishment of the International Collection of Cacao Varieties attended by researchers, producers and representatives of chocolate companies in Latin America, the United States and Europe. This collection is the foundation of an active genetic enhancement plant breeding program that has already made more productive, disease-resistant, good industrial quality varieties available to farmers in Central America and Mexico. It is important to note that CATIE has intensified its presence on international forums for ongoing discussion of cacao cultivation, including: International Panel on Cacao Genetic Resources (coordinated by Bioversity), Group of Plant Breeders of the Americas (co-coordinated by CATIE) and the Global Task Force for Cacao Genetic Resources.

In the same period, with support from World Coffee Research (WCR), the molecular characterization of the entire population of 785 wild *Coffea arabica* genotypes preserved at CATIE was achieved for the first time. This genetic study identified the most genetically diverse genotypes that form the core collection of CATIE. In addition, a new methodology was developed for the laboratory production of coffee microplants using solid culture medium. In the field, a new method to reproduce *Coffea arabica* F1 hybrids using rooted cuttings was developed. These advances led to the initiation of negotiations for an agreement with the FLOREXPO de Costa Rica firm for the mass reproduction of coffee hybrids.

Finally, support from Gesellschaft für Internationale Zusammenarbeit (GIZ) enabled the renovation of part of the infrastructure for the management of the germplasm collections and the regeneration of the coffee collections, plus some species of the Sapotaceae and Myrtaceae families.

It is important to highlight PAAS' contribution to the development of Nationally Appropriate Mitigation Action (NAMA) for the coffee crop in Costa Rica. For this it has worked jointly with the Ministry of Agriculture and Livestock of Costa Rica (MAG) on developing the baseline and the training plan to begin NAMA-coffee implementation in Costa Rica. The aim of this initiative is to reduce greenhouse gas emissions (GHG) from coffee production and processing. NAMA-coffee Costa Rica is the world's first agricultural NAMA.



Mesoamerican Agroenvironmental Program (MAP)

Achievements of the Mesoamerican Agroenvironmental Program in its work with small producers (2014-2015)

As a result of these actions, an increase was seen in family consumption of nutritive foods, given that between 2013 and 2015, there was a significant change in the number of food groups consumed by the families. For example, in NicaCentral in 2013, only 3% of the families reported consuming nine food groups, and this percentage rose to 76% in 2016. In the case of Trifinio, the change between 2013 and 2016 was from less than 1% to 29% (2015 monitoring study conducted by MAP).

At the local level, MAP continued to contribute to improving the food and nutritional security (FNS) of small producers by strengthening capacity for decision-making and diversification of production in yards and farms. By 2015, 95% of the goal to engage 5,000 families in the Farmer Field Schools (FFS) had already been reached for the two territories where the program operates: Trifinio (the tri-national border region of El Salvador, Honduras and Guatemala) and NicaCentral (Nicaragua). This was made possible thanks to the operation of 402 FFS, which were attended by nearly 10,000 participants, of which 5300 (53%) were women. The FFS have promoted the use of 38 agro-ecological and agroforestry technologies, as well as the use of practices to improve the quality of the household setting, gender equality issues, and family and farm finances. In addition, 17,000 food and forest species seedlings were delivered to the 5,000 families in order to increase the diversity of food and timber products in their yards and farms. In Trifinio, 18 community gardens were established to serve 401 families from the second FFS cycle, most of them members of the Ch'orti' ethnic group.

In order to contribute to strengthening the socio-organizational structure of the 30 business organizations involved in the program, 49 sessions (23 in 2014 and 26 in 2015) of the Territorial Business Training School were held with a total of 663 participants. Another 307 sessions (161 in 2014 and 146 in 2015) for Business Technical Assistance were conducted for 767 participants.

One of MAP's key results is having promoted better territorial governance and the CST approach. MAP provided technical support to the design and/or analysis of policy instruments and/or territorial planning.

Achievements of the Meso-American Agroenvironmental Program in its work with producers' organizations (2014-2015)

Significant progress was seen in compliance to the six criteria and their respective indicators used to evaluate the socio-organizational structure of the business institutions. When comparing the baseline date from 2013 with that from 2016, we observed an average increase in compliance to these six criteria of 42% in NicaCentral and 39% in Trifinio.



Principles of the “Climate-Smart Territories” Approach

1. Territorial management is developed by numerous actors who represent different sectors of society based on a shared identity and vision, collaboratively articulating different geographical settings in the territory and incorporating elements of climatic and non-climatic risk.
2. Equity and inclusion are integrated as cross-cutting themes in territorial management processes for the empowerment of excluded and vulnerable groups.
3. Knowledge management contributes to learning and innovation to support decision making by different sectors of society in territory management processes.
4. Food, water and energy security are addressed systematically, taking into account the livelihoods of the rural population and the sustainability of ecosystem services.
5. Sustainable production systems adapted to climate risk and other global changes are implemented, in conjunction with inclusive value chains.
6. Actions within the territory contemplate the risk derived from climate change and other relative global changes and they strengthen the response capacity of different actors for appropriate decision-making.

Finally, in order to scale up and mainstream the MAP approaches and learning, strategic alliances were established to coordinate action and facilitate enabling conditions for the CST approach in new projects and territories. Between 2014 and 2015, 15 agreements for scaling up were established with many institutions/ organizations to scale up the CST approach and the MAP methodologies and lessons learned. As a result, 3,537 people participated in short courses and other types of training related to the CST approach. In 2015, the number of participants were double that of 2014 (1,307 people). The topics that had the most participation were FNS, gender equity, adaptation, mitigation and vulnerability to climate change, and the multisectoral and multi-scale approach for territorial governance and planning processes.

Achievements of the Meso-American Agroenvironmental Program in its work with territorial platforms (2014-2015)

The principles of the CST approach were incorporated into territorial strategies and platform plans, such as the “Strategic plan of the Trifinio Tri-national Plan Commission (CTPT) 2014-2018” and the “Statutes of the Lempa River Tri-national Commonwealth (MTRL)”, both approved in 2014. Likewise, governmental institutions have incorporated some of the CST principles into their policies and planning frameworks, for example: the “Strategy for Adaptation to Climate Change (Honduras, El Salvador and Guatemala)”, the “Policy for Adaptation to Climate Change for the Agricultural, Fishing and Aquaculture Sector” and the “National Plan for Adaptation to Climate Change.” The last two are in El Salvador.

MAP's Monitoring and Evaluation System (M&ES)


In MAP's M&ES, indicators were monitored at the direct effect level that allowed researchers to identify progress in the incorporation of the CST approach in the territories where MAP operates. In 2015, the use of mobile devices was used as a tool to collect data in the field. Through the use of this innovation, CATIE conducted 332 home surveys and characterized a total of 633 yards and farms, capturing complementary information such as GPS points and photographs of yards, farms and gardens that are available in MAP's M&ES database.

Publications and participation of the MAP team in events

In the period 2014-2015, 15 CATIE master's students (eight in 2014 and seven in 2015) received financial and technical support from MAP for the development of their respective theses in research on topics such as FNS, agro-ecological practices, ecosystem services and climate change adaptation and mitigation, among others.

In addition, in conjunction with CCAFS, MAP electronically published in 2015 a "compendium of key practices and technologies in four productive systems (gardens/yards, pastures, basic grains and agroforestry systems) in Trifinio and NicaCentral".

In 2014 and 2015, MAP staff members participated in international events, including "CGIAR Science Week" (Rome, Italy 2014), the "Third Global Science Conference on Climate-Smart Agriculture" (Montpellier, France, March 2015), and the "Global Landscapes Forum" (GLF) in 2014 and 2015 at COP 20 (Lima, Peru, 2014) and COP 21 (Paris 2015).



In the period 2014-2015, CATIE achieved significant advances in its strategic objective of strengthening scientific and professional education in systemic approaches through development of innovative graduate, professional and technical educational products, both in the classroom and via distance learning.

Strategic pillar



Targeting education



We are an international university that integrates education, research and extension specializing in agriculture and natural resources.

The most relevant are highlighted below:

After a process of self-evaluation and external assessment, the National Accreditation System for Higher Education (SINAES) in Costa Rica accredited the institution's Doctorate of Science in Agriculture and Natural Resources Program and the international academic master's programs, in October 2015, thereby ensuring that these programs comply with accepted international standards of quality.

The accreditation by SINAES legitimizes CATIE's educational quality to society and the national and international academic community, and it is a mechanism for ensuring its students a high quality education.



First doctoral program in sciences accredited by SINAES in Costa Rica

Four international academic master's accredited by SINAES in areas such as

- › Agroforestry and sustainable agriculture
- › Economy, development and climate change
- › Management and conservation of forests and biodiversity
- › Integrated watershed management

The above makes CATIE the university in Costa Rica with the most **accredited graduate study programs**, a highly relevant achievement considering that CATIE only offers graduate studies and only in agriculture and natural resources.

More leaders for change

CATIE continues training professionals capable of dealing with challenges and problems in agriculture, natural resources, the environment and rural development, as well as with the ability to take advantage of opportunities for sustainable development. When our graduates return to their countries, they are agents of change, providing leadership and putting into practice the skills acquired during their studies to solve the great problems that affect the territories, such as poverty, food and nutrition insecurity, degradation of ecosystems and the environment, climate change and variability, the decreasing availability and quality of water, desertification and soil degradation and the need to change to a base of renewable energy. All of this falls within a sustainable development approach tied to social and environmental responsibility. It is noteworthy that in this period, more female (57%) than male representatives (43%) were enrolled in the Graduate Program.



Table 1. 2014-2015 Graduate Program in figures

Variable	Male	Female	Total
No. of graduate diploma students	19	33	52
No. of specialized graduate students	4	3	7
No. of master's students	74	97	171
No. of doctoral students	9	13	22
No. of exchange students	38	55	93
Total no. of students	144	201	345
No. of countries students represent	30		
No. of countries the faculty represents	23		

In addition, more than 120 thesis studies or final dissertation works of master's and doctoral students that serve as the basis for technical and scientific publications.

Expansion of classroom and virtual academic options

In order to offer academic programs that respond to the new necessities and demands of the countries of Latin America, in the period 2014-2015 CATIE expanded its academic offering at the graduate level in both classroom and virtual modes on topics of international relevance.



- › **25 students** entered the **new virtual** international professional master's in watershed management
- › **Two** more master's included in the options
 - › International professional master's in Administration and Development of **sustainable businesses** (ADNS, Spanish acronym)
 - › International academic master's in mitigation and adaptation to **climate change** (MACC)

Ties of cooperation strengthened

As an international land-grant type of university, CATIE carries out its work in alliance with more than 400 partners, among them outstanding universities from around the world, which creates a favorable environment for integrated knowledge management open to the principal focuses and approaches being analyzed, discussed and implemented at a global level.



- › **23 agreements** with universities signed in 2014-2015:
 - › Pennsylvania State University
 - › University of Arizona
 - › University of Florida
 - › University of Delaware
 - › University of Costa Rica
 - › National Agrarian University, La Molina, Perú
 - › Iowa State University
 - › Montana State University
 - › University of North Texas
 - › California State Polytechnic University Pomona
 - › Graduate School of Chapingo
 - › National Autonomous University of Nuevo León, Mexico

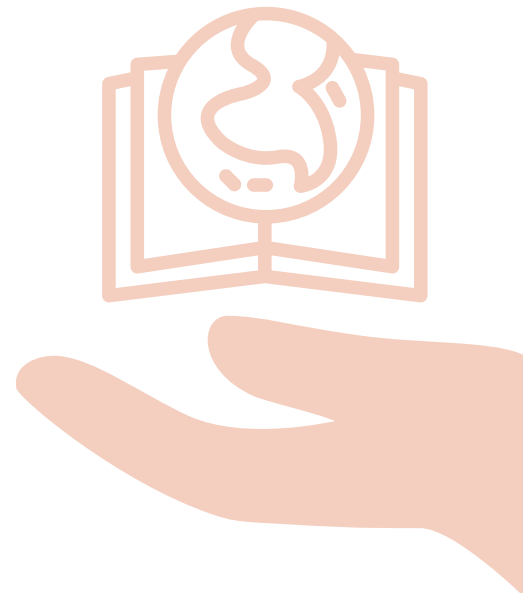
- › More than **65 agreements** now in force with universities around the world

- › Active **participation** in the Hispanic Association of Colleges and Universities (HACU)

- › Development of **cooperation** mechanisms with **four** groups of universities in the United States
 - › Land Grant Universities (APLU)
 - › Hispanic-Serving Agricultural Colleges and Universities (HSACU's)
 - › Tribal Colleges and Universities
 - › Historically Black Colleges and Universities (HBCU's)

From dream to reality: living the legacy of Henry A. Wallace

The Strengthening Agriculture and Rural Development through Education for Leadership Program (CATIE-IICA), implemented by the CATIE Graduate School, was expanded to benefit 14 new students and other academic activities. This program receives economic support from the United States Department of Agriculture and carries the name Henry A. Wallace Legacy Scholars, based on reviving the dream of Wallace, founding father of IICA and CATIE, during his time as vice president of the United States and as secretary of agriculture. It was Wallace who envisioned agriculture as a powerful impetus for the countries' development and a bond of brotherhood among peoples. He also saw America as an important alternative for tropical crops and livestock, which would require the establishment of research and teaching systems according to regional needs.



Access to knowledge and international information



The IICA-CATIE Orton Memorial Library, specialized in agriculture, forest sciences, livestock and related subjects, worked on projects during 2014-2015 to modernize the library and strengthen access to knowledge and international information.

Among more than 8,000 institutions, Ranking Web of Research Centers places CATIE:

- › Placed 439 at the global level
- › Position 19 in Latin America
- › Number 1 in Costa Rica, Central America and the Caribbean



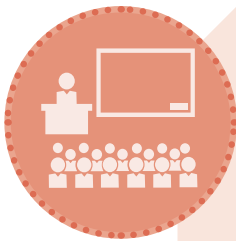
Implementation of ICT to strengthen knowledge management

- › Integrated system of management of **KOHA Libraries**
- › Online catalog with **100,000** entries (OPAC)
- › Institutional repository with **7,000** publications
- › Digital library with **110,080** new users via Internet
- › **53,473** sessions on Internet
- › **3,450,380** pages visited on Internet
- › Web page with **metasearch engine**
- › Library users benefit from the **increase** in services and information resources
- › **1,300** new bibliographic resources
- › **Two** interlibrary alliances (CGIAR Consortium Library and University of Idaho)
- › **New** websites on coffee leaf rust (roya), carbon and biomass, and cocoa
- › **Strengthening of information skills: 200** professionals and students of the CATIE Graduate Program trained

A world of capabilities

CATIE continues to offer one of the best options for training in the Latin American region. It also continues to be a leader among institutions for its ability to translate the results of research and development projects into teaching and learning processes through its training activities.

During 2014-2015, the center's Training Area gave courses and diploma programs at the headquarters in Costa Rica, with the participation of at least 30 countries. But it also held activities in the countries to respond to the needs for research and development projects of national and regional institutions.



21 strategic courses with the participation of **274** persons

177 men and **97** women

Topics covered: mitigation and adaptation to climate change, diversified management of forests and tools for monitoring carbon capture, among others.



63 special courses that trained **950** persons

673 men and **277** women

Topics covered: business development, watershed management, territorial management, ecosystem approaches, sustainable rural development, cacao cultivation, among many others

Virtual offering:
14 courses and
six diplomas, with
231 participants

Topics covered: business development, geographic information systems, integrated watershed management, climate change, fruit cultivation, water resources, bioenergy and food security





20 international cooperative courses taught as part of the Cooperative Studies Abroad **Program (CSAP)**

334 persons participated (220 women and 114 men)



Establishment and strengthening of **alliances** with educational institutions from **North America**, Europe and other regions of the world

Visits from recognized universities such as **Guelph, Purdue University, NELD, HBSI Alliance** (Delaware, Tuskegee and Alabama A&M) and others

Eight diplomas taught in the classroom with a total of **75** participants

Topics covered: biostatistics, integrated monitoring of ecosystem services and sustainable tourism, water resource management, climate change.



Virtual Education Program as a necessary complement to classroom education

- › An adequate **platform** for this program was developed according to international standards
- › **Updated** virtual education **processes and methodologies** were sought

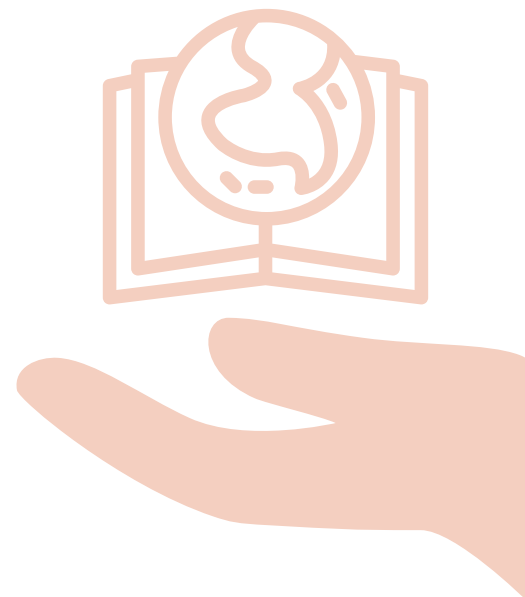
CATIE's strategic **positioning** within the group of national, regional and international higher education institutions that have an interest in having Costa Rica as the headquarters of activities for **international education**



Hand in hand with Biostatistics

The work of the CATIE Biostatistics Unit is recognized in the scientific environment of Latin America and the world.

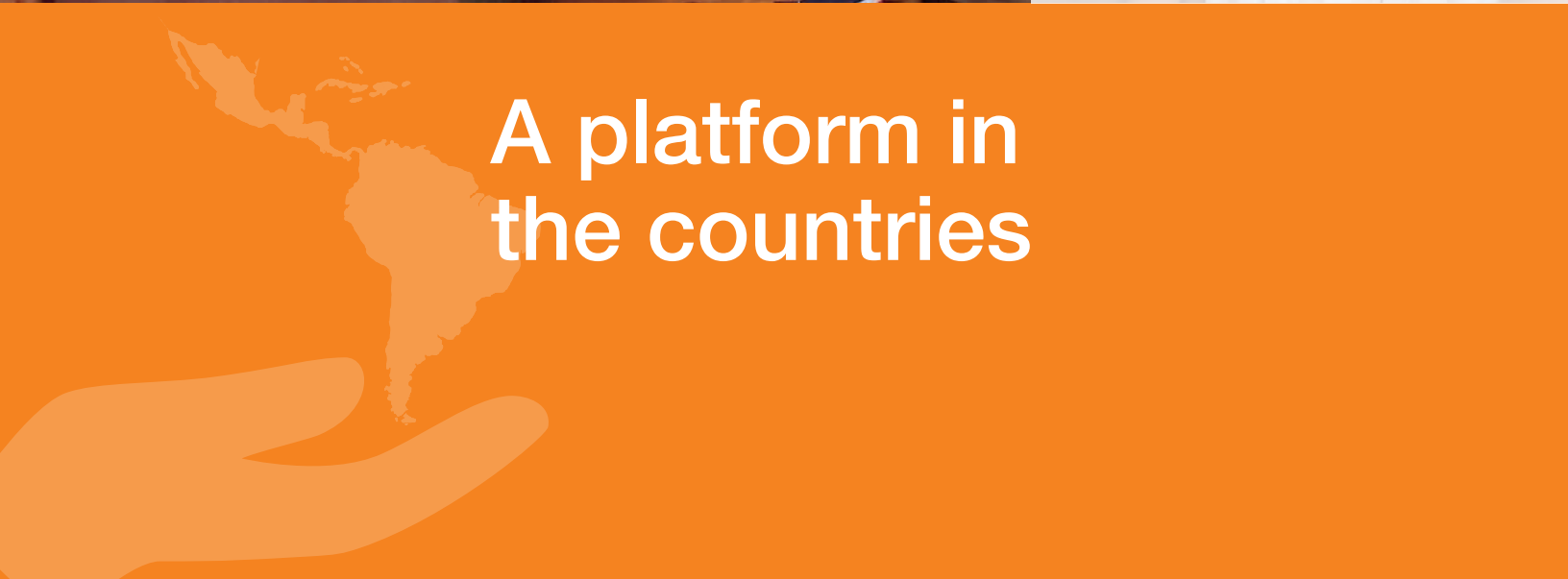
- › **Scientific publications and presentations:** two books, one book chapter, 17 articles published and 16 submitted to scientific journals with high impact including:
 - › Nature
 - › Agroforestry Systems
 - › Ecology
 - › Global Ecology and Biogeography
 - › Ecological Applications
 - › Tropical Ecology
 - › Ornitología Neotropical
 - › Environmental Entomology
- › **17 presentations** at international conferences and courses.
- › Development of **technical consultancies** for data analysis in agricultural technology research institutes in Central America, jointly with IICA
- › Increased capabilities and permanent update of **InfoStat**, **Q-eco** and **FDiversity** software
- › **Heavily** used by teachers and researchers around the world
- › **Dissemination of research** on statistics and its applications through training courses and presentations at international scientific events
- › **Five consecutive years** of teaching the international diploma program on biostatistics in different countries: Costa Rica, Guatemala, Ecuador, Bolivia.
- › In addition: **23** classroom courses on statistics, 4 graduate courses on biometry, biometry advising for CATIE students and technicians.





During 2014-2015, CATIE served the needs of the member countries through strategic alliances, technical assistance and capacity strengthening, among other actions.

Strategic pillar



A platform in the countries



CATIE's main activities in Central America are highlighted below, referencing the three pillars that define its outreach work: impact, knowledge management and technology transfer.

Impact in the region

All of CATIE's actions aim to influence or advocate, accompany, provide proposals and offer alternatives; this way, the knowledge generated is paired with its most developed and specific application.

In 2014 and 2015, the clarity of this concept of influencing or advocating to transform permeated the institution's work; the main activities are given in the matrix below by country.



Advocacy processes	
Country	Action
Guatemala	<ul style="list-style-type: none"> › Supported the development of 10 national policies and 6 international policies and instruments. › Implemented the first Local Extension System (Spanish acronym SLE) in San Juan Comalapa, Chimaltenango, as a mechanism for coordination between municipal organizations. › Contribution to the strengthening of the Guatemalan System of Protected Areas (SIGAP). › Implemented the Gender Policy in coordination with the Ministry of Agriculture, Livestock and Food (MAGA).
Panama	<ul style="list-style-type: none"> › Developed a Management Plan for the Río Chiriquí Viejo Basin, at the request of the National Environmental Authority. › Contributions in congresses, forums and national dialogues on territorial land management, climate change, water and agricultural production. › Analyzed lessons and guidelines on the role of agriculture in national development. › Supported the development of five national policies on climate change, water resources, forest management, rural development and environmental management.
Honduras	<ul style="list-style-type: none"> › Contributions in plans, policies and strategies for promoting socioeconomic development in harmony with natural resources, humans and social justice. › Promoted the promotion of models, methodologies, technologies and inputs for policies on sustainable land management through CAN using a CST approach. › Contributions in six events with national and local policy-makers on CST, climate change, the environment, forestry development and agroforestry systems with cacao. › Developed a proposal for training using the Farmer Field School methodology implemented by the National Program for Sustainable Rural Development.



El Salvador

- › **Raised the profile of the institution's work** at fairs and forums.
- › Contributions in **10 platforms** that promote CST and institutional services.
- › Provided **strategic support to MAG** with the development of a profile for sustainable development of the Dry Corridor in El Salvador, the dissemination of its strategic plan, and revision of the Strategy for Climate Change and the Climate Change Policy.
- › Closely **collaborated with programs** such as the MAG's Family Agriculture Plan and the Ecosystems and Landscape Restoration Program of the Ministry of the Environment and Natural Resources (MARN).
- › Served on the main **panels in the country** organized to improve the country's response to the productive, social and environmental issues it faces.
- › Contributions in **policies** related to food and nutrition security.

Nicaragua

- › Implemented **new practices** for the sustainable management of natural resources thanks to the partnership with CGIAR.
- › Developed **research** on forestry, cacao, coffee, climate change, and value chains for milk and beans.
- › Developed work plans to promote topics for **research and development** that were disseminated through CAN.
- › Developed **three national forums** for sharing methodologies and technologies on climate change, trees in agroforestry systems and climate-smart agriculture.



Climate Center: access to weather/climate information for Central America and the Dominican Republic

Climate Center is a regional platform of climate information that responds to the needs of different users that require this unified climate information, for adaptation to climate change and improvement of

productivity, competitiveness and quality of life. It was developed by CATIE and its partners DAI and IUCN through the Regional Climate Change Program funded by the United States Agency for International Development (USAID) in conjunction with SICA's Regional Hydraulic Resources Committee (CRRH) and hydro-meteorological services in the region.

The information will serve several different users, including:

- › **Meteorological services:** It will help them develop and show their products in an integrated manner.
- › **Users in the area of coffee:** It will allow producers and technicians know climate information and help the authorities in the sector connect with producers in the field, by collecting information about vulnerability and the presence of coffee rust on the farms.
- › **Users of fishing and aquaculture:** will also be able to connect at the regional, national and local level with information regarding weather conditions that affect their activities and fishery resources.

Advocacy actions took the form of policies, plans, strategies, platforms and support to programs and ministries in the areas of food and nutrition security, biodiversity conservation, climate-smart agriculture, watershed management, climate change, gender equity, sustainable forest management, ecosystem services and agroforestry. CATIE has likewise actively participated in congresses, forums, roundtables and national dialogues.

Without a doubt, the policymakers of the member countries have found high-value strategic partners in CATIE's National Offices (NO).



Spreading knowledge in the region

Knowledge management is at the heart of CATIE's daily work, from its production to its dissemination, use and implementation. From this perspective, the main actions of the institution under this rubric are given in the matrix below by country.

Knowledge management	
Country	Action
Guatemala	<ul style="list-style-type: none"> › Nine Guatemalans graduated from the CATIE Masters Program in diverse areas related to agriculture, environment and natural resource management. › Eight graduation projects and five masters theses created inputs for partners on topics of interest. › 1,462 persons (34% women and 66% men) improved their knowledge, capacities and skills in the areas of ecosystem services, climate change mitigation and adaptation, biostatistics, land management, agroecology, carbon monitoring and sequestration, and natural resource management, among others. › Demonstrated the success, sustainability and ecological integrity achieved in the concession procedure for sustainable forestry management in the Maya Biosphere Reserve (MBR).
Panama	<ul style="list-style-type: none"> › 300 producer families and more than 200 professionals received training on climate change, soil management, climate-smart agriculture, water footprint in livestock production and watershed restoration. › Provided guidance to Zamorano students for their field work on sustainable forestry management and silvopastoral systems.
Honduras	<ul style="list-style-type: none"> › Defined a research agenda with public and private national universities. › Developed two thesis research projects on climate change, territorial land management and ecosystem services. › Five Hondurans graduated from the Graduate School and seven applied. › Approximately 2,303 persons acquired new knowledge through 162 short courses.
El Salvador	<ul style="list-style-type: none"> › Developed international courses to train professionals from national institutions on forest inventories, remote sensors, blue carbon measurement in mangroves, participatory management techniques and financial education for cooperatives.
Nicaragua	<ul style="list-style-type: none"> › Seven Nicaraguan professionals graduated from the CATIE Masters Program, conducting research on: <ul style="list-style-type: none"> › Water harvesting and protected agriculture technologies › Production and commercialization of <i>Eucalyptus camaldulensis</i> › Analysis of management conditions that fostered the impact of coffee leaf rust › Analysis of the capacity and measures to manage floodways in the Estelí River sub-basin › 12 professionals became social-organizational development facilitators and 35 became Farmer Field School facilitators. › 34 professionals acquired knowledge on watershed management using a CST approach agroforestry cacao production. › Conducted 38 courses with PRACAMS.

Several thousand producer families and hundreds of professionals and technical trainers are among those impacted by knowledge management; they have acquired new knowledge on ecosystem services, climate change mitigation and adaptation, biostatistics, territorial land management, agroecology, agroforestry, carbon monitoring and sequestration, natural resources management, soil management, climate-smart agriculture, water footprint in livestock breeding, watershed restoration, sustainable forestry management, silvopastoral systems, forest inventories, blue carbon measurement in mangroves and financial education for cooperatives.

All of this knowledge, which has been transferred to diverse stakeholders in the countries, makes a significant contribution to the reduction of poverty and economic, social and environmental development in the region.

Transferring technology to the region

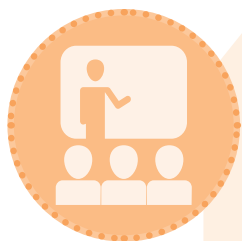
Through its research and development projects, CATIE created and identified best practices, innovations and methodologies to promote the sustainable management of agriculture and natural resources. Subsequent to this, it has worked to ensure these new technologies are transferred to the countries for use in the field by producer families and are promoted by the different local and national stakeholders.

In this context, the following matrix presents the main actions on technology transfer that CATIE implemented in the countries in 2014 and 2015.



Technology transfer	
Country	Action
Guatemala	<ul style="list-style-type: none"> › 9,638 families implemented innovations for food production and consumption and 1,318 courses were taught in Farmer Field Schools on climate change adaptation practices. › Developed 807 plans for group farms and 262 community plans and trained 738 volunteer promoters through the Rural Development Learning Centers (Spanish acronym CADER), › With the Territorial Business Training Schools (EFET), 317 small producers initiated business development processes and engaged in value chains. › Restored high-risk areas of the Acatenango Volcano that conserved 890 hectares of natural forest, designated 67 hectares for reforestation and soil conservation, and benefitted 65 families with incentives.





Country	Action
Panama	<ul style="list-style-type: none"> In the Embera Wounaan indigenous region, worked on the Reduction of Emissions from Deforestation and Forest Degradation (REDD+), through the Regional Climate Change Program (PRCC). Conducted field studies, a sustainable forest management plan study, workshops, training and technical assistance. In Ngäbe Buglé, gave two diploma courses on the formulation of development projects, networking and cooperatives. 40 youths concluded the diploma program, developing five projects for their communities and 18 business plans. Conducted a study assessing mangrove ecosystem services in David and the Golfo de Montijo Wetlands that included a quantification of carbon capture (the first of its kind in the country). Joined the “Alianza por el millón de hectáreas [Million Hectare Alliance],” which aims to protect the country’s forests and biodiversity.
Honduras	<ul style="list-style-type: none"> Developed seven documents to promote agricultural, agroforestry and sustainable forest systems. These materials are used in the Farmer Field Schools for managing kitchen gardens, sustainable home gardens, community forestry, etc. Through the partners, 130 producer families received inputs for developing their work. Established three pilot sites using applications and practices under the CST approach.
El Salvador	<ul style="list-style-type: none"> Consolidated the CST approach in two territories. Research on blue carbon and mangrove ecosystem services in the Jaltepeque estuary transferred information on measurement methodology to national institutions (MARN and MAG) and the academy. 266 families learned about watershed management practices, agroforestry systems and territorial-level climate change. Developed five innovative agricultural technology products for MAG. Developed practices to reduce problems related to food insecurity in the Santa Ana and Chalatenango departments: <ul style="list-style-type: none"> Use of environmentally friendly production technologies Business training Farmer Field Schools as an agricultural technology extension method with market links and a gender-based approach
Nicaragua	<ul style="list-style-type: none"> 1,600 families are applying and innovating various practices for the use and diversification of their home gardens and their agricultural and livestock production activities based on what they learned in the Farmer Field Schools. Management of half-orange kiln technology to produce charcoal has increased families’ production yields. 1,800 families are applying methodologies and technologies in business plans, home garden production, health management of large and small livestock, and agroecological pest and disease management for cacao, coffee and basic grains.

Notable examples of technology transfer include the implementation of innovations for reducing food insecurity, watershed management practices, agroforestry systems and adaptation to climate change, innovative agricultural technology products, and the use of technologies such as the half-orange kilns for charcoal and environmentally friendly production technology.

The application of methodologies and technologies such as business plans, home garden plans and community plans are also noteworthy, along with methodologies for measuring blue carbon and mangrove ecosystem services.

Putting this set of technologies into practice has directly impacted the region because it enables the countries to have the appropriate and necessary tools to face global challenges and promote sustainable development.

Links with other countries



Mexico

Using the concept of institutional liaisons, between 2014 and 2015 CATIE strengthened its partnerships in Mexico to foster collaborative work:

- › At the governmental level with SAGARPA, SEMARNAT, CONABIO and INEGI
- › At the academic level with ECOSUR, UNACH, UADY and UNICACH
- › At the cooperation level with partners including FAO, TNC, CI, IICA, Rainforest Alliance, GIZ and Ecoagriculture Partner.

It also consolidated funding from CATIE donor friends such as GEF, ICI/BMU and the World Bank.

Other noteworthy accomplishments of the last two years include:

- › Held the **Latin American Seminar on Indicators and Monitoring in Productive Landscapes** organized by CATIE, CONABIO, GIZ, CI, Ecoagriculture Partners and Bioversity International, with the participation of more than 45 researchers from the region.
- › Jointly managed resources with SAGARPA, ENDESU, FAO and SEMARNAT with the GEF for the **development of sustainable and diversified livestock production** in two regions of Mexico.
- › Managed CATIE-IICA resources with support from CONABIO and SAGARPA through the ICI/BMU for the **scaling up of biodiversity and ecosystem services in ranching landscapes** in three regions of Mexico.



Bolivia

During 2014 and 2015, CATIE maintained an institutional position for joint work with Bolivia on strengthening local organizations through the transfer of technology and skills.

In this context, 16 cooperative agreements were signed in 2014; 10 of these are still in effect. In addition, progress was made on, collaborative actions with the Agronomy Faculty of the Higher University of San Andrés.



Dominican Republic

In the Dominican Republic, CATIE has worked on two areas, one with the Ministry of the Environment and Natural Resources and the United Nations Development Programme, and the other with the Regional Climate Change Program.

In the context of the first area, it carried out the overall coordination of a participatory process for the formulation of seven plans for the conservation and sustainable use of important protected areas in the country. As part of the second area, it conducted a course-workshop to begin strengthening technical skills in 21 public officials and key stakeholders through the identification of opportunities for implementing actions and formulating integrated national policies and strategies for climate change mitigation and adaptation.



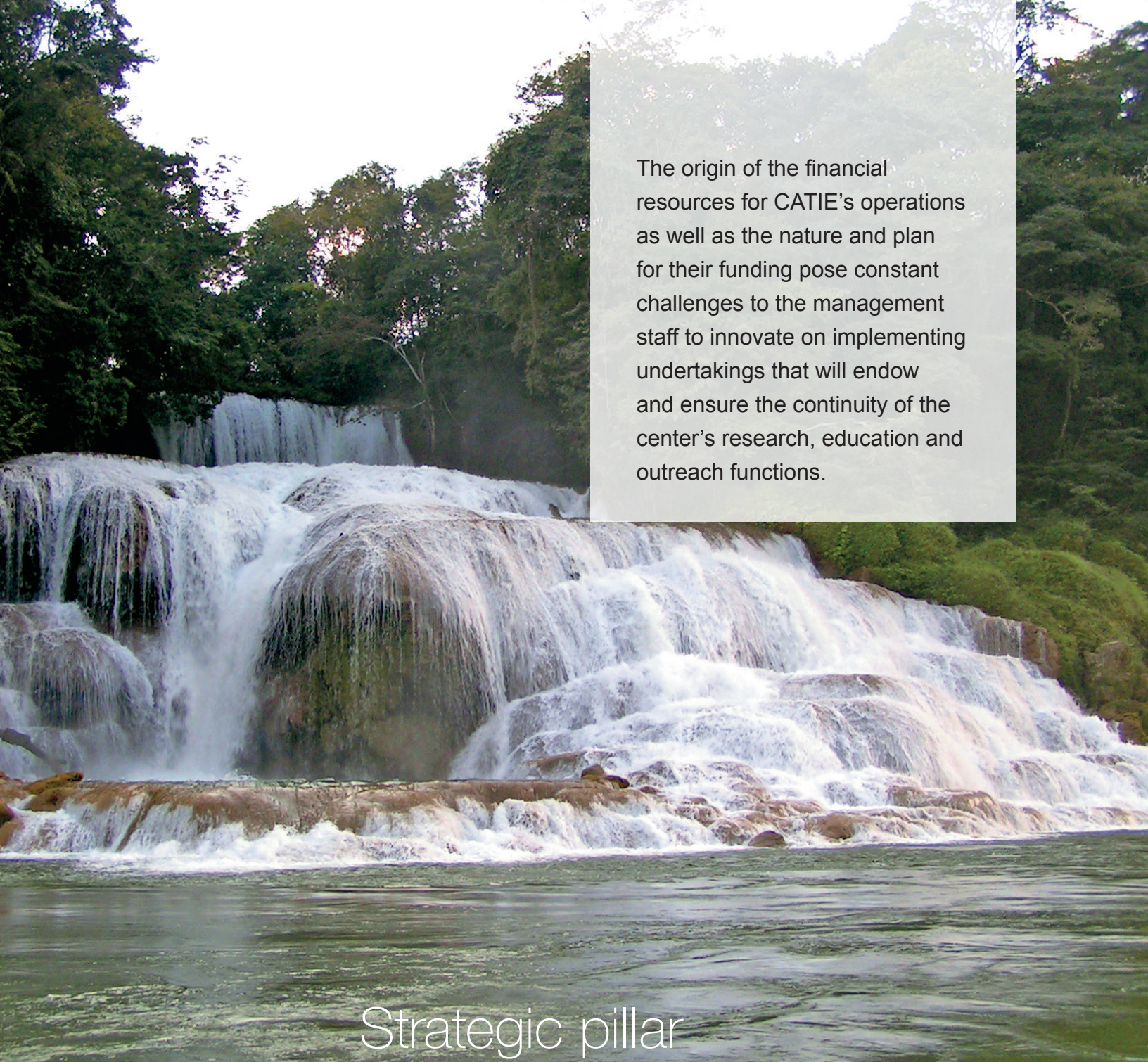
Haiti, Colombia, Peru and Paraguay

In conjunction with the National Offices, CATIE strengthened actions to promote business negotiation in Haiti, Colombia, Peru and Paraguay during this period.

Peru and Haiti are seen mainly as countries to establish project management offices. In the case of Haiti, CATIE offered technical support to the Ministry of the Environment during 2015 to prepare the National Climate Change Strategy.

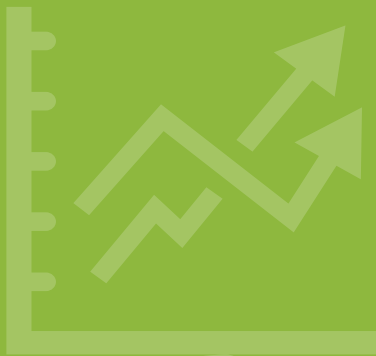
Two projects were implemented in Peru, one on CST in the Shullcas River Watershed in the Huancayo region and another related to the cultivation of crops on terraces.

Likewise, CATIE signed agreements in this South American country with UNA La Molina, the Regional Government of Junín, the National Central University of Peru and the Peruvian Association for Conservation to begin operations.



The origin of the financial resources for CATIE's operations as well as the nature and plan for their funding pose constant challenges to the management staff to innovate on implementing undertakings that will endow and ensure the continuity of the center's research, education and outreach functions.

Strategic pillar



Finances

The core budget is not more than 15-17% of the total and the amount corresponding to dues from member countries and IICA's contribution does not exceed 5%. This financial structure, with 95% based on pledged external resources and self-management, not only places CATIE as an organization that constantly strives to maintain reasonable budgets, its ability to establish reserves and maintain liquidity is complicated.

CATIE receives the largest share of its resources from donors. About 50% of its operations are financed through agreements; 25% through self-management conducted by the different units with actions ranging from small agreements to training and advisory services, many of which are also restricted resources. This has also allowed the establishment of an entrepreneurial institutional culture committed to making contributions to the core functions of the Center. The remaining 25% comes from the core budget (dues, contributions and investments, indirect administrative costs and productive activities).

Behavior of finances in recent years

The need to protect the financial health of the Center ranges from protecting and encouraging this culture to establishing administrative and financial management that ensures CATIE's operational sustainability and investment resource management capacity. Establishing reserves or injection of working capital to strengthen the management model are alternatives under analysis.

CATIE must be more rigorous in its control measures and establish a plan that will allow it to recover its finances, because at the end of 2015, it had a negative balance of USD 530,000 in comparison with the positive results of USD 103,000 and USD 315,000 for 2014 and 2013, respectively.

In 2015 alone, overall cash showed a drop of USD 2,386,000, which has led to CATIE to take urgent austerity measures, reduce costs and pursue new fundraising mechanisms. However, pre-financing practices for the activities of agreements and accounts receivable from member countries should be resolved as soon as possible to overcome liquidity problems.

Financial indicators: 2014-2015 comparative

6.1% income 8.0% expenditure

Deficit of USD -530,000. This deficit corresponds to a decrease in income for the core budget, coupled with the loss of biological assets and deteriorating accounts receivable from the countries

Commercial activities

Total income: -2.5%. This decrease is due to a drop in prices for coffee and sugarcane.

Contributions to the core budget: USD 478,000. Handicapped by the loss of biological assets.