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**Reports of the Tropical Agriculture Research and Higher  
Education Center (CATIE) presented to the Governing  
Council**

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Solutions for environment and development  
Soluciones para el ambiente y desarrollo

# Annual Report 2019





An aerial photograph of the CATIE campus, featuring a large, multi-story building with a red roof and a central courtyard. The campus is surrounded by lush greenery, including palm trees and other tropical vegetation. A large pond is visible in the foreground, reflecting the surrounding landscape. The background shows a hilly area with more trees and some buildings.

## Maintaining CATIE's foundational spirit in times of change

In 1973, CATIE (Tropical Agricultural Research and Higher Education Center) was established as an autonomous entity dedicated to research, higher education and outreach activities.

Since then, CATIE has maintained its unique focus on integrating higher education and holistic research that has led to new approaches, including agroforestry and silvopastoral systems for sustainable agriculture and livestock, model forests, forest concessions, the blue economy and ecosystem services. In the coming years, priority will be given to CATIE's recognition as an international academic center, with the pre-eminence of an international university. This will allow us to ensure that its founding spirit, with which it operates to date, is maintained.

2019 was a year of challenges, opportunities and achievements in all our areas of work. In this report, we present the actions developed by the Center to support the countries of the region in finding the solutions they need to achieve sustainable and inclusive development.

**Muhammad Ibrahim**  
**Director General of CATIE**





CATIE AT A  
GLANCE

**Stories that make a  
difference**

# Towards a circular economy in local governments of Costa Rica

The circular economy generates 1.1% of gross domestic product (GDP) worldwide, being an alternative to the linear economy. For this reason, in 2019, the Municipality of Turrialba in Costa Rica, the Institute for Municipal Development and Advisory Services (IFAM) and the Ministry of Environment and Energy (MINAE) signed a letter of understanding for the implementation of a project to have circular economies in local governments. This project will be financed by the Climate Technology Network (CTCN) and implemented through CATIE. The project aims to incorporate the circular economy approach into municipal planning frameworks, promote more sustainable consumption patterns, improve solid waste management and reduce total CO2 emissions in local governments, specifically in the city of Turrialba; thus contributing to the country's goal of achieving more sustainable and carbon neutral development. With this initiative, CATIE maintains its commitment to continue working with municipalities and local partners to promote innovations in their economies and the transition towards sustainable production models in the framework of a green, circular and efficient economy. In this context, CATIE has an important role to play in generating knowledge and strengthening capacities at different levels.

Mr. Carlos Manuel Rodríguez, Minister of Environment and Energy of Costa Rica, said:

*“This initiative represents an excellent opportunity to complement, from the local governments, what the country has been doing at the macro level in order to facilitate a transition to a circular economy. At the macro level this concept is positioned with decision makers and structures have been developed to facilitate its implementation. We must then start to close the gap with a bottom-up approach. This initiative will give a dose of political reality to the processes developed at the macro level. I also consider it very important that academia, international cooperation and local governments work in an alliance to strengthen the process by which we aspire to move towards a green-circular economy.”*



# The future of coffee and cocoa is safeguarded at CATIE

For more than 70 years, international coffee and cocoa collections have conserved genetic resources that have made it possible to improve existing coffee and cocoa varieties. For several decades, CATIE, together with various partners, have been conducting research using the genetic wealth that exists in the collections and they have managed to generate six new varieties of cocoa and F1 hybrids of coffee with characteristics such as disease tolerance, ability to adapt to various climate and soil conditions, high productivity and excellent quality.

The new cocoa and coffee materials have been successfully disseminated to cocoa and coffee growing families in Central America and Mexico, contributing to the increased productivity and sustainability of the crops, as well as the income of the producing families. These actions generate economic and social well-being while conserving biodiversity and ecosystem services through the agroforestry systems that are formed from these crops.

The International Cocoa Collection began in 1944 with materials introduced from 25 different countries, including Ghana, Brazil, Belize, Colombia, Honduras, Ecuador, Indonesia, Trinidad and Tobago, Cameroon and Malaysia.

It currently has 1,235 accessions and was declared one of the two most important international cocoa collections in the world by the United Nations Food and Agriculture Organization (FAO). It is also a central part of the global strategy for the conservation and use of cocoa genetic resources promoted by Bioversity International.

The International Coffee Collection began in 1949 with materials introduced from Brazil, Guatemala and El Salvador. Later, wild *Coffea arabica* materials were brought in from Ethiopia, Kenya and Yemen, collected by the United Nations Food and Agriculture Organization (FAO), the French Scientific Research Institute for Development Cooperation (ORSTOM, today IRD), and the International Plant Genetic Resources Institute (IPGRI).





This coffee collection, composed of around 2000 varieties, is the fourth largest in the world and the most important collection of *Coffea arabica* in the Americas, both in terms of the number of varieties and the genetic diversity it conserves. It is considered one of the four collections of origin in the world, according to the Global Strategy for the Conservation of Coffee Genetic Resources developed by the Global Crop Diversity Trust and WORLD COFFEE RESEARCH (WCR). Both collections are in the public domain and since their creation they have supported the genetic improvement programs of many countries around the world, offering opportunities to produce differentiated chocolates and coffees that are healthier, have better quality, and innovative flavors.

Over the years, CATIE has had the support of important partners for the maintenance of the collections and the development of research, including PROMECAFE, the Costa Rican Coffee Institute (ICAFE), GAIA Coffee, Cafetalera Orígenes, San Francisco Bay Coffee, the PROCAGICA Programme (of the INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE and the European Union), Crop Trust, WCR, the Centre for International Cooperation in Agronomic Research for Development (CIRAD) Starbucks, the Fine Coffee Association of Costa Rica, Nestlé, Mars, Bioversity International, WORLD COCOA FOUNDATION (WCF), the Ministry of Agriculture and Livestock of Costa Rica (MAG), the National Institute for Agricultural Innovation and Technology Transfer (INTA), Korean Cooperation for Food and Agriculture in Latin America (KOLFACI), the United States Department of Agriculture (USDA) and FAO.





# A regional strategy for climate change adaptation and mitigation

In order to create a regional strategy for climate change adaptation and mitigation, in 2017 CATIE gave life to the Latin American and Caribbean Platform for Sustainable Livestock Intensification, which was financed by New Zealand, Fontagro and CATIE. In 2019, some of the most relevant outputs of this initiative include:

- Document on the state of the art of research and innovation for the sustainable intensification of livestock production systems and climate change adaptation/mitigation in Latin America and the Caribbean
- Analysis of the strengths and weaknesses of current livestock research programs in Latin America and the Caribbean (LAC).
- Coordinated regional agenda for research and development of sustainable intensive livestock systems in the context of climate change and a plan for its implementation.
- Regional database on sustainable livestock production technologies, practices and innovations, including methodologies and approaches to adapt and mitigate climate change in LAC, as well as people working on these issues.
- Local and regional events to share information with stakeholders on livestock systems and low greenhouse gas (GHG) emission technologies for climate change adaptation and mitigation.
- Document on training needs for capacity building in the sustainable intensification of animal production systems in Latin America and the Caribbean.
- Training materials for workshops.
- Online courses on topics relevant to the interests of platform members focused on sustainable intensification of livestock systems
- Inventory of existing and new policies for the promotion of sustainable livestock intensification in LAC
- Summary of policies for the promotion of intensive livestock systems with low greenhouse gas emissions in different countries of the Americas
- Drafting of five proposals and a concept note to give continuity to the actions carried out by this project.



# Blue carbon: an ally in combating climate change

Coastal-marine ecosystems and communities are highly susceptible to climate change. They are already suffering from the negative effects of increased and more frequent storms, storm surges and hurricanes; coral mortality; decline in fisheries and other extractive resources associated with food security and livelihoods; loss of tourism potential; coastal erosion; and displacement of infrastructure. If sea level rise trends continue, nearly one billion people will be affected around the world by 2050.

The cost of global inaction far exceeds that associated with our urgent climate change adaptation needs. This urgency is greatest in our region, one of the most critically threatened by the negative impacts of climate change worldwide. Given this dynamic and since 2011, CATIE has been one of the global pioneers of “blue carbon”, developing scientific and political actions as innovative tools for climate action to strengthen the flows of ecosystem services and the livelihoods of rural marine-coastal populations in Latin America and the Caribbean. Toward this end, CATIE focuses on mangroves as the main ecosystems capable of providing a range of climate change adaptation and mitigation solutions for our developing societies.

After a decade of work on the issue, an emerging and basically unknown global issue has been positioned as a technical and political priority to increase the climate ambition of countries within the Paris Agreement. CATIE’s current leadership is undeniable: it is an important member of the International Partnership for Blue Carbon, one of the largest intergovernmental and multi-sectoral platforms developing the theme. CATIE has a permanent presence in the Scientific Working Group of the International Blue Carbon Initiative, the most important scientific and policy advisory platform in the world; and its senior specialist in the subject is the lead author of the IPCC’s Special Report on the Ocean and the Cryosphere. At the national level, methods for quantifying blue carbon stocks in mangroves have been developed and technical capacities strengthened in 75% of the countries in Central America and the Dominican Republic. In addition, the development of policy statements, instruments and actions has been facilitated in the service of the governments of Costa Rica and Colombia. The integrated institutional vision – natural resources, society and sustainable development – is making it possible to enhance the innovative synergies needed to meet the goals above and to strengthen the economic, social and ecological resilience of the marine-coastal territories of the American continent.





# MESCYT and CATIE encourage dominican professionals to obtain quality graduate degrees

CATIE and the Ministry of Higher Education, Science and Technology (MESCYT) of the Dominican Republic are working together to strengthen the capacities of professionals in the Dominican Republic in the areas of sustainable agriculture and natural resource management, in order to contribute to the sustainable and economic development of the country.

MESCYT has awarded scholarships to send a total of 16 Dominican students to CATIE for the 2019-2020 and 2020-2021 academic periods.

In the last decade, 10 Dominicans have graduated from CATIE (six men and four women). Therefore, according to Isabel Gutiérrez, dean of the Center's Graduate School, this represents an important opportunity for the professional and personal growth of more young Dominicans.



## Stories of Success

### Climate-smart Energy

In 2019, CATIE installed 72 solar panels in one of its buildings in order to demonstrate the savings that can be achieved with the implementation of this type of technology. CATIE hopes to gradually replicate this initiative in other institutional facilities of higher-energy consumption. With this pilot project CATIE is moving towards the use of clean energy and climate-smart buildings, thus contributing to the environment by reducing the effects of global warming.

The size of the photovoltaic plant is 23.40 KwP and it generates 32,563 kWh per year (92% of the total energy consumed by the selected building). This represents an economic saving of USD 6,200 per year.

The total investment of the project is of approximately USD 29,000 and the return on investment will be achieved in about 4.8 years. The installation of the panels and the entire system was developed by the company Enertiva through a request for bid process, and in coordination with CATIE's Department of Information Technologies and Communication.





## CIRAD and CATIE: a cooperation relationship of more than 30 years

For more than 30 years, CATIE and The French Agricultural Research Centre for International Development (CIRAD) have carried out relevant agricultural research for the region, thereby improving the quality of life of rural populations. Currently 10 CIRAD researchers work at CATIE headquarters in Costa Rica with a shared-cost partnership model. This model has achieved a win-win relationship where both institutions collaborate together in coffee-related projects, such as monitoring of the incidence of rust, agroforestry systems, cocoa, forests and remote sensing, among others.

At the end of 2019, the Directors General of both institutions signed an agreement to renew a second phase of the institutional research partnership for 10 more years (2017-2027) towards keeping the progress of initiatives such as the Scientific Cooperation Platform (PCP) and Agroforestry Systems with Perennial Crops. These initiatives contribute to maintain and increase the productivity, competitiveness, and sustainability of agroforestry systems with coffee and cocoa in Mesoamerica. The platform also involves the Regional Cooperative Program for the Technological Development and Modernization of Coffee Cultivation (PROMECAFE), the International Centre for Research in Agroforestry (ICRAF) and Bioversity International.

Michel Eddi, president and Director General of CIRAD, during his visit to CATIE for the signing of this agreement, commented that the long-term cooperation relationship kept and promoted by CATIE and CIRAD is the best way to face enormous national and global issues such as climate change and the degradation of biodiversity: "Both institutions have the capacity to build towards a common future, working on the topics and objectives we share to develop projects, mobilize responsibilities and find resources to work on what we must."





CATIE AT A  
GLANCE

**Our numbers in 2019**

# Projects negotiated



**47**  
projects  
negotiated

that include:

- Technical assistance
- Training courses
- Research initiative



The approved  
proposals total  
**USD**  
**6 591 456**



## Distribution of plants and seeds

**28 000** coffee plants in greenhouses for distribution.

**4073 kg** of forest seeds from 40 species to 52 clients in 14 countries.

**115 951** hybrid plants and coffee varieties sold.

326 seed samples were collected from coffee accessions for distribution to 19 beneficiaries in five countries: Guatemala, Mexico, Nicaragua, Costa Rica and Honduras.



## Productivity

To increase seed production of coffee varieties, a 2 ha Seed Garden was established which includes 10 of the most important varieties.



## New businesses

A specialty ground coffee was marketed and “Productos Cabiria” was created to give added value to the fruit trees of the Botanical Garden.

# Publications

## 137 publications

- 8 libros y monografías
- 3 Books, book chapters and monographs
- 18 Papers at conferences
- 31 Papers in scientific journals
- 7 papers en revistas técnicas
- 4 Presentations at congresses
- 2 Technical series
- 53 Theses
- 11 Reports and other publications



# Finanzas

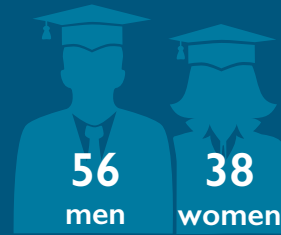
**PENDIENTE INFORMACIÓN**

# Graduate school

## New enrollments

94

new students in the 2019  
*Master's Program*



18 countries

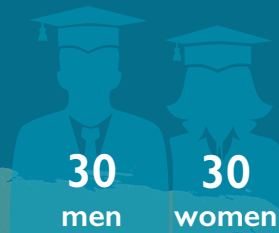
- Belize
- Bolivia
- Brazil
- Colombia
- Costa Rica
- Ecuador
- El Salvador
- United States
- Guatemala
- Haiti
- Honduras
- Mexico
- Nicaragua
- Panama
- Paraguay
- Peru
- Dominican Republic
- Taiwan

1 Mexican student  
in the *Doctoral Program*

## Graduates

60

graduates from the  
*Master's Program*



20 countries

- Belize
- Brazil
- Chile
- Colombia
- Costa Rica
- Ecuador
- El Salvador
- Spain
- United States
- France
- Guatemala
- Haiti
- Honduras
- Mexico
- Nicaragua
- Panama
- Paraguay
- Peru
- Dominican Republic
- Uganda

1 Costa Rican graduate  
from the *Doctoral Program*



## Indicadores

**8083 persons**

(31% women and 69% men) from

**26 countries strengthened  
their capacities**

The training offer included: courses, the cooperative international studies program (CSAP), diploma programs and professional internships.

- 
- Argentina
  - Bolivia
  - Brazil,
  - Canada
  - Chile
  - Colombia
  - Costa Rica
  - Cuba
  - Ecuador
  - El Salvador
  - United States
  - Guatemala
  - Holland
  - Honduras
  - Mexico
  - Nicaragua,
  - New Zealand
  - Panama
  - Paraguay
  - Peru
  - Puerto Rico
  - Dominican Republic
  - Uruguay
  - Venezuela







**CATIE IN DETAIL**  
**Education that meets the  
region's demands**

# Postgraduate Training of the highest level

*Our Graduate Program enjoys high prestige and international recognition for its academic quality.*

With more than 70 years of training leaders in Latin America and the world, in 2019 the Graduate School launched three virtual master's degrees in the following areas:

Watershed Management  
Agribusiness Management and Sustainable Markets  
Agroecological Intensification and Food Security

Thanks to this, the School admitted about 94 students (including on-campus and online Master's degrees). More than 100 applicants who know about CATIE's experience and quality and who wish to be part of our prestigious institution were entered into the database of Admission: 80 in on-campus Masters Programs, 28 exchange students and 4 as part of the exclusive program for Graduates.

CATIE's educational offer is known through its Graduates who currently contribute to CATIE's leadership in Postgraduate Education working in academia, research centers and public and private entities. Additionally, in 2019 an online consultation and verification of the information of each Graduate from anywhere in the world was made available in an updated and transparent way.

The Graduate School, aware of the socioeconomic situation of most of the students applying for masters and doctoral degrees, offers financial aid initiatives and manages the necessary financial resources with third parties so that the financial aspect is not a limitation for the candidates. For this reason, strategic alliances were also key in 2019 in facilitating scholarship management processes for applicants and other initiatives, achieving the signing of seven agreements with institutions dedicated to the promotion and financing of higher education.

2019 was particularly special because of constant changes in the governments of the hemisphere and their socioeconomic crises, which directly affected efficiency in financial resource management. Therefore, countries such as Mexico, Colombia, El Salvador, Costa Rica, and Panama, which have historically contributed resources to the Scholarship Program, are limiting their decisions and reducing their available funding for education. These changes are guiding the Graduate School to propose a strategy for approaching potential funders other than the traditional ones, including private companies and the establishment of "basket" programs in which different sources contribute to a common fund that subsequently makes it possible to redistribute resources.

## **Agreements with institutions dedicated to the promotion and financing of higher education**

Agreements were signed with the Ministry of Higher Education, Science and Technology (MESCYT) of the Dominican Republic; the University of Texas of the Rio Grande Valley; The 1890 University Foundation of the United States; Weihenstephan-Triesdorf University of Applied Sciences of Germany; Consortium Montpellier University of Excellence (MUSE) of France; and the University of Quisqueya of Haiti.

Other relevant actions in areas such as student wellbeing, the exchange program, accreditation and research activities are mentioned below:

### Student wellbeing

With the aim of promoting adequate and harmonious conditions for the good academic performance of the student community and the wellbeing of their families, the Student Welfare Office improved the processes for visa applications and immigration procedures and provided accompaniment and counseling to students for emotional situations and/or conflict management. Monthly tours of student housing facilities were institutionalized for timely reporting of problems, damages, and situations for improvement. Similarly, several cultural exchange spaces were provided throughout the year and with the aim of supporting students in the care of minors, providing them with a space close to their academic activities, a children's playroom was opened in the Graduate School, which includes furniture, toys, games and other recreational elements.

### Exchange Program

The Exchange Program has been particularly attractive to undergraduate and graduate students. In 2019, **50% of the students enrolled (14 students) were Europeans** from countries such as France, Spain and Italy. Some students who did their undergraduate internship at CATIE even returned to do their graduate internship or graduate studies at the School.

### Research Symposium

For the third consecutive year, the Graduate School held its [research symposium](#); an academic space where students can socialize with the institution's scientific community. Thirty-seven different research projects in nine countries were presented on topics related to the environment, natural resources and agriculture. The symposium represented a space for academic exchange between students and professor-researchers of the Center and, as in the two previous editions, it included four thematic panels:

1. *Agroforestry and sustainable agriculture.* With 16 investigations to be carried out in five countries: Dominican Republic, Guatemala, Honduras, Mexico and Costa Rica.
2. *Economics, development and climate change.* With 10 investigations in Costa Rica, Dominican Republic, Colombia, Honduras and Guatemala.
3. *Management and integrated management of watersheds.* With 4 investigations to be carried out in Costa Rica and the Dominican Republic.
4. *Management and conservation of tropical forests and biodiversity.* With 7 investigations to be carried out in Costa Rica, Guatemala, Honduras, Nicaragua and the Dominican Republic.





## Accreditation

The re-accreditation process for the Master's and Doctoral Programs with Costa Rica's National Higher Education Accreditation System (SINAES) promoted discussions and workshops throughout 2019 on the review and adjustment of graduation periods, curricula and evaluation criteria.

## Success story: beyond the classrooms

Hellen Choco graduated in 2019 from the Master's Program in Economics, Development and Climate Change. Upon leaving CATIE, this young professional from Belize took on an important task for the development of her country: **to be in charge of facilitating the formulation of agroforestry public policy for Belize.** In this role, Choco will have an opportunity to interact with high-level representatives and obtain the necessary inputs to make this project a reality.

"I decided to study at CATIE because it is an institution well known for its development and research projects, especially in the agricultural world. I am sure that leading the development of this policy has been possible thanks to the courses and teachings I received during my studies at CATIE. I believe that this is a way to make a positive contribution to my country; I will be able to promote major changes that will contribute to the conservation of the environment and help with climate change adaptation and mitigation", **Hellen Choco, a graduate of CATIE from Belize.**



Raquel Vélez, a student from Colombia, shared her research which she presented at the Research Symposium of CATIE's Graduate School in San Antonio de los Caballeros, the Experimental Station of the Sugarcane Research Center of Colombia (CENICAÑA), as well as at a workshop organized by this institution where she also had the opportunity to participate as a speaker.

"At the end of the presentation, the director of the Tibaitatá Research Centre of AGROSAVIA invited me not only to visit the Centre's facilities, but also CIMPA's headquarters in Barbosa (which specializes in panel production). In my tour of these institutions I had two key interviews with experts in the area: Jader Rodriguez, the engineer in charge of energy

efficiency in sugar mills, and Gonzalo Rodriguez Borray, economist in charge of the social part of the projects", **Raquel Vélez, Colombian student, M.Sc. candidate in Economics, Development and Climate Chang.**



# Renewing our training offer

Training has been a key tool for CATIE in building capacity; the institution has versatility and a capacity to react promptly on issues related to the situation and the specific demands of the countries. However, today the subject is of strategic importance, in both classroom and virtual modes. One significant fact that has become a trend is that technicians, government officials, and private sector and civil society agents are rarely able to take leaves of absence for long-term training purposes. This makes CATIE's training programs attractive for training qualified human resources in topics related to agriculture and the environment.

Therefore, in 2019, CATIE's Training Area entered an intense process of reactivation and a new coordinator with a long history of training activities was appointed. The reactivation of the unit included both the formulation and implementation of several regulations and guidelines to reorder training activities and achieve better articulation between the different CATIE units that carry out these activities (programs, projects and representations in the countries of the region).

All this restructuring work allowed for important achievements in a relatively short period of time, as detailed below:

**Internship program in Peru.** An internship program was established with the National Agricultural Innovation Program of the Institute for Agricultural Innovation (INIA/PINIA) of Peru to contribute to strengthening research capacities in CATIE's areas of expertise such as agroforestry, coffee, cocoa, sustainable livestock production, climate change, biostatistics, agribusiness, watersheds, participatory research, qualitative methods, sustainable rural development, innovative agricultural technologies, forests, and biodiversity, among others. Actions implemented included starting a three-week course at CATIE's headquarters in Turrialba, Costa Rica, with a group of 17 INIA officials who took an intensive program in topics ranging from biostatistics, data management and analysis, research, extension and innovation, climate change, inclusion and gender, value chains, as well as more specialized topics related to extension and innovation for participatory rural development, germplasm production and management, coffee and cocoa production, sustainable forest management and biodiversity management in protected areas and sustainable livestock. This program was taught using the learning by doing modality with talks by CATIE experts, field trips, practice exercises and guided readings.





An individual internship program was also developed and continues to operate, whereby INIA researchers carry out internships at CATIE for one to eight months at the time of year that is most convenient to them, working on topics of common interest with different CATIE projects. To date, 12 such internships have been completed. Work also continues with 115 files for 2020.

**Training program with government institutions of the Dominican Republic.** With the Ministry of Agriculture of the Dominican Republic, the development of a diploma course for 60 public and private sector professionals in integrated pest management (DiMIP) was planned, with a duration of 160 hours of attendance and composed of theoretical and practical sessions. This diploma course will be taught by CATIE and Dominican Republic teachers in this same country in 2020, with the objective of developing skills to address problems in the country's most important agricultural production systems. Two topics of interest to the country were worked on jointly with the Dominican Ministry of Natural Resources and Environment. The first is a five-day, face-to-face, practical course-workshop on integrated coastal zone management (ICZM) and marine spatial planning (MSP), which will be held in 2020 in three regions of the country: the Northern Region, the Southeastern Region, and the Metropolitan and Southwestern Regions, with the participation of technicians from the environmental department of the Ministry of Agriculture and the Ministry of Tourism, mayors, universities and NGOs. The second is a five-day course for capacity building of stakeholders involved in land use and land use change in the Dominican Republic (REDD+). The objective is to strengthen and increase technical capacities of key actors in the livestock sector, forests and protected areas linked to the implementation of the Emissions Reduction Program (ERP) of the country's forests, through techniques focused on the environmental sustainability of the activities they carry out, climate change mitigation, and the ERP. This course will also be held in 2020 and will cover topics such as sustainable low-carbon livestock production, sustainable forest management, natural landscape restoration, and protected area management in the context of climate change.

**Training program with Nicaragua.** Cooperation between CATIE and Nicaragua's Ministry of Environment and Natural Resources (MARENA) was established in early 2019 in the framework of the National REDD+ Strategy (ENDE-REDD+). One of the actions implemented was a 100% virtual diploma course in Geographic Information Systems (GIS) and remote sensing applied to natural resource management, which will also be implemented in May 2020. This cooperation will strengthen the capacities of the technical teams of the National Forestry Institute (INAFOR) and the Nicaraguan Territorial Studies Institute (INETER) to introduce, strengthen and develop skills in the management of GIS and remote sensing in the capture, storage, processing and dissemination of geo-referenced information for natural resource management and administration. In addition, an online course on forest governance, socio-environmental elements and monitoring systems for REDD+ was held in late 2019 to provide knowledge and capacity on forest governance and disseminate tools for the development of processes associated with social and environmental safeguards in the context of REDD+.

**Training program with the municipality of Oxapampa in Peru.** The cooperation was established in 2019 with the aim of contributing to the promotion and development of cooperative relations in the areas of forest management and conservation, biodiversity, agro-forestry, tropical agriculture and sustainable development. It began with a 10-day internship at CATIE's campus in Turrialba, Costa Rica, with the participation of the mayor, councilmen, technicians and civil society of Oxapampa Municipality. In this internship, the subject of economic retribution for water resources was worked on. In addition, a nine-day course was held in the city of Oxapampa, Peru, where work was done on hydrological modeling.

## Success story:

“This internship represented a growth experience on both professional and personal levels. It was an opportunity to broaden and deepen my knowledge in value chain analysis and in the use of tools for capacity building in rural associative enterprises. Working with the indigenous women’s organization motivated me to continue focusing my skills in the search for better opportunities for inclusive, equitable and sustainable development”, **Claudia María Rojas**, a Peruvian who did an internship at CATIE, working with a women’s organization in a rural indigenous area of Costa Rica.







# CATIE IN DETAIL

**Research for sustainable and  
inclusive development**



# Research in Economic Development and Environment

## Contributing to the SDG



## Addressing the challenges of climate change and variability

In 2019, the Research Program on Development, Economy and Environment (PIDEA) carried out several actions to address the challenges arising from climate change and variability. It generated applied research, provided advisory services and strengthened the capacities of key actors, including technicians from ministries of agriculture and environment, and development institutions in several countries of the region, such as Belize, Costa Rica, Jamaica and Paraguay, among others.

In order to address problems of water scarcity and low productivity in the use of water, which are exacerbated by climate change, several technical studies were carried out to support a programme of payments for environmental services in the Yallahs and Hope Basins, which provide water to the cities of Kingston and St. Andrew where 40 per cent of Jamaica's population lives. This program was innovative and has great potential for replication in other parts of the island and in the Caribbean in general because of its effectiveness in watershed protection; a task that draws on CATIE's more than 15 years of experience in designing, implementing and evaluating payments for environmental services in several countries of the region.



The LATINOADAPTA project sought to strengthen decision-making in the area of climate change adaptation, closing knowledge gaps identified in Costa Rica's National Report and strengthening the links between science and public policy. Among other actions, work was done to strengthen the already institutionalized platforms that act as networks for consultation, advising and channels of political influence in the country, and support was given to the Scientific Council on Climate Change (4C). The lessons learned from this experience will be used in the other five countries of the region that are part of the initiative (Argentina, Brazil, Chile, Costa Rica, Paraguay and Uruguay).

In 2019, support continued for business training that seeks to successfully, sustainably and inclusively scale up and insert MiSMEs (especially associative enterprises) into value chains. In this case, the work done in promoting productive and service enterprises aimed at the indigenous population in the framework of the capacity-building programme in indigenous territories in the Brunca Region of Costa Rica was noteworthy.

With the aim of strengthening the coffee sector in Central America, under the framework of the project on Socioeconomic and Environmental Sustainability of Agroforestry Coffee in Central America (SEACAF), economic, social and environmental trade-offs between agroforestry systems and coffee monocultures are being identified and evaluated. This study emphasized the economic and social contribution of coffee agroforestry to agricultural livelihoods. The results of this initiative will provide evidence to support the formulation of agricultural and environmental policies in the region.

### **Environment for Development (EfD): developing research in economics and development**

After 12 years of operation at CATIE, EfD-Central America is consolidated as a regional reference in environmental economics and advising on the design of environmental policies in the region. In 2019, EfD carried out research in the following areas in collaboration with government actors:

1. Impact of public policies to minimize the effect of flooding in urban and rural areas
2. Mechanisms for adapting to the negative effects of climate change on human capital formation
3. Carbon tax design and implementation options

In addition, in conjunction with seven countries around the world and with funding from the Swedish International Development Cooperation Agency (SIDA), EfD contributed to the design and application of a methodology to economically value environmental services (e.g. pollination and water purification) and to include them in national accounts systems (Gross Domestic Product) through the use of economic valuation methodologies that can be replicated in low-, middle- and high-income countries.

Under the Sustainable Management of Oceans and Marine Resources project, which is being developed in Chile, South Africa, Tanzania, Vietnam, India and Costa Rica, innovative tools from the experimental economy are applied to encourage changes in the behavior of the different actors in the production and consumption chain of plastics that pollute marine and coastal areas. In particular, research was conducted on the impact of the use of biodegradable packaging on agricultural product markets and the characterization of different public policy options to minimize the use of polluting plastics.



## Capacity Building

### Training of Trainers in Climate-Smart Agriculture (CSA) in Belize

In 2019, 44 extension agents from MAFFESDI (Ministry of Agriculture, Forestry, Fisheries, Environment, Sustainable Development and Immigration) were trained in CSA. These technicians now have knowledge and tools that allow them to assess the risk of climate-related impacts arising from the interaction of climate hazards with the vulnerability and exposure of agricultural systems, and they have a set of proven practices that can be used to mitigate these risks.

### Network for strengthening the economic valuation of ecosystem services in the Gran Chaco Region, Paraguay-Argentina

CATIE contributed to the creation and strengthening of this network, including participation in the First International Seminar on Valuation of Ecosystem Services in Argentina, in collaboration with the National University of Formosa and the National University of Asunción.

### Capacity building in indigenous territories in the Brunca region, Costa Rica

In order to promote productive enterprises and successfully, sustainably and inclusively insert them in value chains, in 2018 and 2019, CATIE worked on business training for 373 indigenous Bribri and Ngäbe families (about 150 women and 223 men) from the Brunca region of Costa Rica, who are undertaking agricultural or service activities. Among the most relevant results is the generation of at least 20 commercial alliances, the most relevant being the one reached with fashion designer Víctor Alemán (Timberland's representative in Costa Rica) and the INOV8 company for production, highlighting the launch of high fashion garments based on cultural elements of the indigenous groups. Some of these garments will even be put on sale at the international airport of Costa Rica. This program was created at the request of the Instituto Mixto de Ayuda Social (IMAS).

#### A partnership that is bearing fruit

CATIE made recommendations to IMAS (Brunca headquarters) on the way its social aid programs for indigenous populations are structured; these were accepted and changes were made in both the approach and the duration of the training, with follow-up given to the beneficiaries. Thanks to the training program and this contribution, the institution has expressed its interest in continuing to support CATIE's work in the Brunca region with the possibility of applying it in other regions of the country. In addition, two tools were developed: one measures the capacity that each person has to become an entrepreneur and the second allows an analysis of the level of business development in an established enterprise. Both tools have been adjusted for working with indigenous populations (differentiating element) and their use allowed the development of a training network in accordance with the capacities of the beneficiaries and the potentialities detected in the Brunca region.



## Innovative courses that meet the demands of the region

*Lessons for the implementation of Payment for Environmental Services (PES).* At the request of several governmental actors in the Government of Jamaica, a course was held to build capacity in the design and implementation of PES. Ten professionals (six women) participated, who came to CATIE's headquarters to learn first-hand about the institution's and Costa Rica's experience in implementing PES in order to start a similar program in Jamaica.

*Economic foundations for the management and valuation of environmental services.* This was given to 14 people (nine women) from seven countries from the governmental sector, non-governmental organizations (NGOs), international organizations, etc., and it was offered for the twentieth consecutive time at CATIE's headquarters, providing tools for economic valuation of the environment, as well as public policy options based on economic incentives for ecosystem management in the region.

*Capacity building in carbon measurement and economic valuation of environmental services.* At the request of the Jamaican Forestry Department, several courses were provided to 54 professionals (36 women) regarding carbon measurement and monitoring for REDD+ programs, as well as the use of economic valuation methodologies for environmental services provided by forests and forest plantations in Jamaica.

*Training of trainers and governance in associative companies (virtual mode).* This was aimed at fifteen people (eight women) from eight countries, who are in technical positions linked to work with rural associative enterprises or who are part of associative enterprises. Work was done on practical methodologies for capacity building (coaching), organizational management and good governance, capacity-building in carbon measurement and economic valuation of environmental services. At the request of the Jamaican Forestry Department, several courses were provided to 54 professionals (36 women) regarding carbon measurement and monitoring for REDD+ programs, as well as the use of economic valuation methodologies for environmental services provided by forests and forest plantations in Jamaica.

### Development of a seal for sustainable soy production

The Union of Cooperatives (UNICOOP), the Agricultural Production Cooperative (COPRONAR) and the Ministry of Environment and Sustainable Development (MADES) of Paraguay sought CATIE's support for the formulation of a seal based on sustainable agribusiness through the implementation of best agricultural practices that integrate economic, social and environmental criteria; as well as developing a parallel process for capacity building in the soybean value chain in Paraguay that involves companies linked to soybean production that want to differentiate their product. To achieve this, a (digital) tool was developed to evaluate production systems and determine their sustainability. The tool has a series of criteria, indicators and elements that are directly linked to social, environmental and economic aspects.



## Our strategic partners

By strengthening its strategic alliances, CATIE has been able to enhance its actions with the support of multiple local, national and international partners.

### Public sector

- Ministry of Agriculture, Forestry, Fisheries, Environment, Sustainable Development and Immigration (MAFFESDI) of Belize
- Joint Institute for Social Assistance (IMAS)
- Union of Cooperatives (UNICOOP)
- Agricultural Production Cooperative (COPRONAR)
- Ministry of Environment and Sustainable Development (MADES)

### International organizations

- The National Environment and Planning Agency (NEPA)
- Forestry Department (FD)





## Most relevant publications of 2019

Below are the 10 most relevant publications for 2019, including one publication in the journal *Nature Climate Change* and two in the *Proceedings of the National Academy of Sciences of the United States of America* (PNAS).

- Alpizar, F; Bernedo del Carpio, M; Ferraro, PJ; Meiselman, B. 2019. The impacts of a capacity- building workshop in a randomized adaptation project (en línea). *Nature Climate Change* 9: 587-591. Consultado 04 mar. 2020. Disponible en <https://www.nature.com/articles/s41558-019-0536-3>
- Van Etten, J; De Sousa, K; Aguilar, A; Barrios, M; Coto, A; Dell'Acqua, M; Fadda, C; Gebrehawaryat, Y; Van de Gevel, J; Gupta, A; Kiros, A; Madriz, B; Mathur, P; Mengistu, D; Mercado, L; Nurhisen-Mohammed, J; Paliwal, A; Enrico-Pè, M; Quirós, C; Rosas, JC; Sharma, N; Singh, S; Solanki, I; Steinke, J. 2019. Crop variety management for climate adaptation supported by citizen science (en línea). *PNAS* 116(10):4194-4199. Consultado 04 mar. 2020. Disponible en <https://doi.org/10.1073/pnas.1813720116>
- Sterner, T; Barbier, E; Bateman, I; Van den Bijgaart; Crépin, AS; Edenhofer, O; Fishcer, C; Habla, W; Hassler, J; Johansson-Stenman, O; Lange, A; Polasky, S; Rockström, J; Smith, HG; Steffen, W; Wagner, G; Wilen, JE; Alpizar, F; Azar, C; Carless, D; Chávez, C; Coria, J; Engström, G; Jagers, S; Köhlin, G; Löfgren, Å; Pleijel, H; Robinson, A. 2019. Policy design for the Anthropocene (en línea). *Nature Sustainability* 2:14-21. Consultado 04 mar. 2020. Disponible en <https://www.nature.com/articles/s41893-018-0194-x>
- Herrera, D; Pfaff, A; Robalino, J. 2019. Impacts of protected areas vary with the level of government: Comparing avoided deforestation across agencies in the Brazilian Amazon (en línea). *PNAS* 116(30):14916-14925. Consultado 04 mar. 2020. Disponible en <https://doi.org/10.1073/pnas.1802877116>
- Beveridge, L; Whitfeld, S; Fraval, S; Van Wijk, M; Van Etten, J; Mercado, L; Hammond, J; Davila-Cortez, L; Suchini, JG; Challinor, A. 2019. Experiences and Drivers of Food Insecurity in Guatemala's Dry Corridor: Insights from the Integration of Ethnographic and Household Survey Data (en línea). *Frontiers in Sustainable Food Systems*. Consultado 04 mar. 2020. Disponible en <https://doi.org/10.3389/fsufs.2019.00065>
- Viguera, B; Alpizar, F; Harvey, C; Martínez-Rodríguez, R; Saborío-Rodríguez, M; Contreras, L. 2019. Climate change perceptions and adaptive responses of small-scale farmers in two Guatemalan landscapes (en línea). *Mesoamerican Agronomy* 30(2):313-331. Consultado 04 mar. 2020. Disponible en DOI 10.15517/AM.V30I2.33938
- Viguera, B; Alpizar, F; Harvey, C; Martínez-Rodríguez, R; Saborío-Rodríguez, M. 2019. Climate change perceptions and adaptive responses of small-scale coffee farmers in Costa Rica (en línea). *Mesoamerican Agronomy* 30(2). Consultado 04 mar. 2020. Disponible en DOI 10.15517/AM.V30I2.32905
- Thornton, PK; Loboguerrero, AM; Campbell, BM; Kavikumar, KS; Mercado, L; Shackleton, S. 2019. Rural livelihoods, food security and rural transformation under climate change (en línea). Consultado 04 mar. 2020. Disponible en <https://ccafs.cgiar.org/es/publications/rural-livelihoods-food-security-and-rural-transformation-under-climate-change#.XmKIMi3SFfQ>
- Madrigal, R; Capitán, T; Salas, A; Córdoba, D. 2019. Household and community responses to seasonal droughts in rural areas of Costa Rica. *Waterlines* 38(4):297-315.
- Chávez, I; Partelow, S; Madrigal-Ballester, R; Schlüter, A; Gutierrez, I. 2019. Do responsible shing areas work? Comparing collective action challenges in three small-scale sheries in Costa Rica (en línea). *International Journal of the Commons*. Consultado 04 mar. 2020. Disponible en <https://www.thecommonsjournal.org/articles/10.18352/ijc.923/>

## Stories of Success

### Training of Trainers in Climate Intelligent Agriculture (CSA)

Ministry of Agriculture, Forestry, Fisheries, Environment, Sustainable Development and Immigration (MAFFESDI) of Belize

**Objective:** To support extension workers and farmers in Belize in improving their capacity to reduce the risks associated with climate change

*“Thanks to the training and manual developed by CATIE, MAFFESDI technicians are trained and have tools that facilitate the use of the CSA approach as a strategy to address climate risk. In addition, they will be able to diagnose the risk of climate hazards and identify and promote the adoption of practices for small producers to reduce the impact of climate change on their livelihoods. This will help us strengthen Belize’s agricultural sector, deal with climate threats, and be competitive in international markets,”* **Victoriano Pascual, Director of Climate Change, MAFFESDI.**



### Capacity-building program in indigenous territories of the Brunca Region in Costa Rica, Instituto Mixto de Ayuda Social (IMAS)

**Objective:** to promote productive enterprises and insert them successfully, sustainably and inclusively in value chains

*“I’m living a dream I don’t want to wake up from. It has been an incredible experience what we have lived during the whole training process provided by CATIE. I never thought I would see models wearing my clothes, much less that I would be able to go with them, but now I want to continue working, creating clothes that are different from what I had traditionally done; this will give me more opportunities to sell and have more money for the house and the business”,* **Julia Montezuma, participant in the program for the Altos de San Antonio Community, Ciudad Neyli, Costa Rica.**

# Agriculture, Livestock Production and Agroforestry

## Contributing to the SDG



## International cocoa and coffee collections of global importance

In 2019, CATIE celebrated the anniversary of the cocoa (75 years) and coffee (70 years) collections, which are recognized worldwide for the wide genetic diversity they preserve, as they are essential in ensuring the future of both crops. The anniversary event took place at CATIE's headquarters and brought together important players in the cocoa and coffee sectors. It also featured presentations by experts who shared the history and importance of the collections for research and the dissemination of genetic resources, as well as the success story of the Geisha variety of coffee in Panama.

In addition, as part of the Global Strategy for the Conservation of Coffee Genetic Resources, a study by the Crop Trust was conducted to assess the current status of the collection and propose actions to ensure its conservation and long-term availability.

In this regard, new initiatives and financial support were negotiated in 2019 to preserve both collections. In the case of the International Coffee Collection, support was provided by several institutions such as the Costa Rican Coffee Institute (ICAFE), *San Francisco Bay Coffee*, and the Central American Program for Integrated Coffee Rust Management (PROCAGICA). For its part, the project *Maximizing Coffee and Cocoa Opportunities in the Americas* (MOCCA) supported the general maintenance of the plantations of the International Cocoa Collection for the next three years.

### Seed garden of selected coffee varieties

There is a growing interest among coffee companies for certain varieties that are present in CATIE's International Coffee Collection. These varieties have stood out in international competitions due to characteristics that make them attractive for new exclusive coffee markets: ET-47, Geisha, Java, Laurina, Mibirizi, Mokka, Rume Sudan, SL-28, SL-34 and Wush wush. In 2019, a 2-hectare seed garden was created on CATIE's land using materials from all of these varieties with the aim of increasing seed production in the short term in order to meet the growing demand for these promising materials.





CATIE is also part of the *Cacaonet Task Force* initiative, which supports the management of cocoa collections worldwide. Thanks to this initiative the *World Cocoa Foundation* (WCF) will provide support to CATIE and Trinidad's collections.

## More and better varieties of coffee and cocoa available in the region

In 2019, CATIE made available to the region about 115,951 coffee plants, including F1 hybrids with exceptional characteristics of productivity, resistance to pests and diseases, as well as other promising varieties. Of the total number of plants distributed 84,382 were produced by an innovative method of rooting cuttings at CATIE's Forest Seed Bank (BSF) and 31,569 by the *in vitro* process called somatic embryogenesis, developed at the Center's Biotechnology Laboratory. This represents the highest number of plants produced in a year to date at the laboratory.

In search of better cocoa clone alternatives for distribution, the Biotechnology Laboratory carried out several investigations for the development of embryos. As a result, two embryos in particular (Jiffy pellets and Ellepots) showed special characteristics (small, light and biodegradable) that offer great possibilities for the production of cocoa clones in a faster, more efficient and environmentally friendly way.

In addition, an agreement was signed with the Mexican biotechnology company *Global Nature Technology* to supply coffee and cocoa germplasm for its multiplication and distribution in Mexico and other countries in the region. The company will set up its laboratories on CATIE's land, which represents the beginning of a new phase in attracting high-tech companies to the campus.

**Genetic improvement**  
CATIE researchers and their partners continue their studies and evaluations for genetic improvement. More than 50 F1 coffee hybrids are being evaluated and a new set of nine improved cocoa clones will soon be released.



## Research and Development in Agroforestry

CATIE's agroforestry coffee trials turned 19 years old in 2019. This trials continue to generate research results with recommendations for producers in the region. The results of all these investigations currently serve and will serve to guide the regional coffee sector towards better agroforestry production strategies, as well as increasing yields and the provision of ecosystem services.

In the cocoa research field, efforts were focused on generating proposals for innovations and their further application in development projects. The team worked on topics related to the use of technologies such as drones and shadow-simulation software to make agroforestry diagnoses of cacao crops. The results support decision-making processes to improve the design and management of cocoa plantations as well as combining the Schools of Field (ECA) with virtual teaching (digital animation, monitoring of activities and goals with cell phones). These technologies are already being developed in a cocoa project in Honduras (led by Heifer) and in the short term they will be used in other agroforestry projects.

The participatory research project for the renewal of cocoa plantations in eight Latin American countries (financed by the Korean Cooperation for Food and Agriculture in Latin America - KoLFACI) continued in 2019. This project laid the foundations for the establishment of a 4-hectare area for applied agronomic and agroforestry research with cocoa on CATIE's La Montaña farm, in which medium- to long-term trials will be carried out to generate specific technological packages (fertilization, integrated pest management, diversification) to offer to the region's cocoa farmers.

**Actions against climate change**  
Supported by the Climate Technology Center and Network (CTCN), the Government of Belize is leading the development of the National Agroforestry Policy, as part of the country's actions to address climate change mitigation and adaptation.

Together with PROCAGICA, 200 plots of land were established in four Central American countries for participatory experimentation and validation of innovative practices for integrated management of coffee as well as pest and disease control.

In addition, a documentation process of the role of mixed plantations in commercial restoration-reforestation as an alternative for the production of wood-based products was carried out under the framework of the Forests, Trees and Agroforestry (FTA) program of the Center for International Forestry Research (CIFOR).

The *Trees on Farms* project represents another successful effort in Agroforestry. It has helped the Honduran government on reporting on biodiversity conservation indicators and improving livelihoods through the use of trees in the country's agricultural landscapes. The project is funded by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), led by the World Agroforestry Centre (ICRAF) in which the consortium of institutions includes CATIE in Honduras, CIRAD-CIFOR in Indonesia, Gottingen University, Hanover University and the International Union for Conservation of Nature (IUCN).





## Towards sustainable, low-carbon livestock production in the region

CATIE has supported the livestock sector and the governments of Honduras, Costa Rica, Guatemala, Nicaragua, Cuba and Panama in the design of public policies through technical inputs and participation in governance spaces with the aim of achieving sustainable livestock production. In the case of Costa Rica support was provided for the implementation of the Nationally Appropriate Mitigation Actions (NAMA). In Panama, Guatemala and Cuba contributions were directed towards the design of a national sustainable livestock strategy. The greatest achievement was obtained in Honduras, where, with support from the NAMA Facility and in coordination with the Ministry of Agriculture and Livestock and the Ministry of Environment, the banking and private (industry) sectors, academia and other trade unions, will design a national program to transform the livestock sector towards a low-carbon economy.

Moreover, the management of mechanisms to access public finances through a green credit in Honduras was made possible during 2019 through a proposal for a differentiated financial mechanism directed towards the livestock sector. At the same time, other actions were carried out in this country for the generation of an emissions baseline for the development of the livestock NAMA, through the development and monitoring of biodiversity and carbon methodologies, as well as sustainability indicators based on the principles and standards of the Sustainable Agriculture Network (SAN) for livestock. In addition, a strategy was designed with the private sector and associated unions to improve meat and milk value chains. The strategy will make possible to identify niche markets for sustainable livestock products.

All these actions were carried out through the *Productive Landscapes* project, which is funded by the Global Environment Facility (GEF) through the United Nations Development Program (UNDP) and in coordination with the Honduran Ministry of the Environment.





In 2019, CATIE worked jointly with the *Livestock Belize* project, which is financed by the Multilateral Investment Fund and under the administration of the Inter-American Development Bank (IDB-MIF). Under the framework of this project, CATIE was responsible for the characterization of 10 model farms located in the Cayo and Orange Walk districts of Belize as well as the identification of silvopastoral options for the improvement of climate change resilience in these farms. These actions serve as a basis for learning processes for technicians from the *Belize Livestock Producers Association (BLPA)* and the Belize Ministry of Agriculture, as well as BLPA producer partners.

In Mexico, CATIE worked in the territories of Jalisco, Campeche and Chiapas through the project *Biodiversity and Sustainable Agroforestry Livestock Landscapes*, known as BioPaSOS. By coordinating with the Ministries of Agriculture and Environment, this project promotes sustainable livestock among more than 1200 producers who were trained to establish silvopastoral systems and implement best livestock practices using the Field Schools (ECA) methodology. ECA was adapted to each of the three territories: in Jalisco, for example, it will be implemented in the territories of the Intermunicipal Environmental Board for the Integrated Management of the Lower Ayuquila River Basin (JIRA) and the Intermunicipal Environmental Board of the South Coast (JICOSUR), in coordination with the Secretariat of Agriculture and Rural Development (SADER). SADER recently decided to adopt ECA methodology in the training of livestock producers in the remaining three intermunicipal boards of the state, which is a great achievement of CATIE in terms of policy advocacy and project impact.

In the framework of the *Sustainable Futures* project for the Costa Rican dairy sector: Optimization of Environmental and Economic Results (SUSCORIDA) a study was conducted to determine future sustainable scenarios for food production in the tropics, using the Costa Rican dairy sector as a pilot scenario. The study focused on pasture quality, methane and nitrous oxide emissions in tropical systems, and the measurement of ammonia emissions and nitrate and phosphate infiltration. The results of the project showed that cow feces deposited on the pasture when animals leave the paddocks, generate ammonia emissions of about 10 g/ha/h, which decreases as the hours go by to emissions of 2 g/ha/h at the time of fertilization.

The study was implemented by CATIE in conjunction with *Bangor University* with support from the *Global Challenge Research Fund Foundation Award (GCRF)*, *Rothamsted Research* and funded by the *Biological and Biotechnology Research Council (BBSRC)* of the United Kingdom.





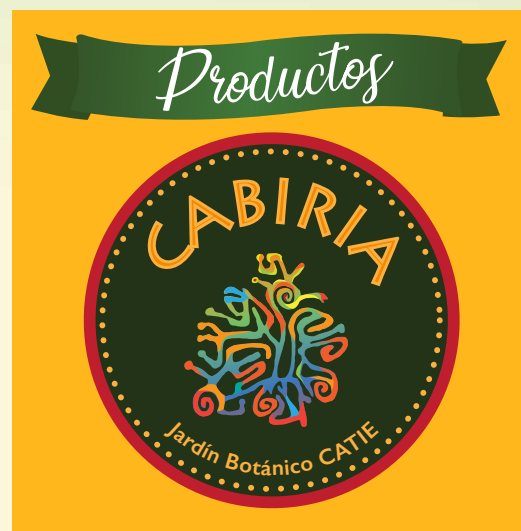
## Innovative products that make a difference

Towards the exploration of new businesses, the distribution of a CATIE-specialty coffee was initiated, using the main coffee hybrids as a base. We also worked on the initiative to give added value to the fruits of CATIE's Botanical Garden through the registration of the CABIRIA brand.

**CATIE-Specialty Coffee** is a venture that began in 2019 to market specialty coffees from materials produced by the Coffee Breeding Program and some outstanding varieties from CATIE's International Coffee Collection. In the introduction stage, work was carried out with two of the FI coffee hybrids (Centroamericano and Esperanza) and in 2020 the offer will be increased with four varieties: SL 28, Geisha, ET-47 and Milenio. The process of registering the brand and sanitary permit for the products is already underway.

**Productos CABIRIA** began in 2019 as a promising initiative of the Collections and Botanical Garden for the development of innovative food products based on tropical fruits, preserved in CATIE's collections since 1944. The potential in this field is extensive, and the objective is to develop an agribusiness with the potential to scale-up for agroindustry and export, through linkages between the Botanical Garden and strategic partners, so that CABIRIA products make a difference.

The products have shown excellent acceptance and they represent an opportunity for business after more than a year of research. Work is also underway to develop substitutes for animal-based meat, using a coffee by-product. Productos Cabiria has the permission of the Ministry of Health and the municipal patent and the registration of the brand was submitted with approval expected in 2020.



## Our strategic partners

By strengthening its strategic alliances, CATIE has been able to enhance its actions with the support of multiple local, national and international partners. The following highlights those with which various initiatives were developed in 2019, with the aim of achieving sustainable and inclusive development:

### Universities

- University of Vermont, United States
- University of Guadalajara, Mexico
- Autonomous University of Chiapas, Mexico
- Juárez Autonomous University of Tabasco, Mexico
- Technological Institute of China, Mexico

### National or local governments

- Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), Mexico
- National Institute for Forestry, Agriculture and Fisheries Research (INIFAP), Mexico
- Intermunicipal Boards of Jalisco
- National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico
- CGIAR Consortium-Research Program on Forests, Trees and Agroforestry (FTA):
- CIFOR, ICRAF, CIRAD, Bioversity, TROPENBOS
- Coffee Institute of Costa Rica (ICAFFE)

### Research centers and foundations

- *Global Crop Diversity Trust*
- Inter-American Institute for Cooperation on Agriculture (IICA)
- Produce Foundation Jalisco, Mexico
- Center for International Cooperation in Agronomic Research for Development (CIRAD)

### Private enterprises

- Agrinet, Mexico
- Western Ecoforest Agriculture and Reforestation, Guatemala
- *Global Nature Technology*, Costa Rica and Mexico
- *Rijk Zwaan*, Holland
- SEMIRSA Forestal SAC, Peru
- GAIA Artisan Coffee, Costa Rica





## Most relevant publications

The 10 most relevant publications of 2019 on agriculture, agroforestry and livestock are presented below:

- Sepúlveda, N; Vågen, TG; Winowiecki, LA; Chiputwa, B; Makui, P; Somarriba, E; Sampson, AL. 2019. Sentinel Landscape stocktaking pilot study: Report Nicaragua-Honduras. Working Paper 2. Bogor, Indonesia, The CGIAR Research Program on Forests, Trees and Agroforestry (FTA). Consultado 04 mar. 2020. Disponible en DOI: 10.17528/cifor/00
- Gutiérrez-Ortiz, A; Bertia, F; Solano-Sánchez, W; Navarini, L; Colomban, S; Crisafulli, P; Forzato C. 2019. Distribution of p-coumaroylquinic acids in commercial Coffea spp. of different geographical origin and in other wild coffee species. Food Chemistry 286:459-466.
- Fister, A; Leandro-Muñoz, ME; Zhang, D; Marden, J; Tiffin, P; De Pamphilis, C; Maximova, S; Gultinan, M. 2020. Widely distributed variation in tolerance to Phytophthora palmivora in four genetic groups of cacao (en línea). Tree Genetics & Genomes 16(1). Consultado 04 mar. 2020. Disponible en DOI: 10.1007/s11295-019-1396-8
- Avelino, J; Vilchez, S; Segura-Escobar, MB; Brenes-Loaiza, MA; De Melo-Virginio, E; Casanoves, F. 2020. Shade tree Chloroleucon eurycyclum promotes coffee leaf rust by reducing uredospore wash-off by rain (en línea). Crop Protection 129. Consultado 04 mar. 2020. Disponible en <https://doi.org/10.1016/j.cropro.2019.105038>.
- Cerda, R; Orozco, L; Sepúlveda, N; Carreño, G; Ordóñez, J; Amores, F; Caicedo, W; Oblitas, S; Somarriba, E. 2019. Tropical agroforestry and ecosystem services: trade-off analysis for better design strategies (en línea). Mosquera-Losada M; Prahú R. (eds). En Agroforestry for sustainable agriculture. Burleigh Dodds Series in Agricultural Science. 43p. Consultado 04 mar. 2020. Disponible en <http://hdl.handle.net/11554/9089>
- Merle, I; Pico, J; Granados, E; Boudrot, A; Tixier, P; De Melo-Virginio, E; Cilas, C; Avelino, J. 2019. Unraveling the Complexity of Coffee Leaf Rust Behavior and Development in Different Coffea arabica Agroecosystems (en línea). Phytopathology 110(2). Consultado 04 mar. 2020. Disponible en DOI: 10.1094/PHYTO-03-19-0094-R
- Ardila-Fernández, F; Sepúlveda, C; Ibrahim, M; Detlefsen, G. 2019. Especies arbóreas en la alimentación del ganado y su relación con la diversidad orística en relictos de bosques en paisajes ganaderos de Campeche. M.Sc. Thesis.
- Chain-Guadarrama, A; Martínez-Salinas, A; Aristizábal, N; Ricketts, TH. 2019. Interacting ecosystem services: a review of pest control, pollination, and potential effects of climate change in coffee systems. Agriculture, Ecosystems and Environment. Papers in refereed scientific journals
- Estrada-Carmona, E; Martínez-Salinas, A; DeClerck, FAJ; Vilchez-Mendoza, S; Garbach, K. 2019. Managing the farmscape for connectivity increases conservation value for tropical bird species with different forest-dependencies. Journal of Environmental Management. Papers in refereed scientific journals.
- Suber, M; Gutiérrez-Beltrán, N; Torres, CF; Turriago, JD; Arango, J; Banegas, NR; Berndt, A; Bidó, DIM; Burghi, V; Cárdenas, DA; Cañanda, P; Canu, FA; Chacón, AR; Chacón Navarro, M; Chará, J; Díaz, L; Huamán-Fuertes, E; Espinoza-Bran, JE; Girón-Muñoz, PR; Guerrero, Y; Gutierrez-Solis, JF; Pezo, D; Prieto-Palacios, G; Roman-Cuesta, RM; Rosales-Riveiro, KA; Rueda-Arana, C; Sepúlveda, C; Serrano-Basto, G; Solarte, A; Woo-Poquioma, N. 2019. Mitigación con Sistemas Silvopastoriles en Latinoamérica: Aportes para la incorporación en los sistemas de Medición Reporte y Verificación bajo la CMNUCC. Working Paper No. 254, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Tobar, D; Bonin, M; Andrade, H; Pulido, A; Ibrahim, M. 2019. Deforestation processes in the livestock territory of La Vía Láctea, Matagalpa, Nicaragua (en línea). Journal of Land Use Science 14(3):225-241. Consultado 04 mar. 2020. Disponible en <https://doi.org/10.1080/1747423X.2019.1671907>

## Stories of Success



### BioPaSOS Project

Through the collaboration between the Autonomous University of Chiapas (UNACH) and the BioPaSOS project, low-cost biodigesters were designed using locally available inputs as a strategy to reduce methane emissions on cattle ranches.

One such biodigester was implemented on a producer's ranch. Luis Fernando Molina, professor at UNACH, said that the implementation of this biodigester allow us to know exactly how this best practice contributes to greenhouse gases (GHG) mitigation on cattle ranches. In addition, it will provide information on how much firewood is no longer needed in the producer's home once the gas produced and stored in the biodigester is being used.

**Laura Madera**, a livestock producer from Jalisco, Mexico, participated in one of the BioPaSOS Project's Field Schools to learn how to implement best livestock practices on her ranch.

*"Through the Field Schools, the project has taught us about best livestock practices. It has given us tools to realize how much money we have been throwing away and how much we have contaminated. Now, on our cattle ranch we are putting into practice what they teach us and we are seeing better results in production and saving money".*





# Forests, Biodiversity and Climate Change

## Contributing to the SDG



## Towards sustainable urban areas

In 2019, the Ecosystem Modeling Unit (EMU) of the Forests, Biodiversity and Climate Change Program (PBBCC), through various urban ecology initiatives in Costa Rica made a key contribution to the environmental initiatives of the Municipality of Curridabat; which by year-end had been extended to 31 municipalities in the Greater Metropolitan Area of Costa Rica.

The UME characterized the green and blue infrastructure of these urban areas, determining the behavior of surface temperatures and measuring ecological connectivity as inputs for the municipalities' territorial planning. All this work led to the creation of the first report on the status of biodiversity in an urban municipality. This report allows an evaluation of the progress towards the vision of the municipality: the Ciudad Dulce (Sweet City), which aims to improve the well-being of citizens through increased contact with nature and by integrating city growth with a sustainable development approach.

The Watersheds and Water Security Unit (UCSH) entered the field of urban watersheds through the implementation of the project *Measuring sustainability in cities: valuing trees and their services*, with support from the municipality of Turrialba, the Rural Development Institute (INDER) and other actors in Costa Rica. In addition, UCSH team worked with the Municipal Development Institute of Costa Rica to support the management of the Intermunicipal Agency of the Maria Aguilar River Sub-basin-AIRMA. Again, this project supported the vision of the municipalities to move towards a model of multilevel governance for sustainable urban development, focusing in this case on water resources.





## Activa Business Lab: a new platform for forestry businesses

With funding from the International Climate Initiative's (IKI) *Secondary Forests* project, CATIE led the creation of the Activa Business Lab (<http://activa.catie.ac.cr/>). The Lab aims to facilitate the process of rural and indigenous communities and agricultural and forestry producers in developing innovations and closing the gap between potential investors and the territories they inhabit. The ventures supported to date include *Sacalá* of Jilotepeque, Guatemala, and *Hartmade*, of Turrialba, Costa Rica.

This sector has traditionally been excluded from new entrepreneurial, acceleration and financing movements. For this reason, they addressed the challenges faced by rural entrepreneurs in the agricultural and forestry sectors, promoting the creation of new disruptive, innovative and inclusive business models based on intellectual property, all with positive social and environmental impacts.

These business models will promote rural economic development, connect rurality with new economic dynamics, support and encourage rural entrepreneurship, accelerate small and medium enterprises (SMEs) with high potential to generate positive social and environmental impacts, introduce innovation in rural areas, as well as nurturing rural businesses with financing and training to grow with green economy elements.

Finally, a *hackathon*-type technological challenge was carried out in Guatemala; which sought to generate an affordable and sustainable housing solution where the predominant material was wood. For this process, 32 proposals were received from which three were selected, and the team members had a pre-incubation process to generate their business model.





## Climate change mitigation and adaptation through management of forests and forested landscapes

The project *Mechanisms and networks for climate change technology transfer in Latin America and the Caribbean*, coordinated by the Inter-American Development Bank (IDB) and financed by the Global Environment Facility (GEF), promoted the development and transfer of technologies from CATIE's Ecosystem Management Chair (GECO), to contribute to reducing greenhouse gas emissions and vulnerability to climate change in the energy, transport, agriculture and forestry sectors

On the other hand, the project *Socio-ecological Restoration of climate-change resilient Forests, Landscapes and Ecosystem Services*, led by the **Chair of Ecology in Tropical Forest Management**, contributed to the resilience of landscapes and forests under high exposure to climate change that are found in protected areas of the Talamanca Mountain Range in Costa Rica.

These forests are of regional importance for their biodiversity and of national importance for the ecosystem services they provide to Costa Rican society. During 2019, the project consolidated the baseline for monitoring changes in the ecosystems, publishing three articles in international scientific journals and developing, in a participatory manner with the main actors, a plan for strengthening capacities to reduce the vulnerability of the ecosystems of the protected areas.

### National forest resource monitoring systems

In 2019, work on national forest resource monitoring systems was carried out in Mexico, Brazil, Suriname, Costa Rica and the Dominican Republic, yielding the following outstanding actions:

- Software was developed for the automatic classification of remote sensing data, data management and applications for the web and mobile devices. These tools strengthen the capacities of countries to monitor losses and gains in forest and agroforestry areas and wood traceability.
- Networks of forest monitoring experts were piloted in collaboration with the Virtual Center of Excellence in Forest Monitoring, an initiative housed at the National Forestry Commission (CONAFOR) in Mexico. These networks make a decisive contribution to the necessary harmonization of countries' forest monitoring systems and the development of new approaches and tools.
- The Project strengthened technical capacities in beneficiary countries on the use of information technologies and artificial intelligence and contributed to the improvement of forest governance and transparency through the adoption of these technologies.



In addition, GECO consolidated its participation at the global, regional and national levels with technical and political actions related to high-carbon ecosystems, particularly blue carbon in mangroves. The GECO leader is co-author of the IPCC's Special Report on the Ocean and the Cryosphere in a Changing World (SCCR) and the contribution to this report was presented at the PreCOP, held in San José, Costa Rica, in 2019. GECO also maintained its participation in the Scientific Working Group of the International Blue Carbon Initiative and has provided technical assistance to the new Nordic countries' Blue Carbon Network based on the scientific and political experience generated in Central America and the Caribbean.

At the regional level, GECO conceptualized and designed the interdisciplinary and multisectoral *Mangroves for Development* project, which will begin in 2020, promoting transformational actions in coastal-marine landscapes of the northwestern Dominican Republic and promoting the inclusion of blue carbon and mangroves in the Nationally Determined Contributions (NDC). In addition, it contributed to the conceptualization of the regional strategy for the conservation of the mangroves of the Mesoamerican reef, responding to the needs of the Central American Integration System (SICA).

In Costa Rica, GECO in partnership with Conservation International (CI) completed a study of land use change and a prioritization of areas for restoration in the mangroves of the Gulf of Nicoya. CI will be working with GECO in 2020 and 2021 to restore mangroves in the country's Pacific region. Finally, training was provided to a large team from the Colombian government with the intention that Colombia could build its country position on blue carbon during COP25.

Finally, the Latin American Chair of Forestry Policy and Economics (CLAPEF) formulated a course for Ecuador, the Capacity Building Program in Proposal Formulation for Access to Climate Finance, which was offered virtually to train 49 people from public and private institutions, especially in access to resources from the Green Climate Fund (GCF).





## Restoration and sustainable management of forests and forested landscapes

The Latin American Model Forest Network (RLABM) is a partnership between voluntary and cross-sectoral social platforms for the sustainable management of forests and landscapes, supported by government institutions in each member country and by international organizations such as the Center for International Forestry Research (CIFOR), the International Centre for Tropical Agriculture (CIAT), CUSO International and the Food and Agriculture Organization of the United Nations (FAO); and chaired by CATIE. Through these platforms, local leaders seek to implement the proposals and commitments of international conventions in their territories.

In 2019, the *Hileia Baiana* platform in Brazil joined the RLABM, bringing the total number of Model Forest initiatives to 33 in 14 countries. The study and systematization of their achievements and impacts was completed, showing their contribution to the consolidation of local natural resource governance, the promotion of sustainable practices, greater local participation in conservation actions, improvement of ecosystem services, and the impact of territories on public policies. The RLABM also held the workshop on Opportunities and Challenges of Model Forests in the context of land occupation and water management, under the framework of the Sustainable Development Goals (SDG) in Bolivia, where more than 50 leaders of territorial management processes strengthened their vision and capacities to face these challenges.

The project *Development of Sustainable Forestry Models and Links with the Private Sector for Secondary Forests*, with funding from the German government's IKI (hereafter the IKI project) represents the most recent milestone in CATIE's long and outstanding track record in the field of restored forests through secondary succession, and its ecological foundations.

In 2019, concrete progress was made in facilitating changes in public policy in El Salvador, Guatemala, Honduras and Costa Rica to generate enabling conditions for the management of secondary forests, building work agendas with forest authorities. In order to lead the development of business models and attract financing for secondary forest management, the technological challenge called *Constructon* was carried out and launched in Guatemala, seeking solutions for wooden housing. This project is also implementing secondary forest management demonstration areas in each of the countries of action, conducting research on forest growth and yields and the costs and benefits of management.

### Strengthening capacities from the RLABM

With the 31st edition of the International Course on Forest Management: Governance and Legality in Forest Management and Restoration in the Tropics of Latin America and the Caribbean, held in 2019, more than 600 leaders and decision makers from institutions, programs, organizations and companies in the region have already been trained on the options and tools for sustainable forest management. Similarly, with the IV International Course on Forest Landscape Restoration, nearly 100 leaders of restoration projects and programs in several Latin American countries have been trained in methods to restore ecosystem services for human development. The course on Diversified Management of Natural Forests for officials of the National Council of Protected Areas (CONAP) contributed to the national analysis of the contribution to conservation and human development of forest concessions in Guatemala, while the First International Course on Methods and Tools for Community Forest Management (held in El Petén, Guatemala, and of which two other versions will be held in 2020) is training Latin American leaders in community forest management for integrated and inclusive development, based on the lessons and experiences shared directly by local actors in the Petén.

The Latin American Chair of Forest Policy and Economics (CLAPEF) completed the project *Green Transformations in the Global South (GreeTS)*, carried out jointly with the Technical University of Darmstadt in Germany, the School of Oriental and African Studies (SOAS) of the University of London and the Vietnamese Academy of Social Sciences. This project carried out a comparative analysis of Vietnam and Costa Rica of the enabling conditions and barriers to transformations for achieving a green economy in the land use and energy sectors. GreeTS generated more than 20 scientific publications and strengthened a knowledge network on the green economy related to the rural sector.

Finally, the use of drone technology in 2019 allowed better data to be obtained for the management of shade in cocoa plantations and the productive characterization of secondary forests. The Ecosystem Modeling Unit uses the most powerful platform currently available to collect and process geospatial data in real time, contributing to relevant projects such as the *Water Harvesting* project in Nicaragua.

The Ecology Chair consolidated a system for the massive import of field data obtained through the use of electronic devices. The database has eight independent studies of the effects of global change drivers on natural forests. Some of the studies date from the late 1980s and the database contains measurements for a total of 47 492 tree, palm, liana, and tree fern individuals, with 1,026 species counted. This initiative is a significant contribution to the region's knowledge of tropical forests and their responses to human intervention, including biodiversity and ecosystem services, and it has served to improve their management based on scientific evidence.

### Fires in forests and productive landscapes

Forest fires are a constant threat and risk to tropical ecosystems and are expected to increase in frequency and number due to climate change, and to begin occurring in ecosystems such as wetlands where they did not occur naturally.

In response to this threat, research has been carried out on the effects of forest fires on tropical ecosystems, as well as various works related to forest fire susceptibility analysis of the vegetation, methods for assessing fuel loads, prediction of fire behavior for tropical fuels, and vulnerability and threat analysis to fires in tropical ecosystems. All these efforts will contribute to strengthening the capacities of countries to restore productive forests and landscapes during the current decade of restoration, in the face of high exposure to climate change.



## Integrated watershed management and water security

In 2019, the Watersheds and Water Security Unit (UCSH) focused on consolidating and expanding the lines of research through master's thesis research, research and development projects, and the establishment of partnerships with research centers and universities to address the subject of watersheds. The implementation of the *Proresilience* project in Haiti, financed by the European Union and implemented with OXFAM, stands out. In this project, work was done on planning watersheds and community development, focusing on food security and assessing the resilience of these communities and their territories to the impacts of climate change and variability.

In addition, as part of the work approaches in watershed management, the following stand out: the development of the follow-up, monitoring and evaluation system of the *PROCUENCAS Panama* project (implemented by the Ministry of Environment); the drafting of the Management Plan for the Lake Atitlán Basin, Guatemala (requested by the Lake Atitlán Watershed Management Authority); and the development of the Territorial Management Plan for the Selle Massif watersheds in the southeast department of Haiti (financed by the United Nations Development Program-UNDP). Based on the implementation of these tools for the management and administration of hydrographic basins, in 2019 specific progress was made in facilitating and mediating for the change towards co-management of basins based on the institutionalization of this plan as a guide for the work of the Authority for the Management of the Lake Atitlán Basin, establishing enabling conditions for the sustainability of this basin, which is of great importance for tourism in Guatemala.

With the implementation of watershed planning methodologies in Haiti, the incorporation and adoption of the methodological guide for watershed co-management has been achieved ([http://haitienvironnement.org/yahoo\\_site\\_admin/assets/docs/Guide.145103620.pdf](http://haitienvironnement.org/yahoo_site_admin/assets/docs/Guide.145103620.pdf)), which has also served to introduce a farm planning methodology using a watershed approach, thus facilitating the homogenization of methodological processes in watershed management. Several international organizations use these methodologies, including UNDP and OXFAM.

In Panama, CATIE is leading the social and ecological components of the *Implementation of biodiversity monitoring and conservation actions in the Indio River basin* project, which focuses on supporting biodiversity conservation in the watershed.

In 2019, workshops were held with local stakeholders, forming community groups to implement the monitoring and implement the first community monitoring in the basin, thus facilitating the consolidation of a database.



## Our strategic partners

CATIE has managed to strengthen its actions with the support of multiple local, national and international partners. Below, we highlight those with which various initiatives were developed in 2019, on the subject of forests, biodiversity, climate change and watersheds:

### Universities

- Institute for Investigations and Forest Services of the National University of Costa Rica (UNA)
- School of Forest Engineering of the Technological Institute of Costa Rica (TEC)
- Technological University of Pereira, Colombia
- National School of Agrarian Sciences (ENCA), Guatemala
- National Institute for Forestry Sciences (NIFOS), South Korea
- University Mayor of Chile
- University of Idaho, United States

### National or local governments

- National Conservation Area System (SINAC), Costa Rica
- Center for International Cooperation in Agronomic Research for Development (CIRAD), France
- Forest Ecosystems Observatory (OEFo), Costa Rica
- National Center for Geo-environmental Information (CENIGA), Technical Unit of the Ministry of Environment and Energy of Costa Rica
- National Monitoring System of Land Use, Cover and Ecosystems (SIMOCUTE), Costa Rica
- National Environmental Information System (SINIA), Costa Rica
- International Model Forest Network
- National Council of Protected Areas (CONAP), Guatemala
- National Forests Institute (INAB), Guatemala
- National Institute for Conservation, Forest Development, Protected Areas and Wildlands (ICF), Honduras
- National Forestry Institute (INFONA), Paraguay
- Forest Service of Peru (SERFOR)
- Autonomous Regional Corporation of Risaralda (CARDER), Colombia
- Governance of Santa Cruz de la Sierra, Bolivia
- Brazilian Agricultural Research Company (EMBRAPA)
- Brazilian Forest Service (SFB)
- National Forestry Corporation (CONAF), Chile
- Forestry Institute (INFOR), Chile
- Ministry of Environment of Colombia
- Ministry of Environment of Panama
- National Forest Financing Fund (FONAFIFO),

Costa Rica

- Canadian Forest Service
- National Forestry Commission (CONAFOR), Mexico
- Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA)
- French Development Agency (AFD)
- *Foundation for Forest Management and Production Control, of the Ministry of Spatial Planning, Land and Forestry, Surinam*

### Civil society

- *Tropical Managed Forests Observatory (TmFo)*
- *World Resources Institute (WRI)*
- International Union of Forest Research Organizations (IUFRO)
- Fundatoledo, Hojanca, Costa Rica
- Action Fund, Colombia
- Madera Verde, Honduras
- CUSO, Canadá
- Association of Forest Communities of the Petén, Guatemala
- Association for Research and Integrated Development (AIDER), Peru
- College of Agronomy Engineers, Costa Rica

### Private enterprises

- Foundation for the Development of the Central Volcanic Cordillera (FUNDECOR), Costa Rica
- Forest Development Commission of San Carlos (CODEFORSA), Costa Rica
- Tirimbina Biological Reserve, Costa Rica
- Foundation for the Conservation of the Chiquitano Dry Forest, Bolivia

### International organizations

- United Nations Organization for Food and Agriculture (FAO)
- International Center for Tropical Agriculture (CIAT)
- *World Wildlife Fund (WWF)*, Panama
- Center for International Forestry Research (CIFOR)
- *World Agroforestry (ICRAF)*
- RAINFOREST ALLIANCE



## Most relevant publications

- Turrén-Cruz, T; Benegas-Negri, L; Gutiérrez-Montes, IA; Brenes-Pérez, C. 2019. Evaluación de la vulnerabilidad ante eventos climáticos extremos, en La Paz, Baja California Sur; México. *CIENCIA ergo-sum*, 26(1):1-27. Papers in refereed scientific journals.
- Carrera, F; Rodas, A. 2019. Contribución de las concesiones forestales en Guatemala al cumplimiento de los Objetivos de Desarrollo Sostenible. XXV IUFRO World Congress. Papers in conference proceedings.
- Chacón, Mario. 2019. Resumen del estado del monitoreo forestal en Latinoamérica y el Caribe. Papers in conference proceedings.
- Corrales, L; Brenes, C; Fung, E; Betbeder, J. Evaluación de la infraestructura verde y conectividad ecológica en el cantón de Curridabat. Report and other publications.
- Corrales, L; Brenes, C. 2019. Estrategia Regional para el Manejo y Conservación de los Manglares en el Golfo de Nicoya-Costa Rica-2019-2030. Book and Monographs.
- Rozendaal, D; Bongers, F; Aide, MT; Alvaréz-Dávila, E; Ascarrunz, N; Balvanera, P; Becknell, JM; Bentos, TV; Brancalion, P; L. Cabral, GA; Calvo-Rodríguez, S; Chave, J; César, RG; Chadzon, RL; Condit, R; Dallinga, JS; De Almedia-Cortéz, JS; De Jong, B; De Oliveira, A; Denslow, JS; Dent, DH; DeWalt, S; Dupuy, JM; Durán, SM; Dutrieux, LP; Espírito-Santo, MM; Fandino, MC; Fernandes, GW; Finegan, B; García, H; Gonzalez, N; Granda-Moser, V; Hall, JS; Hernández-Stefanoni, JL; Hubell, S; Jakovac, CC; Hernández, AJ; Junqueira, AB; Kennard, D; Larpin, D; Letcher, SG; Licona, JC; Lebrija-Trejos, E; Marín-Spiotta, E; Martínez-Ramos, M; S. Massoca, PE; Meave, JA; G. Mesquita, RC; Mora, F; Muller, SC; Muñoz, R; Nolasco-De Oliveira-Neto, S; Norden, N; F. Nunes, YR; Ochoa-Ganoa, S; Ortiz-Malavassi, E; Ostertag, R; Peña-Claros, M; Perez-García, EA; Piotta, D; Powers, JS; Aguilar-Cano, J; Rodríguez-Buritica, S; Rodríguez- Velázquez, J; Romero-Romero, MA; Ruíz, J; Sánchez-Azofeifa, A; Silva- De Almeida, A; L. Silver, W; Schwartz, NB; Wayt-Thomas, W; Toledo, M; Uriarte, M; Valadares-Da Sá Sampaio, E; Van Breugel, M; Van der Wall, H; Martins, SV; M. Veloso, MD; M. Vester, HF; Vicentini, A; G. Vieira, IC; Villa, P; Williamson, GB; Zanini, KJ; Zimmerman, J; Poorter, L. 2019. Biodiversity recovery of Neotropical secondary forests (en línea). *Science Advances* 5(3). Consultado 04 mar. 2020. Disponible en DOI: 10.1126/sciadv.aau3114
- Ministerio del Ambiente de Haití, PNUD, CATIE (Benegas, L., Faustino, J., Watler, W.J.). 2019. Guide Méthodologique pour l'Élaboration des Plans de Gestion des Bassins Versants d'Haïti. Publicación Técnica.
- Serrano-Molina, JJ; Delgado, D; Esquivel, MJ; Morales-Aymerich, JP. 2019. Guía didáctica para la silvicultura de bosques secundarios y degradados de Centroamérica (en línea). Serie Técnica. Manual Técnico 14. Consultado 04 mar. 2020. Disponible en <http://repositorio.bibliotecaorton.catie.ac.cr/handle/11554/9101>
- Veintimilla, D; Ngo Bieng, MA; Delgado, D; Vilchez-Mendoza, S; Zamora, N; Finegan, B. 2019. Drivers of tropical rainforest composition and alpha diversity patterns over a 2,520 m altitudinal gradient (en línea). *Ecology and Evolution* 9(10):5720-5730. Consultado 04 mar. 2020. Disponible en <https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.5155>
- Villalobos-Soto, R; Bustos, E; Carrera-Gambeta, F; Delgado, D; Zamora, R. 2019. Elementos críticos para la restauración a escala de paisajes, desde experiencias de los bosques modelo (en línea). Papers in conference proceedings. Consultado 04 mar. 2020. Disponible en <http://repositorio.bibliotecaorton.catie.ac.cr/handle/11554/9217>

## Stories of Success:

Gustavo Pinelo, an agent of change in community forestry management in Guatemala, considers CATIE to be a promoter of sustainable forestry development in the Petén.

*“CATIE’s contribution can be seen from different points of view. Among the most impacting is the research that began with the design and installation of experiments in permanent plots for measurement to learn about the dynamics of the Petén forest. This research has closed a cycle by providing scientific data, ensuring with some degree of certainty the long-term permanence of the five timber species with the greatest volumetric contribution in the forest concessions of the multiple use zone of the Maya Biosphere Reserve. Furthermore, in terms of forest management, CATIE was the first school to ensure the conservation and good management of the Petén forest, publishing technical forestry and environmental elements that now serve as support in several countries. But what has been transcendental is accompanying forestry concession process, which is clearly a globally recognized success, with ample possibilities for replication”.*





# CATIE IN THE REGION

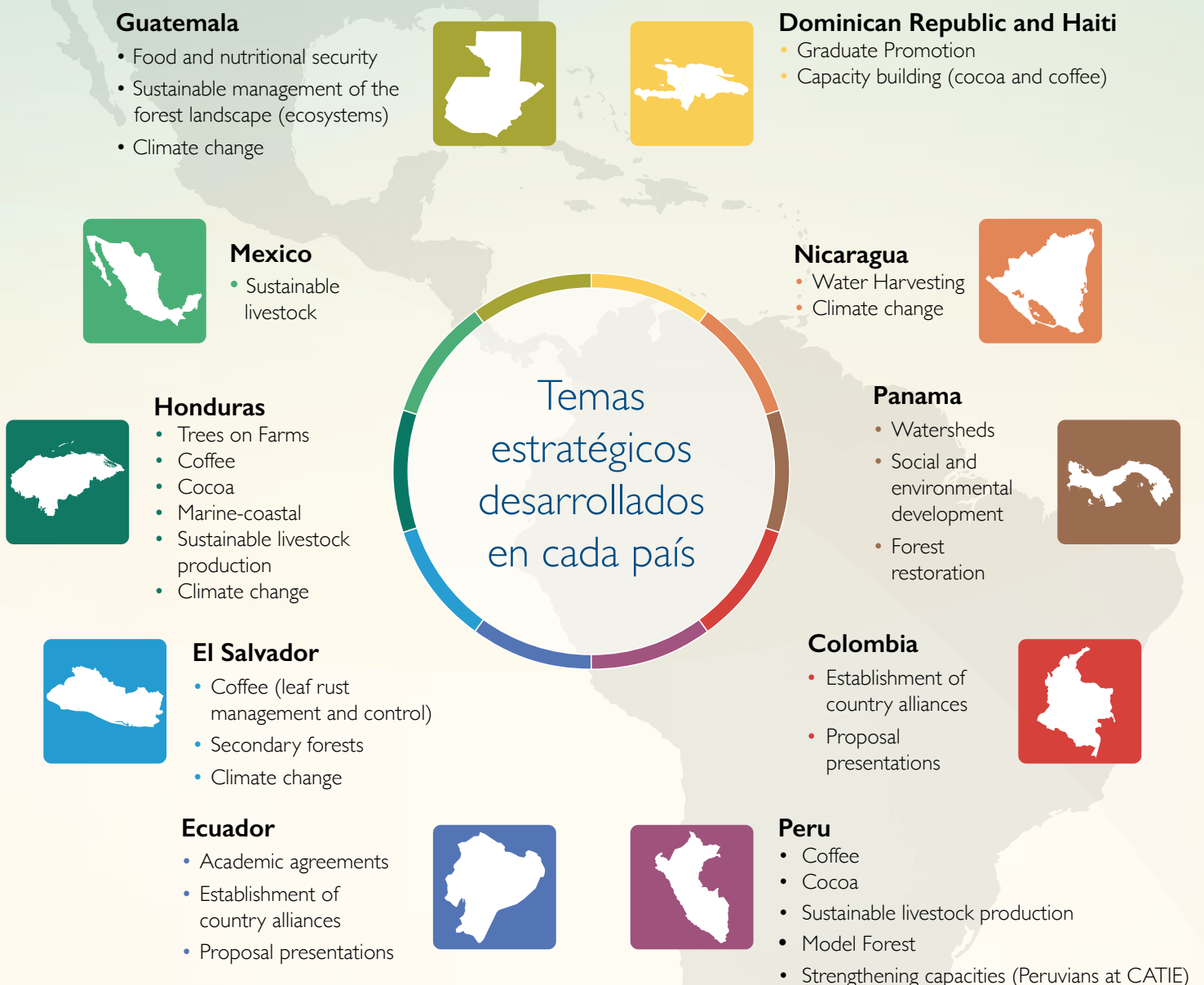
# Addressing the demands of the region

CATIE's mandate focuses on supporting countries in the region to develop sustainable and inclusive management of agriculture and natural resources.

In 2019, the institution, with the support of various partners and donors has worked on multiple projects and capacity building processes on key issues, which meet the demands of the region. Among the actions developed in the countries, the transfer of technology and knowledge and the impact on policies at different scales stand out, contributing to poverty reduction and the economic, social and environmental development of the region.

The following is a summary of these actions in the countries.

## Strategic themes developed in each country





# Strengthening capacities

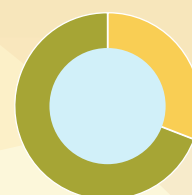
Thematic areas	Country													
	Belize	Bolivia	Chile	Colombia	Costa Rica	Ecuador	Guatemala	Honduras	Jamaica	Mexico	Nicaragua	Panama	Peru	
Climate change (adaptation, mitigation, financing)														
Protected Areas, biodiversity														
Climate-smart Agriculture														
Sustainable silvo-pastoral, and low-emission livestock production														
Natural resource management and administration														
Watershed management														
Geographic information systems														
Coffee and cocoa agroforestry systems														
Value chains														
Alternative conflict resolution														
Forests, restoration														
Sustainable Development Goals														
Biostatistics														
Environmental economics and environmental services														

Belize	Bolivia	Chile	Colombia	Costa Rica*
66	46	21	20	1087
Ecuador	Guatemala	Honduras	Jamaica	
49	21	69	11	
Mexico	Nicaragua	Panama	Peru	
4477	88	1598	530	

Number of professionals trained per country

**8083**

persons trained by CATIE



69% men



31% women

\* Note: In the case of Costa Rica, the figure reflects the professionals who come to train at CATIE's headquarters in Turrialba, Costa Rica. They represent 26 countries in total.

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 members include 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).



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## **INDEPENDENT AUDITORS' REPORT**

To the Board of Directors of the Tropical Agriculture Research and Training Center (CATIE)

### *Opinion*

We have audited the accompanying financial statements of the Tropical Agriculture Research and Training Center ("CATIE" or the "Entity"), which comprise the statements of financial position as of December 31, 2019 and 2018, and the statements of activities, changes in net assets, and cash flows for the years then ended, and a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Tropical Agriculture Research and Training Center ("CATIE" or the "Entity") as of December 31, 2019 and 2018, its financial performance and its cash flows for the year then ended, in accordance with the International Financial Reporting Standards.

### *Basis for Opinion*

We conducted our audit in accordance with the International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Entity in accordance with the Code of Professional Ethics of the Association of Certified Public Accountant of Costa Rica and the Code of Ethics for Professional Accountants of the International Ethics Standards Board for Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with such requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### *Additional Financial Information*

Our audit was conducted in order to have an opinion on the basic financial statements taken as a whole. The supplemental financial information included in exhibits 1 to 6 is presented in order to report on the status of the fees receivable from member countries and the execution of operations by CATIE. This information is not required by the basic financial statements. This information has been the subject of the audit procedures applied in the audit of the financial statements mentioned above, and in our opinion, is presented fairly, in all material respects, with the financial statements taken as a whole.

### *Responsibilities of Management and Those Charged with the Entity's Governance with the Financial Statements*

Management is responsible for the preparation and fair presentation of the Entity's accompanying financial statements according to the International Financial Reporting Standards and for the internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In the preparation of financial statements, Management is responsible for assessing the Entity' ability to continue as a going concern, disclosing as it may be necessary, the matters related to the going concern principle and using such accounting basis, unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance of the Entity are responsible for overseeing the financial reporting process of.

## *Auditor's Responsibilities for the Audit of the Financial Statements*

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the International Standards on Auditing (ISAs) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the International Standards on Auditing (ISA), we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting in the preparation of the financial statements in the context of the applicable financial reporting framework. We also conclude, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the disclosures in the financial statements about the material uncertainty or, if such disclosures are inadequate, to modify the opinion on the financial statements. Our conclusions are based on information available at the date of the auditor's report. However, future events or conditions may cause the Entity to cease to continue as a going concern.



- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We are required to communicate with those charged with governance at the Entity regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.



Licda. Anayancy Porras Barrientos - C.P.A. No.2863  
Insurance Policy No.0116 FIG 7  
Expires: September 30, 2020  
Revenue stamp of Law No.6663, ¢1.000, affixed and paid  
La Ribera de Belén, Heredia, Costa Rica

July 6, 2020



## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

### STATEMENTS OF FINANCIAL POSITION AS OF DECEMBER 31, 2019 AND 2018

(Expressed in thousands of US dollars)

	Notes	2019	2018
<b>ASSETS</b>			
CURRENT ASSETS:			
Cash and cash equivalents	3d, 4	US\$ 4,669	US\$ 4,763
Investments in financial instruments	3g, 3h, 5	227	446
Accounts receivable	3i, 6	1,796	2,125
Inventories	3g, 7	<u>380</u>	<u>359</u>
Total current assets		7,072	7,693
PROPERTY, FURNITURE, BEARER PLANTS AND EQUIPMENT - Net	3j, 3k, 10	5,277	5,494
BIOLOGICAL ASSETS	3n, 8	500	437
TRUST ASSETS	9	1,573	1,570
OTHER ASSETS	3m, 11	<u>878</u>	<u>861</u>
TOTAL		<u>US\$15,300</u>	<u>US\$16,055</u>
<b>LIABILITIES AND NET ASSETS</b>			
CURRENT LIABILITIES:			
Current portion of long-term debt	13	US\$ 72	US\$ 134
Current portion of financial liabilities for right to use	3e, 16	67	
Trade accounts payable		102	79
Employee benefits	14	338	470
Repatriation and recognition of years of service	3w	371	90
Accumulated expenses and other accounts payable	3m, 12	<u>670</u>	<u>873</u>
Total current liabilities		1,808	1,646
LONG - Term Debt	13	702	590
FINANCIAL LIABILITY FOR RIGHT OF USE	3e, 16	<u>188</u>	<u>          </u>
Total liabilities		<u>2,510</u>	<u>2,236</u>
NET ASSETS:			
Unrestricted funds:			
Regular funds	3b	1,885	1,294
Plant fund	3b	5,926	5,933
Temporarily restricted funds:			
Agreement fund	3a	4,180	4,888
Funds in custody	3a	<u>799</u>	<u>1,704</u>
Total net assets		<u>12,790</u>	<u>13,819</u>
TOTAL		<u>US\$15,300</u>	<u>US\$16,055</u>

The accompanying notes are an integral part of the financial statements.



**TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)**

**STATEMENTS OF ACTIVITIES  
FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018**  
(Expressed in Thousands of US Dollars)

Notes	2019						2018						
	Unrestricted Regular Funds			Temporarily Restricted Funds			Unrestricted Regular Funds			Temporarily Restricted Funds			
	Basic Activities Fund	Productive Activities Fund	Sub-total	Agreements	Custody	Total	Basic Activities Fund	Productive Activities Fund	Sub-total	Agreements	Custody	Total	
Income:													
IICA Contribution	US\$1,000		US\$1,000			US\$ 1,000	US\$ 938		US\$ 938			US\$ 938	
Member country fees	600		600			600	600		600			600	
Tuition of students	783		783			783	803		803			803	
Administrative support and overhead	912		912			912	1,186		1,186			1,186	
Miscellaneous	360		360			360	197		197			197	
Funds released from restrictions		US\$ 329	329	US\$9,712	US\$4,862	14,903		US\$ 314	314	US\$12,150	US\$4,896	17,360	
Management of goods and services		1,320	1,320			1,320		1,211	1,211			1,211	
Agricultural activities		942	942			942		1,157	1,157			1,157	
Trust contributions	742		742			742	620		620			620	
Total income	3q	4,397	2,591	6,988	9,712	4,862	21,562	4,344	2,682	7,026	12,150	4,896	24,072
Expenses:													
Staff	3,726	955	4,681	6,374	2,259	13,314	3,609	980	4,589	6,752	2,282	13,623	
Travel and per-diem	178	26	204	549	232	985	202	21	223	985	197	1,405	
Communications and printouts	98	59	157	167	122	446	149	64	213	332	99	644	
Building maintenance	53	215	268	62	108	438	52	253	305	93	59	457	
General expenses	181	206	386	787	180	1,354	307	197	504	887	243	1,634	
Training and scholarships	345		345	617	1,468	2,430	236		236	1,500	1,612	3,348	
Investments (in assets)				262	44	306				329	57	386	
Supplies and costs	78	639	718	102	212	1,031	40	730	770	154	149	1,073	
Overhead costs				792	237	1,029	24		24	1,118	198	1,340	
Total expenses		4,659	2,100	6,759	9,712	4,862	21,333	4,619	2,245	6,864	12,150	4,896	23,910
Primary (deficit) surplus		(262)	491	229			229	(275)	437	162			162
Transfer from the productive activities fund		491	(491)					437	(437)				
Increase in unrestricted net assets		229		229			229	162		162			162
Other non-current revenues:													
Donation and sale of assets		118		118			118	138		138			138
Gain in valuation of biological assets		115		115			115	133		133			133
Value of milk contribution certificates		(106)		(106)			(106)	173		173			173
Income from impairment of notes payable		161		161			161						
Total non-current income		288		288			288	444		444			444
Other non-current expenses:													
Depreciation expense	10	614		614			614	523		523			523
Lease financial expense		24		24			24						
Amortization of intangibles								18		18			18
Loss from asset disposal		110		110			110	14		14			14
Loss in valuation of biological assets								8		8			8
Impairment of accounts receivable - net of recoveries	6	(847)		(847)			(847)	(583)		(583)			(583)
Impairment of accounts receivable		131		170			170	143		143			143
Total non-current expenses		32		32			32	123		123			123
Increase (decrease) in unrestricted net assets after non-current items		US\$ 485	US\$	US\$ 485	US\$	US\$	US\$ 485	US\$ 483	US\$	US\$ 483	US\$	US\$	US\$ 483

The accompanying notes are an integral part of the financial statements.

## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

### STATEMENTS OF CHANGES IN NET ASSETS FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

(Expressed in Thousands of US Dollars)

	Notes	Net Assets				Total
		Unrestricted Funds		Temporarily Restricted Funds		
		Regular	Plant	Agreements	Custody	
BALANCE, AS OF DECEMBER 31, 2017		US\$1,691	US\$6,061	US\$ 4,237	US\$ 1,480	US\$ 13,469
Adjustment from adoption of IFRS 9	4, 15	(936)				(936)
Restricted contributions received from donors				12,557	5,176	17,733
Disbursements from restricted funds				(12,150)	(4,896)	(17,046)
Other movements in restricted funds		(237)	165			(72)
Recognition of balances receivable from donors	6			712	789	1,501
Release of restricted funds				(468)	(845)	(1,313)
Decrease in funds		<u>776</u>	<u>(293)</u>			<u>483</u>
BALANCE, AS OF DECEMBER 31, 2018		1,294	5,933	4,888	1,704	13,819
Adjustment from adoption of IFRS 16	16		(7)			(7)
Restricted contributions received from donors				9,242	4,580	13,822
Disbursements from restricted funds				(9,712)	(4,862)	(14,574)
Other movements in restricted funds		106				106
Recognition of balances receivable from donors	6			474	166	640
Release of restricted funds				(712)	(789)	(1,501)
Decrease in funds		<u>485</u>				<u>485</u>
BALANCE, AS OF DECEMBER 31, 2019		<u>US\$1,885</u>	<u>US\$5,926</u>	<u>US\$ 4,180</u>	<u>US\$ 799</u>	<u>US\$ 12,790</u>

The accompanying notes are an integral part of the financial statements.

## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

### STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

(Expressed in Thousands of US Dollars)

	Notes	2019	2018
<b>OPERATING ACTIVITIES</b>			
Increase in net assets		US\$ 485	US\$ 483
Adjustments to reconcile the change in net assets with net cash provided by (used in) operating activities:			
Depreciation	10	614	523
Amortization of intangible assets			(8)
Impairment of accounts receivable - member countries	6	193	248
Recovery of accounts	6	570	831
Loss in disposal of biological assets	8		9
Changes from valuation of biological assets	8	(14)	(18)
Financial expenses on loans		36	27
Other movements of restricted funds		(762)	(352)
Impairment of notes payable		(161)	
Changes in operating assets and liabilities:			
Accounts receivable		(434)	(542)
Inventories		(21)	11
Trade accounts payable		23	25
Employees' legal benefits		(132)	(204)
Repatriation and recognition of years of service		281	90
Accumulated expenses and other accounts payable		(237)	(204)
Cash provided by (used in) the operating activities		441	829
Interest paid		(2)	(1)
Net cash provided by (used in) the operating activities		439	828
<b>INVESTMENT ACTIVITIES</b>			
Short-term investments		219	(186)
Additions to property, furniture and equipment	10	(171)	(436)
Additions to intangible assets			24
Proceeds from the sale of fixed assets	10	205	67
Decrease of biological assets	8	(49)	(11)
Additions to the trust fund		(3)	70
Other financial assets		(17)	(242)
Net cash used in the investment activities		(184)	(714)
<b>FINANCING ACTIVITIES</b>			
New loans		334	370
Amortization of debt		(123)	(125)

(Continues)



## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

### STATEMENTS OF CASH FLOWS

#### FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

(Expressed in Thousands of US Dollars)

	2019	2018
Amortization of leases	US\$ (58)	
Temporarily-restricted contributions	13,822	US\$ 17,733
Disbursements for the execution of temporarily-restricted funds	<u>(14,692)</u>	<u>(17,184)</u>
Net cash provided by the financing Activities	<u>(717)</u>	<u>794</u>
NET VARIATION IN CASH AND CASH EQUIVALENTS	(94)	908
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE YEAR	<u>4,763</u>	<u>3,855</u>
CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR	<u>US\$ 4,669</u>	<u>US\$ 4,763</u>

#### TRANSACTIONS THAT DID NOT GENERATE ANY CASH MOVEMENT:

1. During 2019 and 2018, donations of machinery, vehicles, furniture, and equipment for the sum of US\$117 and US\$138, respectively. Such donations come from the Agreements Fund for US\$62 and US\$85 for 2019 and 2018, respectively, and from the Custody Fund, for US\$56 and US\$53 for 2019 and 2018, respectively. The transactions mentioned above did not use or generate cash.
2. During 2019, IFRS 16 was adopted, which entailed the recognition of leased buildings in the fixed asset accounts for a total of US\$313; these transactions were recognized in the financial statement where cash was used (Note 16).
3. As a result of the implementation of IFRS 9 for 2019, impairment of notes payable was recognized for a total of US\$161; these transactions were recognized in the financial statement where cash was used (Note 13).

(Concluded)

The accompanying notes are an integral part of the financial statements.

# TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

(Expressed in Thousands of US Dollars)

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### 1. ACTIVITIES

The Tropical Agriculture Research and Training Center (the "Entity") is an international university at a postgraduate level that teaches and trains leaders in agriculture, natural resources and related fields, so that they are able to face challenges and take advantage of the opportunities of a changing world in Costa Rica. Its top-level holding company is International Group Holdings Limited. Therefore, CATIE has postgraduate programs recognized for their quality and track record, it teaches what it does with hundreds of members in many countries and shares the progress and levels of science and technology in different fields of interest and the demands and needs of today's world. Its headquarters are located in Turrialba, Costa Rica and is formed by thirteen member countries and the Inter-American Institute for Cooperation on Agriculture (IICA).

CATIE was established in 1973 through a ten-year agreement entered between the Costa Rican Government and the Inter-American Institute for Cooperation on Agriculture (IICA). In 1983, this agreement was amended and extended up to 2000. As indicated in Note 17, in 2000 the parties entered into a new agreement for a 20-year term.

In addition, in 1993 CATIE created the Foundation for Education and Research in the Development and Conservation of Natural Resources of the American Tropics (FUNDATROPICOS), a Costa Rican foundation which main purpose is to achieve the financial sustainability of CATIE through management of donations and other funds received, in order to ensure a fixed income source for the continuance of its operations.

The financial statements are presented in *US Dollars (\$)* and are rounded to the nearest thousandth.

### 2. ADOPTION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

- a. ***Application of New and Revised International Financial Reporting Standards ("IFRS" or "IAS") that are Mandatory for the Current Period*** - In the current period, the Entity applies a series of new and amended IFRS, issued by the International Accounting Standard Council ("IASB") which are mandatory and became effective for the periods that started on or after January 1, 2019.

**New and Amended IFRS in Effect that are Effective for the Years and Reporting Periods Beginning as of January 1, 2019** - The Entity implemented IFRS 16 (issued by the IASB in January 2016), which establishes new or modified requirements with respect to lease accounting. It introduces significant changes to lessee accounting, removing the distinction between an operating lease and a finance lease and requiring the recognition of a right-of-use

asset and a lease liability at the initial date of all leases, except those considered to be short-term or low-value assets. In contrast to lessee accounting, the requirements for the lessor remain significantly unchanged. Details of the new requirements are described in Note 3. The initial impact of the adoption of IFRS 16 on the Entity's financial statements is described below.

The date of initial application of IFRS 16 for the Entity will be January 1, 2019.

The Entity has implemented IFRS 16 using the modified retrospective approach, reformulating the comparative information.

- *Impact of the New Definition of a Lease* - The Entity will make use of the practical expedient available on transition to IFRS 16 not to reassess whether a contract is or contains a lease. Accordingly, the definition of a lease in accordance with IAS 17 and IFRIC 4 will continue to apply to those leases entered or modified before January 1, 2019.

The change in the definition of a lease mainly relates to the concept of control. IFRS 16 determines whether a contract contains a lease based on whether the customer has the right to control the use of an identified asset for a term in exchange for a consideration. This contrasts with the "risks and benefits" approach of IAS 17 and IFRIC 4.

The Entity will apply the definition of a lease and related guidance set out in IFRS 16 to all lease agreement entered into or modified on or after January 1, 2019. In preparation for the first-time adoption of IFRS 16, the Entity has carried out an implementation project, which has shown that the new lease definition under IFRS 16 will not significantly change the scope of contracts that meet the definition of a lease for the Entity.

- *Impact on Lessee Accounting* -
  - Previous Operating Leases - IFRS 16 will change how the Entity accounts for leases previously classified as operating leases under IAS 17, which were off-statement of financial position.

When applying IFRS 16, for all leases (except those noted below), the Entity will:

- i. Recognize right-of-use assets and lease liabilities in the statement of financial position, initially measured at the present value of future lease payments.
- ii. Recognize the depreciation of right-of-use assets and interest on lease liabilities in the income statement.
- iii. Separate the total amount of cash paid to the principal (presented in the financing activities) and interest (presented in the financing activities) in the statement of cash flows.

Lease incentives (e.g. rent-free period) are recognized in the initial measurement as part of the right-of-use assets and lease liabilities when under IAS 17 they resulted in the recognition of a lease incentive, amortized as a reduction of rental expenses generally on a straight-line basis.



Under IFRS 16, assets for rights of use are tested for impairment in accordance with IAS 36.

For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers, office furniture, and telephones), the Entity will choose to recognize a lease expense on a straight-line basis as permitted by IFRS 16. This expense is presented in "other expenses" in the income statement.

- Previous Finance Leases - The main differences between IFRS 16 and IAS 17 with respect to contracts classified as finance leases is the measurement of the residual value guarantees provided by the lessor to the lessee. IFRS 16 requires the Entity to recognize as part of its lease liabilities only the amount expected to be payable under a residual value guarantee, rather than the maximum amount guaranteed as required by IAS 17. This change did not result in any material impact on the Entity's financial statements.
- *Impact on Lessor Accounting* - IFRS 16 does not contain significant changes in the way a lessor accounts for a lease. Under IFRS 16, a lessor continues to classify leases as either finance leases or operating leases and accounts for those two types of leases differently.

Moreover, IFRS 16 changed and expanded the necessary disclosures, especially those relating to how the lessor manages the risks arising from the residual interest on leased assets.

Under IFRS 16, an intermediate lessor must account for the primary lease and sublease as two separate contracts. The intermediate lessor must classify the sublease as a finance lease or an operating lease by reference to the right-of-use asset arising from the primary lease (and not by reference to the underlying asset as was the case under IAS 17).

Due to this change, the Entity has reclassified some sublease contracts as finance leases. As required by IFRS 9, an allowance for doubtful accounts is recognized for finance leases receivable.

- *Initial Financial Impact Arising from the Adoption of IFRS 16* - The tables below show the adjustment amounts for each item in the financial statements affected by the implementation of IFRS 16 for the current and previous periods.

	<b>2019</b> <b>(Figures in</b> <b>Thousands)</b>	<b>2018</b> <b>(Figures in</b> <b>Thousands)</b>
Impact on income statement		
Impact on results of the year:		
Increase in depreciation of right-of-use assets (1)	US\$ 71	
Increase in financial expenses (1)	24	
Decrease in other expenses (1)	<u>(82)</u>	
Increase (decrease) in the results of the year	<u>US\$ 13</u>	<u>US\$</u>

Impact on Assets, Liabilities and Capital as of December 31, 2019	Previously Reported	Adjustment by IFRS 16	Reformulated
Right-of-use assets (1)	_____	US\$234	US\$234
Net impact on total assets	US\$ _____	US\$234	US\$234
Lease Liabilities (1)	_____	US\$255	US\$255
Net impact on total liabilities	US\$ _____	US\$255	US\$255
Retained earnings	US\$ _____	US\$ (7)	US\$ (7)

The Entity as a lessee:

- (1) The implementation of IFRS for to leases previously classified as operating leases under IAS 17 resulted in the recognition of right-of-use assets for US\$234 and lease liabilities for US\$255. It also resulted in a decrease in other expenses for US\$82, an increase in depreciation for US\$71, and an increase in interest expenses for US\$24.

The implementation of IFRS 16 has an impact on the Entity's statement of cash flows. Under IFRS 16, lessees must present:

- Short-term lease payments, low-value asset lease payments, and equity lease payments which are not included in the measurement of lease liability, as part of operating activities;
- The cash paid for the interest on lease liabilities either as operating activities or financing activities, as permitted by IAS 7 (the Entity has decided to include interest paid as part of financing activities); and
- Cash payments for the capital portion of the lease liabilities, as part of the financing activities.

The adoption of IFRS 16 did not result in any impacts on the net cash flows.

- b. **Impact of the Application of other Amendments to the IFRS Standards and Interpretations that are Effective for Periods Beginning on or After January 1, 2019** - In the current year, the Entity has adopted a series of amendments to the IFRS Standards and Interpretations issued by the IASB. Their adoption has had no material impact on the disclosures or amounts reported in these financial statements.

- **Amendments to IFRS 9 – Prepayment Features with Negative Compensation** - The Entity adopted the amendments to IFRS 9 for the first time in the current year. The amendments to IFRS 9 clarify that, for the purpose of assessing whether a prepayment feature meets the SPPI condition (Solely Payments of Principal and Interest), the party exercising the option may pay or receive reasonable compensation for the prepayment irrespective of the reason for prepayment. In other words, the assets with prepayment features and negative compensation do not automatically fail SPPI test.
- **Amendments to IAS 28 - Long Term Interests in Associates and Joint Ventures** - The Entity adopted the amendments to IAS 28 for the first time in the current year. The amendment clarifies that IFRS 9, including its impairment requirements, applies to other financial instruments in an associate or joint venture to which the equity method does not apply.

This includes long-term investments which essentially are part of the net investment in an associate or joint venture. The Entity applies IFRS 9 to such long-term interests to which it previously applied IAS 28. In applying IFRS 9, the Entity does not take into account any of the adjustments to the carrying amount of long-term interests as required by IAS 28 (e.g. adjustments to the carrying amount of long-term interests arising from the allocation of losses of the investee or the assessment of impairment under IAS 28).

- **Annual Improvements to the IFRS - 2015-2017 Cycle - Amendments to IAS 12 - Income Taxes, IAS 23 - Borrowing Costs, IFRS 3 - Business Combinations and IFRS 11 - Joint Arrangements** - The Group has adopted the amendments included in the Annual Improvements to the IFRS - 2015-2017 Cycle for the first time in the current year. The annual Improvements include amendments to four standards.
  - *IAS 12 - Income Taxes* - The amendments clarify that an Entity should recognize the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity originally recognized the transactions that generated the distributable profits. This is the case irrespective of whether different tax rates apply to distributed and undistributed profits.
  - *IAS 23 - Borrowing Costs* - The amendments clarify that if any specific borrowing remains outstanding after the related asset is ready for its intended use or sale, that borrowing becomes part of the funds that an entity borrows generally when calculating the capitalization rate on general borrowings.
  - *IFRS 3 - Business Combinations* - The amendments to IFRS 3 clarify that when an entity obtains control of a business that is a joint operation, the entity applies the requirements for a business combination achieved in stages, including remeasuring its previously held interest (PHI) in the joint operation at fair value. The PHI to be remeasured includes any unrecognized assets, liabilities and goodwill relating to the joint operation.
  - *IFRS 11 - Joint Arrangements* - The amendments to IFRS 11 clarify that when a party that participates in, but does not have joint control of, a joint operation that is a business obtains joint control of such a joint operation, the Entity does not remeasure its previously held interest in the joint operation.
- **Amendments to IAS 19 - Employee Benefits Plan Amendment, Curtailment or Settlement** - The amendments clarify that the past service cost (or of the profit or loss on settlement) is calculated by measuring the defined benefit liability (asset) using updated assumptions and comparing benefits offered and plan assets before and after the plan amendment (or curtailment or settlement) but ignoring the effect of the asset ceiling (that may arise when the defined benefit plan is in a surplus position). IAS 19 is now clear that the change in the effect of the asset ceiling that may result from the plan amendment (or curtailment or settlement) is determined in a second step and is recognized in the normal manner in other comprehensive income.



Paragraphs related to the measurement of the current cost of service and net interest on the defined benefit liability (asset). It will now be required to use the updated assumptions of the remeasurement to determine the current cost of the service and the net interest after the amendment (curtailment or settlement) of the plan and for the remainder of the reporting period. In the case of net interest, the amendments make it clear that for the period after the plan's amendment (curtailment or settlement), the net interest is calculated by multiplying the liability (asset) times the defined profits as revalued according to IAS 19:99 at the discount rate used in the new remeasurement (taking into account the effect of contributions and benefit payments on the net defined benefit liability (asset).

- **IFRIC 23 - Uncertainty over Income Tax Treatments** - IFRIC 23 sets out how to determine the accounting tax position when there is uncertainty over income tax treatments. The Interpretation requires an entity to:
  - Determine whether uncertain tax positions are assessed separately or as a group; and
  - Assess whether it is probable that a tax authority will accept an uncertain tax treatment used, or proposed to be used, by an entity in its income tax returns:
    - i. If so, the entity should determine its accounting tax position consistently with the tax treatment used or planned to be used in its income tax returns.
    - ii. If not, the entity should reflect the effect of uncertainty when determining the accounting tax position using the most likely amount or the expected value method.
- c. ***New and Revised IFRS in Issue but not Yet Effective*** - As of the date of issue of these financial statements, the Entity has not applied the following new and revised IFRS that have been issued but are not yet effective:
  - I. **IFRS 10 and IAS 28 (Amendments)** - Sale or Contribution of Assets between an Investor and its Associate or Joint Venture.
  - II. **Amendments to IFRS 3** – Definition of a Business.
  - III. **Amendments to IAS 1 and IAS 8** - Definition of Materiality.
  - IV. **Conceptual Framework** - IFRS Conceptual Framework.

The Company's management is analyzing the adoption of the above-mentioned standards, and as of the date of this report, it is unreliable to issue an opinion on the future impact on the Company's financial statements; the main changes are detailed below:

- I. **Amendments to IFRS 10 and IAS 28 - Sale or Contribution of Assets between an Investor and its Associate or Joint Venture** - Amendments to IFRS 10 and IAS 28 deal with situations where there is a sale or contribution of assets between an investor and its associate or joint venture. Specifically, the amendments state that the profit or loss resulting from the loss of control of a subsidiary that does not contain a business in a

transaction with an associate or joint venture that is accounted for using the equity method, are recognized in the profit or loss of the controlling entity only to the extent of the interest of unrelated investors in that associate or joint venture. Similarly, the profit and loss resulting from the remeasurement of investments retained in any former subsidiary (that has become an associate or a joint venture that is accounted for using the equity method) at fair value, are recognized in the profit or loss of the previous controlling entity, only to the extent of the interests of unrelated investors in the new associate or joint venture.

The effective date of the amendments has yet to be set by the IASB; however, earlier application of the amendments is permitted. The Entity's management anticipate that the application of these standards could have an impact on the Entity's financial statements in future periods should such transactions arise.

- II. **Amendments to IFRS 3 – Definition of a Business** - The amendments clarify that while businesses usually have outputs, outputs are not required for an acquired set of activities and assets to qualify as a business. To be considered a business, an acquired set of activities and assets must include at least an input and a substantial process that together contribute significantly to the ability to create outputs.

Additional guidance is provided to help determine whether a substantive process has been acquired.

The amendments introduce an optional test to identify the fair value concentration, which allows for a simplified assessment of whether a set of acquired assets and activities is not a business if substantially all the fair value of the acquired gross assets is concentrated in a single identifiable asset or a set of similar assets.

The amendments are applied prospectively to all business combinations and asset acquisitions for which the acquisition date is on or after the beginning of the first reporting period beginning on or after January 1, 2020, with earlier adoption allowed.

- III. **Amendments to IAS 1 and IAS 8 – Definition of Materiality** - The amendments are intended to simplify the definition of materiality contained in IAS 1, making it easier to understand and are not intended to alter the underlying concept of materiality in the IFRS. The concept of obscuring material information with non-material information has been included in the new definition.

The limit for influential materiality for users has been changed from "could influence" to "reasonably be expected to influence".

The definition of materiality in IAS 8 has been replaced by a reference to the definition of materiality in IAS 1. In addition, the IASB amended other standards and the Conceptual Framework that contained a definition of materiality or reference to the term "materiality to ensure consistency."

The amendment will be prospectively applied for reporting periods that start on or after January 1, 2020, and earlier application is permitted.

- IV. **Conceptual Framework in IFRS** - Along with the revised Conceptual Framework, which became effective on 29 March 2018, the IASB also issued the Amendments to References to the Conceptual Framework in IFRS. The document contains amendments to IFRS 2, 3, 6, 14, IAS 1, 8, 34, 37, 38, IFRIC 12, 19, 20, 22 and SIC 32.

However, not all modifications update the pronouncements regarding references to the conceptual framework so that they refer to the revised Conceptual Framework. Some pronouncements are only updated to indicate which version they refer to (the IASC Framework adopted by the IASB in 2001, the 2010 IASB Framework or the Revised Framework of 2018) or to indicate that the definitions in the Standard have not been updated with new definitions developed in the revised Conceptual Framework.

The amendments, which are actually updates, are effective for annual periods beginning on or after January 1, 2020, with earlier adoption allowed.

### 3. SIGNIFICANT ACCOUNTING POLICIES

- a. **Basis of Presentation** - CATIE's financial statements are prepared according to the International Financial Reporting Standards (IFRS), and in addition, certain guidelines of the Financial Accounting Standard No.117, issued by the American Institute of Certified Public Accountants of the United States of America, have been adopted (applicable to not-for-profit entities commencing December 1994) (Note 1r), since the IFRS do not include specific matters applicable to not-for-profit entities.

**Historical Cost** - Generally, historical cost is based on the fair value of the consideration granted in exchange of goods and services.

**Fair Value** - Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Entity takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability on the measurement date. Fair value for measurement and/or disclosure purpose in these financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of IFRS 2, leasing transactions that are within the scope of IAS 17, and, measurements that have some similarities to fair value but are not fair value, such as net realizable value in IAS 2 or value in use in IAS 36.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- *Level 1* - Inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date;
- *Level 2* - Inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
- *Level 3* - Unobservable inputs for asset or liability.



- b. **Funds Managed by CATIE** - Funds managed by CATIE are classified in the financial statements, according to their restrictions, as Unrestricted Funds, Plant Fund and Temporarily Restricted Funds. These funds are segregated into the following categories based on their source and purpose:

- **Unrestricted Regular Funds -**

- *Basic Activities Fund* - It includes the basic activities of CATIE in promoting and developing the research and education in agriculture, forestry, livestock, and related fields, as established in its original articles of incorporation.

Such activities are mainly financed through member countries fees, IICA's annual contributions, revenues from training activities, specific donations and contributions received for financing these activities, through interests generated on trusts of which CATIE is a beneficiary, and through the administrative and logistical support (overhead) charged to project agreements.

- *Productive Activity Fund* - It comprises those activities developed by CATIE in the agriculture, livestock and management of goods and services fields, which generate an economic benefit. The main productive activities are: cultivation of sugarcane, coffee, and other minor agricultural products, as well as cattle farming, lodging services, and data processing services, among others.
- *Plant Fund* - This Fund controls the real property, furniture and equipment acquired with resources from the Basic Activities Fund and funds donated by national or international organizations. The assets included in this Fund are part of CATIE's available resources to achieve its institutional goals. The balance of the Plant Fund is represented by the monetary value, net of depreciation, of real and personal property owned by CATIE. This Fund does not include fixed assets acquired with resources from the Agreements Fund, since capital expenditures are recognized as expenses of the respective project. Nevertheless, if such assets are donated, exchanged, or sold to CATIE upon termination of the contract, they will be included in this Fund. Physical control over fixed assets acquired with resources from the Agreements Fund is kept by CATIE, through a fixed assets database.

- **Temporarily Restricted Funds -**

- *Funds in Custody* - Includes funds received from national and international organizations to finance training and education provided by CATIE to some scholarship students and technicians from those institutions, as well as for the execution of certain research projects, which negotiated amount is under US\$75,000. For control purposes, income and expenses related to those funds are recorded separately until their specific purposes are fulfilled.
- *Agreement Fund* - Correspond to funds received by CATIE for the execution of certain agreements and contracts subscribed with national and international organizations, and their use is specifically restricted to the agreed-upon activities of such agreements and

contracts. For control purposes, separate accounting records are used for the income and expenses related to those funds. Some of these funds are administered in independent checking accounts, according to the contractual requirements established by the donor. In addition, CATIE has entered into agreements with national and international organizations on which CATIE has no participation or technical responsibility whatsoever. Thus, income and expenses of such funds are not shown as such in the Statement of Activities. The balance administered for this concept as of December 31, 2019 and 2018, amounts to US\$135 and US\$127, respectively.

- c. **Currency and Foreign Currency Transactions** - The accounting records of CATIE are kept in United States of America dollars (US\$), its functional currency, and the financial statements and its notes, are also expressed in such currency. Monetary assets and liabilities originated in currencies other than their functional currency are translated to US dollars at the exchange rates in effect in each country as of the date of the financial statements.

Transactions made in foreign currency are registered at the exchange rate in force as of the date of the transaction. Assets and liabilities in foreign currency at the end of each accounting period are adjusted at the exchange rate in force as of such date. Exchange rate differences originated from the liquidation of assets and obligations denominated in foreign currency and from the adjustment of balances as of closing date are recognized in the results of the period in which they occurred.

As of December 31, 2019 and 2018, exchange rates for US\$1 at each of the countries where CATIE develops its activities were the following:

Country	Currency	Exchange Rate as of December 31, 2019	Exchange Rate as of December 31, 2018
Belize	Belize Dollar	2.00	2.00
Bolivia	Bolivianos	6.86	6.86
Costa Rica	Colones	570.09	604,39
Guatemala	Quetzales	7.70	7.74
Honduras	Lempiras	24.635	24.339
CEE	Euro	0.8898	0.8740
Nicaragua	Córdobas	33.838	32.331
Peru	Nuevo Sol	3.314	3.369
Dominican Republic	Dominican Pesos	52.45	50.09

- d. **Cash and Cash Equivalentents** - The cash accounts include restricted balances, held in separate bank accounts, to be used solely to cover disbursements of the agreements signed by CATIE with different donors, or to receive disbursements contributed by them. These restricted balances amount to a US\$4,847 and US\$3,855 as of December 31, 2018 and 2017, respectively. All investments with an original maturity of less than three months are considered cash equivalentents.

- e. **Leases** -

**The Entity as a Lessor** - The Entity enters into lease agreements as a lessor for some of the investment properties. The Entity also leases to retailers the equipment necessary for the presentation and development of activities and equipment manufactured by the Entity.

The leases in which the Entity is a lessor are classified as financial leases or operating leases. When the terms of the agreement significantly transfer all risks and benefits of ownership to the lessee, the agreement is classified as a financial lease. All other agreements are classified as operating agreements.

When the Entity is an intermediate lessor, it accounts the principal lease and sublease as two separate agreements. The sublease is classified as a lease or operating lease in reference to the right-of-use asset arising from the principal lease.

The income from operating leases is recognized on a straight-line basis during the term of the relevant lease. The direct initial costs incurred in the negotiation and arrangements of the operating lease are added to the carrying amount of the leased asset and are recognized on a straight-line basis during the term of the lease.

The outstanding amounts of the financial leases are recognized as leases receivable for the amount of the net investment in the leases. The financial lease income is allocated to the accounting periods as to show a constant rate of return on the net unpaid investment regarding the leases.

When an agreement includes leasing and non-leasing components, the Entity applies IFRS 15 to allocate the consideration for each component under the agreement.

**The Entity as a Lessee** - The Entity evaluates whether an agreement contains a lease at its source. The Entity recognizes a right-of-use asset and a corresponding lease liability for all lease agreements in which it is a lessee, excluding short-term leases (a term of 12 months or less) and low-value assets (such as tablets, personal computers, and small office furniture and phones). For these leases, the Entity recognizes rent payments as an operating on a straight-line basis during the term of the lease, unless another method is more representative of the pattern of time during which the economic benefits arise from the use of the leased assets.

The lease liability is initially measured at the present value of the rental payments that are not made on the start date, discounted by the rate implicit in the agreement. If this rate cannot be easily determined, the Entity uses incremental rates.

Rental payments included in the measurement of the lease liability consist of:

- Fixed rental payments (including fixed payments basically), less any lease incentive received;
- Variable rental payments that depend on an index or rate, initially measured using the index or rate on the start date;
- The expected amount payable by the lessee under residual value guarantees;
- The exercise price of call options, if the lessee is reasonably sure of exercising the options; and
- Payments for penalties resulting from the termination of the lease, if the lease term reflects the exercise of a lease termination option.



The lease liability is presented separately in the statement of financial position.

The lease liability is subsequently measured by increasing the carrying amount to show the interest accrued on the lease liability (using the effective interest method) and reducing the carrying amount to show the rental payments made.

The Entity carries out a revaluation of the lease liability (and makes the corresponding adjustment to the related right-of-use asset) provided that:

- The term of the lease is modified or there is a significant event or change in the circumstances of the lease resulting in a change in the evaluation of the exercise of the call option; therefore, the lease liability is measured by discounting the updated rental payments using an updated discount rate.
- The rental payments are modified as a result of changes to the index or rate or a change to the expected payment under a guaranteed residual value, in which case the lease liability is revalued by discounting the updated rental payments using the same discount rate (unless the change to the rental payments is caused by a change to a variable interest rate, in which case an updated discount rate is used).
- A lease agreement is modified and the modification of the lease is not accounted for as a separate lease, in which case the lease liability is revalued based on the term of the modified lease, by discounting the updated rental payments using a discount rate updated at the effective date of the modification.

The Entity did not make any of the adjustments mentioned in the periods presented.

The right-of-use assets consist of the initial measurement of the corresponding lease liability, the rental payments made on or before the start date less any lease incentives received and any initial costs. The subsequent valuation is the cost less the accumulated depreciation and impairment losses.

If the Entity incurs in an obligation to decommission and remove a leased asset, renovate the facilities where it is located, or restore the underlying asset to the condition required by the lease terms and conditions, a provision measured under IAS 37 must be recognized. To the extent that costs are related to a right-of-use asset, costs are included in the related right-of-use asset unless those costs are incurred to generate inventories.

The right-of-use assets are depreciated over the shorter of the lease term and the useful life of the underlying asset. If a lease transfers the ownership of the underlying asset or the cost of the right-of-use asset shows that the Entity is planning to exercise a call option, the right-of-use asset will be depreciated over the useful life. Depreciation begins on the lease start date.

The right-of-use assets are presented separately in the statement of financial position.

The Entity applies IAS 36 to determine whether a right-of-use asset is impaired and accounts for any impairment losses identified as described in the "Property, plant, and equipment" policy.

As a practical expedient, IFRS 16 allows you not to separate non-lease components, but rather to account for any lease and its related non-lease components as a single agreement. The Entity has not used this practical expedient. For agreements containing lease components and one or more additional lease or non-lease components, the Entity allocates the consideration of the agreement to each lease component under the separate selling price method of the lease component and the relative added selling price for all non-lease components.

- f. **Inventories** - Material and supplies inventories are valued at average cost, which does not exceed its net realizable value. The coffee mill inventory and forest seed bank are valued at amounts that are approximate to its net fair value. The Entity follows the policy of directly including the value of the damaged or obsolete inventories in the operating results, according to the analyses performed on an annual basis.
- g. **Financial Instruments** - Financial assets and liabilities are recognized when the Entity becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially valued at fair value. Transaction costs that are directly attributable to the acquisition or issuance of financial assets and liabilities (different from the financial assets at fair value through profit or loss) are added to or reduced from the fair value of the financial assets or liabilities, where applicable, since initial recognition. The transaction costs directly attributable to the acquisition of financial assets and liabilities at fair value through profit or loss are immediately recognized in the profit or loss.

- h. **Financial Assets** - Every regular purchase or sale of financial assets are recognized and derecognized at a trading date. Regular purchases or sales are financial asset purchases or sales that require the delivery of assets within the term established by the regulations or the usual practice in the market.

All recognized financial assets are subsequently measured in full, either at amortized cost or fair value, according to the financial asset classification.

**Financial Asset Classification** - Debt instruments that meet the following conditions are subsequently measured at amortized cost:

- If the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Debt instruments that meet the following conditions are subsequently measured at fair value through other comprehensive income:

- The financial asset is held within a business model in which assets are managed to achieve a particular objective by both collecting contractual cash flows and selling financial assets; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

By default, all the other financial assets are subsequently measured at fair value through profit or loss.

In spite of the above, the Entity may make the following irrevocable choice/designation since initial recognition of a financial asset:

- It may irrevocably choose to present subsequent changes in the fair value of an equity investment in other comprehensive income if the following certain are met (see (iii) below); and
- It may irrevocably designate a debt instrument that meets the amortized cost or fair value criteria through other comprehensive income if doing so eliminates or significantly reduces an accounting mismatch (see (iv) below).
  - (i) *Amortized Cost and Effective Interest Method* - The effective interest method is a method to calculate the amortized cost of a debt instrument and allocate interest income during the relevant period.

For the financial assets that were not purchased or arisen from impaired credit financial assets (for example, impaired-credit financial assets since initial recognition), the effective interest rate is the rate that accurately discounts the future expected cash inflows (including all paid or received fees that are an integral part of the effective interest rate, the transaction costs and other premiums or discounts) excluding expected credit losses throughout the expected life cycle of a debt instrument or, if applicable, a shorter term at carrying amount, net of the debt instrument since initial recognition. For the purchased or originated impaired credit financial assets, a credit-adjusted effective interest rate is calculated by discounting the future estimated cash flows, including the expected credit losses, at the amortized cost of the debt instrument since initial recognition.

The amortized cost of a financial asset is the amount at which the financial asset is measured since initial recognition less the reimbursements of the principal, plus the accrued amortization using the effective interest method of any difference between such initial amount and the amount at maturity, adjusted by any loss. The gross carrying amount of a financial asset is the amortized cost of a financial asset before adjusting any allowance for losses.

The interest income is recognized on an effective interest basis for debt instruments subsequently measured at amortized cost and fair value through other comprehensive income. For the purchased or originated credit-impaired financial assets, the interest income is calculated based on the effective interest rate at the gross carrying amount of a financial asset, except for the financial assets that subsequently suffered credit impairment (see below). For the financial assets that subsequently suffered credit impairment, the interest income is recognized based on the effective interest rate at amortized cost of the financial asset. If in subsequent reporting periods the credit risk of the credit-impaired financial instrument improves, so that the financial asset is no longer credit impaired, the interest income is recognized based on the effective interest rate at the gross carrying amount of the financial asset.



For the purchased or originated credit impaired financial assets, the Entity recognizes the interest income based on the credit-adjusted effective interest rate at amortized cost of the financial asset since initial recognition. The calculation does not use a gross basis again, even if the credit risk of the financial asset subsequently improves, so that the financial assets are no longer credit impaired.

Interest income is recognized through profit or loss and is included in "Financial Income - Interest Income."

- (ii) *Debt Instruments Classified at Fair Value Through Other Comprehensive Income* - Corporate bonds held by the Entity are classified at Fair Value through other comprehensive income. Corporate bonds are initially measured at fair value plus transaction costs. Therefore, changes in the carrying amount of these corporate bonds as a result of foreign exchange profits and losses (see below), profit or loss impairment (see below), and interest income calculated on an effective interest method basis (see (i) above) are recognized in the profit or loss. The amounts that are recognized as income are the same as the amounts that would have been recognized as income had they been measured at amortized cost. All other changes in the carrying amount are recognized at amortized cost. All other changes in the carrying amount of these corporate bonds are recognized in other comprehensive income or accrued under the heading of investment revaluation reserve. When these corporate bonds are derecognized, the accrued profit or loss previously recognized in other comprehensive income is reclassified as profit or loss.
- (iii) *Equity Investments Designated as Fair Value Through Other Comprehensive Income* - At initial recognition, the Entity may make the irrevocable choice (instrument for instrument) to designate equity instrument investments at Fair Value through other comprehensive income. The designation at fair value through other comprehensive income is not allowed if the equity investment is held for trading or if it is a contingent consideration recognized by an acquirer in a business combination.

A financial asset is held for trading if:

- It has been obtained to be sold in the short run; or
- At initial recognition, it is part of an identified financial instrument portfolio that the Entity manages collectively and if there is evidence of a recent short-term profit-making pattern; or
- It is a derivative (except for derivatives that are contractual financial guarantees or an effective hedging instrument).

Equity instrument investments at fair value through other comprehensive income are initially recognized at fair value plus transaction costs. Then, they are measured at fair value with profit or loss arising from changes to the fair value recognized in other comprehensive income and accrued in the investment revaluation

reserve. The accrued profit or loss cannot be reclassified as profit or loss in the item of equity investments, but it is rather transferred to retained earnings.

The dividends of these equity instrument investments are recognized in the profit or loss according to IFRS 9, unless the dividends clearly represent a recovery of part of the investment cost. The dividends are included in the item of financial income in the profit or loss of the fiscal year.

The Entity has designated all the equity instrument investments that are not held for trading as fair value through other comprehensive income in the initial application of IFRS 9.

- (iv) *Financial Assets at Fair Value Through Profit or Loss* - The financial assets that do not meet the criteria to be measured at amortized cost or fair value through other comprehensive income (see (i) to (iii) above) are measured at fair value through profit or loss. Specifically:
- Equity instrument investments are classified at fair value through profit or loss, unless the Entity designates an equity investment that is not held for trading or contingent consideration resulting from a business combination at fair value through other comprehensive income at initial recognition (see (iii) above).
  - Debt instruments that do not meet the conditions of amortized cost or fair value through other comprehensive income (see (i) and (ii) above), are classified at fair value through profit or loss. Moreover, the debt instruments that meet the conditions of amortized cost or fair value through other comprehensive income can be designated as fair value through profit or loss since initial recognition, if such designation eliminates or significantly reduces a measurement or recognition inconsistency (denominated "accounting disparity") that would result from the measurement of assets or liabilities or the recognition of profit or loss on different bases. The Entity has not designated any debt instruments at fair value through profit or loss.

Financial assets at Fair Value through other comprehensive income are measured at fair value at the end of each reporting period, with any profit or loss of fair value recognized in profit or loss as long as it is not part of a designated hedging relationship (see hedging accounting policy). The net profit or loss recognized in the profit or loss includes any dividends or interest earned on the financial asset and included in "other profit or loss."

*Foreign Exchange Profit or Loss* - The carrying amount of financial assets denominated in a foreign currency is determined at that foreign currency and translated at the exchange rate at the end of each reporting period. Specifically:

- For financial assets measured at amortized cost that are not part of a designated hedging relationship, exchange rate differences are recognized in the profit or loss under "other profit or loss";
- For debt instruments measured at fair value through other comprehensive income that are not part of a designated hedging relationship, currency differences in the amortized cost of the debt instrument are recognized in the profit or loss under the heading of other profit or loss. Other exchange rate differences are recognized in another comprehensive outcome in the investment revaluation reserve;
- For financial assets measured at fair value through profit or loss that are not part of a designated hedging relationship, exchange rate differences are recognized in the profit or loss under the heading of other profit or loss; and
- For equity instruments measured at fair value through other comprehensive income, exchange rate differences are recognized in another comprehensive income in the investment revaluation reserve.

See the hedging accounting policy regarding foreign currency differences where the risk component of a foreign currency for a financial asset designated as a foreign currency risk hedging instrument.

*Financial Asset Impairment* - The Entity recognizes an allowance for expected credit losses on investments in debt instruments measured at amortized cost or at fair value through other comprehensive income, lease accounts receivable, trade accounts receivable and contractual assets, as well as financial guarantee contracts. The amount of the expected credit losses is updated on each reporting date to reflect changes to the credit risk since the initial recognition of the respective financial instrument.

The Entity recognizes expected lifetime expected credit losses on trade accounts receivable, contractual assets and lease accounts receivable. The expected credit losses on these financial assets are estimated using an allowance matrix based on the Entity's historical experience of credit losses, adjusted by factors that are specific to these debtors, the general economic conditions, and an assessment of both the current management and the forecast of conditions on the reporting date, including the time value of the money, where appropriate.

For all other financial instruments, the Entity recognizes a lifetime expected credit loss when there has been a significant increase in the credit risk since initial recognition. However, if the credit risk of a financial instrument has not significantly increased since initial recognition, the Entity measures the allowance for losses for such a financial instrument in an amount equal to the expected 12-month credit loss.

The lifetime expected credit loss represents the expected credit loss resulting from all events of noncompliance during the expected useful life of a financial instrument. In contrast, the expected 12-month credit loss represents the portion of the lifetime expected credit loss that will result from predetermined events on a financial instrument within 12 months of the reporting date.



- (i) *Significant Increase in the Credit Risk* - In assessing whether the credit risk of a financial instrument has significantly increased since initial recognition, the Entity compares the risk of noncompliance of the financial instrument on the reporting date to the risk of noncompliance of the financial instrument on the start date. Recognition. In conducting this assessment, the Entity considers both quantitative and qualitative information as reasonable and well-founded, including the historical experience and available prospective information at no unnecessary cost or effort. The prospective information includes the future prospects of the industries in which the Entity's debtors operate, obtained from economic expert reports, financial analysts, governmental agencies, relevant expert groups and other similar organizations, as well as several external sources of actual information and foreseen economic information related to the Entity's key operations.

In particular, the following information is taken into account when assessing whether the credit risk has significantly increased since initial recognition:

- An existing or expected significant impairment of the external rating (if any) or internal rating of the financial instrument;
- A significant impairment of external market indicators of the credit risk for a specific financial instrument, for example, a significant increase of the credit spread, credit default swap for the debtor, or the term or the extent to which the fair value of a financial asset is less than its amortized cost;
- Existing or expected adverse changes in the economic, financial or business conditions that are likely to cause a significant decrease in the debtor's ability to meet a debt obligation;
- A significant current or expected impairment of the debtor's operating income;
- Significant increases of credit risk on other financial instruments of the same debtor;
- An existing or expected adverse change in the debtor's regulatory, economic or technological conditions resulting in a significant decrease in the debtor's ability to meet obligations.

Regardless of the outcome of the above assessment, the Entity assumes that the credit risk on a financial asset has significantly increased since initial recognition when the contractual payments are delinquent for more than 30 days, unless the Entity has reasonable and reliable information to prove otherwise.

In spite of the above, the Entity assumes that the credit risk on a financial instrument has not significantly increased since initial recognition if the financial instrument is considered to have a low credit risk on the reporting date. A financial instrument is considered to have a low credit risk if:

- The financial instrument has a low risk of noncompliance,
- The debtor has an outstanding ability to meet contractual cash flow obligations in the short term, and
- Adverse changes in the economic and business conditions in the long term may reduce the ability of the debtor to meet contractual cash obligations, but necessarily.

The Entity considers that a financial asset has low credit risk when the asset has an external credit rating of "investment grade" according to the globally accepted definition, or if no external rating is available, that the asset has an internal "achievable" rating. Achievable-for-sale means that the counterparty has a strong financial position and there are no past due amounts.

For financial guarantee contracts, the date on which the Entity becomes a party to the irrevocable commitment is considered to be the date of initial recognition for the purposes of assessing the impairment of the financial instrument. In assessing whether there has been a significant increase in credit risk since initial recognition of financial guarantee contracts, the Entity considers changes in the risk that the specified debtor will default on the contract.

The Entity regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in the credit risk and reviews them as appropriate to ensure that the criteria are able to identify a significant increase in the credit risk before the amount is past due.

(ii) *Definition of Noncompliance* - The Entity considers the following as a noncompliance event for internal credit risk management purposes, since the historical experience indicates that financial assets are not recoverable when they meet any of the following criteria:

- When the debtor fails to comply with financial agreements;
- Information developed internally or obtained from external sources indicates that the debtor is unlikely to pay its creditors, including the Entity, in full (regardless of any guarantees held by the Entity).

Regardless of the above analysis, the Entity considers that noncompliance has occurred when a financial asset has more than 90 days due, unless the Entity has reasonable and reliable information to demonstrate that a later default criterion is more appropriate.

(iii) *Credit-Impaired Financial Assets* – A financial asset is credit-impaired when one or more events have a detrimental impact on the estimated future cash flows of such a financial asset. Evidence that a financial asset is credit-impaired includes observable data on the following events:

- Significant financial difficulty of the issuer or debtor;
  - Breach of a contract, such as a default or expired event (see (ii) above);
  - The debtor's lenders, for economic or contractual reasons related to the debtor's financial difficulty, grant the debtor a concession that the lenders would not otherwise consider;
  - The debtor is more likely to go bankrupt or some other financial reorganization; or
  - The dissolution of a functional market for the financial assets due to financial difficulties.
- (iv) *Derecognition Policy* - The Entity derecognizes a financial asset when there is information indicating that the debtor is in serious financial difficulty and there is no realistic prospect of recovery, for example, when the debtor has been placed in liquidation or has filed a bankruptcy proceeding, or in the case of trade accounts receivable, when the amounts are due for more than two years, whichever is earlier. Written-off financial assets may still be subject to compliance activities under the Entity's recovery procedures, taking into account legal advice where appropriate. Any recovery performed is recognized in the profit or loss.
- (v) *Measurement and Recognition of Expected Credit Losses* - Measuring expected credit losses is a function of the probability of noncompliance, the loss given the noncompliance (i.e. the magnitude of the loss if there is a default) and the exposure to noncompliance. The assessment of the probability of noncompliance and the loss resulting from a default is based on historical data adjusted by the prospective information as described above. As for noncompliance exposure, for financial assets, this is represented by the gross carrying amount of the assets on the reporting date; for financial guarantee contracts, the exposure includes the amount set on the reporting date, along with any additional amount expected to be obtained in the future by the noncompliance date determined based on historical trends, the Entity's understanding of the specific financial needs of the debtors, and other relevant future information.

For the financial assets, the expected credit loss is estimated as the difference between all contractual cash flows owed to the Entity in accordance with the contract and all cash flows that the Entity expects to receive, discounted at the original effective interest rate. For a lease receivable, the cash flows used to determine the expected credit losses are consistent with the cash flows used in measuring the lease receivable in accordance with IAS 17 Leases.

For a financial guarantee contract, where the Entity is required to make payments only in case of noncompliance by the debtor in accordance with the terms of the secured instrument, the allowance for expected losses is the expected payment to reimburse the holder for a credit loss less any amount the Entity expects to receive from the holder, the debtor or any other party.



If the Entity has measured the allowance for losses for a financial instrument in an amount equal to the expected lifetime credit loss in the previous reporting period, but it determines on the current presentation date that the conditions for the expected lifetime credit loss are no longer met, the Entity will estimate the loss margin in an amount equal to the expected credit loss of 12 months on the current reporting date, except for the assets for which the simplified approach was used.

The Entity acknowledges a loss or impairment loss in the profit or loss of all financial instruments with an adjustment corresponding to its carrying amount through an account of allowance for losses, except for investments in debt instruments measured at fair value through other comprehensive income, for which the allowance for losses in other comprehensive and accumulated income in the investment revaluation reserve is recognized, and it does not reduce the carrying amount of the financial asset in the statement of financial position.

Derecognition of Financial Assets - The Entity derecognizes a financial asset only if the contractual rights of the asset's cash flows expire, or when it transfers the financial asset and substantially all risks and benefits of ownership of the asset to another entity. If the Entity does not substantially transfer or withholds all the risks and benefits of ownership and continues to control the transferred asset, the Entity will recognize its withheld interests in the asset and a related liability for the amounts payable. If the Entity substantially withholds all the risks and benefits of ownership of a transferred financial asset, the Entity will continue to recognize the financial asset and will also recognize a secured loan for the income received.

When derecognizing a financial asset measured at amortized cost, the difference between the carrying amount of the asset and the amount of the consideration received and receivable is recognized in the profit or loss. In addition, when derecognizing an investment in a debt instrument classified as fair value through other comprehensive income, the previously accumulated profit or loss in the investment revaluation reserve is reclassified in the profit or loss. In contrast, in the derecognition of an investment in an equity instrument that the Entity chose in the initial recognition to measure at fair value through other comprehensive income, the previously accumulated profit or loss in the investment revaluation reserve is not reclassified in the profit or loss, but it is rather transferred to the accumulated profit (deficit).

i. ***Financial Liabilities and Equity*** -

**Classified as Debt or Equity** - Debt and equity instruments are classified as financial liabilities or as equity according to the contents of the contractual agreements and definitions of a financial liability and an equity instrument.

**Equity Instruments** - An equity instrument is any contract that shows a residual interest on an entity's assets after deducting all liabilities. The equity instruments issued by the Entity are recognized at the income received, net of direct issue costs.

The repurchase of the Entity's own equity instruments is recognized and deducted directly from the equity. No profit or loss is recognized in the profit or loss of the purchase, sale, issue or payment of the Entity's own equity instruments.

**Compound Instruments** - The components of convertible debt securities issued by the Entity are separately classified as financial liabilities and equity according to the contents of the contractual agreements and the definitions of a financial liability and an equity instrument. A conversion option to be settled by exchanging a fixed amount of cash or another financial asset for a fixed number equity instruments is an equity instrument.

At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. This amount is recorded as a liability on an amortized cost basis using the effective interest method until it is extinguished at conversion or maturity date of the instrument.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument in full. This is recognized and included in the net equity, net of the income tax effects, and is not subsequently remeasured.

Transaction costs related to the issue of convertible debt securities are allocated to the liabilities and equity components proportionally to the allocation of the gross income. The transaction costs related to the equity component are directly recognized in the equity. The transaction costs related to the liability component are included in the carrying amount of the liability component and amortized over the useful life of the convertible loan notes using the effective interest method.

**Financial Liabilities** - All financial liabilities are subsequently measured at amortized cost using the effective interest method or at fair value through profit or loss.

However, financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuous equity method is applied, and the financial guarantee contracts issued by the Entity are measured in accordance with the specific accounting policies detailed below.

**Financial Liabilities at Fair Value through Profit or Loss** - Financial liabilities are classified at fair value through profit or loss when the financial liability (i) is the contingent consideration of an acquirer in a business combination, (ii) is held for trading, or (iii) is designated as fair value through profit or loss.

A financial liability is classified as held for trading if:

- It has been acquired mainly to repurchase it in the short term; or
- At initial recognition, it is part of a portfolio of identified financial instruments that the Entity jointly manages and has a recent actual pattern of short-term profit-making; or
- It is a derivative, except that the derivative is a financial guarantee contract or a designated and effective hedging instrument.

A financial liability not held for trading or the contingent consideration of an acquirer in a business combination may be designated as fair value through profit or loss at initial recognition if:

- Such designation significantly eliminates or reduces a measurement or recognition inconsistency that would otherwise arise; or
- The financial liability is part of a financial asset or financial liability or both, which is managed and its performance is assessed at fair value in accordance with the Entity's documented risk management or investment strategy, and the information on the combination is internally provided on that basis; or
- It is part of a contract containing one or more implied derivatives, and IFRS 9 allows the entire combined contract to be designated as fair value through profit or loss.

Financial liabilities at fair value through profit or loss are measured at fair value, and the profit or loss arising from changes in the fair value is recognized in the income to the extent that it is not part of a designated hedging relationship (see the hedging accounting policy). The net profit or loss recognized in the profit or loss includes any interest paid on the financial liability and is included in the heading of "other profit or loss" in the income.

However, for financial liabilities designated as fair value through profit or loss, the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability is recognized in other comprehensive income unless the recognition of the effects of changes in the credit risk of the liability in other comprehensive income would create or extend an accounting mismatch in the income. The remaining amount of the change in the fair value of the liability is recognized in the income. Changes in the fair value attributable to the credit risk of a financial liability recognized in other comprehensive income are not subsequently reclassified in the income. They are rather transferred to the accumulated profit once the financial liability is derecognized.

The profit or loss on financial guarantee contracts issued by the Entity and which are designated by the Entity as fair value through profit or loss is recognized in the income.

**Financial Liabilities Subsequently Measured at Amortized Cost-** Financial liabilities that are not (i) a contingent consideration of an acquirer in a business combination, (ii) held for trading, or (iii) designated as fair value through profit or loss, are subsequently measured at amortized cost using the effective interest method.

The effective interest method is a method for calculating the amortized cost of a financial liability and for allocating interest expenses during the relevant period. The effective interest rate is the rate that accurately deducts foreseen future cash payments (including all charges and points paid or received that are an integral part of the effective interest rate, transaction costs, and other premiums or discounts) over the expected useful life of the financial liability, or (if appropriate) a shorter term, at the amortized cost of a financial liability.

**Financial Guarantee Contractual Liabilities** - A financial guarantee contract is a contract that requires the issuer to make specific payments to reimburse the holder for a loss incurred because a specific debtor did not make the payments when due under the terms of a debt instrument.



Financial guarantee contractual liabilities are initially measured at fair value and, if not designated at fair value through other comprehensive income and do not arise from a transfer of an asset, they are subsequently measured at the greater of:

- the amount of the allowance for losses determined in accordance with IFRS 9 (see the financial assets above); and
- the amount initially recognized less, where applicable, the accumulated depreciation recognized in accordance with the revenue recognition policies set out above.

**Foreign Exchange Profit or Loss** – For the financial liabilities that are denominated in a foreign currency and are measured at amortized cost at the end of each reporting period, foreign currency profit or loss is determined based on the amortized cost of the instruments. These foreign currency profit or loss is recognized under the heading "Other profit or loss" in the income for financial liabilities that are not part of a designated hedging relationship. For those designated as a hedging instrument for foreign currency risk hedging, foreign currency profit or loss is recognized in other comprehensive income and accrued into a separate component of the equity.

The fair value of financial liabilities denominated in a foreign currency is determined in that foreign currency and translated at the exchange rate at the end of the reporting period. For financial liabilities measured at fair value through profit or loss, the foreign currency component is part of the profit or loss of fair value and is recognized in the profit or loss for financial liabilities that are not part of a designated hedging relationship.

**Derecognition of Financial Liabilities** - The Entity derecognizes financial liabilities if, and only if, the Entity's obligations are fulfilled, paid or have expired. The difference between the carrying amount of the derecognized financial liability and the consideration paid and payable is recognized in the income.

When the Entity exchanges a debt instrument in another with the existing lender on substantially different terms, such an exchange is accounted for as an extinction of the original financial liability and the new financial liability is recognized. Similarly, the Entity considers the substantial modification of the terms of an existing liability or a part therein as an extinction of the original financial liability and the new liability is recognized. The terms are supposedly substantially different if the present discounted value of cash flows under the new terms, including any net paid fee or any fee received and discounted using the original effective rate is at least 10% different from the current discounted value of the remaining cash flows of the original financial liability. If the change is not substantial, the difference between: (1) the carrying amount of liability prior to modification; and (2) the present value of cash flows after modification should be recognized in the income as profit or loss due to modification in other profit or loss.

- j. **Property, Furniture, Bearer Plants and Equipment** - CATIE follows the policy of recording funds disbursed for the acquisition of property, furniture, bearer plants and equipment as expenses, and it subsequently capitalizes those amounts in the Plant Fund whenever those assets are acquired with resources from the Basic Activities Fund. Therefore, such capitalization is performed based on the acquisition cost of the assets.

CATIE also registers as part of the Plant Fund property, plant and equipment acquired through Funds in Custody as part of the Plant Fund, except in those cases the entity where the person responsible for the fund communicates of the non institutional use of the asset upon termination of the contract or agreement.

- k. **Depreciation** - Depreciation of property, furniture, bearer plants and equipment is made using the straight-line method over the estimated useful lives of the respective assets, as shown below:

Detail	Depreciation Rates
Buildings	2 to 10%
Machinery	6.67 to 20%
Vehicles	10 to 16.67%
Office and home furniture and equipment	10 to 100%
Laboratory equipment	10 to 33.33%
Computer equipment and licenses	10 to 33.33%
Software licenses	20 to 33.33%
Coffee plantations	6.67 a 10%
Sugar cane plantations	7.69 a 10%

Depreciation expense is recorded in the Plant Fund.

- l. **Allowance for Impairment of Accounts Receivable from Member Countries** - As of 2011, CATIE calculates this impairment based on Article 8 of the "General Regulations of CATIE" which state that the Member State in arrears in the payment of their fees for more than 2 full years will have the right to vote in the Superior Council of Ministers. Based on this article, CATIE has recorded impairments for those member country fees that have been in arrears for two years or more.

When IFRS 9 became effective on January 1, 2018, the amount of the expected credit loss is updated on each reporting date to reflect changes in credit risk since the initial recognition of the respective financial instrument. For 2019, the impairment sum was US\$416 (thousands) and for 2018, it was US\$583 (thousands).

CATIE recognizes an allowance for losses from foreseen credit losses in accounts receivable from member countries. The amount of credit losses is updated on each reporting date to reflect the changes in the credit risk since the initial recognition of the respective financial instrument.

CATIE recognizes lifetime expected credit losses on accounts receivable from member countries. The expected credit losses on these financial assets are estimated using an allowance matrix based on the historical experience of credit losses, adjusted by factors that are specific to these debtors, the general economic conditions, and an assessment of the current direction and the forecast of conditions on the reporting date, including the time value of money when appropriate.

For the remaining financial instruments, CATIE recognizes a lifetime credit loss when there has been a significant increase in the credit risk since initial recognition. Nevertheless, if the credit risk of a financial instrument has not significantly increased since initial recognition, CATIE measures the allowance for losses for such a financial instrument in an amount equal to the expected 12-month credit loss.

The lifetime expected credit loss represents the expected credit loss resulting from all the events of noncompliance during the expected useful life of a financial instrument. In contrast, the expected 12-month credit loss represents the portion of the lifetime expected credit loss that will result from predetermined events on a financial instrument within 12 months of the reporting date.

- m. **Valuation of Other Assets** - CATIE registers the amounts disbursed for the purchase of certificates of investment of Cooperativa de Productores de Leche Dos Pinos, R.L., at historical value. Every year an impairment valuation takes place, taking into consideration the reasonability of the balance.

With the implementation of IFRS commencing on January 1, 2018, the sum of the disbursements for acquiring certificates of investment held at their historical value are measured at fair value, taking the profit or loss in valuation to results.

- n. **Biological Assets** - CATIE follows the practice of capitalizing the disbursements incurred for developing and breeding cattle for the dairy activity. At the end of each accounting period, dairy cattle is valued at its fair value, recognizing a profit or loss from the increase or decrease of the herd.

The sugarcane and coffee plantations are initially registered at cost, which is considered as fair value because it has not had a significant biological transformation. Afterwards, it is measured at fair value, less the costs at point of sale.

Forest plantations are valued at fair value through a methodology that considers the different conditions of the plantations, according to their diameters, plantation management, density, topography, quality of sites, and on the basis of lots measured every year.

In order to determine fair value, biological assets are separated by age and type, calculating the expected present value of the net cash flows by biological asset, in their current condition and location.

- o. **Temporarily Restricted Net Assets** - Funds contributed by national or international organizations to establish the Agreement Funds, Funds in Custody, and Administered Funds, for the execution of agreements, contracts, or specific activities are recorded as temporarily restricted net assets. As they are used in the activities defined in the agreements and contracts, CATIE simultaneously recognizes such amounts as income released from restrictions and as expenses of the Agreement Fund and Funds in Custody in the statement of activities.

When the expenses incurred by CATIE in the execution of an agreement, contract, or specific activity exceed the respective contributions, the excess is recorded as an account receivable from the respective donor.

- p. **Employees' Legal Benefits** - According to the Costa Rican labor law, employees that are dismissed without just cause are entitled to severance pay, equivalent to 20 days of salary for each year of continuous service, with a limit of eight years. However, on December 23, 1998, CATIE, along with a Permanent Employee Committee, agreed that severance pay should be recognized as an actual right and not as an expectation by law. The main clauses of such agreement were the following:

- Since January 1999, CATIE monthly deposits 8.33% of salaries and benefits paid in the Fideicomiso de Cesantía del Personal Nacional del CATIE (Trust for Severance Pay of CATIE's Local Employees), which is administered by the investment fund administration company of Banco Popular y Desarrollo Comunal. As of March 2001, 3% of this provision is transferred to different pension funds selected by employees. Starting in February 2012, 5.33% of severance is deposited in Asociación Solidarista de Empleados (ASOCATIE) (CATIE's Employee Fund), in behalf of the associated employees.
- From September to December 2016, a massive employment termination process was applied for staff from Costa Rica. The objective was to reduce staff costs, and along with the Permanent Workers Committee, it was agreed to eliminate additional employee benefits to the 3% law of the Labor Compensation Fund (FOCOPEN), five-year bonuses, as well as annual payments for seniority.
- Funds corresponding to severance, plus the accumulated yield, will be returned to each employee only at the moment of leaving CATIE, regardless of the reason of their exit.

For employees working in countries where CATIE has offices, the policy of directly charging expenses and provisioning employees' legal benefits is followed.

q. **Revenue Recognition** - The Entity recognizes income from the following sources:

- Donations from member countries and from the Inter-American Institute for Cooperation on Agriculture ("I.I.C.A.").
- Research and projects carried out in different member countries regarding soil and climate studies.
- Income from tuition of students of post-graduate Master's programs provided by CATIE.
- Agricultural income from the sale of cane, coffee, seeds, and milk.

**Donations** - The Entity is composed of member countries that make a contribution of US\$50,000 per year, and I.I.C.A, which contributes US\$1,000,000 per year, and these donations are used as working capital.

This income is recognized during the period because, according to the contractual terms, each member must contribute such amounts per year.

**Research and Projects** - The Entity conducts various research projects on forest areas, river basins, climate change, among others. These projects account for income for CATIE, and it is recognized in accordance with the contractual terms of each, either according to progress made or delivery of final report.

**Student Tuition Income** - As part of its operations, the Entity has become one of the most important universities in Latin American. CATIE receives income from tuition from postgraduate and Master's programs on agricultural sciences, and it is recognized when students enrolled.



- Agricultural Income** - CATIE receives income from seed sales, cultivation of sugar cane and coffee and milk production. This income is recognized when the control and risks of each product are transferred, which usually takes place at the point of sale, i.e. at CATIE facilities.
- r. **Contributions to the International Professional Staff Retirement Fund** - Pursuant to the provisions of the employment agreements of the international professional staff, CATIE and the professionals must jointly contribute to a retirement fund. According to Resolution No.9-94/VII ROJD of the VII Regular Meeting of CATIE's Board of Directors, the monthly contributions to cover expected disbursements of this Retirement Fund are transferred by CATIE to *Morgan Stanley Investment Funds* and to the OAS Retirement Fund. The management of such funds is the sole responsibility of the international professional staff.
- s. **Use of Estimates** - In preparing the financial statements, Management has to make estimates that affect the reported amounts of certain assets and liabilities, as well as of other income and expenses shown in the financial statements. Actual results could vary from such estimates. Estimates made by management include estimates for impairment of other countries' fees, useful life of property, furniture, bearer plants and equipment, and labor liabilities.
- t. **Vacation** - The Costa Rican laws establish that for each year of work, employees are entitled to certain number of vacation days. The Entity registers on a monthly basis a provision to cover future disbursements for this concept.
- u. **Applicable Regulations of the Financial Accounting Standards No.117, Issued by the American Institute of Certified Public Accountants of the United States of America** - CATIE has adopted certain guidelines of the Financial Accounting Standard No.117. This principle establishes general standards for the presentation of the financial statements and the basic financial information of the not-for-profit organizations.
- v. **Intangible Assets** - Intangible assets with defined useful life and separately acquired are registered at cost less the accumulated amortization and any accumulated impairment loss. Amortization is recognized using the straight-line method on their estimated useful life. The estimated useful life and depreciation method are reviewed at the end of each reporting period, and the effect of any change in the estimate is registered on a prospective basis. Intangible assets with an indefinite useful life that are acquired separately are registered at cost less any accumulated impairment loss.
- w. **Repatriation and Recognition of Years of Service** - In accordance with its own regulations, CATIE covers the costs of transfers, travel to the home country and recognition of years of service of international professional staff when employees resign or are dismissed, and this is calculated according to the years of service and the number of dependents of each officer. In addition, the national staff could enjoy recognition of years of service when leaving CATIE, except in countries where local laws require the payment of fourteen or more salaries per year, or in which half or more of the monthly salary per year of service is required, in the event of resignation or termination of services.

In countries where CATIE has offices, the national staff could receive termination benefit payment under the applicable laws in each country. CATIE has implemented the policy of recording an allowance for legal benefits to cover future disbursements, considering the actuarial probabilities of future events, future salary increases and the time value of money. Actual payments for these items are charged to the allowance.

#### 4. CASH AND CASH EQUIVALENTS

Cash and cash equivalents as of December 31 are detailed below:

	<b>2019</b>	<b>2018</b>
Petty cash	US\$ 10	US\$ 11
Cash due from banks	<u>4,659</u>	<u>4,612</u>
Sub-total	4,669	4,623
Cash and cash equivalents:		
In US dollars:		
Banco BCT, certificates of time deposit, in US dollars, annual interest rate of 2.3%, with maturity in March 2019	<u>          </u>	<u>140</u>
Total	<u>US\$4,669</u>	<u>US\$4,763</u>

As of December 31, 2019 and 2018, there is restricted cash totaling US\$2,709 and US\$1,991, respectively, corresponding to donations made for specific projects, agreements and student scholarships.

#### 5. INVESTMENTS IN FINANCIAL INSTRUMENTS

Financial investments at maturity as of December 31 are detailed below:

	<b>2019</b>	<b>2018</b>
Banco G&T Continental, certificates of time deposit, in quetzales, interest rate of 5.75% variable per annum (6.00% in 2017) per annum, with maturity in March 2018	US\$ 64	US\$ 64
Banco de América Central, certificates of time deposit, in US dollars, annual fixed interest rate of 2.25%, with maturity in April 2019		9
Banco BCT, certificates of time deposit, in US dollars, annual fixed interest rate of 3%, with maturity in April 2019		25
Banco BCT, certificates of time deposit, in US dollars, annual variable interest rate of 3.77%, with maturity in December 2019		328
Banco BCT, certificates of time deposit, in US dollars, annual fixed interest rate of 2.10%, with maturity in February 2019		20

(Continues)

	<b>2019</b>	<b>2018</b>
BCT Bank, dollar certificates of time deposit 4.10% fixed annual interest with maturity in April 2020	US\$ 26	
BCT Bank, dollar certificates of time deposit 3.25 per cent a fixed annual interest with maturity in May 2020	27	
BCT Bank, dollar certificates of time deposit 3% fixed annual interest with maturity in June 2020	35	
BCT Bank, dollar certificates of time deposit 3.25% fixed annual interest, with maturity in February 2020	50	
BCT Bank, certificates of time deposit in colones, 8.3% at annual fixed interest rate with maturity in March of the 2021	<u>25</u>	<u>          </u>
Total	<u>US\$227</u>	<u>US\$446</u>

## 6. ACCOUNTS RECEIVABLE

Accounts receivable as of December 31 are detailed below:

	<b>2019</b>	<b>2018</b>
Trade	US\$ 419	US\$ 520
Staff	53	21
Fundatrópicos interest	124	127
Advance payments for the development of projects	21	9
Member country fees	3,020	3,261
Third-party payments for the benefit of agreements	474	712
Third-party payments for the benefit of funds in custody	166	789
Others	<u>2</u>	<u>16</u>
Sub-total	4,279	5,455
Less: Allowance for impairment	<u>(2,483)</u>	<u>(3,330)</u>
Total	<u>US\$ 1,796</u>	<u>US\$ 2,125</u>

Accounts receivable from countries correspond to fees not paid to the Entity by member countries, which were established for the implementation of basic activities and are classified as unrestricted funds. Accounts receivable are recovered in the functional currency of the financial statements, are not subject to any discount, and do not bear interest.

A detail of the movement of the allowance for impairment is shown below:

	<b>2019</b>	<b>2018</b>
Balance at the beginning of the year	US\$ 3,330	US\$2,977
Recovery of estimated accounts	(1,040)	(831)
Adjustment from Adoption of IFRS 9		936
Increase in the allowance	<u>193</u>	<u>248</u>
Balance at the end of the year	<u>US\$ 2,483</u>	<u>US\$3,330</u>

As of December 31, 2019 and 2018, doubtful accounts for the sum of US\$170 and US\$73, respectively, corresponding to the custody fund, were directly recognized to the expense.

During 2018, CATIE adopted International Financial Reporting Standard 9: Financial Instruments, which is why the following effects are presented in the financial statements as of December 31, 2018, considering that the administration made the decision to adopt it prospectively, as established by the norm:

<b>Detail</b>	<b>Balance</b>
Adjustment according IRFS 9 - previous period	US\$ 936
Adjustment IFRS 9 2018	<u>210</u>
Total	<u>US\$1,146</u>

The following table details the risk profile of accounts receivable under CATIE's allowance matrix:

	<b>December 31, 2019</b>			
	<b>Less than one Year</b>	<b>One to Two Years</b>	<b>Over Two Years</b>	<b>Balance</b>
Accounts receivable - countries	US\$ 385	US\$ 424	US\$ 2,630	US\$ 3,439
Allowance for accounts receivable countries	<u>(229)</u>	<u>(150)</u>	<u>(2,104)</u>	<u>(2,483)</u>
Total	<u>US\$ 156</u>	<u>US\$ 274</u>	<u>US\$ 526</u>	<u>US\$ 956</u>

	<b>December 31, 2018</b>			
	<b>Less than one Year</b>	<b>One to Two Years</b>	<b>Over Two Years</b>	<b>Balance</b>
Accounts receivable - countries	US\$ 649	US\$ 994	US\$ 2,138	US\$ 3,781
Allowance for accounts receivable countries	<u>(572)</u>	<u>(875)</u>	<u>(1,883)</u>	<u>(3,330)</u>
Total	<u>US\$ 77</u>	<u>US\$ 119</u>	<u>US\$ 255</u>	<u>US\$ 451</u>

## **7. INVENTORIES**

Inventories as of December 31 are as follows:

	<b>2019</b>	<b>2018</b>
Coffee at coffee mill	US\$ 29	US\$ 21
Forest seed bank	267	254
Materials and supplies	62	67
Others	<u>22</u>	<u>17</u>
Total	<u>US\$380</u>	<u>US\$359</u>



Due to the infrastructure and physical conditions where the inventories are stored and their non-perishable nature, Management considers that there will be a low risk and likelihood of incurring in losses due to the obsolescence or low turnover of the inventories; therefore, it is not appropriate to keep an allowance for obsolescence or slow turnover.

## 8. BIOLOGICAL ASSETS

Biological assets consist of dairy cattle, coffee plantations, sugarcane, and wood.

Biological assets are as follows:

	<b>2019</b>	<b>2018</b>
Wood	US\$200	US\$174
Cattle	<u>300</u>	<u>263</u>
Total	<u>US\$500</u>	<u>US\$437</u>

A summary of the movement of the account of biological assets is shown below:

	<b>2019</b>	<b>2018</b>
Balance at the beginning of the year	US\$437	US\$417
Additions	49	11
Adjustments from a change in the fair value	14	18
Loss in disposal of biological assets	<u>          </u>	<u>(9)</u>
Balance at the end of the year	<u>US\$500</u>	<u>US\$437</u>

A detail of purchases and births, sales and deaths and valuation adjustments of cattle is as follows:

	<b>Heads of Cattle</b>	<b>Cost</b>
Balances as of December 31, 2017	290	US\$272
Purchases and births	185	
Sales and deaths	(132)	
Adjustment for valuation	<u>          </u>	<u>(9)</u>
Balances as of December 31, 2018	343	263
Purchases and births	187	
Sales and deaths	(164)	
Adjustment for valuation	<u>          </u>	<u>37</u>
Balances as of December 31, 2019	<u>366</u>	<u>US\$300</u>

As of December 31, 2019, CATIE had a dairy herd of 188 milk-producing cows (of these, there are 147 producing milk and 41 in rest period). There are also 106 heifers, 19 of them will soon give birth for the first time and 87 are in development stage. There are 72 breeding heifers, from which 25 heifers were bred in 2018 and 47 heifers in 2019, with the purpose of producing a breeding herd using dairy cow wombs crossed with beef semen. In addition, there 3 breeding bulls for artificial insemination. CATIE produced, in the year ended December 31, 2019, 867.344 milk kilograms, with a reasonable value less the estimates costs in the point of sale of 327 colons for each kilogram (value determined at the time of milking).

As of December 31, CATIE has the following wood plantations:

	Number of Hectares Planted	
	2019	2018
Initial balance	147	147
Entry	6	17
Departures	(10)	(17)
Final Wood Balance	<u>143</u>	<u>147</u>

## 9. TRUST FUNDS

Trust funds as of December 31 are as follows:

	2019	2018
Contributions to the trust:		
COSUDE II/Fundatrópicos Funds	<u>US\$1,573</u>	<u>US\$1,570</u>

FUNDATROPICOS-CATIE-BCT/2014 Investment Fund Management Trust ("the Trust") was created on May 23, 2014 by the Foundation for Education and Research in the Development and Conservation of Natural Resources in the American Tropics (FUNDATROPICOS) and the Tropical Agriculture Research and Training Center (CATIE) (Trustors), Banco BCT, S.A., (the Trustee) and the Tropical Agriculture Research and Training Center (CATIE) (the Beneficiary). The trust is organized in accordance with the laws of Costa Rica for the management of money, securities, and loans.

The trust is the result of a merger of four trusts: COSUDE I Fundatrópicos Trust, COSUDE II Fundatrópicos Trust and Fundatrópicos Trust, all managed by Banco BCT, S.A, FUNDATROPICOS-CATIE-BCT/2014 Fund and Investment Management Trust, and the last one prevails, which objective is to fund the financial self-sustainability of CATIE, with the development and implementation of research activities, as well as education and other educational activities in the area of agricultural sciences, renewable resources, and other related activities.

Fundatrópicos' interest in the total balance of net assets in the Trust as of December 31, 2019 is for the sum of US\$11,798 (thousands), (US\$12,089 thousands in 2018), equivalent to 86.87% (87.01% in 2018), and CATIE's interest is for the sum of US\$1,573 (thousands) (US\$1,570 thousands in 2018) equivalent to 13.33% (12.99% in 2018).

Fundatrópicos through an agreement with the Administrative Board and CATIE might give joint instructions so that, from the net assets of the Trust but not from its returns, payments are made to third parties that have been related to the Trust's management.

The 8-14/XXVIII and 2-13/extraordinary meetings' resolutions by the Administrative Board of Fundatrópicos approved allocating to CATIE 85% of the yields generated by the Trust and capitalizing the remaining 15%. CATIE recognized income amounting to US\$742,000 and US\$620,000 in 2019 and 2018, respectively.

## 10. PROPERTY, FURNITURE, BEARER PLANTS AND EQUIPMENT - NET

Property, furniture, bearer plants and equipment as of December 31, 2019, are as follows:

2019					
Note	2018	Additions	Disposals	Transfers And Adjustments	2017
Historical cost:					
Lands	US\$ 483		US\$ (28)		US\$ 455
Buildings	6,987	US\$ 46			7,033
Machinery	530	3	(2)		531
Vehicles	1,220	57	(151)		1,126
Office furniture and equipment	369	47	(24)		392
Residence furniture and equipment	137	14	(6)		145
Lab equipment	126	14	(1)		139
Computer equipment	510	99	(25)		584
Right to use building and facilities		313			313
Agriculture plantations	6	<u>571</u>	<u>8</u>	<u>(114)</u>	<u>465</u>
Sub-total		<u>10,933</u>	<u>601</u>	<u>(351)</u>	<u>11,183</u>
Accumulated depreciation:					
Buildings	(4,017)	(142)			(4,158)
Machinery	(211)	(50)	1		(260)
Vehicles	(449)	(125)	105		(469)
Office furniture and equipment	(196)	(42)	2		(236)
Residence furniture and equipment	(65)	(14)			(79)
Lab equipment	(50)	(14)			(64)
Computer equipment	(289)	(80)	8	US\$(1)	(362)
Right to use building and facilities		(71)		(7)	(78)
Agriculture plantations	<u>(162)</u>	<u>(76)</u>	<u>39</u>	<u>(9)</u>	<u>(199)</u>
Sub-total	<u>(5,439)</u>	<u>(614)</u>	<u>155</u>	<u>(9)</u>	<u>(5,906)</u>
Total	<u>US\$ 5,494</u>	<u>US\$ (13)</u>	<u>US\$(197)</u>	<u>US\$(9)</u>	<u>US\$ 5,277</u>

Property, furniture, bearer plants and equipment as of December 31, 2018, are as follows:

2018					
Note	2017	Additions	Disposals	Transfers And Adjustments	2018
Historical cost:					
Lands	US\$ 483				US\$ 483
Buildings	6,994		US\$ (7)		6,987
Machinery	656	US\$ 99	(225)		530
Vehicles	1,291	369	(440)		1,220
Office furniture and equipment	655	20	(306)		369
Residence furniture and equipment	258	17	(138)		137
Lab equipment	294	2	(170)		126
Computer equipment	1,063	67	(620)		510
Agriculture plantations	6	<u>571</u>	<u>(1906)</u>	<u>(12)</u>	<u>571</u>
Sub-total	<u>12,265</u>	<u>574</u>	<u>(1,906)</u>	<u>(12)</u>	<u>10,933</u>
Accumulated depreciation:					
Buildings	(3,883)	(141)	7		(4,017)
Machinery	(391)	(45)	225		(211)
Vehicles	(732)	(101)	396	US\$(12)	(449)

(Continues)

Note	2018				2018
	2017	Additions	Disposals	Transfers And Adjustments	
Office furniture and equipment	US\$ (454)	US\$ (45)	US\$ 303		US\$ (196)
Residence furniture and equipment	(190)	(13)	138		(65)
Lab equipment	(207)	(13)	170		(50)
Computer equipment	(815)	(85)	611		(289)
Agriculture plantations	<u>(83)</u>	<u>(80)</u>	<u>1</u>		<u>(162)</u>
Sub-total	<u>(6,755)</u>	<u>(523)</u>	<u>1,851</u>	<u>US\$(12)</u>	<u>(5,439)</u>
Total	<u>US\$ 5,510</u>	<u>US\$ 51</u>	<u>US\$ (55)</u>	<u>US\$(12)</u>	<u>US\$ 5,494</u>

Donations corresponding to machinery, vehicles, furniture, and equipment were received, which amounted to the sum of US\$117 and US\$138 as of the years ended December 31, 2019 and 2018, respectively. Such donations come from the Agreement Fund, which amount to US\$62 and US\$85 for 2019 and 2018, respectively, from the Custody Fund, for the sums of US\$56 and US\$53 for 2019 and 2018, respectively. The previously mentioned transactions did not use or generate any cash.

Additions for US\$601 during 2019 include buildings purchased through leases amounting to US\$313. The above is the result of adopting IFRS 16 (See Note 16).

As of December 31, CATIE has the following plantations:

	Number of Planted Hectares	
	2019	2018
Coffee	21	20
Sugarcane	<u>151</u>	<u>151</u>
Total	<u>172</u>	<u>171</u>

The value of coffee and sugarcane was transferred to property, furniture, and equipment since these correspond to bearing plants based on International Accounting Standard No. 16.

During 2019, CATIE produced 287 coffee fanegas, from which 157 were harvested at Finca Comercial and the remaining 122 were harvested from the different areas of cops in the experimental farm, for a price of US\$89.54, once the estimated costs in points of sale are reduced (amount determined in the harvesting moment.)

Also, during 2019, 5,655 tons of sugarcane were harvested at a selling price of US\$36.26 per ton, once the estimated costs in point of sale were reduced (amount determined at cutting time.)

Moreover, 1,000 tons and 430 tons of conventional and organic sugarcane, respectively, were delivered to Assukkar, at a price of US\$33.71 for conventional and US\$76.96 for organic.

As of December 31, 2019, 20 hectares of coffee are at a production stage and 1 hectare at a development stage, and 151 hectares of sugarcane are at short age.



## 11. OTHER ASSETS

Other assets as of December 31 are as follows:

	<b>2019</b>	<b>2018</b>
Contribution certificates, Cooperativa de Productores de Leche, R.L. in colones	US\$636	US\$644
Performance bond deposits lease in Bolivia, Guatemala and Peru	19	33
Performance bond deposits in El Salvador, Panama, Costa Rica and Nicaragua	15	44
Others	<u>208</u>	<u>140</u>
Total	<u>US\$878</u>	<u>US\$861</u>

The performance bond deposits correspond to deposits given as guarantee of several projects. During the 2018 period the Company adopted IFRS 9: Financial Instruments (Note 15), so the milk contribution certificates are valued at fair value with changes in results; the effect of that valuation as of December 31, 2019 and 2018 is US\$(106) and US\$173, respectively.

## 12. ACCRUED EXPENSES AND OTHER ACCOUNTS PAYABLE

The accumulated expenses and other accounts payable as of December 31 are as follows:

	<b>2019</b>	<b>2018</b>
Miscellaneous projects	US\$ 89	US\$241
Withholdings	78	58
Accumulated expenses	70	60
Funds in custody	87	158
Interest payable	2	1
Security deposits - bids	17	10
Accounts payable OTN	42	78
Provision for audits	19	31
Payroll C.C.S.S	96	101
Others	<u>170</u>	<u>135</u>
Total	<u>US\$670</u>	<u>US\$873</u>

## 13. LONG-TERM DEBT

Long-term debt as of December 31 is as follows:

	<b>2019</b>	<b>2018</b>
FUNDATRÓPICOS, 7.75% interest per annum, maturity in September 2019 in dollars, surety bond		US\$ 47
FUNDATRÓPICOS, 3.00% interest per annum, Maturity in September 2033, in dollars, surety bonds, first 3 years only interest is paid	US\$ 667	333

(Continues)

	<b>2019</b>	<b>2018</b>
FUNDATRÓPICOS, annual interest of 6.50%, maturity in September 2023, in dollars surety bond	US\$ 268	US\$ 338
Hacienda Juan Viñas, S.A., 6% interest per annum, maturity on June 20, 2019, in dollars, guarantee against sugarcane harvest 2017-2019	_____	_____6
Sub-total	935	724
Less: Current portion of long-term debt	(72)	(134)
Estimate of profit from financial liability valuation	<u>(161)</u>	<u>_____</u>
Net	<u>US\$ 702</u>	<u>US\$ 590</u>

A detail of the long-term debt maturities is as follows:

<b>Year ended:</b>	<b>2019</b>	<b>2018</b>
Until one year	US\$ 72	US\$134
From one to five years	702	398
After five years	_____	<u>192</u>
Total	<u>US\$774</u>	<u>US\$724</u>

To grant loans, FUNDATRÓPICOS used funds of the FUNDATROPICOS-CATIE-BCT/2014 trust.

## **14. EMPLOYEE BENEFITS**

CATIE's employee benefits are defined in the staff regulations for professional international and national staff. These regulations govern not only employee's duties and rights, but also a series of benefits determined by the institutional authorities. Based on the framework about the benefits defined by CATIE, the costs of these benefits for CATIE are assessed.

### **14.1 RECOGNITION OF YEARS OF SERVICE**

CATIE operates this benefit solely for its international staff and it is estimated based on the following weeks in terms of the years of service:

<b>Years of Continuous Service</b>	<b>Weeks to be Paid</b>
02	08
03	10
04	12
05	14
06	16
07	18
08	20
09	22
10	24
11	26
12	28
13	30
14	32
15 or more	34

The present value of the liability from the recognition of the years of service is calculated in terms of the last base salary of the participants. Therefore, an increase in the salary of participants of the plan will increase the plan's liability.

There is a subsidiary ledger with individual accounts by employee. The benefit is paid at the end of the employment relationship to employees with two years of continuous service at CATIE. Total expense recognized in the comprehensive statement of activities was US\$62,000 in 2019 and US\$69,000 in 2018. Moreover, CATIE recognized payments and adjustments for US\$31,000 in 2019 and US\$99,000 in 2018.

#### **14.2 REPATRIATION AND TRAVEL TO HOME COUNTRY**

CATIE covers the following expenses at the end of the employment agreements of international professional staff:

- a. Travel expenses of the employee and dependent family members to their home country according to the airfare at the time of travel.
- b. Moving expenses of household goods up to an amount of US\$6,000.
- c. A lump sum of US\$2,750.

For this benefit, there is also a subsidiary ledger with individual accounts per employee. The benefit is paid at the end of the employment relationship to employees with two years of continuous service at CATIE. Total expense recognized in the comprehensive statement of activities was US\$97,000 in 2019 and US\$94,000 in 2018. Moreover, CATIE recognized payments and adjustments for US\$76,000 in 2019 and US\$126,000 in 2018.

#### **14.3 VACATION FOR NATIONAL STAFF**

From September to December 2016, CATIE dismissed and rehired the national staff at the main campus as part of a downsizing process thereby eliminating some employee benefits; as a result of this process, all the staff had to take the accumulated vacation days before the liquidation date, which resulted in the labor liability balance from vacations as of December 31, 2016 to be used entirely; the balance of this benefit became a debt as of December 31, 2017 because the collective vacation days were taken at the end of the year, thereby representing an account receivable from employees for US\$0 and a labor liability for US\$19,000 in 2018. In 2019, this labor liability amounts to US\$24,000.

#### **14.4 SEVERANCE PAY OF NATIONAL STAFF**

The severance pay of the national staff is paid in accordance with the laws in each country. For the Costa Rican employees who are not members of the Employees' Association, CATIE transfers 5.33% of the monthly severance pay to SAFI Banco Popular and the same percentage to ASOCATIE.

For the remaining countries, CATIE monthly charges the amount of the severance pay to expenses and they are provisioned. CATIE is legally liable for this employee benefit which is recognized for each country as follows.

Country	Calculation Method
Honduras and Guatemala	Salaries earned in the last six months, or a fraction of shorter time, including overtime, salary in kind, usual bonuses, or any other salary, if any. The result is multiplied times 14 months (including 50% of the 13th and 14th month) and then divided by 12 months to obtain the average salary for the compensation.
El Salvador	One salary is recognized per each year of service or a fraction of a shorter time, with a maximum of 4 minimum salaries per year for an estimated amount of US\$251,70 in 2015, and the maximum annual compensation was US\$1,006.80.
Nicaragua	Law No.185 was approved on September 5, 1996. One month of salary for each of the first 3 years of work, and 20 days of salary for each year of work, starting on the fourth year of work. Under no circumstance, compensation will be less than one month or more than five months. Fractions between years served will be liquidated on a proportional basis.
Panama	Severance pay or the seniority bonus is calculated based on one week of salary per each year of service (1/52).

The most recent actuarial assessment of the obligation from the aforementioned benefits was conducted on December 31, 2019 and 2018 by Luis Guillermo Fernández Valverde, Mathematician-Actuary, consultant, and founding member of the Costa Rican Association of Actuaries, member No.8963.

The present value of the obligation from the aforementioned benefits and the cost of the current service and past service were measured using the credit method of the foreseen Unit.

The fair value of the employee benefits according to the results of the actuarial study and the amounts of the employee benefits of CATIE as of December 31 are as follows:

2019						
Benefit	Country	Local Currency (in Thousands)	Exchange Rate	Actuarial Value (in Thousands US\$)	Total CATIE (in Thousands US\$)	Difference (in Thousands US\$)
Staff's severance pay	Costa Rica	249.751	570	438		(438)
	Guatemala	950	8	124	53	(71)
	Honduras	928	25	35	15	(20)
	Nicaragua	103	1	103	61	(42)
	Panamá	14	1	14	6	(8)
	México	0	19		48	48
	El Salvador	0	1		3	3
	<b>Subtotal</b>			<b>714</b>	<b>186</b>	<b>(528)</b>
Years of service and repatriation	Costa Rica	105	1	105	116	11
	Costa Rica	32	1	32	36	4
	<b>Subtotal</b>			<b>137</b>	<b>152</b>	<b>15</b>
	<b>Severance Transferred to Asocatie and SAFI</b>					<b>466</b>
	<b>Total</b>			<b>851</b>	<b>338</b>	<b>-47</b>



2018						
Benefit	Country	Local Currency (in Thousands)	Exchange Rate	Actuarial Value (in Thousands US\$)	Total CATIE (in Thousands US\$)	Difference (in Thousands US\$)
Staff's severance pay	Costa Rica	213.398	604	353		(353)
	Guatemala	751	8	97	28	(69)
	Honduras	511	24	21	15	(6)
	Nicaragua	914	33	28	21	(7)
	Panamá	16	1	16	4	(12)
	México	54	19	3	12	9
	El Salvador	0	1	—	10	10
	<b>Subtotal</b>			<b>518</b>	<b>90</b>	<b>(428)</b>
Years of service and repatriation	Costa Rica	285	1	285	290	5
	Costa Rica	34	1	34	90	56
	<b>Subtotal</b>			<b>319</b>	<b>470</b>	<b>61</b>
	<b>Severance Transferred to Asocatie and SAFI</b>			—	—	<b>367</b>
	<b>Total</b>			<b>837</b>	<b>560</b>	<b>—</b>

Reconciliation of employee benefits at December 31 is as follows:

	Year 2019	Year 2018
Years of service and repatriation	US\$152	US\$380
Staff's severance pay	<u>186</u>	<u>90</u>
Subtotal	338	470
Severance provision at foreign entities	<u>466</u>	<u>367</u>
Total	<u>804</u>	<u>837</u>
Balances as actuary:		
Years of service and repatriation	137	319
Staff's severance pay	<u>714</u>	<u>518</u>
Total	<u>851</u>	<u>837</u>
Net actuarial variation	<u>US\$ 47</u>	<u>US\$</u>

## 15. FINANCIAL INSTRUMENTS

A summary of the main disclosures regarding CATIE's financial instruments is as follows:

### 15.1 SIGNIFICANT ACCOUNTING POLICIES

The significant accounting policies and methods approved, including the recognition criteria, the measurement basis, and the basis on which income and expenses are recognized for each type of financial asset, financial liability, and equity instrument are discussed in Note 1 to the financial statements.

### 15.2 FINANCIAL INSTRUMENT CATEGORY

The classification of financial instruments is as follows:

	<b>2019</b>	<b>2018</b>
Cash and cash equivalents and investments	US\$4,896	US\$5,209
Financial assets:		
Accounts receivable	<u>665</u>	<u>1,083</u>
Total	<u>US\$5,560</u>	<u>US\$6,292</u>
Financial liabilities at amortized cost:		
Accounts and notes payable	<u>US\$1,497</u>	<u>US\$1,281</u>
Total	<u>US\$1,497</u>	<u>US\$1,281</u>

**Reconciliation of Liabilities Derived from Financing Activities** - The table below details changes in liabilities arising from financing activities, including cash and non-cash changes:

	Balance at 31-Dec-2018	Cash		No - Cash	Balance at 31-Dec-2019
		Flows Cash Financing (*)	Cash Flows Amortization Leases (*)	Transfers From Debt	
Debt and financial liabilities	<u>US\$724</u>	<u>US\$333</u>	<u>US\$(122)</u>	<u>US\$(161)</u>	<u>US\$774</u>

(\*) It corresponds to the net cash flow generated in debt and other financial liabilities, correspond to new credit transactions received and depreciation made, in the period 2019.

According to the classification levels established by IFRS 7 concerning the degree to which fair values are observable in the market, cash flows are at Level 1, i.e. fair values derived from quoted (unadjusted) prices in the active market. As of December 31, 2019 and 2018, there were no assets or liabilities at fair value in Levels 2 and 3.

### 15.3 LEVERAGE RISK MANAGEMENT

CATIE manages its net asset structure to maximize funds by optimizing the fund and debt balance. The capital structure used consists of debt, cash, and funds. The leverage ratio is as follows:

	<b>2019</b>	<b>2018</b>
Loans and notes payable	US\$ 1,658	US\$ 1,281
Cash and cash equivalents	<u>(4,895)</u>	<u>(5,209)</u>
Available net cash	<u>US\$ (3,237)</u>	<u>US\$(3,928)</u>
Net assets	<u>US\$12,320</u>	<u>US\$13,819</u>
Leverage ratio	<u>(26%)</u>	<u>(28%)</u>

### 15.4 EXCHANGE RATE RISK

CATIE performs transactions denominated in foreign currency, and therefore, it is exposed to the risk of exchange rate fluctuations in the quotes of these currencies regarding the US dollar, affecting its activities, financial position, and cash flows. CATIE does not have any spread agreements to mitigate such risk.

The balances of assets and liabilities denominated in foreign currencies in thousands are as follows:

	2019								
	Colones	Quetzales	Lempiras	Córdoba	Euros	US Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Assets:									
Cash and cash equivalents	¢ 25.705	Q1,900	L 131	C\$ 677	€669	BZ\$18	RD\$2,872	BS\$1	S/0
Financial investments		705							
Accounts receivable	6.220	18							
Other assets	<u>324.462</u>								
Total assets	356.387	2,623	131	677	669	18	2,872	1	
Liabilities:									
Accounts payable and accrued expenses	<u>(134.364)</u>	<u>(634)</u>	<u>(753)</u>	<u>(3,392)</u>					
Net position (exposure) in thousands	<u>¢ 222.024</u>	<u>Q1,989</u>	<u>L(623)</u>	<u>C\$(2,715)</u>	<u>€669</u>	<u>BZ\$18</u>	<u>RD\$2,872</u>	<u>BS\$1</u>	<u>S/0</u>

	2018								
	Colones	Quetzales	Lempiras	Córdoba	Euros	US Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Assets:									
Cash and cash equivalents	¢ 47.830	Q1,987	L 164	C\$ 110	€670	BZ\$15	RD\$2,709	BS\$1	S/22
Financial investments		498							
Accounts receivable	5.652	8	102						
Other assets	<u>348.610</u>								
Total assets	402.092	2,493	266	110	670	15	2,709	1	22
Liabilities:									
Accounts payable and accrued expenses	<u>(149.396)</u>	<u>(497)</u>	<u>(428)</u>	<u>(2,694)</u>		<u>(1)</u>			
Net position (exposure) in thousands	<u>¢ 252.696</u>	<u>Q1,996</u>	<u>L(162)</u>	<u>C\$ 2,584</u>	<u>€670</u>	<u>BZ\$14</u>	<u>RD\$2,709</u>	<u>BS\$1</u>	<u>S/22</u>

**Foreign Exchange Sensitivity Analysis** - The following itemization shows the sensitivity to a decrease or increase in the exchange rate, 5% is the sensitivity rate used by management and represents the best estimate of a variation in the exchange rate.

**Sensitivity to an Increase / Decrease in the Exchange Rate -**

	2019								
	Colones	Quetzales	Lempiras	Córdoba	Euros	Belize Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Net position (exposure) in thousands	<u>¢222.024</u>	<u>Q1.989</u>	<u>L (623)</u>	<u>C\$(2,715)</u>	<u>€ 669</u>	<u>Bz\$18</u>	<u>RD\$2,872</u>	<u>Bs 1</u>	<u>S/</u>
Closing exchange rate	<u>570.09</u>	<u>7.70</u>	<u>24.64</u>	<u>33.84</u>	<u>0.89</u>	<u>2</u>	<u>52.45</u>	<u>6.86</u>	<u>3.31</u>
Net position in thousands of dollars	<u>US\$ 389</u>	<u>US\$258</u>	<u>US\$(25)</u>	<u>US\$ (80)</u>	<u>US\$751</u>	<u>US\$ 9</u>	<u>US\$ 55</u>	<u>US\$</u>	<u>US\$</u>
5% increase (loss) profit	<u>US\$ 19</u>	<u>US\$ 12</u>	<u>US\$ (1)</u>	<u>US\$ (4)</u>	<u>US\$ 36</u>	<u>US\$</u>	<u>US\$ 3</u>	<u>US\$</u>	<u>US\$</u>
Decrease of 5% profit (loss)	<u>US\$ (20)</u>	<u>US\$(14)</u>	<u>US\$ 1</u>	<u>US\$ 4</u>	<u>US\$(40)</u>	<u>US\$</u>	<u>US\$ (3)</u>	<u>US\$</u>	<u>US\$</u>

	2018								
	Colones	Quetzales	Lempiras	Córdobas	Euros	Belize Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Net position (exposure) in thousands	<u>₡252,695</u>	<u>Q1,996</u>	<u>L (162)</u>	<u>C\$(2,583)</u>	<u>€ 670</u>	<u>Bz\$ 15</u>	<u>RD\$2,709</u>	<u>Bs 1</u>	<u>S/ 22</u>
Closing exchange rate	<u>604.39</u>	<u>7.74</u>	<u>24.34</u>	<u>32.33</u>	<u>0.87</u>	<u>2.00</u>	<u>50.09</u>	<u>6.86</u>	<u>3.37</u>
Net position in thousands of dollars	<u>US\$ 418</u>	<u>US\$ 258</u>	<u>US\$ (7)</u>	<u>US\$ (80)</u>	<u>US\$760</u>	<u>US\$ 7</u>	<u>US\$ 54</u>	<u>US\$</u>	<u>US\$ 7</u>
5% increase (loss) profit	<u>US\$ 20</u>	<u>US\$ 12</u>	<u>US\$</u>	<u>US\$ (4)</u>	<u>US\$ 36</u>	<u>US\$</u>	<u>US\$ 3</u>	<u>US\$</u>	<u>US\$</u>
Decrease of 5% profit (loss)	<u>US\$ (22)</u>	<u>US\$(14)</u>	<u>US\$</u>	<u>US\$ 4</u>	<u>US\$ (40)</u>	<u>US\$</u>	<u>US\$ (3)</u>	<u>US\$</u>	<u>US\$</u>

## 15.5 CREDIT RISK

The financial instruments subject to the credit risk mainly include cash and cash equivalents, investments and accounts receivable.

Cash and cash equivalents and investments are held in strong financial institutions and pose a minimum risk. The credit risk in the accounts receivable is deemed high because payments of member country fees entail significant political factors. CATIE monitors past-due balances and performs a valuation and recording of the allowance for losses of its accounts receivable.

As of December 31, 2019, the concentration of CATIE receivables is presented in the Member Country Contributions (see Annex 2), which represent approximately 71% of the total receivables.

A description of aged fees is shown in Exhibit 2 of the supplementary information.

The credit risk refers to the risk that a counterparty fails to meet its contractual obligations, thus resulting in financial losses for CATIE. As of December 31, 2019, CATIE's maximum exposure to the credit risk without taking into account any guarantees held or other credit improvements, which would cause a financial loss due to noncompliance with an obligation by counterparties, and the financial guarantees provided arise from:

- The carrying amount of the respective financial assets recognized as indicated in the statement of financial position; and
- The maximum amount that CATIE would have to pay if the financial guarantee is requested, regardless of the probability that the guarantee will be exercised. The related allowance for losses is described in Note 6.

CATIE's exposure is continuously monitored and the added value of concluded transactions is allocated between approved counterparties.

CATIE's current credit risk classification framework comprises the following categories:

Category	Description	Bases for the Recognition of Expected Credit Losses
Realizable	The counterparty has a low risk of non-compliance and has no amount overdue by 12 months	12-month. Expected credit losses

(Continued)



Category	Description	Bases for the Recognition of Credit Losses Expected
Doubtful account	The amount is overdue by more than 30 days or there has been a significant increase in the credit risk since initial recognition	Expected lifetime credit loss - no credit impairment
In default	The amount is overdue by more than 90 days or there is evidence that the asset has credit impairment	Expected lifetime credit loss - credit impairment
Derecognition	There is evidence that the debtor is in serious financial difficulties and that the Company has a realistic prospect of recovery.	The amount is derecognized

The tables below detail the creditworthiness of CATIE's financial assets, as well as CATIE's maximum exposure to the credit risk by credit risk rating:

31/12/2018	Note	Rating Credit External	Rating Credit Internal	12-Months or Credit Loss Expected for Life?	Value in Gross Books ( I )	Loss Expected	Value in Books Net ( I )
Accounts by charge				Credit loss expected for life (simplified approach)			
	6	N/A	(i)		<u>US\$4,279</u>	<u>US\$(2,483)</u>	<u>US\$(1,796)</u>

For receivables, the Company has applied the simplified approach in IFRS 9 to measure the estimate for losses on the expected lifetime credit loss. The Company determines the expected credit losses on these items using a provision matrix, estimated based on historical credit loss experience based on the debtors' overdue status, adjusted as appropriate to reflect current conditions and estimates of future economic conditions. Accordingly, the credit risk profile of these assets is presented based on their expired status in terms of the provisioning matrix.

As of December 31, 2019, the concentration of CATIE receivables is presented in the Member Country Contributions (see Annex 2), which represent approximately 71% of the total receivables.

In general, the concentration of credit risk is limited due to the low amount of living receivables. CATIE has a policy of providing credit to its commercial customers. Management constantly monitors receivables to reduce non-payment of these balances. CATIE constantly monitors the credit capacity of its customers, adjusting credit policies as needed. Also, CATIE maintains an estimate for bad accounts based on the expected recoverability of all of its receivables.

## 15.6 LIQUIDITY RISK

The management of CATIE manages the liquidity risk by keeping adequate cash reserves. Moreover, CATIE constantly monitors its cash flows and the matched maturity analysis, which pays a timely attention to the short-term and medium-term obligations. CATIE prepares an annual budget and gives a constant follow up to the cash balances.

The foreseen recovery of financial assets as of December 31, 2019 is as follows:

Financial Assets	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing instruments	Between 0.01% and 4%	US\$4,719	US\$ 65	US\$ 87	US\$ 25	US\$4,896
Non interest-bearing instruments		<u>68</u>	<u>402</u>	<u>354</u>	<u>262</u>	<u>562</u>
Total		<u>US\$4,787</u>	<u>US\$467</u>	<u>US\$441</u>	<u>US\$(237)</u>	<u>US\$5,459</u>

The scheduled payments of the financial liabilities as of December 31, 2019 are as follows:

Financial Liabilities	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing obligations	Between 6% and 7.75%	US\$ 15	US\$ 24	US\$ 96	US\$ 801	US\$ 936
Non interest-bearing obligations		<u>140</u>	<u>239</u>	<u>70</u>	<u>251</u>	<u>700</u>
Total		<u>US\$155</u>	<u>US\$263</u>	<u>US\$166</u>	<u>US\$1,052</u>	<u>US\$1,636</u>

The foreseen recovery of financial assets as of December 31, 2018 is as follows:

Financial Assets	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing instruments	Between 0,01% and 4% per annum	US\$4,847		US\$353	US\$ 9	US\$5,209
Non interest-bearing instruments		<u>68</u>	<u>US\$544</u>	<u>354</u>	<u>117</u>	<u>1,083</u>
Total		<u>US\$4,915</u>	<u>US\$544</u>	<u>US\$707</u>	<u>US\$126</u>	<u>US\$6,292</u>

The scheduled payments of the financial liabilities as of December 31, 2018 are as follows:

Financial Liabilities	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing obligations	Between 6% and 7.75% per annum	US\$ 15	US\$ 24	US\$ 96	US\$590	US\$ 725
Non interest-bearing obligations		<u>140</u>	<u>239</u>	<u>70</u>	<u>106</u>	<u>555</u>
Total		<u>US\$155</u>	<u>US\$263</u>	<u>US\$166</u>	<u>US\$696</u>	<u>US\$1,280</u>

## 15.7 INTEREST RATE RISK

CATIE has loan obligations that generate fixed interest rates; therefore, it is not subject to fluctuating interest rates.

## 15.8 FAIR VALUE OF FINANCIAL INSTRUMENTS

The estimates of the market fair value are carried out at a specific period of time and are based on relevant market information and information related to the financial instruments. These estimates do not reflect any premium or discount that might result from selling a financial instrument at a given period.

The fair value of financial instruments traded in active markets is estimated based on market price quotations on the dates of the financial statements.

The fair value of the financial instruments not traded in active markets is based on valuation techniques and assumptions based on the market conditions on the dates of the financial statements.

These estimates are subjective and, by nature, they entail uncertainty and a lot of judgment; therefore, they cannot be determined accurately. Any changes to the assumptions and criteria might affect these estimates.

The accounts receivable and payable are assets and liabilities that were not derived from determined or fixed payments and are not quoted in an active market. It is assumed that their carrying amount, less the allowance for impairment, if any, is close to their fair value.

The market value of short-term financial assets and liabilities is close to their carrying amount, mainly due to their maturity.

The methods and assumptions used by CATIE to determine the market fair value of the financial instruments are as follows:

- a. **Cash, Cash Equivalents and Temporary Investments** - The carrying amount of these assets is close to their fair value due to their current nature.
- b. **Accounts Receivable and Payable** - The carrying amount of the financial liabilities in less than one year is close to their fair value due to their short-term nature. CATIE carries out estimates for accounts receivable at their fair value.
- c. **Long-Term Debt** - The estimated fair value of loans payable is estimated based on the discounted amount of the future estimated cash flows. The loan rates are set at market values; therefore, their carrying amount is close to their fair value.

## 16. LEASES

As of December 31, 2019, CATIE has the following leases and the respective assets have been capitalized as lease equipment in accordance with IFRS 16:

Leases of buildings with Fundación Ciudad del Saber., Ministry of Agriculture and Livestock of Nicaragua and Inmobiliaria Megaterra, S.A. The main terms of these lease agreements are as follows:

- a. Agreements have terms ranging from 48 to 108 months.
- b. CATIE absorbs all risks and benefits related to the ownership and use of the properties.
- c. The buildings are located in Panama, Nicaragua and Guatemala.

Leases are detailed below:

	<b>2019</b>
In dollars, a rate of 8.50% per annum, maturity between December 2021 and September 2023	<u>US\$255</u>
Subtotal	255
Current portion of financial leases	<u>(67)</u>
Long-term financial leases	<u>US\$188</u>

A reconciliation of the future minimum payments associated with these agreements is shown below:

<b>Year Ended on</b>	<b>2019</b>
December 31, 2020	US\$ 67
December 31, 2021	77
December 31, 2022	79
December 31, 2023	8
December 31, 2024	8
December 31, 2025	8
December 31, 2026	<u>8</u>
Total	<u>US\$255</u>

## **17. OPERATING EXPENSES**

According to their functional classification, as of December 31 expenses are detailed below:

	<b>2019</b>	<b>2018</b>
Higher Guidelines, Administrative and Finance and Strategic Services (Institutional Support)	US\$ 2,531	US\$ 2,259
Research Division (Research)	9,212	9,596
Education Division (Teaching)	2,763	2,979
Administrative and Finance Department - Commercial Component (Subsidiary Companies)	2,413	2,537
External Projection Division (Projection)	<u>4,414</u>	<u>6,539</u>
Total	<u>US\$21,333</u>	<u>US\$23,910</u>

## **18. DISBURSEMENTS SUBJECT TO APPROVAL**

Some grant agreements entered into with international organizations, detailed in Exhibit 5 of the supplementary information, stipulate that disbursements for agreed-upon programs executed with grant funds are subject to approval or rejection by those organizations, depending on compliance with the terms of each agreement.

As of December 31, 2019 and 2018, CATIE's management is not aware of any amount of disbursements subject to reimbursement that have already been rejected by any donors.



## **19. CONTRACTUAL STATUS OF CATIE**

On September 12, 2000, under Law No.8028, the Costa Rican Legislative Assembly ratified the articles of incorporation of CATIE entered into among the Government of Costa Rica, the Inter-American Institute for Cooperation on Agriculture (IICA) and CATIE. The most significant terms of this Law are as follows:

- a. The Inter-American Board of Agriculture will be the highest governing body of CATIE.
- b. CATIE's members may be regular or special. The regular members will be IICA, the Government of Costa Rica, and the Governments of the remaining member countries of IICA. Special members will include international governmental and non-governmental organizations, international centers, and private organizations with similar purposes as those of CATIE.
- c. IICA will contribute up to a maximum of 5% of IICA fees budget to CATIE's basic budget. The contribution made by IICA in 2017 and 2016 was US\$968,000 and US\$804,000. Each member country of CATIE will annually contribute with no less than US\$50,000 to cover CATIE's expenses.
- d. The agreement will be for a 20-year term as of the effective date and may be renewed for equal consecutive terms.

CATIE's equity consists of: i) the usufruct for the entire term of the articles of incorporation, for the equity consisting of lands, buildings, equipment, and other real and personal property contributed by IICA, plus improvements thereof, ii) all assets CATIE has acquired or will acquire in the future.

- e. Upon termination of the contract, all usufruct property as well as improvements thereof, will be returned to IICA. The remaining assets will be distributed between IICA, the Government of Costa Rica, and regular active members based on contributions made.

## **20. TAXES**

Since CATIE is a not-for-profit international organization, it is exempted of any type of taxes, contributions, and national and municipal rates, whether present or future ones, as well as of any fees regarding customs, national licenses ("patentes"), and other.

## **21. RELEVANT AGREEMENTS AND LAWSUITS**

As of December 31, 2019 and 2018, a complaint was filed against CATIE, which is based on the administrative decisions considered by CATIE as illegal, issued in the Administrative Penalizing Procedure for the Termination of Contract CENTA No. 02/2014 "Consultancy Services on Social Forestry" from the public call for proposals CENTA-FANTELE No.03 /2014, in El Salvador, on the grounds of expiration, through which CATIE's administrative accountability was established, the execution of a performance bond for about US\$16,000.00 (sixteen thousand dollars), legal currency of the United States of America, is ordered.

In addition, as a result of the complaint, CATIE is currently disqualified from participating in competitive biddings in that country for a term of five (05) years, starting on January 6, 2016 and ending on January 6, 2021, a term soon to expire.

As part of the lawsuit, a provisional remedy was requested to suspend such administrative decisions, which was denied, and currently CATIE's Special Agent filed a motion to reconsider such a decision, which is pending resolution.

## **22. RELEVANT AND SUBSEQUENT FACTS**

In February 2019, the World Health Organization (WHO) disclosed the existence of the infectious disease COVID-19, caused by SARS-CoV-2, following an outbreak in the city of Wuhan, China. As of 29 March 2020, cases of infection have been confirmed in more than 175 countries around the world.

Like some countries that have taken similar measures to mitigate the effects of COVID 19, on March 16, 2020, the President of Costa Rica Carlos Alvarado Quesada declared a yellow alert throughout the country, thus establishing a series of measures through Executive Order #42227, which states, among other aspects, the declaration of a National State of Emergency, the prevention of the arrival of foreigners, and the suspension of classes at all schools in the country.

For the rest of the countries where CATIE operates through representatives and liaisons, they have been ordered to respect the health measures decreed by the Ministries of Health of each country. Officials have been allowed to do remote work as a protective measure; it is important to point out that in countries where governments have not decreed drastic measures, CATIE has instructed representatives and liaisons to take all necessary forecasts such as those taken in Costa Rica.

In compliance with the measures decreed by the government, CATIE created an Emergency Committee coordinated by the Deputy Director General of CATIE with the participation of heads of the different areas. This committee is responsible for the interpretation and compliance of the Health and Safety protocols recommended by the Government, including the restricted access of people to the campus; the decision was made to allow officials to choose for the option of remote work, a reduction of 25% of the working day was administratively assessed, besides the reduction of salaries for three months, but according to the progress of the pandemic, further drastic measures could be taken regarding working hours, which could reach a 50% reduction. As a last resort if the crisis worsens or if is not clear when all activities can be resumed, staff could be dismissed and staff in key positions could be recruited again for the basic support of the institution.

The following measures have been recommended: Social distancing, virtual meetings, use of masks in the most vulnerable positions, and daily monitoring of temperature for all people entering the campus. Different communication materials have been developed, i.e., infographics, emails, videos, availability of contacts to answer to queries.

The above-mentioned committee meets at least once a week to assess the impact of the measures that have been implemented and to establish new protection measures. Minutes are taken on these meetings for the specific follow-up of the agreements. With respect to countries, country coordinators have made decisions according to the measures made by each government, and they are informed to the headquarters; for

example; some projects have modified their field activities by products that can be carried out at a desk (reports) and the use of communication technologies to comply with the provisions of the agreements.

At a management and finance level, an agreement was entered into with the international professional staff to reduce 25% of their contract for a three-month term as of April to alleviate the financial crisis to be faced by the institution. Moreover, in collaboration with the representative workers' body, i.e., the Permanent Workers' Committee (CPT), an agreement was entered into to reduce the working hours by 25% for a three-month term as of May.

With regard to the implementation of the agreements that CATIE has entered into, no donors so far have expressed the intention of reducing the budget for the implementation of projects during this pandemic, and in accordance with the instructions given to each project leader and representative in the countries, the projects are being implemented on a regular basis by changing field activities which would be carried out after the emergency. At present, all project tasks that do not require field work are being carried out.

The measures taken for these 3 months of reduced working hours, amount to about US\$415,000. In terms of liquidity, the cash flow is monitored on a daily basis to analyze future cash requirements. The Board of Directors of Fundatropicos issued a resolution to obtain funds of up to 30% of the total trust managed by Banco BCT. Therefore, the expenses to be made by CATIE would be supported by this resolution.

Financially and in accordance with the analysis and other measures that may be taken in the event of further spread of the pandemic, CATIE hopes not to end this period at a loss.

### **23. APPROVAL OF THE FINANCIAL STATEMENTS**

The financial statements have been approved by CATIE's management, and their issue has been authorized for July 6, 2020.

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**TROPICAL AGRICULTURE RESEARCH  
AND TRAINING CENTER  
(CATIE)**

**AS OF DECEMBER 31, 2019**

**SUPPLEMENTAL FINANCIAL INFORMATION**

**EXHIBIT 1:** Statement of fees of member countries and IICA.

**EXHIBIT 2:** Ageing analysis of pending fees from member countries and IICA.

**EXHIBIT 3:** Budget and execution of income by fund and source.

**EXHIBIT 4:** Budget and execution of expenses by fund and source.

**EXHIBIT 5:** Statement of financial position of agreement funds and funds in custody.

**EXHIBIT 6:** Execution of expenses by fund, division and expense purpose.



## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

STATEMENT OF FEES OF MEMBER COUNTRIES AND IICA  
YEAR ENDED DECEMBER 31, 2019

(Expressed in Thousands of U.S. Dollars)

	Fees Receivable at the Beginning of Year	Fees for the Year	Fees Collected During the Year			Fees Collected During the Year		
			Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year
Inter-American Institute for Cooperation on Agriculture (IICA)		US\$1,000		US\$1,000	US\$1,000			
Regular Members -								
Government of Bolivia	US\$ 720	50				US\$ 720	US\$ 50	US\$ 770
Government of Colombia	461					461		461
Government of Costa Rica		50		50	50			
Government of Guatemala		50		50	50			
Government of Honduras	302	50	US\$ 98		98	204	50	254
Government of Panamá	0	50		50	50			0
Government of Nicaragua	28	50	7	36	43	21	14	35
Government of El Salvador	50	50	50	50	100			
Government of República Dominicana		50		50	50			
Government of México	150	50	150	50	200			
Government of Paraguay	750	50				750	50	800
Government of Belice	350	50	200		200	150	50	200
Government of Venezuela	450	50				450	50	500
Total	<u>US\$3,261</u>	<u>US\$1,600</u>	<u>US\$505</u>	<u>US\$1,336</u>	<u>US\$1,841</u>	<u>US\$2,756</u>	<u>US\$264</u>	<u>US\$3,020</u>

\* \* \* \* \*

**TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)****AGEING ANALYSIS OF PENDING FEES FROM MEMBER COUNTRIES AND IICA  
YEAR ENDED DECEMBER 31, 2019**

(Expressed in Thousands of U.S. Dollars)

	<b>Años 1979-2009</b>	<b>Año 2010</b>	<b>Año 2011</b>	<b>Año 2012</b>	<b>Año 2013</b>	<b>Año 2014</b>	<b>Año 2015</b>	<b>Año 2016</b>	<b>Año 2017</b>	<b>Año 2018</b>	<b>Total</b>
IICA											
Government of Bolivia	US\$ 270	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50
Government of Colombia	61	50	50	50	50	50	50	50	50	50	50
Government of Costa Rica	(57)	29	28								
Government of El Salvador	(350)			50	50	50	50	50	50	50	
Government of Guatemala	(300)	50	50	50	50	50	50	50	50	50	
Government of Honduras	(146)			50	50	50	50	50	50	50	50
Government of Panamá											
Government of Nicaragua	(105)	14	14	14	14	14	14	14	14	14	14
Gobierno de República Dominicana	(400)	50	50	50	50	50	50	50	50	50	
Government of Belice	(200)			50	50	50	50	50	50	50	50
Government of Venezuela		50	50	50	50	50	50	50	50	50	50
Government of Paraguay	300	50	50	50	50	50	50	50	50	50	50
Government of México	(150)							50	50	50	
Total	<u>US\$(1,077)</u>	<u>US\$343</u>	<u>US\$342</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$364</u>	<u>US\$264</u>

\* \* \* \* \*

**TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)****BUDGET AND EXECUTION OF INCOME BY FUND AND SOURCE****YEAR ENDED DECEMBER 31, 2019**

(Expressed in Thousands of U.S. Dollars)

Income Sources	Basic Fund		
	Budget	Execution	Balance
Member Fees:			
IICA	US\$1,000	US\$1,000	
Member countries	<u>600</u>	<u>600</u>	
Sub-total	<u>1,600</u>	<u>1,600</u>	
Trusts:			
Fundatrópicos (COSUDE)	336	324	US\$ 12
Fundatrópicos (USAID)	<u>269</u>	<u>418</u>	<u>149</u>
Sub-total	<u>605</u>	<u>742</u>	<u>137</u>
Administration & Finance Division (DAF):			
Administration component	81	55	(26)
Treasury	25	7	(18)
Recovery of taxes	15	43	28
Work orders (maintenance)	5	69	65
Recovery of general services		82	82
Contribution of services	313		(313)
Overhead Funds in custody DAF	3	3	
Other Income	<u>35</u>	<u>106</u>	<u>71</u>
Sub-total	<u>476</u>	<u>366</u>	<u>(111)</u>
Commercial component			
Overhead for funds in custody commercial	7	8	1
Contributions of commercial farms	<u>164</u>		<u>(164)</u>
Sub-total	<u>171</u>	<u>8</u>	<u>(163)</u>
Sub-total	<u>648</u>	<u>374</u>	<u>(274)</u>
Technical Programs:			
Forestry, biodiversity, and climate change program (PBBYc)	100	180	79
Agriculture, livestock, and agro-forestry program (PRAGA)	590	257	(333)
Research Program Development Economics Environment	<u>100</u>	<u>182</u>	<u>82</u>
Sub-total	<u>790</u>	<u>618</u>	<u>(172)</u>
Education Division:			
Master's tuition	516	500	(16)
PhD's tuition	18	22	4
Overhead for professional master's degrees	151	128	(23)
Short course tuition	35	42	7

(Continues)

Income Sources	Basic Fund		
	Budget	Execution	Balance
Exchange students	US\$ 6	US\$ 9	US\$ 3
Biostatistics unit	8	1	(7)
Library	51	48	(3)
Graduation fees	13		(13)
Graduation tests		14	14
Sub-total	<u>874</u>	<u>783</u>	<u>(34)</u>
Outreach Division:			
Recovery of indirect costs USAID	266	232	(33)
Overhead national technical offices	<u>715</u>	<u>233</u>	<u>(482)</u>
Sub-total	<u>747</u>	<u>279</u>	<u>(482)</u>
Total	<u>5,264</u>	<u>4,397</u>	<u>(824)</u>

#### Commercial Fund

Administration & Finance Division (DAF):			
Administration component:			
Transportation	US\$ 260	US\$ 281	US\$ 21
Information technology	<u>260</u>	<u>288</u>	<u>28</u>
Sub-total	<u>520</u>	<u>569</u>	<u>49</u>
Commercial component:			
Seed orchard	40	57	17
Seed bank	300	276	(24)
Rooting of coffee stem cuttings	10	39	29
Lodging and hotel services	591	660	69
Laundry	25	30	5
Souvenir store	70	60	(10)
Coffee plantation		17	17
Sugarcane plantation	315	304	(11)
Finca Lechería	626	563	(64)
Livestock farm	20	1	(19)
Forest plantation	<u>5</u>	<u>14</u>	<u>9</u>
Sub-total	<u>2,002</u>	<u>2,022</u>	<u>20</u>
Total	<u>2,522</u>	<u>2,591</u>	<u>69</u>

#### Agreement Fund

Green and Inclusive Research and Development Division (DIDVI):			
Green and inclusive research and development division	US\$ 738	US\$ 721	US\$ (17)
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	5,636	2,752	(2,884)
Economic and Environmental Research and Development Program	<u>871</u>	<u>2,020</u>	<u>1,149</u>
Sub-total	<u>7,245</u>	<u>5,493</u>	<u>(1,752)</u>

(Continues)

	<b>Agreement Fund</b>		
<b>Outreach Division:</b>			
PRCC-UICN operations support	US\$ 260	US\$ 218	US\$ (42)
National Office Guatemala	2,140	679	(1,461)
National Office Honduras	2,003	118	(1,885)
National Office El Salvador	186		(186)
National Office Nicaragua	2,700	2,097	(603)
National Office Panamá	479	503	24
National Office Dominicana	0	39	39
National Office Perú	173		(173)
National Office Belice	42		(42)
Sub-total	<u>7,983</u>	<u>3,654</u>	<u>(4,329)</u>
<b>Managed Projects:</b>			
National Office Guatemala		103	103
Sub-total		<u>103</u>	<u>103</u>
Total	<u>15,228</u>	<u>9,290</u>	<u>(5,938)</u>

	<b>Fund in Custody</b>		
<b>Administration &amp; Finance Division (DAF)</b>			
Basic services	US\$ 6	US\$ 79	US\$ 73
Human development	3	1	(2)
Concessions	25	17	(8)
International fair	105	62	(43)
NRDC - Commercial Farm	20	8	(12)
DCO Investment Fund	1	16	15
Sub-total	<u>160</u>	<u>183</u>	<u>23</u>
<b>Strategic Services:</b>			
Specific Fund Managed	100	194	94
Communication and Advocacy unit	<u>100</u>	<u>56</u>	<u>(44)</u>
Sub-total	<u>200</u>	<u>250</u>	<u>50</u>
<b>Technical Programs:</b>			
Forestry, biodiversity, and climate change program (PBBYC)	175	735	560
Agriculture, livestock, and agro-forestry program (PRAGA)	566	951	386
Economic and environmental research and development program	<u>225</u>	<u>507</u>	<u>282</u>
Sub-total	<u>966</u>	<u>2,194</u>	<u>1,228</u>
<b>Education Division:</b>			
Scholarship funds	311	887	576
Scholarship funds and loans	55	24	(31)
Educational services	24	1	(23)
Master in sustainable tourism	60	33	(27)
Practical master in development	21	16	(6)
Online Education	277	120	(157)
Training unit	350	419	69

(Continues)



	<b>Fund in Custody</b>		
Orton Library			
Biostatistics unit	<u>US\$ 60</u>	<u>US\$ 71</u>	<u>US\$ 11</u>
Sub-total	<u>1,159</u>	<u>1,572</u>	<u>413</u>
Outreach directorate and Revolving Fund			
National Office - México			
National Office - Guatemala	105	80	(25)
National Office - Honduras	38	44	6
National Office - El Salvador	40	7	(33)
National Office - Nicaragua	50	115	65
National Office - Panamá	150	134	(16)
National Office - Rep. Dominicana			
National Office - Bolivia			
Sub-total	<u>383</u>	<u>380</u>	<u>(3)</u>
TOTAL	<u>2,868</u>	<u>4,580</u>	<u>1,711</u>
TOTAL BUDGET AND EXECUTION	<u>US\$25,883</u>	<u>US\$20,859</u>	<u>US\$(5,024)</u>

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**TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)****BUDGET AND EXECUTION OF EXPENSES BY FUND AND SOURCE  
YEAR ENDED DECEMBER 31, 2019**

(Expressed in Thousands of U.S. Dollars)

Sources of Expenses	Basic Fund		
	Budget	Execution	Balance
Top Guidelines (DSU):			
General directorate	US\$ 359	US\$ 387	US\$ (28)
General sub-directorate	41	46	(6)
Board of Directors	85	60	26
High Council	26	6	20
Internal audit	89	78	11
Sub-total	<u>600</u>	<u>577</u>	<u>23</u>
Administration & Finance Division (DAF):			
Administration component			
Administration and finance directorate			
Finance and accounting	336	268	67
External audit	36	35	1
Human development	183	179	4
General services and production	31	68	(37)
Surveillance services	197	252	(55)
Maintenance	242	235	7
Integrated waste management	1	5	(4)
Concierge services	61	42	19
Sub-total	<u>1,088</u>	<u>1,086</u>	<u>2</u>
Commercial component:			
La Lola Farm	21	17	3
Plant genetics collections	84	80	4
Biotechnology laboratory	13	18	(5)
Sub-total	<u>118</u>	<u>116</u>	<u>2</u>
Sub-total	<u>1,205</u>	<u>1,202</u>	<u>4</u>
Strategic Services:			
Legal services	36	48	(12)
Communication and Advocacy unit	103	103	
Development and outreach office	175	131	43
Strategic alliance office	119	133	(15)
Sub-total	<u>432</u>	<u>415</u>	<u>16</u>
Green and Inclusive Research and Development Division (DIDVI):			
Green and inclusive research and development division	405	354	51
Forestry, biodiversity, and climate change program (PBByC)	289	236	53

(Continues)

Sources of Expenses	Basic Fund		
	Budget	Execution	Balance
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	US\$ 241	US\$ 143	US\$ 98
Sub-total	<u>934</u>	<u>732</u>	<u>202</u>
Education Division:			
Education directorate	540	538	2
Fundatrópicos scholarships	125	113	12
Professors technical departments	376	392	(15)
Orton Library	50	83	(33)
Biostatistics unit	<u>91</u>	<u>122</u>	<u>(31)</u>
Sub-total	<u>1,182</u>	<u>1,248</u>	<u>(66)</u>
Outreach Division:	0		
Membership contributions	40	27	13
National Office - Belize	0	1	(1)
National Office - Mexico	20	16	3
National Office - Guatemala	24	(16)	40
National Office - Honduras	56	50	6
National Office - El Salvador	19	17	2
National Office - Nicaragua	40	35	4
National Office - Dominican Rep.	47	46	1
National Office - Brazil	24	19	5
National Office - Colombia	0	2	(2)
National Office - Perú	29	37	(8)
National Office - Paraguay	34	21	13
National Office - USA	3	1	2
National Office - Ecuador	2	10	(8)
National Office - Bolivia	<u>          </u>	<u>1</u>	<u>(1)</u>
Sub-total	<u>338</u>	<u>258</u>	<u>80</u>
Other Budget Items:			
Reimbursement for vacation		(8)	8
Colombia Payment Agreement		106	(106)
República Dominicana Payment Agreement		130	(130)
Operating Reserve	<u>573</u>	<u>          </u>	<u>573</u>
Sub-total	<u>573</u>	<u>228</u>	<u>345</u>
Total	<u>5,264</u>	<u>4,659</u>	<u>605</u>

**Comercial**

Administration & Finance Division (DAF):			
Administration component:			
Information technology	US\$ 257	US\$ 254	US\$ 3
Transportation	<u>179</u>	<u>192</u>	<u>(13)</u>
Sub-total	<u>436</u>	<u>446</u>	<u>(10)</u>
Commercial component:			
Commercial Directorate			

(Continues)

	<b>Comercial</b>		
Lodging and hotel services	US\$ 365	US\$ 303	US\$ 62
Laundry	25	21	4
Coffee plantation		4	(4)
Sugarcane plantation	307	326	(19)
Forest plantation	38	24	14
Livestock farm	14	8	6
General dairy industry	483	526	(43)
Seed bank	259	319	(60)
Seed orchard	40	57	(17)
Rooting of coffee stem cuttings	10	12	(2)
Souvenir store	66	55	12
Sub-total	<u>1,608</u>	<u>1,654</u>	<u>(46)</u>
Total	<u>2,045</u>	<u>2,100</u>	<u>(56)</u>

	<b>Agreement Fund</b>		
Green and Inclusive Research and Development Division (DIDVI):			
Forestry, Biodiversity, and Climate Change Program (PBBYC)	US\$ 848	US\$1,699	US\$ (852)
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	5,644	2,869	2,774
Economic and Environmental Research and Development Program (PIDEA)	<u>754</u>	<u>1,512</u>	<u>(758)</u>
Sub-total	<u>7,245</u>	<u>6,080</u>	<u>1,165</u>
Outreach Division:			
Regional climate change program	4,153	423	3,730
National Office Guatemala	840	778	62
National Office Honduras	250		250
National Office El Salvador	50	2	48
National Office Nicaragua	1,738	1,577	161
National Office Panama	912	718	194
National Office Dominican Rep.	40	39	1
State of Bolivia			
Sub-total	<u>7,983</u>	<u>3,537</u>	<u>4,446</u>
Managed Projects:			
National Office Guatemala		95	(95)
Sub-total		95	(95)
Total	<u>15,228</u>	<u>9,712</u>	<u>5,516</u>

	<b>Agreement Fund</b>		
Administration & Finance Division (DAF):			
Administration component:			
Basic services	US\$ 6	US\$ 8	US\$ (2)
Human development	3	1	2
Infrastructure	25	69	(44)
NRDC commercial farm	105	18	87

(Continues)

	<b>Agreement Fund</b>		
Concessions	US\$ 20	US\$ 11	US\$ 9
International fair	<u>1</u>	<u>65</u>	<u>(64)</u>
Sub-total	<u>160</u>	<u>173</u>	<u>(13)</u>
Strategic Services:			
Management of specific funds	100	257	(157)
Communication and Advocacy unit	<u>100</u>	<u>50</u>	<u>50</u>
Sub-total	<u>200</u>	<u>307</u>	<u>(107)</u>
Green and Inclusive Research and Development Division (DIDVI):			
Green and Inclusive Research and Development Division (DIDVI)	175	872	(697)
Forestry, Biodiversity, and Climate Change Program (PBBYC)	566	1,088	(522)
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	<u>225</u>	<u>496</u>	<u>(271)</u>
Sub-total	<u>966</u>	<u>2,455</u>	<u>(1,489)</u>
Education Division:			
Scholarship funds	311	787	(476)
Scholarship funds and loans	50	112	(63)
Educational services	33	41	(8)
Master in agro-business			
Master in sustainable tourism	12	40	(28)
Practical master in development		15	(15)
Online Education	277	111	166
Training unit	350	352	(2)
Orton Library			
Biostatistics unit	<u>127</u>	<u>57</u>	<u>70</u>
Sub-total	<u>1,159</u>	<u>1,515</u>	<u>(356)</u>
External Projection Division			
National Office - Guatemala	151	84	67
National Office - Honduras	15	19	(4)
National Office - El Salvador	19	18	1
National Office - Nicaragua	90	131	(41)
National Office - Panamá	108	159	(51)
National Office - Rep. Dominicana			
National Office - State of Acre Brazil			
National Office - Bolivia			
Sub-total	<u>383</u>	<u>412</u>	<u>(28)</u>
TOTAL	<u>2,868</u>	<u>4,862</u>	<u>(1,994)</u>
TOTAL BUDGET AND EXECUTION	<u>US\$25,406</u>	<u>US\$21,333</u>	<u>US\$ 4,318</u>

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## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

## SUMMARY OF INCOME AND EXPENSES IN AGREEMENT FUNDS

YEAR ENDED DECEMBER 31, 2019

(Expressed in Thousands of U.S. Dollars)

Fondo	Fuente	Convenio	Costo		Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019	
							Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
2	010	002	DG56	1	Instituto Nacional Autónomo de Investigaciones Agropecuarias	INIAP Convenio Específico de Cooperación Técnica	0	7	0	0	0	0	0	0
2	010	003	DH92	2	Instituto Nacional de Investigación Agropecuaria (INIA) de Uruguay	Convenio de Co-Ejecución del proyecto Intensificación Sostenible de la Lechería Ref FTG/RF-15940-RG	0	2	0	0	12	17	2	0
2	011	008	DA50	3	The Center for International Forestry Research	Forest, Agroforestry Program (FTA)	0	0	0	0	0	1	1	0
2	011	009	DA51	4	The Center for International Forestry Research	CGIAR Research Program: Forest Trees and Agroforestry (FTA)	0	111	0	0	258	173	0	196
2	013	034	DH66	5	Banco Internacional de Desarrollo	Desarrollando sistemas de producción ganaderos competitivos con bajas emisiones de gases de efecto invernadero en América Central. Proyecto FONTAGRO FTG/RF-14652-RF	0	3	3	0	0	0	0	0
2	013	036	DE40	6	Banco Internacional de Desarrollo	Mecanismos y Redes de Transferencia de Tecnología Relacionada con el Cambio Climático en América Latina y el Caribe.No. ATN/FM-14836-RG	0	278	0	0	683	993	32	0
2	013	038	DH84	7	Banco Interamericano de Desarrollo	Innovaciones para fomentar la adaptación al Cambio Climático del Sistema Productivo Agrícola y Ganadero en America Latina y el Caribe	0	14	14	0	0	0	0	0
2	013	039	DH93	8	Banco Interamericano de Desarrollo	Plataforma Latinoamericana y del Caribe para la intensificación sostenible de la producción ganadera:	0	99	0	0	60	159	0	0
2	013	040	GQ03	9	Banco Interamericano de Desarrollo	Contrato con el Inter-American Development Bank (IDB)	0	9	0	0	0	0	0	0
2	014	003	DG28	10	Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement	Agreement between the Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement (CIRAD) and the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)	0	21	0	0	132	120	0	33
2	014	005	DE33	11	Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement	Enhancing Adaptation and Resilience to Drought in Dry Tropical Social-Ecological Systems ( <b>Investigación y Gestión de Colaboración</b> )	3	0	0	0	0	0	0	0
2	014	006	DF33	12	Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement	CIRAD - Persyst Department	0	23	0	0	10	19	0	14
2	014	007	DC30	13	Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement	Forests and Ecological intensification of Agricultural Systems	0	2	0	0	0	0	0	2
2	016	004	DH62	14	Centro Internacional de Agricultura Tropical	CONVENIO CIAT - CATIE, Carne y lácteos competitivos a través de la intensificación sostenible y el acceso a mercados especializados en Nicaragua. C-069-14	0	2	2	0	0	0	0	0
2	016	006	DA48	15	Centro Internacional de Agricultura Tropical	Subcontrato de Socio CCAFS (Cambio Climático , Agricultura y Seguridad Alimentaria _Centro Internacional de Agricultura Tropical (CIAT) C-061-15	28	0	0	0	28	0	0	0
2	019	005	GG12	16	Agencia Suiza para el Desarrollo y la Cooperación	La Unidad de Asistencia Técnica al Proyecto Cosecha de Agua en Nicaragua	51	0	0	0	51	0	0	0
2	019	007	GG14	17	Agencia Suiza para el Desarrollo y la Cooperación	Adaptación de la agricultura al cambio climático a través de la cosecha de agua (Cosecha de Agua)	0	1,500	0	0	1,750	1,477	0	1,773
2	024	014	GD30	18	Organización de las Naciones Unidas para la Alimentación y la Agricultura	Aumento de la Resiliencia Climática de Familias Rurales a través de la Restauración de Paisajes y de Tierras Degradadas en Guatemala	2	0	0	0	0	0	0	0
2	024	015	GG15	19	Organización de las Naciones Unidas para la Alimentación y la Agricultura	Acción temprana para prevenir y disminuir los impactos de la sequía en el corredor seco de Nicaragua	0	0	0	0	100	100	0	0
2	028	005	DG65	20	Fundecooperación para el Desarrollo Sostenible	Cosecha de agua y uso más eficiente en sistemas protegidos y diversificados en la zona principal hortícola de CR: Fomento de experiencias piloto con productores agroecológicos del Norte de Cartago y otras zonas importantes para la GAM (CODIGO 060-14)	0	57	0	0	0	56	0	1
2	029	003	DG47	21	Centre for Agricultural Bioscience International	CABI-PLANTWISE	0	4	0	0	78	73	0	9
2	033	007	DA22	22	Agencia de Cooperación Alemana	GTZ Productos Fitosanitarios no químicos	0	0	0	0	0	0	0	0
2	033	012	GE19	23	Agencia de Cooperación Alemana	Programa CLIFOR, PN 11.2163.1-004.00 028/15 /2016/83231879	122	0	0	3	118	0	0	0
2	033	013	DC39	24	Agencia de Cooperación Alemana	GIZ- Medidas adaptación basadas en Ecosistemas en America	0	0	0	0	91	90	0	1
2	041	001	DF03	25	Biodiversity International	BIOVERSITY INTERNATIONALLOA 2013-04 (Convenio Administrativo BIOVERSITY/CATIE para el año 2013) (LoA 2014/10 Adendum	0	12	0	0	125	127	0	10
2	041	007	DA49	26	Biodiversity International	Comparación sistemática de diferentes enfoque de evaluación participativa de variedades de cultivos anuales para la adaptación climática (LOA 2015/73 CATIE-MAP)	4	0	0	0	18	13	0	0
2	041	008	GD24	27	Biodiversity International	Support in creating robust climate information systems on climate and food security in Guatemala	0	2	0	0	0	0	0	0
2	041	009	DF34	28	Biodiversity International	BIOVERSITY INT-Apoyo colección Germoplasma Cacao Mocca	0	0	0	0	45	0	0	45

Fondo	Fuente	Convenio	Costo		Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019	
							Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
2	043	013	DE49	29	Programa de las Naciones Unidas para el Medio Ambiente	Acuerdo de financiación a pequeña escala SSFA/REDD-004/2016	3	0	0	0	0	0	3	0
2	043	015	GD29	30	Programa de las Naciones Unidas para el Desarrollo	Acuerdo de Subsidio de Microcapital entre el Asociado en la Implementación y la Institución Receptora para la entrega de fondos de Subsidio CATIE	0	6	0	0	0	0	0	0
2	043	017	GD32	31	Programa de las Naciones Unidas para el Desarrollo	Proyecto Asistencia Técnica a las Partes que Reúnen las Condiciones para la Elaboración del Sexto Informe Nacional del CDB (6NR-LACII) del Programa de las Naciones Unidas para el Desarrollo-PNUD	0	0	0	3	2	4	0	0
2	043	018	GI17	32	Oficina de las Naciones Unidas de Servicios para Proyectos	Memorando de acuerdo - Modelo Básico - Entre UNOPS y ONG Locales Basadas en la Comunidad y Organizaciones Basadas en la Comunidad Bajo el Programa de Pequeñas Donaciones (GEF)	0	25	0	0	25	48	0	2
2	043	019	GI18	33	Programa de las Naciones Unidas para el Desarrollo	PUND-Implementación acciones de Monitoreo y conservación Rio Indio	0	0	0	0	127	143	15	0
2	043	020	DG72	34	The United Nations Industrial Development Organization	UNIDO-Desarrollo política forestal integrada Belice	0	0	0	0	12	12	0	0
2	043	021	DI93	35	Programa de las Naciones Unidas para el Desarrollo	PNUD- Elaboración de un Plan de Manejo La Selle	0	0	0	0	53	22	0	31
2	067	003	DF29	36	Institut de Recherche pour le Developpement	MACACC (Acuerdo N° AIRD-13-AGRO-0005-09)	8	0	0	0	0	0	0	0
2	075	002	DG71	37	Lutheran World Relief	LWR-Segundo Convenio Colaborativo	0	0	0	0	41	40	0	1
2	082	010	GE15	38	Unión Europea	Capacidades locales fortalecidas para el Desarrollo Productivo en Forestaría Comunitaria y valoración de bienes y servicios forestales (DCI-ALA/2014/338-885)	5	0	0	0	0	0	0	0
2	082	011	GA28	39	Unión Europea	Contrato de Subvención, Acciones Exteriores de la Unión Europea, FOOD/2017/386-542 Plataforma de Información nacional sobre Nutrición (PINN)	212	0	0	0	196	2	17	0
2	082	012	GD28	40	Unión Europea	Contrato de Subvención, Acciones Exteriores de la Unión Europea, FOOD/2017/386-542 Plataforma de Información nacional sobre Nutrición (PINN)	0	838	0	0	607	716	0	730
2	084	016	DH72	41	Centro Internacional de Agricultura Tropical	Subcontrato de Socio CCAFS (Cambio Climático , Agricultura y Seguridad Alimentaria _Centro Internacional de Agricultura Tropical (CIAT) C-061-15	0	8	8	0	0	0	0	0
2	084	017	DG57	42	United States Department of Agriculture	"Evaluation of Improved Cacao (Theobroma cacao) Materials for Agronomic Performance, Reaction to Diseases and Uptake of Cadmium."	0	37	0	0	13	45	0	4
2	084	019	DG61	43	United States Department of Agriculture	Development of Clones of Theobroma cacao With Resistance to Frosty Pod and Black Pod Using Genomics-assisted Breeding Methodology AGREEMENT 58-6038-6-009-F	0	22	0	0	0	41	19	0
2	085	006	GA15	44	United States Agency for International Development	USAID Regional Climate Change Program RCCP N° 596-12-000001	0	179	0	0	218	395	0	0
2	095	100	DG63	45	EARTHCORP de Costa Rica Foundation	Contrato de arrendamiento de instalaciones y terreno en finca La Lola y Cooperación técnica entre el CATIE y EARTHCORP de Costa Rica Foundation	0	4	0	0	23	14	0	14
2	104	005	DC17	46	University of Gothenburg	EFD-COMMONS	0	50	0	0	33	83	0	0
2	104	009	DC28	47	University of Gothenburg	Environment for Development Initiative in Central America Work Plan 2017 EFD .EEU ref 17002, Sida No 61050043	0	155	0	0	0	111	0	44
2	104	010	DC32	48	University of Gothenburg	Efd Travel Management Services	0	11	0	0	0	10	0	0
2	104	011	DC33	49	University of Gothenburg	Effects of forest certification on bird biodiversity in Sweden	0	5	0	0	0	5	0	0
2	104	012	DH91	50	University of Gothenburg	Develop Sustainable Futures for Food Production in The Tropics, Using the CR dairy sector: Optimising environmental and economic outcomes	28	0	0	0	111	107	24	0
2	104	013	DC37	51	University of Gothenburg	EFD-Work Plan 2019	0	0	0	0	593	431	0	161
2	108	006	DE38	52	United Nations Environment Programme	Joint UNEP-UNIDO Programme to host and Manage the Climate Technology Centre and Network (CTCN)	0	61	0	0	0	13	0	47
2	108	008	DH77	53	United Nations Environment Programme	Roadmap to Nationally Appropriate Mitigation Action in Livestock Sector of Honduras and Nicaragua UNEP - NCF4	0	9	9	0	0	0	0	0
2	108	009	DE41	54	United Nations Environment Programme	Joint UNEP-UNIDO Programme to host and manage the Climate Technology Centre and Network (CTCN) Reference number: DTIE15-EN0104	0	1	0	0	0	0	0	0
2	111	008	DA42	55	Royal Norwegian Embassy	Mesoamerican Agroenvironmental Programme (MAP Norway) Second Phase	0	0	0	0	0	4	4	0
2	112	001	DF10	56	La Red Regional de Investigación y Desarrollo del Plátano y Banano para América Latina y El Caribe	MUSALAC	0	19	0	0	19	0	0	0
2	118	002	DG66	57	Ministerio de Medio Ambiente y Recursos Naturales (Rep Dominicana)	Contrato de Servicios de Consultoría: Evaluación del Contenido de Biomasa y Carbono en Cobertura No Bosque en República Dominicana-CON-SCC-05-2017	0	26	0	0	0	26	0	0
2	119	005	DH95	58	United States Fish and Wildlife Service	Conserving Neotropical Migrants by Managing Ecosystem Services on Coffee Farms (6749)	4	0	0	0	44	77	36	0
2	129	002	DG50	59	Nestle Ltd.	Mejoramiento genético de variedades de Cacao	0	14	0	0	36	34	0	16
2	159	003	GD26	60	Fundación para la Conservación en Guatemala	Cogestión Territorial para la Conservación y manejo sostenible del complejo volcánico Acatenango-Fuego	0	0	0	0	0	0	0	0
2	159	004	GD33	61	Fundación para la Conservación de los Recursos Naturales y Ambiente en Guatemala	FCA-Conservación y manejo sostenible del paisaje forestal	0	0	0	0	71	58	0	13
2	173	001	GN01	62	Estado de ACRE-BRAZIL	Estado de Acre	0	7	0	0	0	0	0	0

Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019		
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor	
2	180	001	DF26	63	World Agroforestry Centre	ICRAF-CATIE	0	10	0	0	0	0	0	
2	182	002	GI10	64	Fundación para la Conservación de los Recursos Naturales	Consultoría "Creación de un modelo integral de incentivos por servicios ambientales, que promueva la conservación y la restauración ambiental, y aumente los ingresos de los pequeños productores"	0	1	0	0	0	0	0	
2	182	003	GI16	65	Fundación para la Conservación de los Recursos Naturales	Contrato de servicios entre La Fundación para la Conservación de los Recursos Naturales (Natura) y CATIE	0	13	0	0	42	46	0	9
2	182	004	GI19	66	Fundación para la Conservación de los Recursos Naturales	NATURA-Elaboración del Diagnostico pormenorizado Rio Santa Maria	0	0	0	0	36	22	0	14
2	182	005	GI20	67	Fundación para la Conservación de los Recursos Naturales	NATURA-Restauración Bosques Galería Microcuenca Rio Gallito	0	0	0	0	30	20	0	10
2	183	003	GI12	68	Fundación para la Conservación de los Recursos Naturales	Fundación para la Conservación de los Recursos Naturales	0	6	0	0	0	0	0	0
2	186	003	DI94	69	Conservation International Foundation	CI-Rehabilitación Humedal Puntarenas	0	0	0	0	196	0	0	196
2	191	007	DI78	70	Costa Rica Por Siempre	Desarrollo de indicadores de integridad ecológica y sus respectivos protocolos de monitoreo a nivel local para los ámbitos terrestres y de aguas continentales en 32 áreas silvestres protegidas de Costa Rica	26	0	0	0	0	0	26	0
2	199	004	DC29	71	Instituto Nacional de Biodiversidad	Fortalecimiento de la gestión comunitaria del agua en acueductos rurales de las áreas de influencia y conectividad de los Acuíferos de Guácimo-Pococí, Área Priorizada Tortuguero	9	0	0	0	10	1	0	0
2	200	002	DI89	72	Ministerio del Medio Ambiente y Recursos Naturales	CD/MARN/02/2016 "Consultoría apoyo técnico a la formulación de la ENA REDD-Mba El Salvador" Proyecto N°TF 099529	0	0	0	0	0	0	0	0
2	205	003	DG73	73	Heifer Project International	HEIFER - ejecución del proyecto CHOCOLATE 4ALL	0	0	0	0	121	70	0	51
2	208	002	DG55	74	Texas A&M Agrilife Reserach	Revitalización del Sector Café en Centroamérica (Subrecipient Agreement N° 06-S140670)	0	0	0	0	23	16	0	7
2	210	001	GF25	75	Centro Nacional de Tecnología Agropecuaria y Forestal	Fortalecimiento de la Agricultura Familiar aplicando Tecnologías Sostenibles ante el Cambio Climático en El Salvador	68	0	0	0	0	0	0	0
2	215	002	DC38	76	Department of State United States of America	Accountable providers, technology and citizen participation for improved water services in vulnerable communities of Costa Rica	0	0	0	0	0	0	0	0
2	216	005	CC01	77	Sistema Nacional de Áreas de Conservación	Plan de Manejo de la Cuenca del río Grande de Tárcoles	0	0	0	0	134	29	0	106
2	223	001	DG58	78	Rural Development Administration	Rural Development Administration (RDA) of The Republic of Korea	0	65	0	0	40	104	0	1
2	223	002	DG64	79	KoLFACI of the Rural Development Administration (RDA)	Enhancement of cacao production through the use of improved germplasm and selected climate smart agricultural practices	0	96	0	0	222	116	0	202
2	224	001	DI80	80	Agencia Luxemburguesa para la Cooperación al Desarrollo	Adenda 1. Acuerdo Marco de Cooperación técnica MAE/013-15 1006 firmado entre LuxDev y el CATIE	0	59	0	0	13	73	0	0
2	227	001	GI11	81	Ministerio de Ambiente Panamá	Elaboración del Plan de uso Público del Parque Nacional Chagres	0	9	0	0	0	0	0	0
2	227	002	GE18	82	Secretaria de Energia Recursos Naturales, Ambiente y Minas	N° 16_III_080_Central America_A_Developing sec-ondary forest	21	0	0	0	0	0	21	0
2	227	003	DH90	83	Secretaria de Energia Recursos Naturales, Ambiente y Minas	Entregando múltiples beneficios ambientales mediante el manejo sostenible de los paisajes productivos	23	0	0	0	22	0	0	0
2	227	004	GI14	84	Ministerio de Ambiente Panamá	Una estrategia regional para la adaptación y mitigación del cambio climático	0	196	0	0	243	438	0	1
2	229	001	DI82	85	Westfaelische Wihelms-Universitaet	Consortium Agreement for the project: "Green Transformations in the global South (GreeTS): opening the black-box of a pro-active state and management of sustainability trade-offs in Costa Rica and Vietnam"	0	22	0	0	16	37	0	1
2	231	001	DE45	86	Fundecooperación para el Desarrollo Sostenible	Implementando lo aprendido: mejorando las capacidades de los pobladores de la Península de Nicoya para enfrentar los impactos del cambio climático en el recurso hídrico (N° 051-14)	0	14	0	0	14	47	19	0
2	232	001	DG59	87	World Coffee Research	World Coffee Research 16203	0	0	0	0	13	0	0	12
2	233	002	DG62	88	Instituto Interamericano de Cooperacion para la Agricultura	Contrato de Subdelegación para la ejecución de las acciones regionales de investigación y extensión agrícola en el marco del Programa de Gestion Integral de la Roya del Café	0	13	0	0	368	422	41	0
2	233	003	DC36	89	Instituto Interamericano de Cooperacion para la Agricultura	Gestion de conocimientos para la adaptación de la agricultura familiar al cambio climático (INNOVA-AF)	0	0	0	2	2	4	0	0
2	237	001	GJ03	90	Ministerio de Educacion Superior Ciencia y Tecnologia	Alternativas tecnológicas financieras para la renovación, rehabilitación y fomento de cafetales en la Republica Dominicana	0	2	0	0	39	39	0	2
2	243	001	DH83	91	Korea Rural Economic Institute	Integrated Silvopastoral Apprpaches for Ecosystem Management	0	2	2	0	0	0	0	0
2	244	001	DI84	92	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety	Development of sustainable forestry models & links to private finance for secondary forests.	28	0	0	1	396	405	37	0
2	244	002	DH85	93	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety	International Climate Initiative (IKI)Scaling up Biodiversity Conservation through Climatesmart Agrosilvopastoral Practices in Landscapes dominated by Cattle-raising Systems in Three Regions of Mexico	0	95	0	0	482	683	106	0

Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019	
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
2	244	003	DG68	94	International Center for Research in Agroforestry								
					Harnessing the potential of trees on farms for meeting national and global biodiversity targets. Subgrant Agreement between ICRAF and CATIE/TC 06/06/18: 1.1662	42	0	0	0	155	134	21	0
2	248	001	DE50	95	Centro Tecnológico Forestal de Cataluña								
					Models and decision Support tools for integrated Forest policy development under global change and associated Risk and Uncertainty	0	22	0	0	56	42	0	36
2	249	001	DI91	96	Oxfam Intermon								
					Reducción sostenible de la Inseguridad Alimentaria en los municipios del Alto Artibonite	23	0	0	0	0	0	23	0
2	250	001	DC34	97	Johns Hopkins University (Maryland)								
					EGAP_JHU_Monitoring Experiment - Community monitoring to facilitate climate change adaptation by local institutions in water-scarce regions of Central America	0	50	0	0	86	107	0	29
2	251	001	DC35	98	National Environment & Planning Agency								
					Design of Payment for Ecosystem Services Scheme in Yallahs and Hope River Watershed Management Units in Jamaica	0	235	0	3	317	532	0	23
2	252	001	GD31	99	Proatec SRL								
					Servicios de Consultoría para el apoyo de la implementación del Proyecto Adaptación al Cambio Climático en el Corredor Seco de Guatemala No. 2009 67 075	1	0	0	0	0	0	1	0
2	253	001	DB26	100	Instituto Mixto de Ayuda Social								
					IMAS_Capacitación indígena emprendimientos productivos sostenibles	1	0	0	0	136	119	0	16
2	254	001	DH96	101	Belize Livestock Producer Association								
					Developing a Climate-Smart and Green Cattle Sector in Belize through Technology Innovations and Strengthening Local Institutions	0	16	0	0	25	39	0	2
2	255	001	DI92	102	The National Institute for Forest Science								
					Develop future landscape and ecosystem-level scenarios for forest and landscape restoration under high exposure to climate change (	0	49	0	0	48	67	0	30
2	256	001	DG70	103	Gaia Artisan Coffee								
					GAIA-Acceso y distribución de Germoplasma de Café	0	0	0	0	0	3	3	0
2	257	001	DA52	104	University of Greenwich								
					GREENWICH- Sostenibilidad en la Agroforestería de Café en America Central	0	0	0	0	120	140	20	0
2	258	001	DG74	105	Global Nature Technology								
					GNT-Convenio de Cooperación Producción Híbridos F1 Café	0	0	0	0	0	1	1	0
2	259	001	GE21	106	Programa de Desarrollo Económico Inclusivo Territorial (Honduras)								
					Contribuir a que las familias vulnerables y excluidas de la cadena de valor de ecoturismo costero, marañón y ganadería sostenible	0	0	0	0	0	0	0	0
					<b>Total Convenios</b>	<b>712</b>	<b>4,601</b>	<b>39</b>	<b>13</b>	<b>9,187</b>	<b>9,617</b>	<b>474</b>	<b>3,891</b>

Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre Proyecto	Saldo al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019	
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Egresos Gastos	Deudor	Acreedor
3	024	009	GD21	107	Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO)								
					FAO - Fortalecimiento Institucional	0	19	0	0	100	95	0	24
3	097	039	GD13	108	Comisión Nacional de Áreas Protegidas								
					CONAP / Holanda	0	2	0	0	0	0	0	2
3	097	058	GD16	109	Ministerio de Agricultura y Ganadería (MAGA)								
					MAGA CONVENIO 89-2007	0	106	0	0	2	(1)	0	1
					<b>Total Fondos en Administración</b>	<b>0</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>103</b>	<b>0</b>	<b>0</b>	<b>25</b>

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## TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)

## SUMMARY OF INCOME AND EXPENSES IN FUNDS IN CUSTODY AND MANAGED PROJECTS

YEAR ENDED DECEMBER 31, 2019

(Expressed in Thousands of U.S. Dollars)

Fondo	Fuente	Convenio	Costo	Nombre del Centro de Costo	Saldos al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019	
					Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
8	085	010	EB59	USAID - Becas PRCC	0	70	0	0	0	62	0	9
8	092	005	DH01	Ganadería y Manejo del Medio Ambiente	0	145	35	(35)	356	385	0	151
8	092	025	DE01	Cambio Climático y Cuencas Investigación en Desarrollo Economía y	0	50	0	0	229	267	0	13
8	092	026	DC11	Ambiente	0	158	1	(1)		257	0	185
8	092	029	BE11	Concesiones	0	19	0	0	17	11	0	26
8	092	030	DA05	Laboratorio de Suelos	0	39	0	0	10	23	0	26
8	092	035	GI02	OTN Panamá	0	56	0	0	134	159	0	30
8	092	040	GM02	OTN Bolivia	18	0	20	0	0	0	0	2
8	092	046	BD02	Salud Ocupacional	0	1	0	0	1	1	0	0
8	092	047	BE15	Feria Internacional del CATIE	0	4	0	0	62	65	0	2
8	093	004	EC01	Unidad de Capacitacion	0	26	0	(35)	419	352	0	58
8	093	006	EB29	Textos y Materiales	0	2	0	0	30	28	0	4
8	093	007	EB32	Vida Estudiantil	0	3	0	0	10	11	0	1
8	093	014	EB37	Becas DAAD	13	0	0	(8)	55	42	8	0
8	094	002	GF01	OTN El Salvador	4	0	0	0	7	18	0	0
8	094	042	DA15	Dirección de Investigación y Desarrollo	0	22	0	0	10	4	0	29
8	094	046	GG01	OTN - Nicaragua	3	0	4	(4)	115	131	14	0
8	094	054	DD10	Grupo Manejo de Cuencas Hidrográficas	0	8	0	0	42	42	0	9
8	094	061	DB01	Unidad de Desarrollo de Agronegocios	0	77	0	0	95	117	0	55
8	094	070	DG33	Cacaocultura Latinoamericana	0	80	0	0	256	265	0	70
8	094	084	DG36	Grupo Café, Rentabilidad y Diversidad	0	22	0	0	76	46	0	52
8	094	092	DG38	Cacao Comercial	0	49	0	0	112	156	0	5
8	094	101	FI06	NRDC Finca Comercial	0	39	0	0	8	18	0	29
8	095	022	BB08	Servicios Básicos CATIE	0	11	16	(16)	14	8	0	1
8	095	033	GD02	Adm. Proyectos Guatemala	10	0	1	(1)	80	82	12	0
8	095	063	FH01	Jardín Botánico CATIE	0	9	0	0	67	69	0	6
8	095	067	DA16	Asesoramiento Agroforestal	2	0	0	0	0	0	0	0
8	095	073	DG34	Publicaciones y Consultorías Nicaragua	0	3	0	0	-2	0	0	0
8	095	075	GE02	OTN - Honduras	91	0	4	(31)	44	19	34	0
8	095	082	DG35	Ensayo de Café - Bonilla II	0	1	0	0	40	32	0	9
8	095	086	CB01	Oficina de Comunicación e Incidencia	0	7	0	0	56	50	0	13
8	095	097	GA04	Apoyo Dirección Proyección Regional	3	0	0	0	0	0	3	0
8	095	101	CA03	Gestion de Fondos Específicos OAE	0	15	63	(63)	188	257	0	8
8	096	001	EB08	Becas - CONACYT	0	35	0	0	39	67	0	6
8	096	003	EB34	Becas OEA	0	0	0	0	0	0	0	0
8	096	018	EB58	Educación Virtual	0	6	0	0	120	111	0	15
8	096	028	EE01	Unidad Bioestadística	7	0	6	(6)	71	57	0	14
8	096	032	EB48	Becas IGERT	0	0	0	0	1	1	0	0
8	096	034	EB19	Fondo Estudiantil para Emergencias Medicas	0	13	0	0	0	0	0	13
8	096	036	EB16	Estudiantes de Intercambio	0	1	0	0	1	2	0	0
8	096	039	EB17	Fondo Educativo	0	65	35	0	22	108	0	14
8	096	044	EB14	Becas por Donación	42	0	0	0	191	120	0	29



Fondo	Fuente	Convenio	Costo	Nombre del Centro de Costo	Saldos al 31 de Diciembre de 2018		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2019	
					Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
8	096	047	EB49	Becas BID	0	0	0	0	8	8	0	0
8	096	049	EB10	Becas Estudiantes	16	0	0	0	478	437	0	25
8	096	050	EB04	Becas - SENACYT / FUNDACYT	0	0	0	0	0	0	0	0
8	096	053	EB24	Maestría en Agronegocios CATIE-INCAE	0	0	0	0	0	0	0	0
8	096	054	EB54	IICA - Legado Académico H. Wallace	0	46	5	(5)	0	41	0	0
8	136	001	FI10	Fondo de Inversión DCO	0	22	0	0	16	4	0	34
8	137	001	BA02	Fondo de Inversión DSC	0	0	0	0	65	65	0	0
8	145	001	EB42	Maestría de Turismo Sostenible	0	8	8	0	33	40	0	8
8	150	001	FI12	BIOTECH Operativo	323	0	246	(31)	73	61	94	0
8	151	001	FI13	Híbridos Comerciales	253	0	0	0	0	0	0	0
8	154	001	GB03	Oficina Técnica Nacional - Belice	0	1	0	0	0	0	0	0
8	155	001	GC03	Generación de Fondos OTN México	0	6	0	0	0	2	0	5
8	156	001	GA14	Unidad de Gestion de Oportunidades UGO	0	63	63	(63)	5	0	0	5
8	162	001	DF24	Catedra Agroecología y Agrobiodiversidad	0	0	0	0	0	0	0	0
8	165	001	FI15	Colecciones Fitogénicas	0	34	0	0	40	45	0	30
8	166	001	EB43	Beca Doctorado M Podovan	0	0	0	0	8	8	0	0
8	171	001	EB47	Maestría Practica para el Desarrollo	0	0	0	0	16	15	0	2
8	174	001	GJ02	OTN-Republica Dominicana	0	1	0	0	0	0	0	0
8	179	001	AA03	Generación de Fondos Alvaro Umaña	0	6	0	0	55	62	1	0
8	183	002	DA41	MFA - Noruega MAP Territorio Clave Trifinio	0	50	0	0	10	59	0	2
8	195	001	DE23	Catedra Decisiones Ambientales	6	0	0	0	7	1	0	0
8	197	001	EB51	Becas - OSF	5	0	5	-5	0	0	0	0
8	201	001	EB52	Capital Semilla Fondo Educativo	0	4	0	0	2	5	0	1
8	221	001	DI76	Conferencia WALLACE	0	26	0	0	0	0	0	26
8	242	001	DI16	Curso Manejo Diversificado de Bosques	0	458	264	(264)	499	563	0	394
<b>Total Fondos en Custodia</b>					<b><u>797</u></b>	<b><u>1,762</u></b>	<b><u>812</u></b>	<b><u>(577)</u></b>	<b><u>(4,580)</u></b>	<b><u>4,862</u></b>	<b><u>166</u></b>	<b><u>1,414</u></b>

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**TROPICAL AGRICULTURE RESEARCH AND TRAINING CENTER (CATIE)**

**EXECUTION OF EXPENSES BY FUND, DIVISION AND EXPENSE PURPOSE  
YEAR ENDED DECEMBER 31, 2018**  
(Expressed in Thousands of U.S. Dollars)

	Staff	Travel and Per Diem	Communication and Printing	Maintenance of Equipment and Buildings	General Expenses	Training and Scholarships	Investment in Equipment and Infrastructure	Consumables and Specific Costs	Institutional Support and Overhead	Total
Basic Activity Fund;										
Top Guidelines	US\$ 417	US\$116	US\$ 15	US\$ 1	US\$ 27					US\$ 577
Administrative and Finance Division										
Administration component	959	7	28	31	51	US\$ 1		US\$ 8		910
Comercial component	100		3		12					116
Strategic Services	381	5	17		10	1		2		415
Green and Inclusive Research and Development Directorate	664		16	3	47					732
Education Division	940	26	15	15	71	114		67		1,248
Outreach Division	274	24	5	1	(37)	228				494
Other Budget ítems	8									167
Sub-total Basic Activities	<u>3,726</u>	<u>178</u>	<u>98</u>	<u>53</u>	<u>181</u>	<u>345</u>		<u>78</u>		<u>4,659</u>
Commercial Activity Fund:										
Administration and Finance Division										
Service component	447	18	32	131	125			72		825
Commercial component	508	8	27	84	81			567		1,275
Sub-total Commercial Activities	<u>955</u>	<u>26</u>	<u>59</u>	<u>215</u>	<u>206</u>			<u>639</u>		<u>2,100</u>
Agreement Funds:										
Green and Inclusive Research and Development Directorate	4,163	431	73	25	274	435	US\$137	97	US\$ 476	6,109
Outreach Division	2,120	119	94	38	514	182	125	5	311	3,508
Managed Funds	90				(1)				5	95
Total Agreements	<u>6,374</u>	<u>549</u>	<u>167</u>	<u>63</u>	<u>787</u>	<u>617</u>	<u>262</u>	<u>102</u>	<u>792</u>	<u>9,712</u>
Funds under Custody:								0		
Administration and Finance Division								0		
Administration component	21		3	51	13	3	3	53	7	154
Comercial component	108	5	8	11	16	1	4	37	8	197
Strategic Services	201	5	2		5	76		18		307
Green and Inclusive Research and Development Directorate	1,496	181	65	13	60	212	10	82	157	2,277
Education Division	210	11	24	6	17	1,162	6	22	58	1,515
Outreach Division	222	29	20	27	70	15	22		6	412
Total Funds in Custody	<u>2,259</u>	<u>232</u>	<u>123</u>	<u>108</u>	<u>180</u>	<u>1,468</u>	<u>45</u>	<u>212</u>	<u>237</u>	<u>4,862</u>
<b>TOTAL</b>	<u><b>US\$13,314</b></u>	<u><b>US\$985</b></u>	<u><b>US\$446</b></u>	<u><b>US\$438</b></u>	<u><b>US\$1,354</b></u>	<u><b>US\$2,430</b></u>	<u><b>US\$306</b></u>	<u><b>US\$1,031</b></u>	<u><b>US\$1,029</b></u>	<u><b>US\$21,333</b></u>

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# Financial Report 2019

## Meeting of the Council of Ministers

December, 2020 - Turrialba, Costa Rica

# Content

- I. Introduction
- II. Budget and Execution of Income and Expenditure 2019
- III. Activity Statements
- IV. Balance Sheet
- V. Member countries state of quotas
- VI. Pre-financing statement of the covenants fund and funds in Custody

## Presentation

Sirs  
Superior Council of Ministers

Dear Sirs:

This document contains the execution of the income and expenditure Budget program of the Tropical Agricultural Research and Teaching Center (CATIE) for the period 2019.

We hope that the results shown in the following tables and the synthesized analysis facilitate their understanding and allow the esteemed members of the Council of Ministers to monitor the current and future budgetary and financial monitoring of CATIE.

What is proposed below for discussion and analysis is a summary of the financial situation of the activities of the Tropical Agricultural Research and Teaching Center (CATIE) as of December 31, 2019

CATIE's income and expenses budget is made up of the Basic, Commercial, Agreements and Custody funds. The segregation of the budget by funds is originated by the nature of the activities carried out, by the origin of the resources that finance them and by the existing restrictions in each one of them. Each fund is an independent financial unit with its own assets, liabilities, net assets, income and expenses.

The Financial Statements of the Center identify the restricted or unrestricted nature of the controlled funds in the following categories:

**Basic Activities Fund:** these are classified as unrestricted funds, consisting of resources from IICA contributions and quotas from CATIE member countries, income from teaching activities, surpluses from service activities and commercial farms, sums received for the recovery of indirect costs (RCI) and Overhead (OH) of projects, donations and specific contributions from different agencies and governments, as well as administrative management, treasury management and trust returns.

**Service Activities Fund and Commercial Farm:** cataloged as unrestricted funds, it includes the activities carried out in the sugar cane, coffee, breeding and fattening of beef cattle, dairy, forestry and the sale of forest seeds. It also includes institutional services, such as accommodation, hotels, transportation, laundry and sale of souvenirs, among others.

**Agreement Fund:** its use is strictly restricted to the activities that the entity that finances the agreement has previously indicated. These resources are not the property of CATIE. The Center is responsible for the execution of the resources in accordance with the terms and regulations established in the respective agreement, contract or letter of understanding.



**Plant Fund:** it is made up of the fixed assets owned by the Center (land, buildings, machinery, equipment, vehicles, biological assets, intangible assets, etc.), as well as those assets that have been donated to the institution. They have no restrictions and are a necessary part of the resources available to CATIE to achieve its institutional goals.

**Funds in Custody:** they are created to control income and expenses at the divisional level as a result of small donations and projects with specific purposes and to be developed in a short term. Small consultancies and / or projects for amounts less than US \$ 75 (thousands), educational scholarships for scientific and professional master's degrees, scholarships for training courses and technical communication services, among others, are also part of the income of this fund.

### I.3 Budget and Execution of Income and Expenses 2019

**Table 1 Income**

Fund/Directorate/Program	Budget 2019	Compliance	Budget Balance	Percentage variation
<b>BASIC ACTIVITIES FUND</b>	<b>5 265</b>	<b>4 887</b>	<b>-378</b>	<b>93%</b>
IICA Contribution	1 000	1 000	0	100%
Membership fees	600	600	0	100%
Fundatropicos Escrow	605	742	137	123%
Administration and Finance - Services-Commercial	649	865	216	133%
Technical Units	790	618	-172	78%
Education	874	783	-91	90%
External Projection	747	279	-468	37%
<b>COMMERCIAL ACTIVITIES FUND</b>	<b>2 522</b>	<b>2 590</b>	<b>-165</b>	<b>103%</b>
Administration and Finance - Services	1 206	1 691	485	140%
Administration and Finance - Commercial	1 316	899	-417	68%
<b>AGREEMENTS FUND</b>	<b>15 227</b>	<b>9 250</b>	<b>-3 736</b>	<b>61%</b>
Technical Units	7 245	5 493	-1 752	76%
External Projection	7 982	3 757	-4 225	47%
<b>CUSTODY FUND</b>	<b>2 868</b>	<b>4 579</b>	<b>542</b>	<b>160%</b>
Administration and Finance - Services-Commercial	160	183	23	114%
Strategic Services	200	250	50	125%
Technical Units	966	2 194	1 228	227%
Education	1 159	1 572	413	136%
External Projection	383	380	-3	99%
<b>TOTAL BUDGET</b>	<b>25 882</b>	<b>21 306</b>	<b>-3 532</b>	<b>82%</b>

Regarding the results of the unrestricted funds, 93% of the projected income was accomplished, despite the decrease in the contribution of funds due to agreements for the execution of projects, the input of 100% of the IICA contribution, the income from the FT Escrow and the commercial contributions were able to offset the results.

Table 2 Expenditures

Fund/Directorate/Program	Budget 2019	Execution	Budget Balance	Percentage variation
<b>BASIC ACTIVITIES FUND</b>	<b>5 265</b>	<b>4 659</b>	<b>606</b>	<b>88%</b>
Superior Guidelines	600	577	23	96%
Administration and Finance - Services	1 088	1 201	-113	110%
Strategic Services	138	166	-28	120%
Planning, Monitoring and Evaluation Office	127	116	11	91%
Global Partnerships and Resource Mobilization	166	133	33	80%
Technical Units	1 053	732	321	70%
Education	1 182	1 248	-66	106%
External Projection	338	258	80	76%
Reserve/Operating Fund	573	228	345	40%
<b>COMMERCIAL ACTIVITIES FUND</b>	<b>2 522</b>	<b>2 100</b>	<b>422</b>	<b>83%</b>
Administration and Finance - Services	893	1 212	-319	136%
Administration and Finance - Commercial	1 152	888	264	77%
Surplus Service Activities	313	0	313	0%
Surplus Commercial Activities	164	0	164	0%
<b>AGREEMENTS FUND</b>	<b>15 227</b>	<b>9 712</b>	<b>5 515</b>	<b>64%</b>
Technical Units	7 245	6 080	1 165	84%
External Projection	7 982	3 632	4 350	46%
<b>CUSTODY FUND</b>	<b>2 868</b>	<b>4 862</b>	<b>-1 994</b>	<b>170%</b>
Administration and Finance - Services-Commercial	160	173	-13	108%
Strategic Services	200	307	-107	154%
Technical Units	966	2 455	-1 489	254%
Education	1 159	1 515	-356	131%
External Projection	383	412	-29	108%
<b>TOTAL BUDGET</b>	<b>25 882</b>	<b>21 333</b>	<b>4 549</b>	<b>82%</b>

The administration of the center made important efforts to contain the expense, so that only those expenses strictly necessary for the execution of the tasks were authorized. This measure was adopted in the final months of the year to mitigate the under-execution of some projects and to maintain an adequate institutional cash flow.

## I.4 Activities Statements

### Table 3

STATEMENTS OF COMPREHENSIVE INCOME Period December 31, 2019 (Expressed in thousands of US dollars)	Regular Unrestricted			Temporarily Restricted Funds		
	Activities Basic	Activities Commercial	Sub-total	Agreements	Custody	Total
<b>Total income:</b>	<b>4 397</b>	<b>2 591</b>	<b>6 988</b>	<b>9 712</b>	<b>4 862</b>	<b>21 562</b>
<b>Total expenses:</b>	<b>4 659</b>	<b>2 100</b>	<b>6 759</b>	<b>9 712</b>	<b>4 862</b>	<b>21 333</b>
<b>(Deficit) Primary surplus</b>	(262)	491	229			229
Transfer of the productive activities fund	491	-491	0			0
<b>Increase (decrease) in unrestricted net assets</b>	<b>229</b>	<b>0</b>	<b>229</b>	<b>0</b>	<b>0</b>	<b>163</b>
<b>Other non-current income:</b>						
Donation, sale of assets	118		118			118
Fair value of biological assets	115		115			115
Value Certificates of Contribution Milk	(106)		(106)			(106)
Impairment income in doc's payable	161		161			161
<b>Total non-current income:</b>	<b>288</b>	<b>0</b>	<b>288</b>	<b>0</b>	<b>0</b>	<b>288</b>
<b>Other non-current expenses:</b>						
Depreciation expense	614		614			614
Loss on disposal of Assets	110		110			24
Impairment Other accounts receivable	131		131			131
Impairment accounts receivable Countries	(379)		(379)			(379)
Leasing Financial Expense	24		24			24
<b>Total non-current expenses:</b>	<b>500</b>		<b>500</b>			<b>500</b>
<b>Increase (decrease) in unrestricted net assets</b>						
<b>after non-current items.</b>	<b>\$ 17</b>	<b>\$ 0</b>	<b>\$ 17</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 17</b>

At the end of the 2019 period, an increase in unrestricted net assets of \$229 was obtained, then non-monetary items related to the application of IFRS (International Financial Reporting Standards) were recorded, in which highlights the decrease in value of the milk contribution certificates (US\$ 106) and the depreciation expense of US\$ 614, to obtain a final net result of US\$ 17 thousand.

## I.5 Balance Sheet

### AS OF DECEMBER 31, 2019 AND 2018

(Expressed in Thousands of US Dollars)

	2019	2018
<b>ASSETS</b>		
CURRENT ASSETS:		
Cash and cash equivalents	US\$ 4,669	US\$ 4,763
Investments in Financial Instruments	227	446
Accounts receivable - net	1,796	2,125
Inventories		380 359
Total assets	7,072	7,693
PROPERTY, PLANT PRODUCTION, FURNITURE AND EQUIPMENT NET	5,277	5,494
BIOLOGICAL ASSETS		500,437
ESCROW FUNDS	1,573	1,570
OTHER ASSETS		878,861
<b>TOTAL</b>	<b>US\$ 15,300</b>	<b>US\$ 16,055</b>
<b>LIABILITIES AND NET ASSETS</b>		
CURRENT LIABILITIES:		
Current portion of debt long-term	US\$ 72	US\$ 134
Current portion of financial liability for right to use	67	0
Payable trade accounts	102	79
Employee benefits	338	470
Repatriation and recognition of years of service	371	90
Accrued expenses and other payable accounts	670	873
Total liabilities current	1,620	1,646
LONG-TERM DEBT	702	590
FINANCIAL LIABILITIES FOR RIGHT TO USE	188	0
Total liabilities	2,510	2,236
NET ASSETS:		
Unrestricted funds:		
Regular Funds	1,885	1,294
Plant Fund	5,926	5,933
Funds temporarily restricted:		
Funds agreements	4,18	4,888
Funds in escrow	799	1,704
Total net assets	12,790	13,819
<b>TOTAL</b>	<b>US\$ 15,300</b>	<b>US\$ 16,055</b>

One of the most important indicators is reflecting whether a company is capable of generating liquidity, that is, if it has the capacity to convert its assets into liquidity in the short term; according to the statement of situation for the period, the current ratio (current assets/current liabilities) gives us as a result **4.36** times in which short-term debts can be covered by the institution's current assets.

## I.6 Member countries quotas statement

During 2019, CATIE achieved an important recovery of the countries memberships for an amount of US\$ 841 thousand, mainly as a result of the negotiation with Mexico that canceled all its arrears (US\$ 150,000), also the payment of four years of arrears from Belize (US\$ 200,000) and Honduras, which made a payment to its balance from previous periods.

**Table 4**

**TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER  
MEMBERS' FEES STATEMENT  
As of December 31, 2019**

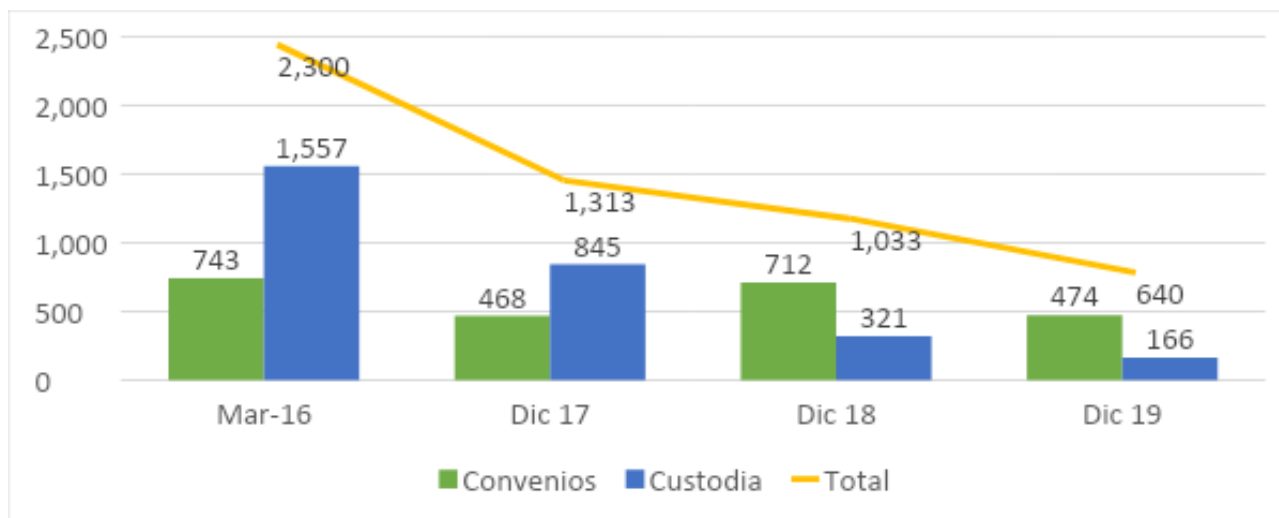
COUNTRY	Accounts receivable at the beginning of the year	Fees for the year	Fees collected in 2019			Net fees receivable at the end of the year
			From previous periods	From the current period	Total received	
BELICE	350 000	50 000	200 000		200 000	200 000
BOLIVIA	720 000	50 000			0	770 000
COLOMBIA	461 000	0			0	461 000
COSTA RICA	0	50 000		50 000	50 000	0
EL SALVADOR	50 000	50 000	50 000	50 000	100 000	0
GUATEMALA	0	50 000		50 000	50 000	0
HONDURAS	302 000	50 000	98 000		98 000	254 000
MÉXICO	150 000	50 000	150 000	50 000	200 000	0
NICARAGUA	28 000	50 000	7 000	36 000	43 000	35 000
PANAMÁ	0	50 000		50 000	50 000	0
PARAGUAY	750 000	50 000			0	800 000
REPÚBLICA DOMINICANA	0	50 000		50 000	50 000	0
VENEZUELA	450 000	50 000			0	500 000
<b>TOTAL COUNTRIES</b>	<b>3 261 000</b>	<b>600 000</b>	<b>505 000</b>	<b>336 000</b>	<b>841 000</b>	<b>3 020 000</b>



## 1.7 Pre-financing statement of the agreement and custody fund

The behavior of the pre-financing of the agreement and custody funds presented below where the CATIE pre-financing of the temporarily restricted portfolio of projects and custody is measured, which generates pressure on the centre's liquidity.

**Table 5**



Financing levels in 2019 continued to decrease; the administration will continue to make efforts to keep pre-financing levels under control.

## **INDEPENDENT AUDITORS' REPORT**

To the Board of Directors of the Tropical Agricultural Research  
and Higher Education Center (CATIE)

### *Opinion*

We have audited the accompanying financial statements of the Tropical Agricultural Research and Higher Education Center ("CATIE" or the "Entity"), which comprise the statements of financial position as of December 31, 2020 and 2019, and the statements of activities, changes in net assets, and cash flows for the years then ended, and the notes to the financial statements, including a summary of the significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Tropical Agricultural Research and Higher Education Center ("CATIE" or the "Entity") as of December 31, 2020 and 2019, its financial performance and its cash flows for the years then ended, in accordance with the International Financial Reporting Standards.

### *Basis for Opinion*

We conducted our audits in accordance with the International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Entity in accordance with the Code of Professional Ethics of the Association of Certified Public Accountant of Costa Rica and the Code of Ethics for Professional Accountants of the International Ethics Standards Board for Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with such requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### *Supplementary Information in Relation to the Financial Statements and the Auditor's Report*

The other information comprises the details included in Exhibits No.1 to 6 the movements of Member States quotas receivable, budget and expenses by chapter and the execution of external resources by financing source, which is included for the benefit of the reader. Management is responsible for the other information.

Our opinion on the financial statements does not cover the other information, and we do not express any form of opinion on it.

In relation to our audit of the financial statements, our responsibility is to read the other information and, by doing so, consider if that is materially consistent with the financial statements or with our knowledge we obtained during our audit, or otherwise if it seems to be materially distorted. If, based on the work that we have done, we are able to conclude that there is an important inaccuracy of this other information; we are obliged to report such matter to you. We do not have anything to report on it.

## *Responsibilities of Management and Those Charged with the Entity's Governance with the Financial Statements*

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In the preparation of financial statements, Management is responsible for assessing the Entity's ability to continue as a going concern, disclosing as it may be necessary, the matters related to the going concern principle and using such accounting basis, unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance of the Entity are responsible for overseeing the financial reporting process of the Tropical Agricultural Research and Higher Education Center (CATIE).

## *Auditor's Responsibilities for the Audit of the Financial Statements*

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the International Standards on Auditing (ISAs) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

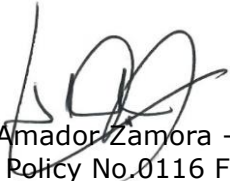
As part of an audit in accordance with the International Standards on Auditing (ISA), we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting in the preparation of the financial statements in the context of the applicable financial reporting framework. We also conclude, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the disclosures in the financial statements about the

material uncertainty or, if such disclosures are inadequate, to modify the opinion on the financial statements. Our conclusions are based on information available at the date of the auditor’s report. However, future events or conditions may cause the Entity to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We are required to communicate with those charged with governance at the Entity regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

  
José Ant. Amador Zamora - C.P.A. No.2760  
Insurance Policy No.0116 FIG 7  
Expires: September 30, 2021  
Law No.6663 stamp for ₡1.000 adhered and paid



June 15, 2021



**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**STATEMENTS OF FINANCIAL POSITION  
AS OF DECEMBER 31, 2020 AND 2019**

(Expressed in thousands of US dollars)

	Notes	2020	2019
<b>ASSETS</b>			
CURRENT ASSETS:			
Cash and banks	3d, 4	US\$ 5,676	US\$ 4,669
Investments in financial instruments	3g, 3h, 5	497	227
Accounts receivable - net	3i, 6	2,013	1,796
Inventories	3g, 7	<u>407</u>	<u>380</u>
Total current assets		8,593	7,072
PROPERTY, FURNITURE, BEARER PLANTS EQUIPMENT AND RIGHT TO USE ASSETS - Net	3j, 3k, 10	4,756	5,277
BIOLOGICAL ASSETS	3n, 8	504	500
TRUST ASSETS	9	1,584	1,573
OTHER ASSETS	3m, 11	<u>1,085</u>	<u>878</u>
TOTAL		<u>US\$16,522</u>	<u>US\$15,300</u>
<b>LIABILITIES AND NET ASSETS</b>			
CURRENT LIABILITIES:			
Current portion of long-term debt	13	US\$ 87	US\$ 72
Current portion of financial liabilities for right to use	3e, 16	67	67
Trade accounts payable		136	102
Employee benefits	14	313	338
Repatriation and recognition of years of service	3w	431	371
Accumulated expenses and other accounts payable	3m, 12	<u>519</u>	<u>670</u>
Total current liabilities		1,553	1,808
LONG - Term Debt	13	948	702
FINANCIAL LIABILITY FOR RIGHT OF USE	3e, 16	<u>118</u>	<u>188</u>
Total liabilities		<u>2,619</u>	<u>2,510</u>
NET ASSETS:			
Unrestricted funds:			
Regular funds	3b	1,989	1,885
Plant fund	3b	5,926	5,926
Temporarily restricted funds:			
Agreement fund	3a	4,826	4,180
Funds in custody	3a	<u>1,162</u>	<u>799</u>
Total net assets		<u>13,903</u>	<u>12,790</u>
TOTAL		<u>US\$16,522</u>	<u>US\$15,300</u>

The accompanying notes are an integral part of the financial statements.



**TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER (CATIE)**

**STATEMENTS OF ACTIVITIES  
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019**  
(Expressed in Thousands of US Dollars)

Notes	2020						2019					
	Unrestricted Regular Funds			Temporarily Restricted Funds			Unrestricted Regular Funds			Temporarily Restricted Funds		
	Basic Activities Fund	Productive Activities Fund	Sub-total	Agreements	Custody	Total	Basic Activities Fund	Productive Activities Fund	Sub-total	Agreements	Custody	Total
Income:												
IICA Contribution	US\$ 853		US\$ 853			US\$ 853	US\$1,000		US\$1,000			US\$ 1,000
Member country fees	600		600			600	600		600			600
Tuition of students	615		615			615	783		783			783
Administrative support and overhead	868		868			868	912		912			912
Miscellaneous	336		336			336	360		360			360
Funds released from restrictions		US\$ 186	186	US\$9,228	US\$3,534	12,948		US\$ 329	329	US\$9,712	US\$4,862	14,903
Management of goods and services		964	964			964		1,320	1,320			1,320
Agricultural activities		923	923			923		942	942			942
Trust contributions	603		603			603	742		742			742
Total income	3q 3,875	2,073	5,948	9,228	3,534	18,710	4,397	2,591	6,988	9,712	4,862	21,562
Expenses:												
Staff	2,933	772	3,705	6,080	1,887	11,672	3,726	955	4,681	6,374	2,259	13,314
Travel and per-diem	48	7	55	176	47	278	178	26	204	549	232	985
Communications and printouts	98	57	155	286	106	548	98	59	157	167	122	446
Building maintenance	41	170	211	87	31	328	53	215	268	62	108	438
General expenses	155	165	320	1,046	103	1,469	181	206	386	787	180	1,354
Training and scholarships	213		213	359	1,061	1,633	345		345	617	1,468	2,430
Investments (in assets)	40	21	61	228	20	309				262	44	306
Supplies and costs	77	522	599	207	49	856	78	639	718	102	212	1,031
Overhead costs				759	229	988				792	237	1,029
Total expenses	3,606	1,714	5,320	9,229	3,534	18,082	4,659	2,100	6,759	9,712	4,862	21,333
Primary (deficit) surplus	269	359	628			628	(262)	491	229			229
Transfer from the productive activities fund	359	(359)					491	(491)				
Increase in unrestricted net assets	628		628			628	229		229			229
Other non-current revenues:												
Donation and sale of assets	10		10			10	118		118			118
Gain in valuation of biological assets	50		50			50	115		115			115
Value of milk contribution certificates	77		77			77	(106)		(106)			(106)
Income from impairment of notes payable							161		161			161
Total non-current income	137		137			137	288		288			288
Other non-current expenses:												
Depreciation expense	10 587		587			587	614		614			614
Lease financial expense	7		7			7	24		24			24
Loss from asset disposal							110		110			110
Loss in valuation of biological assets	39		39			39						
Impairment of accounts receivable - net of recoveries	6 11		11			11	(847)		(847)			(847)
Impairment of accounts receivable	19		19			19	131		170			170
Total non-current expenses	661		661			661	32		32			32
Increase (decrease) in unrestricted net assets after non-current items	US\$ 104	US\$	US\$ 104	US\$	US\$	US\$ 104	US\$ 485	US\$	US\$ 485	US\$	US\$	US\$ 485

The accompanying notes are an integral part of the financial statements.

**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**STATEMENTS OF CHANGES IN NET ASSETS  
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019**

(Expressed in Thousands of US Dollars)

	Notes	Net Assets				Total
		Unrestricted Funds		Temporarily Restricted Funds		
		Regular	Plant	Agreements	Custody	
BALANCE, AS OF DECEMBER 31, 2018		US\$1,294	US\$5,933	US\$ 4,888	US\$ 1,704	US\$ 13,819
Adjustment from adoption of IFRS 16	16		(7)			(7)
Restricted contributions received from donors				9,242	4,580	13,822
Disbursements from restricted funds				(9,712)	(4,862)	(14,574)
Other movements in restricted funds		106				106
Recognition of balances receivable from donors	6			474	166	640
Release of restricted funds				(712)	(789)	(1,501)
Decrease in funds		<u>485</u>				<u>485</u>
BALANCE, AS OF DECEMBER 31, 2019		1,885	5,926	4,180	799	12,790
Restricted contributions received from donors				9,948	3,887	13,835
Disbursements from restricted funds				(9,228)	(3,534)	(12,762)
Recognition of balances receivable from donors				400	176	576
Release of restricted funds				(474)	(166)	(640)
Decrease in funds		<u>104</u>				<u>104</u>
BALANCE, AS OF DECEMBER 31, 2020		<u>US\$1,989</u>	<u>US\$5,926</u>	<u>US\$ 4,826</u>	<u>US\$ 1,162</u>	<u>US\$ 13,903</u>

The accompanying notes are an integral part of the financial statements.

**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**STATEMENTS OF CASH FLOWS  
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019**

(Expressed in Thousands of US Dollars)

	Notes	2020	2019
<b>OPERATING ACTIVITIES</b>			
Increase in net assets		US\$ 104	US\$ 485
Adjustments to reconcile the change in net assets with net cash provided by (used in) operating activities:			
Depreciation	10	585	614
Impairment of accounts receivable - member countries	6	129	193
Recovery of estimated accounts		155	570
Changes from valuation of biological assets	8	39	(14)
Financial expenses on loans		135	36
Other movements of restricted funds		42	(762)
Impairment of notes payable		(64)	(161)
Changes in operating assets and liabilities:			
Accounts receivable		(501)	(434)
Inventories		(27)	(21)
Trade accounts payable		34	23
Employees' legal benefits		(25)	(132)
Repatriation and recognition of years of service		60	281
Accumulated expenses and other accounts payable		<u>(283)</u>	<u>(237)</u>
Cash provided by the operating activities		341	441
Interest paid		<u>(3)</u>	<u>(2)</u>
Net cash provided by the operating activities		<u>338</u>	<u>439</u>
<b>INVESTMENT ACTIVITIES</b>			
Short-term investments		(270)	219
Additions to property, furniture, equipment and right to use assets	10	(80)	(171)
Proceeds from the sale of property, furniture, equipment and right to use assets	10	26	205
Decrease of biological assets	8	(43)	(49)
Additions to the trust fund		(11)	(3)
Other financial assets		<u>(207)</u>	<u>(17)</u>
Net cash (used in) provided by the investment activities		<u>(585)</u>	<u>184</u>
<b>FINANCING ACTIVITIES</b>			
New loans		333	334
Amortization of debt		(72)	(123)
Amortization of leases		(70)	(58)
Temporarily-restricted contributions		13,835	13,822
Disbursements for the execution of temporarily-restricted funds		<u>(12,772)</u>	<u>(14,692)</u>
Net cash provided by the financing activities		<u>1,254</u>	<u>(717)</u>

(Continues)

**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**STATEMENTS OF CASH FLOWS  
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019**

(Expressed in Thousands of US Dollars)

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	<b>2020</b>	<b>2019</b>
NET VARIATION IN CASH AND BANKS	US\$ 1,007	US\$ (94)
CASH AND BANKS AT THE BEGINNING OF THE YEAR	<u>4,669</u>	<u>4,763</u>
CASH AND BANK AT THE END OF THE YEAR	<u>US\$ 5,676</u>	<u>US\$ 4,669</u>

**TRANSACTIONS THAT DID NOT GENERATE ANY CASH MOVEMENT:**

1. During 2020 and 201, donations of machinery, vehicles, furniture, and equipment for the sum of US\$10 and US\$117, respectively. Such donations come from the Agreements Fund for US\$62 for 2019, and from the Custody Fund, for US\$10 and US\$56 for 2020 and 2019, respectively. The transactions mentioned above did not use or generate cash.
2. During 2019, IFRS 16 was adopted, which entailed the recognition of leased buildings in the fixed asset accounts for a total of US\$313; these transactions were recognized in the financial statement where cash was used (Note 16).
3. As a result of the implementation of IFRS 9 for 2019, impairment of notes payable was recognized for a total of US\$161; these transactions were recognized in the financial statement where cash was used (Note 13).

(Concluded)

The accompanying notes are an integral part of the financial statements.

# TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER (CATIE)

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

(Expressed in Thousands of US Dollars)

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### 1. ACTIVITIES

The Tropical Agricultural Research and Higher Education Center (“the Entity”) is an international university at a postgraduate level that teaches and trains leaders in agriculture, natural resources and related fields, so that they are able to face challenges and take advantage of the opportunities of a changing world in Costa Rica. Its top-level holding company is International Group Holdings Limited. Therefore, CATIE has postgraduate programs recognized for their quality and track record, it teaches what it does with hundreds of members in many countries and shares the progress and levels of science and technology in different fields of interest and the demands and needs of today's world. Its headquarters are located in Turrialba, Costa Rica and is formed by thirteen member countries and the Inter-American Institute for Cooperation on Agriculture (IICA).

CATIE was established in 1973 through a ten-year agreement entered between the Costa Rican Government and the Inter-American Institute for Cooperation on Agriculture (IICA). In 1983, this agreement was amended and extended up to 2000. As indicated in Note 17, in 2000 the parties entered into a new agreement for a 20-year term.

In addition, in 1993 CATIE created the Foundation for Education and Research in the Development and Conservation of Natural Resources of the American Tropics (FUNDATROPICOS), a Costa Rican foundation which main purpose is to achieve the financial sustainability of CATIE through management of donations and other funds received, in order to ensure a fixed income source for the continuance of its operations.

The financial statements are presented in *US Dollars (\$)* and are rounded to the nearest thousandth.

### 2. ADOPTION OF REVISIONS TO INTERNATIONAL FINANCIAL REPORTING STANDARDS AND NEW STANDARDS AND NEW INTERPRETATIONS

- a. ***Application of New and Revised International Financial Reporting Standards (IFRS or IAS) that are Mandatory for the Current Year*** - In the current year, the Trust has implemented a number of amendments to IFRSs issued by the International Accounting Standards Board (IASB) that are mandatorily effective for the accounting periods that begin on or after January 1, 2020.
  - **Initial Impact of the Application of the Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39, and IFRS 7)** - In September 2019, the International Accounting Standards Board (“IASB”) published the Interest Rate Benchmark Reform (amendments to IFRS 9, IAS 39 and IFRS 7). These amendments modify specific hedge accounting requirements



to continue to apply hedge accounting for affected hedges during the period of uncertainty before the hedged item or instrument affected by the current interest rate benchmark is amended as a result of ongoing interest rate benchmark reforms.

The amendments also introduce a new disclosure requirement for IFRS 7 for hedging relationships that are subject to exceptions introduced by the amendment to IFRS 9.

- **Initial Impact of Rent Concessions under IFRS 16 Due to COVID-19 Related Issues** - In May 2020, the IASB issued the amendment to IFRS 16, COVID-19 Related Rent Concessions that grants practical expedients for lessees' rent concessions as a direct consequence of COVID-19, thereby introducing a practical expedient for IFRS 16. The practical expedient allows a lessee to assess whether a COVID-19 related rent concession is a lease modification. A lessee who makes this choice should account for any change in lease payments resulting from the COVID-19 related rent concession by applying IFRS 16 as if the change were not a lease modification.

The practical expedient applies only to rent concessions that are a direct consequence of COVID-19 and only if the following criteria are met:

- The change in lease payments results in a consideration that is substantially the same as, or less than, the consideration for the lease immediately preceding the change.
- Any reduction in lease payments affects only payments due on or before June 30, 2021 (a rent concession meets this condition if it results in a reduction in payments before June 30, 2021 or increases lease payments after June 30, 2021), and
- There is no substantive change to other terms and conditions of the lease.

The Entity has not applied changes regarding the treatment of IFRS 16, and the conditions remain as implemented in 2019.

- **Initial Impact of the Application of Other New and Revised IFRS Effective for Reporting Periods that Begin on or After January 1, 2020** - In the current year, the Entity has applied the amendments and interpretations to the IFRSs below issued by the Committee and that are effective for reporting periods that begin on or after January 1, 2020. The adoption has not had any material impact on the disclosures or amounts in these financial statements.
  - *Amendment to References to the Conceptual Framework in IFRS* - The Entity has adopted the amendments included in the Amendments to References to the Conceptual Framework in IFRS for the first time this year. The amendments include resulting amendments to the affected standards that now refer to the new Conceptual Framework. Not all amendments, however, update such pronouncements with respect to the references and phrases of the Conceptual Framework that are related to the revised Conceptual Framework. Some pronouncements are only updated to indicate which version of the Conceptual Framework they refer to (IASB Conceptual Framework adopted by the

IASB in 2001, the 2010 IASB Conceptual Framework, or the new and revised 2018 Conceptual Framework) or to indicate the definitions of standards that have not been updated with the new definitions developed in the revised Conceptual Framework.

The standards that have been amended are IFRS 2, IFRS 3, IFRS 6, IFRS 14, IAS 1, IAS 8, IAS 34, IAS 37, IAS 38, IFRIC 12, IFRIC 19, IFRIC 20, IFRIC 22, and SIC-32.

- *Amendments to IFRS 3, Definition of a Business* - The Entity has adopted the amendments to IFRS 3 for the first time this year. The amendments clarify that while businesses usually have outputs, outputs are not required for an integrated set of activities and assets to qualify as a business. To qualify as a business, a set of activities or assets must include, as a minimum, an input and a substantive process that together significantly contribute to create output.

The amendment removes the assessment of whether market participants are capable of replacing any missing inputs or processes and of continuing to produce outputs. Additional guidance is introduced that helps to determine whether a substantive process has been acquired.

The amendments have introduced an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business. Under the optional concentration test, the acquired set of activities and assets is not a business if substantially all of the fair values of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets.

The amendments are applied prospectively to all business combinations and asset acquisitions for which the acquisition date is on or after January 1, 2020.

- *Amendments to IAS 1 and IAS 8, Definition of Materiality* - The Entity has adopted the amendments to IAS 1 and IAS 8 this year. The amendments made the definition of "materiality" in IAS 1 easier to understand and are not intended to modify the underlying concept of materiality in the IFRS. The concept of "obscuring" material information with immaterial information has been included as part of the new definition.

The threshold for materiality that influence users has changed from "could influence" to "could reasonably be expected to influence."

The definition of "materiality" in IAS 8 has been replaced by a reference to the definition in IAS 1. In addition, the IASB amended other standards and the Conceptual Framework to include a definition of "material" to ensure consistency.

- b. ***New and Revised IFRS Standards not yet Effective*** - At the date of authorization of these financial statements, the Entity has not applied the following new and revised IFRS Standards that have been issued but are not yet effective:

- I. **IFRS 17** - Insurance Contracts
- II. **IFRS 10 and IAS 28 (Amendments)** - Sale or Contribution of Assets between an Investor and its Associate or Joint Venture
- III. **Amendments to IAS 1** - Classification of Liabilities as Current or Non-Current
- IV. **Amendments to IFRS 3** - Reference to the Conceptual Framework
- V. **Amendments to IAS 16** - Property, Plant and Equipment - Proceeds before Intended Use
- VI. **Amendments to IAS 37** - Onerous Contracts - Costs of Fulfilling a Contract
- VII. **Annual Improvements to IFRSs 2018 - 2020 Cycle** - Amendments to IFRS 1 - First-time Adoption of International Financial Reporting Standards, IFRS 9 - Financial Instruments, IFRS 16 - Leases, and IAS 41 - Agriculture

Management does not expect that the adoption of the aforementioned standards will have an important impact on the Entity financial statements in future periods, except as indicated below:

- I. **IFRS 17 - Insurance Contracts** - IFRS 17 establishes principles for the recognition, measurement, presentation and disclosure of insurance contracts and supersedes IFRS 4 - Insurance Contracts.

IFRS 17 describes a general model, which is modified for insurance contracts with direct participation features, described as the Variable Fee Approach. The general model is simplified if certain criteria are met by measuring the liability for remaining coverage using the premium allocation approach.

The general model will use current assumptions to estimate the amount, timing and uncertainty of future cash flows and explicitly measure the cost of such uncertainty, and take into account market interest rates and the impact of policyholder options and guarantees.

In June 2020, the IASB issued amendments to IFRS 17 to address concerns and implementation changes that were identified after IFRS 17 was published. The amendments defer the initial application date of IFRS 17 (incorporating the amendments) for the annual report beginning on or after January 1, 2023. Moreover, the IASB issued the Extension of the Temporary Exemption from Applying IFRS 9 (Amendments to IFRS 4) that extends the expiry date from the temporary exemption from applying IFRS 9 in IFRS 4 for annual periods beginning on or after January 1, 2023.

IFRS 17 must be applied retrospectively unless it is impractical, in which case the retrospective approach is modified or the fair value approach is applied.

In accordance with the transition requirements, the date of initial application is the beginning of the annual reporting period in which the Entity first applies the Standard and the transition date is the beginning of the period immediately preceding the date of initial application.

- II. **Amendments to IFRS 10 and IAS 28 - Sale or Contribution of Assets between an Investor and its Associate or Joint Venture** - The amendments to IFRS 10 and IAS 28 deal with a sale or contribution of assets between an investor and its associate or joint venture. Specifically, the amendments state that profit or loss resulting from the loss of control of a subsidiary that does not contain a business in a transaction with an associate or joint venture that is accounted for using the equity method is recognized in the parent's profit or loss only to the extent of the unrelated investor's interest in that associate or joint venture. Similarly, profits and losses resulting from the remeasurement of retained investments in any former subsidiary (that has become an associate or a joint venture accounted for using the equity method) at fair value are recognized in the profit or loss of the former parent only to the extent of the unrelated investors' interest in the new associate or joint venture.

The effective date of the amendments has not yet been set by the IASB; however, earlier application is permitted. The Entity's management anticipates that the application of these amendments may have an impact on the Entity's financial statements in future periods should such transactions arise.

- III. **Amendments to IAS 1 - Classification of Liabilities as Current or Non-Current** - The amendments to IAS 1 affect only the presentation of liabilities as current and non-current in the statement of financial position, not the amount or timing of recognition of any asset, liability, income or expense is recognized, or the disclosures about those items.

The amendments clarify that the classification of liabilities as current or non-current should be based on rights that are in existence at the end of the reporting period, specify that the classification is unaffected by expectations about whether an entity will exercise its right to defer settlement of a liability, explain that rights exist if there are covenants to be met at the end of the reporting period, and introduce a definition of "settlement" to make clear that settlement refers to the transfer to the counterparty of cash, equity instruments, other assets or services.

The amendments are applied retrospectively for annual periods beginning on or after January 1, 2023, and earlier application is permitted.

- IV. **Amendments to IFRS 3 - Reference to the Conceptual Framework** - The amendments update IFRS 3 so that it can refer to the 2018 Conceptual Framework instead of the 1989 Framework. They also added a requirement that, for obligations within the scope of IAS 37, an acquirer applies IAS 37 to determine whether the acquisition date is a present obligation or exists as a result of a past event. For liens that are within the scope of IFRIC 21, *Liens*, the acquirer applies IFRIC 21 to determine whether the obligation gives rise to a liability to pay a lien that occurred at the acquisition date.

Finally, the amendments add an explicit statement that an acquirer should not recognize contingent assets acquired in a business combination.

The amendments are effective for business combinations for which the acquisition date is on or after the initial period of the first annual period that begins on or after January 1, 2022, and early application permitted if an entity also applies all other updated references (published together with the Conceptual Framework) at the same time or earlier.

- V. **Amendments to IAS 16 - Property, Plant and Equipment - Proceeds before Intended Use** - The amendments prohibit deducting from the cost of an item of property, plant or equipment any proceeds from selling items produced before that asset is ready for use, i.e., proceeds while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Consequently, an entity recognizes such sales proceeds and related costs in profit or loss. The Entity measures the costs of those items in accordance with IAS 2, *Inventories*.

The amendments also clarify the meaning of "testing whether an asset is functioning properly." IAS 16 now specifies this as assessing whether the technical and physical performance of the asset is such that it is capable of being used in the production or supply of goods or services, for rental or others, or for administrative purposes.

If not presented separately in the statement of comprehensive income, the financial statements shall disclose the amounts of proceeds and costs included in profit or loss that relate to items produced that are not an output from the entity's ordinary activities, and which line item(s) in the statement of comprehensive income where such proceeds and costs are included.

The amendments are applied retrospectively, but only to items of property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after the beginning of the earliest period presented in the financial statements in which the entity first applies the amendments.

The Entity shall recognize the cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings (or other component of equity, as appropriate) at the beginning of that earliest period presented.

The amendments are effective for annual periods beginning on January 1, 2022, with early application permitted.

- VI. **Amendments to IAS 37 - Onerous Contracts - Costs of Fulfilling a Contract** - The amendments specify that the "cost of fulfilling" a contract comprises the "costs that relate directly to the contract." Costs that relate directly to a contract can either be incremental costs of fulfilling a contract (e.g. labor or materials) or an allocation of other costs that relate directly to fulfilling contracts (such as the allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract).

The amendments apply to contracts for which the Entity has not yet fulfilled all its obligations at the beginning of the annual reporting period in which the Entity first applies the amendments. Comparatives should not be restated. Instead, the Entity should recognize the cumulative effect of the initial application of the amendments as a balance sheet adjustment to retained earnings or such other component of equity, as appropriate, as of the date of initial application.

The amendments are effective for annual periods beginning on or after January 1, 2022, with early application permitted.



VII. **Annual Amendments to IFRS 2018-2020** - The Annual Amendments include amendments to four standards.

- *IFRS 1 - First-time Adoption of International Financial Reporting Standards* - The amendment provides additional relief for a subsidiary that is a first-time adopter later than its parent with respect to accounting for cumulative translation differences. As a result of the amendments, a subsidiary using the IFRS 1: D16(a) exception may now choose to measure the cumulative translation effects of foreign transactions at the carrying amount that is included in the parent's consolidated statements, based on the parent's date of transition to IFRS, if there were no adjustments for consolidation procedures and for the effects of business combinations in which the parent acquired the subsidiary. A similar election is available for an associate or joint venture that uses the exception in IFRS 1: D16(a).

The amendment is effective for periods beginning on or after January 1, 2022, with early application permitted.

- *IFRS 9 - Financial Instruments* - The amendment clarifies that when applying the "10%" test to assess whether a financial liability should be derecognized, an entity includes only the fees paid or received between the Entity (the borrower) and the lender, including fees paid or received by the entity or the lender.

The amendments are applied prospectively to modifications or changes that occur on or after the date the entity first applies the amendment.

The amendments are effective for annual periods beginning on or after January 1, 2022, with early application permitted.

- *IFRS 16 - Leases* - The amendments remove the reimbursement for leasehold improvements.

As the amendments to IFRS 16 are only an illustrative example, no start date has been established.

- *IAS 41 - Agriculture* - The amendments remove the requirement in IAS 41 for entities to exclude cash flows for tax purposes when measuring fair value. This aligns the fair value measurement in IAS 41 with the requirements of IFRS 13 Fair Value Measurement to be consistent with cash flows and discount rates and allows preparers to determine whether cash flows and discount rates are used on a pre-tax or after-tax basis as is more appropriate to estimate fair value.

The amendment removes the requirement in IAS 41 for entities to exclude cash flows for taxation when measuring fair value. This aligns the fair value measurement in IAS 41 with the requirements of IFRS 13 Fair Value Measurement to use internally consistent cash flows and discount rates and enables preparers to determine whether to use pre-tax or post-tax cash flows and discount rates for the most appropriate fair value measurement.

The amendment is applied prospectively, i.e. for fair value measurements on or after the date an entity initially applies the amendment.

The amendment is effective for annual periods beginning on or after 1 January 2022, with early application permitted.

The Entity is in the process of determining the possible impact of the adoption of the Standards detailed above on its financial statements in the future. Therefore, it is not yet possible to provide a reasonable estimate of such impact until a complete review has been performed.

### 3. SIGNIFICANT ACCOUNTING POLICIES

- a. **Basis of Presentation** - CATIE's financial statements are prepared according to the International Financial Reporting Standards (IFRS), and in addition, certain guidelines of the Financial Accounting Standard FABS ASC No.958, issued by the American Institute of Certified Public Accountants of the United States of America, have been adopted (applicable to not-for-profit entities commencing December 1994) (Note 1r), since the IFRS do not include specific matters applicable to not-for-profit entities.

**Historical Cost** - Generally, historical cost is based on the fair value of the consideration granted in exchange of goods and services.

**Fair Value** - Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Entity takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability on the measurement date.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- *Level 1* - Inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date;
  - *Level 2* - Inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
  - *Level 3* - Unobservable inputs for asset or liability.
- b. **Funds Managed by CATIE** - Funds managed by CATIE are classified in the financial statements, according to their restrictions, as Unrestricted Funds, Plant Fund and Temporarily Restricted Funds. These funds are segregated into the following categories based on their source and purpose:
- **Unrestricted Regular Funds** -
    - *Basic Activities Fund* - It includes the basic activities of CATIE in promoting and developing the research and education in agriculture, forestry, livestock, and related fields, as established in its original articles of incorporation.

Such activities are mainly financed through member countries fees, IICA's annual contributions, revenues from training activities, specific donations and contributions received for financing these activities, through interests generated on trusts of which CATIE is a beneficiary, and through the administrative and logistical support (overhead) charged to project agreements.

- *Productive Activity Fund* - It comprises those activities developed by CATIE in the agriculture, livestock and management of goods and services fields, which generate an economic benefit. The main productive activities are: cultivation of sugarcane, coffee, and other minor agricultural products, as well as cattle farming, lodging services, and data processing services, among others.
  - *Plant Fund* - This Fund controls the real property, furniture and equipment acquired with resources from the Basic Activities Fund and funds donated by national or international organizations. The assets included in this Fund are part of CATIE's available resources to achieve its institutional goals. The balance of the Plant Fund is represented by the monetary value, net of depreciation, of real and personal property owned by CATIE. This Fund does not include fixed assets acquired with resources from the Agreements Fund, since capital expenditures are recognized as expenses of the respective project. Nevertheless, if such assets are donated, exchanged, or sold to CATIE upon termination of the contract, they will be included in this Fund. Physical control over fixed assets acquired with resources from the Agreements Fund is kept by CATIE, through a fixed assets database.
- **Temporarily Restricted Funds -**
    - *Funds in Custody* - Includes funds received from national and international organizations to finance training and education provided by CATIE to some scholarship students and technicians from those institutions, as well as for the execution of certain research projects, which negotiated amount is under US\$75,000. For control purposes, income and expenses related to those funds are recorded separately until their specific purposes are fulfilled.
    - *Agreement Fund* - Correspond to funds received by CATIE for the execution of certain agreements and contracts subscribed with national and international organizations, and their use is specifically restricted to the agreed-upon activities of such agreements and contracts. For control purposes, separate accounting records are used for the income and expenses related to those funds. Some of these funds are administered in independent checking accounts, according to the contractual requirements established by the donor. In addition, CATIE has entered into agreements with national and international organizations on which CATIE has no participation or technical responsibility whatsoever. Thus, income and expenses of such funds are not shown as such in the Statement of Activities. The balance administered for this concept as of December 31, 2019 and 2018, amounts to US\$135 and US\$127, respectively.

- c. **Currency and Foreign Currency Transactions** - The accounting records of CATIE are kept in United States of America dollars (US\$), its functional currency, and the financial statements and its notes, are also expressed in such currency. Monetary assets and liabilities originated in currencies other than their functional currency are translated to US dollars at the exchange rates in effect in each country as of the date of the financial statements.

Transactions made in foreign currency are registered at the exchange rate in force as of the date of the transaction. Assets and liabilities in foreign currency at the end of each accounting period are adjusted at the exchange rate in force as of such date. Exchange rate differences originated from the liquidation of assets and obligations denominated in foreign currency and from the adjustment of balances as of closing date are recognized in the results of the period in which they occurred.

As of December 31, 2019 and 2018, exchange rates for US\$1 at each of the countries where CATIE develops its activities were the following:

Country	Currency	Exchange Rate as of December 31, 2020	Exchange Rate as of December 31, 2019
Belize	Belize Dollar	1.973	2.00
Bolivia	Bolivianos	6.72	6.86
Costa Rica	Colones	610.53	570.09
Guatemala	Quetzales	7.79	7.70
Honduras	Lempiras	24.114	24.635
CEE	Euro	0.8143	0.8898
Nicaragua	Córdobas	34.825	33.838
Peru	Nuevo Sol	3.576	3.314
Dominican Republic	Dominican Pesos	57.546	52.45

- d. **Cash and Cash Equivalents** - The cash accounts include restricted balances, held in separate bank accounts, to be used solely to cover disbursements of the agreements signed by CATIE with different donors, or to receive disbursements contributed by them. These restricted balances amount to a US\$4,847 and US\$3,855 as of December 31, 2018 and 2017, respectively. All investments with an original maturity of less than three months are considered cash equivalents.

- e. **Leases** -

**The Entity as a Lessor** - The Entity enters into lease agreements as a lessor for some of the investment properties. The Entity also leases to retailers the equipment necessary for the presentation and development of activities and equipment manufactured by the Entity.

The leases in which the Entity is a lessor are classified as financial leases or operating leases. When the terms of the agreement significantly transfer all risks and benefits of ownership to the lessee, the agreement is classified as a financial lease. All other agreements are classified as operating agreements.

When the Entity is an intermediate lessor, it accounts the principal lease and sublease as two separate agreements. The sublease is classified as a lease or operating lease in reference to the right-of-use asset arising from the principal lease.

The income from operating leases is recognized on a straight-line basis during the term of the relevant lease. The direct initial costs incurred in the negotiation and arrangements of the operating lease are added to the carrying amount of the leased asset and are recognized on a straight-line basis during the term of the lease.

The outstanding amounts of the financial leases are recognized as leases receivable for the amount of the net investment in the leases. The financial lease income is allocated to the accounting periods as to show a constant rate of return on the net unpaid investment regarding the leases.

When an agreement includes leasing and non-leasing components, the Entity applies IFRS 15 to allocate the consideration for each component under the agreement.

**The Entity as a Lessee** - The Entity evaluates whether an agreement contains a lease at its source. The Entity recognizes a right-of-use asset and a corresponding lease liability for all lease agreements in which it is a lessee, excluding short-term leases (a term of 12 months or less) and low-value assets (such as tablets, personal computers, and small office furniture and phones). For these leases, the Entity recognizes rent payments as an operating on a straight-line basis during the term of the lease, unless another method is more representative of the pattern of time during which the economic benefits arise from the use of the leased assets.

The lease liability is initially measured at the present value of the rental payments that are not made on the start date, discounted by the rate implicit in the agreement. If this rate cannot be easily determined, the Entity uses incremental rates.

Rental payments included in the measurement of the lease liability consist of:

- Fixed rental payments (including fixed payments basically), less any lease incentive received;
- Variable rental payments that depend on an index or rate, initially measured using the index or rate on the start date;
- The expected amount payable by the lessee under residual value guarantees;
- The exercise price of call options, if the lessee is reasonably sure of exercising the options; and
- Payments for penalties resulting from the termination of the lease, if the lease term reflects the exercise of a lease termination option.

The lease liability is presented separately in the statement of financial position.

The lease liability is subsequently measured by increasing the carrying amount to show the interest accrued on the lease liability (using the effective interest method) and reducing the carrying amount to show the rental payments made.

The Entity carries out a revaluation of the lease liability (and makes the corresponding adjustment to the related right-of-use asset) provided that:

- The term of the lease is modified or there is a significant event or change in the circumstances of the lease resulting in a change in the evaluation of the exercise of the call option; therefore, the lease liability is measured by discounting the updated rental payments using an updated discount rate.
- The rental payments are modified as a result of changes to the index or rate or a change to the expected payment under a guaranteed residual value, in which case the lease liability is revalued by discounting the updated rental payments using the same discount rate (unless the change to the rental payments is caused by a change to a variable interest rate, in which case an updated discount rate is used).
- A lease agreement is modified and the modification of the lease is not accounted for as a separate lease, in which case the lease liability is revalued based on the term of the modified lease, by discounting the updated rental payments using a discount rate updated at the effective date of the modification.

The Entity did not make any of the adjustments mentioned in the periods presented.

The right-of-use assets consist of the initial measurement of the corresponding lease liability, the rental payments made on or before the start date less any lease incentives received and any initial costs. The subsequent valuation is the cost less the accumulated depreciation and impairment losses.

If the Entity incurs in an obligation to decommission and remove a leased asset, renovate the facilities where it is located, or restore the underlying asset to the condition required by the lease terms and conditions, a provision measured under IAS 37 must be recognized. To the extent that costs are related to a right-of-use asset, costs are included in the related right-of-use asset unless those costs are incurred to generate inventories.

The right-of-use assets are depreciated over the shorter of the lease term and the useful life of the underlying asset. If a lease transfers the ownership of the underlying asset or the cost of the right-of-use asset shows that the Entity is planning to exercise a call option, the right-of-use asset will be depreciated over the useful life. Depreciation begins on the lease start date.

The right-of-use assets are presented separately in the statement of financial position.

The Entity applies IAS 36 to determine whether a right-of-use asset is impaired and accounts for any impairment losses identified as described in the "Property, plant, and equipment" policy.

As a practical expedient, IFRS 16 allows you not to separate non-lease components, but rather to account for any lease and its related non-lease components as a single agreement. The Entity has not used this practical expedient. For agreements containing lease components and one or more additional lease or non-lease components, the Entity allocates the consideration of the agreement to each lease component under the separate selling price method of the lease component and the relative added selling price for all non-lease components.



- f. **Inventories** - Material and supplies inventories are valued at average cost, which does not exceed its net realizable value. The coffee mill inventory and forest seed bank are valued at amounts that are approximate to its net fair value. The Entity follows the policy of directly including the value of the damaged or obsolete inventories in the operating results, according to the analyses performed on an annual basis.
- g. **Financial Instruments** - Financial assets and liabilities are recognized when the Entity becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially valued at fair value. Transaction costs that are directly attributable to the acquisition or issuance of financial assets and liabilities (different from the financial assets at fair value through profit or loss) are added to or reduced from the fair value of the financial assets or liabilities, where applicable, since initial recognition. The transaction costs directly attributable to the acquisition of financial assets and liabilities at fair value through profit or loss are immediately recognized in the profit or loss.

- h. **Financial Assets** - Every regular purchase or sale of financial assets are recognized and derecognized at a trading date. Regular purchases or sales are financial asset purchases or sales that require the delivery of assets within the term established by the regulations or the usual practice in the market.

All recognized financial assets are subsequently measured in full, either at amortized cost or fair value, according to the financial asset classification.

**Financial Asset Classification** - Debt instruments that meet the following conditions are subsequently measured at amortized cost:

- If the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Debt instruments that meet the following conditions are subsequently measured at fair value through other comprehensive income:

- The financial asset is held within a business model in which assets are managed to achieve a particular objective by both collecting contractual cash flows and selling financial assets; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

By default, all the other financial assets are subsequently measured at fair value through profit or loss.

In spite of the above, the Entity may make the following irrevocable choice/designation since initial recognition of a financial asset:

- It may irrevocably choose to present subsequent changes in the fair value of an equity investment in other comprehensive income if the following certain are met (see (iii) below); and
- It may irrevocably designate a debt instrument that meets the amortized cost or fair value criteria through other comprehensive income if doing so eliminates or significantly reduces an accounting mismatch (see (iv) below).
  - (i) *Amortized Cost and Effective Interest Method* - The effective interest method is a method to calculate the amortized cost of a debt instrument and allocate interest income during the relevant period.

For the financial assets that were not purchased or arisen from impaired credit financial assets (for example, impaired-credit financial assets since initial recognition), the effective interest rate is the rate that accurately discounts the future expected cash inflows (including all paid or received fees that are an integral part of the effective interest rate, the transaction costs and other premiums or discounts) excluding expected credit losses throughout the expected life cycle of a debt instrument or, if applicable, a shorter term at carrying amount, net of the debt instrument since initial recognition. For the purchased or originated impaired credit financial assets, a credit-adjusted effective interest rate is calculated by discounting the future estimated cash flows, including the expected credit losses, at the amortized cost of the debt instrument since initial recognition.

The amortized cost of a financial asset is the amount at which the financial asset is measured since initial recognition less the reimbursements of the principal, plus the accrued amortization using the effective interest method of any difference between such initial amount and the amount at maturity, adjusted by any loss. The gross carrying amount of a financial asset is the amortized cost of a financial asset before adjusting any allowance for losses.

The interest income is recognized on an effective interest basis for debt instruments subsequently measured at amortized cost and fair value through other comprehensive income. For the purchased or originated credit-impaired financial assets, the interest income is calculated based on the effective interest rate at the gross carrying amount of a financial asset, except for the financial assets that subsequently suffered credit impairment (see below). For the financial assets that subsequently suffered credit impairment, the interest income is recognized based on the effective interest rate at amortized cost of the financial asset. If in subsequent reporting periods the credit risk of the credit-impaired financial instrument improves, so that the financial asset is no longer credit impaired, the interest income is recognized based on the effective interest rate at the gross carrying amount of the financial asset.

For the purchased or originated credit impaired financial assets, the Entity recognizes the interest income based on the credit-adjusted effective interest rate at amortized cost of the financial asset since initial recognition. The calculation does not use a gross basis again, even if the credit risk of the financial asset subsequently improves, so that the financial assets are no longer credit impaired.

Interest income is recognized through profit or loss and is included in "Financial Income - Interest Income."

- (ii) *Debt Instruments Classified at Fair Value Through Other Comprehensive Income* - Corporate bonds held by the Entity are classified at Fair Value through other comprehensive income. Corporate bonds are initially measured at fair value plus transaction costs. Therefore, changes in the carrying amount of these corporate bonds as a result of foreign exchange profits and losses (see below), profit or loss impairment (see below), and interest income calculated on an effective interest method basis (see (i) above) are recognized in the profit or loss. The amounts that are recognized as income are the same as the amounts that would have been recognized as income had they been measured at amortized cost. All other changes in the carrying amount are recognized at amortized cost. All other changes in the carrying amount of these corporate bonds are recognized in other comprehensive income or accrued under the heading of investment revaluation reserve. When these corporate bonds are derecognized, the accrued profit or loss previously recognized in other comprehensive income is reclassified as profit or loss.
- (iii) *Equity Investments Designated as Fair Value Through Other Comprehensive Income* - At initial recognition, the Entity may make the irrevocable choice (instrument for instrument) to designate equity instrument investments at Fair Value through other comprehensive income. The designation at fair value through other comprehensive income is not allowed if the equity investment is held for trading or if it is a contingent consideration recognized by an acquirer in a business combination.

A financial asset is held for trading if:

- It has been obtained to be sold in the short run; or
- At initial recognition, it is part of an identified financial instrument portfolio that the Entity manages collectively and if there is evidence of a recent short-term profit-making pattern; or
- It is a derivative (except for derivatives that are contractual financial guarantees or an effective hedging instrument).

Equity instrument investments at fair value through other comprehensive income are initially recognized at fair value plus transaction costs. Then, they are measured at fair value with profit or loss arising from changes to the fair value recognized in other comprehensive income and accrued in the investment revaluation reserve. The accrued profit or loss cannot be reclassified as profit or loss in the item of equity investments, but it is rather transferred to retained earnings.

The dividends of these equity instrument investments are recognized in the profit or loss according to IFRS 9, unless the dividends clearly represent a recovery of part of the investment cost. The dividends are included in the item of financial income in the profit or loss of the fiscal year.

The Entity has designated all the equity instrument investments that are not held for trading as fair value through other comprehensive income in the initial application of IFRS 9.

- (iv) *Financial Assets at Fair Value Through Profit or Loss* - The financial assets that do not meet the criteria to be measured at amortized cost or fair value through other comprehensive income (see (i) to (iii) above) are measured at fair value through profit or loss. Specifically:
- Equity instrument investments are classified at fair value through profit or loss, unless the Entity designates an equity investment that is not held for trading or contingent consideration resulting from a business combination at fair value through other comprehensive income at initial recognition (see (iii) above).
  - Debt instruments that do not meet the conditions of amortized cost or fair value through other comprehensive income (see (i) and (ii) above), are classified at fair value through profit or loss. Moreover, the debt instruments that meet the conditions of amortized cost or fair value through other comprehensive income can be designated as fair value through profit or loss since initial recognition, if such designation eliminates or significantly reduces a measurement or recognition inconsistency (denominated "accounting disparity") that would result from the measurement of assets or liabilities or the recognition of profit or loss on different bases. The Entity has not designated any debt instruments at fair value through profit or loss.

Financial assets at Fair Value through other comprehensive income are measured at fair value at the end of each reporting period, with any profit or loss of fair value recognized in profit or loss as long as it is not part of a designated hedging relationship (see hedging accounting policy). The net profit or loss recognized in the profit or loss includes any dividends or interest earned on the financial asset and included in "other profit or loss."

*Foreign Exchange Profit or Loss* - The carrying amount of financial assets denominated in a foreign currency is determined at that foreign currency and translated at the exchange rate at the end of each reporting period. Specifically:

- For financial assets measured at amortized cost that are not part of a designated hedging relationship, exchange rate differences are recognized in the profit or loss under "other profit or loss";
- For debt instruments measured at fair value through other comprehensive income that are not part of a designated hedging relationship, currency differences in the amortized cost of the debt instrument are recognized in the profit or loss under the heading of other profit or loss. Other exchange rate differences are recognized in another comprehensive outcome in the investment revaluation reserve;

- For financial assets measured at fair value through profit or loss that are not part of a designated hedging relationship, exchange rate differences are recognized in the profit or loss under the heading of other profit or loss; and
- For equity instruments measured at fair value through other comprehensive income, exchange rate differences are recognized in another comprehensive income in the investment revaluation reserve.

See the hedging accounting policy regarding foreign currency differences where the risk component of a foreign currency for a financial asset designated as a foreign currency risk hedging instrument.

*Financial Asset Impairment* - The Entity recognizes an allowance for expected credit losses on investments in debt instruments measured at amortized cost or at fair value through other comprehensive income, lease accounts receivable, trade accounts receivable and contractual assets, as well as financial guarantee contracts. The amount of the expected credit losses is updated on each reporting date to reflect changes to the credit risk since the initial recognition of the respective financial instrument.

The Entity recognizes expected lifetime expected credit losses on trade accounts receivable, contractual assets and lease accounts receivable. The expected credit losses on these financial assets are estimated using an allowance matrix based on the Entity's historical experience of credit losses, adjusted by factors that are specific to these debtors, the general economic conditions, and an assessment of both the current management and the forecast of conditions on the reporting date, including the time value of the money, where appropriate.

For all other financial instruments, the Entity recognizes a lifetime expected credit loss when there has been a significant increase in the credit risk since initial recognition. However, if the credit risk of a financial instrument has not significantly increased since initial recognition, the Entity measures the allowance for losses for such a financial instrument in an amount equal to the expected 12-month credit loss.

The lifetime expected credit loss represents the expected credit loss resulting from all events of noncompliance during the expected useful life of a financial instrument. In contrast, the expected 12-month credit loss represents the portion of the lifetime expected credit loss that will result from predetermined events on a financial instrument within 12 months of the reporting date.

- (i) *Significant Increase in the Credit Risk* - In assessing whether the credit risk of a financial instrument has significantly increased since initial recognition, the Entity compares the risk of noncompliance of the financial instrument on the reporting date to the risk of noncompliance of the financial instrument on the start date. Recognition. In conducting this assessment, the Entity considers both quantitative and qualitative information as reasonable and well-founded, including the historical experience and available prospective information at no unnecessary cost or effort. The prospective

information includes the future prospects of the industries in which the Entity's debtors operate, obtained from economic expert reports, financial analysts, governmental agencies, relevant expert groups and other similar organizations, as well as several external sources of actual information and foreseen economic information related to the Entity's key operations.

In particular, the following information is taken into account when assessing whether the credit risk has significantly increased since initial recognition:

- An existing or expected significant impairment of the external rating (if any) or internal rating of the financial instrument;
- A significant impairment of external market indicators of the credit risk for a specific financial instrument, for example, a significant increase of the credit spread, credit default swap for the debtor, or the term or the extent to which the fair value of a financial asset is less than its amortized cost;
- Existing or expected adverse changes in the economic, financial or business conditions that are likely to cause a significant decrease in the debtor's ability to meet a debt obligation;
- A significant current or expected impairment of the debtor's operating income;
- Significant increases of credit risk on other financial instruments of the same debtor;
- An existing or expected adverse change in the debtor's regulatory, economic or technological conditions resulting in a significant decrease in the debtor's ability to meet obligations.

Regardless of the outcome of the above assessment, the Entity assumes that the credit risk on a financial asset has significantly increased since initial recognition when the contractual payments are delinquent for more than 30 days, unless the Entity has reasonable and reliable information to prove otherwise.

In spite of the above, the Entity assumes that the credit risk on a financial instrument has not significantly increased since initial recognition if the financial instrument is considered to have a low credit risk on the reporting date. A financial instrument is considered to have a low credit risk if:

- The financial instrument has a low risk of noncompliance,
- The debtor has an outstanding ability to meet contractual cash flow obligations in the short term, and
- Adverse changes in the economic and business conditions in the long term may reduce the ability of the debtor to meet contractual cash obligations, but necessarily.



The Entity considers that a financial asset has low credit risk when the asset has an external credit rating of "investment grade" according to the globally accepted definition, or if no external rating is available, that the asset has an internal "achievable" rating. Achievable-for-sale means that the counterparty has a strong financial position and there are no past due amounts.

For financial guarantee contracts, the date on which the Entity becomes a party to the irrevocable commitment is considered to be the date of initial recognition for the purposes of assessing the impairment of the financial instrument. In assessing whether there has been a significant increase in credit risk since initial recognition of financial guarantee contracts, the Entity considers changes in the risk that the specified debtor will default on the contract.

The Entity regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in the credit risk and reviews them as appropriate to ensure that the criteria are able to identify a significant increase in the credit risk before the amount is past due.

- (ii) *Definition of Noncompliance* - The Entity considers the following as a noncompliance event for internal credit risk management purposes, since the historical experience indicates that financial assets are not recoverable when they meet any of the following criteria:
- When the debtor fails to comply with financial agreements;
  - Information developed internally or obtained from external sources indicates that the debtor is unlikely to pay its creditors, including the Entity, in full (regardless of any guarantees held by the Entity).

Regardless of the above analysis, the Entity considers that noncompliance has occurred when a financial asset has more than 90 days due, unless the Entity has reasonable and reliable information to demonstrate that a later default criterion is more appropriate.

- (iii) *Credit-Impaired Financial Assets* - A financial asset is credit-impaired when one or more events have a detrimental impact on the estimated future cash flows of such a financial asset. Evidence that a financial asset is credit-impaired includes observable data on the following events:
- Significant financial difficulty of the issuer or debtor;
  - Breach of a contract, such as a default or expired event (see (ii) above);
  - The debtor's lenders, for economic or contractual reasons related to the debtor's financial difficulty, grant the debtor a concession that the lenders would not otherwise consider;
  - The debtor is more likely to go bankrupt or some other financial reorganization; or

- The dissolution of a functional market for the financial assets due to financial difficulties.
- (iv) *Derecognition Policy* - The Entity derecognizes a financial asset when there is information indicating that the debtor is in serious financial difficulty and there is no realistic prospect of recovery, for example, when the debtor has been placed in liquidation or has filed a bankruptcy proceeding, or in the case of trade accounts receivable, when the amounts are due for more than two years, whichever is earlier. Written-off financial assets may still be subject to compliance activities under the Entity's recovery procedures, taking into account legal advice where appropriate. Any recovery performed is recognized in the profit or loss.
- (v) *Measurement and Recognition of Expected Credit Losses* - Measuring expected credit losses is a function of the probability of noncompliance, the loss given the noncompliance (i.e. the magnitude of the loss if there is a default) and the exposure to noncompliance. The assessment of the probability of noncompliance and the loss resulting from a default is based on historical data adjusted by the prospective information as described above. As for noncompliance exposure, for financial assets, this is represented by the gross carrying amount of the assets on the reporting date; for financial guarantee contracts, the exposure includes the amount set on the reporting date, along with any additional amount expected to be obtained in the future by the noncompliance date determined based on historical trends, the Entity's understanding of the specific financial needs of the debtors, and other relevant future information.

For the financial assets, the expected credit loss is estimated as the difference between all contractual cash flows owed to the Entity in accordance with the contract and all cash flows that the Entity expects to receive, discounted at the original effective interest rate. For a lease receivable, the cash flows used to determine the expected credit losses are consistent with the cash flows used in measuring the lease receivable in accordance with IAS 17 Leases.

For a financial guarantee contract, where the Entity is required to make payments only in case of noncompliance by the debtor in accordance with the terms of the secured instrument, the allowance for expected losses is the expected payment to reimburse the holder for a credit loss less any amount the Entity expects to receive from the holder, the debtor or any other party.

If the Entity has measured the allowance for losses for a financial instrument in an amount equal to the expected lifetime credit loss in the previous reporting period, but it determines on the current presentation date that the conditions for the expected lifetime credit loss are no longer met, the Entity will estimate the loss margin in an amount equal to the expected credit loss of 12 months on the current reporting date, except for the assets for which the simplified approach was used.

The Entity acknowledges a loss or impairment loss in the profit or loss of all financial instruments with an adjustment corresponding to its carrying amount through an account of allowance for losses, except for investments in debt instruments measured at fair value through other comprehensive income, for which the allowance for losses in other comprehensive and accumulated income in the investment revaluation reserve is recognized, and it does not reduce the carrying amount of the financial asset in the statement of financial position.

Derecognition of Financial Assets - The Entity derecognizes a financial asset only if the contractual rights of the asset's cash flows expire, or when it transfers the financial asset and substantially all risks and benefits of ownership of the asset to another entity. If the Entity does not substantially transfer or withholds all the risks and benefits of ownership and continues to control the transferred asset, the Entity will recognize its withheld interests in the asset and a related liability for the amounts payable. If the Entity substantially withholds all the risks and benefits of ownership of a transferred financial asset, the Entity will continue to recognize the financial asset and will also recognize a secured loan for the income received.

When derecognizing a financial asset measured at amortized cost, the difference between the carrying amount of the asset and the amount of the consideration received and receivable is recognized in the profit or loss. In addition, when derecognizing an investment in a debt instrument classified as fair value through other comprehensive income, the previously accumulated profit or loss in the investment revaluation reserve is reclassified in the profit or loss. In contrast, in the derecognition of an investment in an equity instrument that the Entity chose in the initial recognition to measure at fair value through other comprehensive income, the previously accumulated profit or loss in the investment revaluation reserve is not reclassified in the profit or loss, but it is rather transferred to the accumulated profit (deficit).

i. ***Financial Liabilities and Equity*** -

**Classified as Debt or Equity** - Debt and equity instruments are classified as financial liabilities or as equity according to the contents of the contractual agreements and definitions of a financial liability and an equity instrument.

**Equity Instruments** - An equity instrument is any contract that shows a residual interest on an entity's assets after deducting all liabilities. The equity instruments issued by the Entity are recognized at the income received, net of direct issue costs.

The repurchase of the Entity's own equity instruments is recognized and deducted directly from the equity. No profit or loss is recognized in the profit or loss of the purchase, sale, issue or payment of the Entity's own equity instruments.

**Compound Instruments** - The components of convertible debt securities issued by the Entity are separately classified as financial liabilities and equity according to the contents of the contractual agreements and the definitions of a financial

liability and an equity instrument. A conversion option to be settled by exchanging a fixed amount of cash or another financial asset for a fixed number of equity instruments is an equity instrument.

At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. This amount is recorded as a liability on an amortized cost basis using the effective interest method until it is extinguished at conversion or maturity date of the instrument.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument in full. This is recognized and included in the net equity, net of the income tax effects, and is not subsequently remeasured.

Transaction costs related to the issue of convertible debt securities are allocated to the liabilities and equity components proportionally to the allocation of the gross income. The transaction costs related to the equity component are directly recognized in the equity. The transaction costs related to the liability component are included in the carrying amount of the liability component and amortized over the useful life of the convertible loan notes using the effective interest method.

**Financial Liabilities** - All financial liabilities are subsequently measured at amortized cost using the effective interest method or at fair value through profit or loss.

However, financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuous equity method is applied, and the financial guarantee contracts issued by the Entity are measured in accordance with the specific accounting policies detailed below.

**Financial Liabilities at Fair Value through Profit or Loss** - Financial liabilities are classified at fair value through profit or loss when the financial liability (i) is the contingent consideration of an acquirer in a business combination, (ii) is held for trading, or (iii) is designated as fair value through profit or loss.

A financial liability is classified as held for trading if:

- It has been acquired mainly to repurchase it in the short term; or
- At initial recognition, it is part of a portfolio of identified financial instruments that the Entity jointly manages and has a recent actual pattern of short-term profit-making; or
- It is a derivative, except that the derivative is a financial guarantee contract or a designated and effective hedging instrument.

A financial liability not held for trading or the contingent consideration of an acquirer in a business combination may be designated as fair value through profit or loss at initial recognition if:

- Such designation significantly eliminates or reduces a measurement or recognition inconsistency that would otherwise arise; or

- The financial liability is part of a financial asset or financial liability or both, which is managed and its performance is assessed at fair value in accordance with the Entity's documented risk management or investment strategy, and the information on the combination is internally provided on that basis; or
- It is part of a contract containing one or more implied derivatives, and IFRS 9 allows the entire combined contract to be designated as fair value through profit or loss.

Financial liabilities at fair value through profit or loss are measured at fair value, and the profit or loss arising from changes in the fair value is recognized in the income to the extent that it is not part of a designated hedging relationship (see the hedging accounting policy). The net profit or loss recognized in the profit or loss includes any interest paid on the financial liability and is included in the heading of "other profit or loss" in the income.

However, for financial liabilities designated as fair value through profit or loss, the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability is recognized in other comprehensive income unless the recognition of the effects of changes in the credit risk of the liability in other comprehensive income would create or extend an accounting mismatch in the income. The remaining amount of the change in the fair value of the liability is recognized in the income. Changes in the fair value attributable to the credit risk of a financial liability recognized in other comprehensive income are not subsequently reclassified in the income. They are rather transferred to the accumulated profit once the financial liability is derecognized.

The profit or loss on financial guarantee contracts issued by the Entity and which are designated by the Entity as fair value through profit or loss is recognized in the income.

**Financial Liabilities Subsequently Measured at Amortized Cost-** Financial liabilities that are not (i) a contingent consideration of an acquirer in a business combination, (ii) held for trading, or (iii) designated as fair value through profit or loss, are subsequently measured at amortized cost using the effective interest method.

The effective interest method is a method for calculating the amortized cost of a financial liability and for allocating interest expenses during the relevant period. The effective interest rate is the rate that accurately deducts foreseen future cash payments (including all charges and points paid or received that are an integral part of the effective interest rate, transaction costs, and other premiums or discounts) over the expected useful life of the financial liability, or (if appropriate) a shorter term, at the amortized cost of a financial liability.

**Financial Guarantee Contractual Liabilities** - A financial guarantee contract is a contract that requires the issuer to make specific payments to reimburse the holder for a loss incurred because a specific debtor did not make the payments when due under the terms of a debt instrument.

Financial guarantee contractual liabilities are initially measured at fair value and, if not designated at fair value through other comprehensive income and do not arise from a transfer of an asset, they are subsequently measured at the greater of:

- The amount of the allowance for losses determined in accordance with IFRS 9 (see the financial assets above); and
- The amount initially recognized less, where applicable, the accumulated depreciation recognized in accordance with the revenue recognition policies set out above.

**Foreign Exchange Profit or Loss** – For the financial liabilities that are denominated in a foreign currency and are measured at amortized cost at the end of each reporting period, foreign currency profit or loss is determined based on the amortized cost of the instruments. These foreign currency profit or loss is recognized under the heading "Other profit or loss" in the income for financial liabilities that are not part of a designated hedging relationship. For those designated as a hedging instrument for foreign currency risk hedging, foreign currency profit or loss is recognized in other comprehensive income and accrued into a separate component of the equity.

The fair value of financial liabilities denominated in a foreign currency is determined in that foreign currency and translated at the exchange rate at the end of the reporting period. For financial liabilities measured at fair value through profit or loss, the foreign currency component is part of the profit or loss of fair value and is recognized in the profit or loss for financial liabilities that are not part of a designated hedging relationship.

**Derecognition of Financial Liabilities** - The Entity derecognizes financial liabilities if, and only if, the Entity's obligations are fulfilled, paid or have expired. The difference between the carrying amount of the derecognized financial liability and the consideration paid and payable is recognized in the income.

When the Entity exchanges a debt instrument in another with the existing lender on substantially different terms, such an exchange is accounted for as an extinction of the original financial liability and the new financial liability is recognized. Similarly, the Entity considers the substantial modification of the terms of an existing liability or a part therein as an extinction of the original financial liability and the new liability is recognized. The terms are supposedly substantially different if the present discounted value of cash flows under the new terms, including any net paid fee of any fee received and discounted using the original effective rate is at least 10% different from the current discounted value of the remaining cash flows of the original financial liability. If the change is not substantial, the difference between: (1) the carrying amount of liability prior to modification; and (2) the present value of cash flows after modification should be recognized in the income as profit or loss due to modification in other profit or loss.

- j. **Property, Furniture, Bearer Plants, Equipment and right to use assets** - CATIE follows the policy of recording funds disbursed for the acquisition of property, furniture, bearer plants, equipment and and right to use assets as expenses, and it subsequently capitalizes those amounts in the Plant Fund whenever those assets are acquired with resources from the Basic Activities Fund. Therefore, such capitalization is performed based on the acquisition cost of the assets.

CATIE also registers as part of the Plant Fund property, plant and equipment acquired through Funds in Custody as part of the Plant Fund, except in those cases the entity where the person responsible for the fund communicates of the non institutional use of the asset upon termination of the contract or agreement.



- k. **Depreciation** - Depreciation of property, furniture, bearer plants, equipment and right to use assets is made using the straight-line method over the estimated useful lives of the respective assets, as shown below:

Detail	Depreciation Rates
Buildings	2 to 10%
Machinery	6.67 to 20%
Vehicles	10 to 16.67%
Office and home furniture and equipment	10 to 100%
Laboratory equipment	10 to 33.33%
Computer equipment and licenses	10 to 33.33%
Software licenses	20 to 33.33%
Coffee plantations	6.67 a 10%
Sugar cane plantations	7.69 a 10%
Right to use assets	2 to 10%

Depreciation expense is recorded in the Plant Fund.

- l. **Allowance for Impairment of Accounts Receivable from Member Countries** - As of 2011, CATIE calculates this impairment based on Article 8 of the "General Regulations of CATIE" which state that the Member State in arrears in the payment of their fees for more than 2 full years will have the right to vote in the Superior Council of Ministers. Based on this article, CATIE has recorded impairments for those member country fees that have been in arrears for two years or more.

When IFRS 9 became effective on January 1, 2018, the amount of the expected credit loss is updated on each reporting date to reflect changes in credit risk since the initial recognition of the respective financial instrument. For 2020, the impairment sum was US\$11 (thousands) and for 2019, it was US\$847 (thousands).

CATIE recognizes an allowance for losses from foreseen credit losses in accounts receivable from member countries. The amount of credit losses is updated on each reporting date to reflect the changes in the credit risk since the initial recognition of the respective financial instrument.

CATIE recognizes lifetime expected credit losses on accounts receivable from member countries. The expected credit losses on these financial assets are estimated using an allowance matrix based on the historical experience of credit losses, adjusted by factors that are specific to these debtors, the general economic conditions, and an assessment of the current direction and the forecast of conditions on the reporting date, including the time value of money when appropriate.

For the remaining financial instruments, CATIE recognizes a lifetime credit loss when there has been a significant increase in the credit risk since initial recognition. Nevertheless, if the credit risk of a financial instrument has not significantly increased since initial recognition, CATIE measures the allowance for losses for such a financial instrument in an amount equal to the expected 12-month credit loss.

The lifetime expected credit loss represents the expected credit loss resulting from all the events of noncompliance during the expected useful life of a financial instrument. In contrast, the expected 12-month credit loss represents the portion of the lifetime expected credit loss that will result from predetermined events on a financial instrument within 12 months of the reporting date.

- m. **Valuation of Other Assets** - CATIE registers the amounts disbursed for the purchase of certificates of contribution of Cooperativa de Productores de Leche Dos Pinos, R.L., at historical value. Every year an impairment valuation takes place, taking into consideration the reasonability of the balance.

With the implementation of IFRS commencing on January 1, 2018, the sum of the disbursements for acquiring certificates of investment held at their historical value are measured at fair value, taking the profit or loss in valuation to results.

- n. **Biological Assets** - CATIE follows the practice of capitalizing the disbursements incurred for developing and breeding cattle for the dairy activity. At the end of each accounting period, dairy cattle is valued at its fair value, recognizing a profit or loss from the increase or decrease of the herd.

The sugarcane and coffee plantations are initially registered at cost, which is considered as fair value because it has not had a significant biological transformation. Afterwards, it is measured at fair value, less the costs at point of sale.

Forest plantations are valued at fair value through a methodology that considers the different conditions of the plantations, according to their diameters, plantation management, density, topography, quality of sites, and on the basis of lots measured every year.

In order to determine fair value, biological assets are separated by age and type, calculating the expected present value of the net cash flows by biological asset, in their current condition and location.

- o. **Temporarily Restricted Net Assets** - Funds contributed by national or international organizations to establish the Agreement Funds, Funds in Custody, and Administered Funds, for the execution of agreements, contracts, or specific activities are recorded as temporarily restricted net assets. As they are used in the activities defined in the agreements and contracts, CATIE simultaneously recognizes such amounts as income released from restrictions and as expenses of the Agreement Fund and Funds in Custody in the statement of activities.

When the expenses incurred by CATIE in the execution of an agreement, contract, or specific activity exceed the respective contributions, the excess is recorded as an account receivable from the respective donor.

- p. **Employees' Legal Benefits** - According to the Costa Rican labor law, employees that are dismissed without just cause are entitled to severance pay, equivalent to 20 days of salary for each year of continuous service, with a limit of eight years. However, on December 23, 1998, CATIE, along with a Permanent Employee Committee, agreed that severance pay should be recognized as an actual right and not as an expectation by law. The main clauses of such agreement were the following:

- Since January 1999, CATIE monthly deposits 8.33% of salaries and benefits paid in the Fideicomiso de Cesantía del Personal Nacional del CATIE (Trust for Severance Pay of CATIE's Local Employees), which is administered by the investment fund administration company of Banco Popular y Desarrollo Comunal. As of March 2001, 3% of this provision is transferred to different pension funds selected by employees. Starting in February 2012, 5.33% of severance is deposited in Asociación Solidarista de Empleados (ASOCATIE) (CATIE's Employee Fund), in behalf of the associated employees.
- From September to December 2016, a massive employment termination process was applied for staff from Costa Rica. The objective was to reduce staff costs, and along with the Permanent Workers Committee, it was agreed to eliminate additional employee benefits to the 3% law of the Labor Compensation Fund (FOCOPEN), five-year bonuses, as well as annual payments for seniority.
- Funds corresponding to severance, plus the accumulated yield, will be returned to each employee only at the moment of leaving CATIE, regardless of the reason of their exit.

For employees working in countries where CATIE has offices, the policy of directly charging expenses and provisioning employees' legal benefits is followed.

q. **Revenue Recognition** - The Entity recognizes income from the following sources:

- Donations from member countries and from the Inter-American Institute for Cooperation on Agriculture ("I.I.C.A.").
- Research and projects carried out in different member countries regarding soil and climate studies.
- Income from tuition of students of post-graduate Master's programs provided by CATIE.
- Agricultural income from the sale of cane, coffee, seeds, and milk.

**Donations** - The Entity is composed of member countries that make a contribution of US\$50,000 per year, and I.I.C.A, which contributes US\$1,000,000 per year, and these donations are used as working capital.

This income is recognized during the period because, according to the contractual terms, each member must contribute such amounts per year.

**Research and Projects** - The Entity conducts various research projects on forest areas, river basins, climate change, among others. These projects account for income for CATIE, and it is recognized in accordance with the contractual terms of each, either according to progress made or delivery of final report.

**Student Tuition Income** - As part of its operations, the Entity has become one of the most important universities in Latin American. CATIE receives income from tuition from postgraduate and Master's programs on agricultural sciences, and it is recognized when students enrolled.

**Agricultural Income** - CATIE receives income from seed sales, cultivation of sugar cane and coffee and milk production. This income is recognized when the control and risks of each product are transferred, which usually takes place at the point of sale, i.e. at CATIE facilities.

- r. **Contributions to the International Professional Staff Retirement Fund** - Pursuant to the provisions of the employment agreements of the international professional staff, CATIE and the professionals must jointly contribute to a retirement fund. According to Resolution No.9-94/VII ROJD of the VII Regular Meeting of CATIE's Board of Directors, the monthly contributions to cover expected disbursements of this Retirement Fund are transferred by CATIE to *Morgan Stanley Investment Funds* and to the OAS Retirement Fund. The management of such funds is the sole responsibility of the international professional staff.
- s. **Use of Estimates** - In preparing the financial statements, Management has to make estimates that affect the reported amounts of certain assets and liabilities, as well as of other income and expenses shown in the financial statements. Actual results could vary from such estimates. Estimates made by management include estimates for impairment of other countries' fees, useful life of property, furniture, bearer plants, equipment and right to use assets, and labor liabilities.
- t. **Vacation** - The Costa Rican laws establish that for each year of work, employees are entitled to certain number of vacation days. The Entity registers on a monthly basis a provision to cover future disbursements for this concept.
- u. **Applicable Regulations of the Financial Accounting Standards FABS ACS No.958, Issued by the American Institute of Certified Public Accountants of the United States of America** - CATIE has adopted previously certain guidelines of the Financial Accounting Standard No.117. This principle establishes general standards for the presentation of the financial statements and the basic financial information of the not-for-profit organizations.
- v. **Intangible Assets** - Intangible assets with defined useful life and separately acquired are registered at cost less the accumulated amortization and any accumulated impairment loss. Amortization is recognized using the straight-line method on their estimated useful life. The estimated useful life and depreciation method are reviewed at the end of each reporting period, and the effect of any change in the estimate is registered on a prospective basis. Intangible assets with an indefinite useful life that are acquired separately are registered at cost less any accumulated impairment loss.
- w. **Repatriation and Recognition of Years of Service** - In accordance with its own regulations, CATIE covers the costs of transfers, travel to the home country and recognition of years of service of international professional staff when employees resign or are dismissed, and this is calculated according to the years of service and the number of dependents of each officer. In addition, the national staff could enjoy recognition of years of service when leaving CATIE, except in countries where local laws require the payment of fourteen or more salaries per year, or in which half or more of the monthly salary per year of service is required, in the event of resignation or termination of services.

In countries where CATIE has offices, the national staff could receive termination benefit payment under the applicable laws in each country. CATIE has implemented the policy of recording an allowance for legal benefits to cover future disbursements, considering the actuarial probabilities of future events, future salary increases and the time value of money. Actual payments for these items are charged to the allowance.

#### 4. CASH AND BANKS

Cash and banks as of December 31 are detailed below:

	<b>2020</b>	<b>2019</b>
Petty cash	US\$ 12	US\$ 10
Cash due from banks	<u>5,664</u>	<u>4,659</u>
Total	<u>US\$5,676</u>	<u>US\$4,669</u>

As of December 31, 2020 and 2019, there is restricted cash totaling US\$4,041 and US\$2,709 , respectively, corresponding to donations made for specific projects, agreements and student scholarships.

#### 5. INVESTMENTS IN FINANCIAL INSTRUMENTS

Financial investments at maturity as of December 31 are detailed below:

	<b>2020</b>	<b>2019</b>
Banco G&T Continental, certificates of time deposit, in quetzales, interest rate of 5.75% variable per annum (6.00% in 2017) per annum, with maturity in March 2018		US\$ 64
Banco G&T Continental, certificates of time deposit, in quetzales, interest rate of 4% variable per annum, with maturity in August 2021	US\$ 33	
Banco G&T Continental, certificates of time deposit, in quetzales, interest rate of 5.25% variable per annum, with maturity in August 2021	31	
Banco BCT, certificates of time deposit, in US dollars, annual variable interest rate of 3.77%, with maturity in December 2019		
Banco BCT, certificates of time deposit, in US dollars, annual fixed interest rate of 2.10%, with maturity in February 2019		
BCT Bank, dollar certificates of time deposit 4.10% fixed annual interest with maturity in April 2020		26
BCT Bank, dollar certificates of time deposit 3.25 per cent a fixed annual interest with maturity in May 2020		27
BCT Bank, dollar certificates of time deposit 3% fixed annual interest with maturity in June 2020		35

(Continues)

	<b>2020</b>	<b>2019</b>
BCT Bank, dollar certificates of time deposit 3.25% fixed annual interest, with maturity in February 2020		US\$ 50
BCT Bank, certificates of time deposit in colones, 8.3% at annual fixed interest rate with maturity in March of the 2020		25
BCT Bank, certificates of time deposit in colones, 9.2% at annual fixed interest rate with maturity in March of the 2021	US\$ 25	
BCT Bank, certificates of time deposit in colones, 2.73% at annual fixed interest rate with maturity in February of the 2021	50	
BCT Bank, certificates of time deposit in colones, 3.14% at annual fixed interest rate with maturity in July of the 2021	200	
BCT Bank, certificates of time deposit in colones, 2.90% at annual fixed interest rate with maturity in July of the 2021	150	
BCT Bank, certificates of time deposit in colones, 2.25% at annual fixed interest rate with maturity in March of the 2021	<u>8</u>	
Total	<u>US\$497</u>	<u>US\$227</u>

## 6. ACCOUNTS RECEIVABLE

Accounts receivable as of December 31 are detailed below:

	<b>2020</b>	<b>2019</b>
Trade	US\$ 592	US\$ 419
Staff	56	53
Fundatrópicos interest	123	124
Advance payments for the development of projects	9	21
Member country fees	3,099	3,020
Third-party payments for the benefit of agreements	400	474
Third-party payments for the benefit of funds in custody	176	166
Others	<u>15</u>	<u>2</u>
Sub-total	4,470	4,279
Less: Allowance for impairment	<u>(2,457)</u>	<u>(2,483)</u>
Total	<u>US\$ 2,013</u>	<u>US\$ 1,796</u>

Accounts receivable from countries correspond to fees not paid to the Entity by member countries, which were established for the implementation of basic activities and are classified as unrestricted funds. Accounts receivable are recovered in the functional currency of the financial statements, are not subject to any discount, and do not bear interest.



A detail of the movement of the allowance for impairment is shown below:

	<b>2020</b>	<b>2019</b>
Balance at the beginning of the year	US\$2,483	US\$ 3,330
Recovery of estimated accounts	(155)	(1,040)
Increase in the allowance	<u>129</u>	<u>193</u>
Balance at the end of the year	<u>US\$2,457</u>	<u>US\$ 2,483</u>

As of December 31, 2019, doubtful accounts for the sum of US\$170, corresponding to the custody fund, were directly recognized to the expense.

The following table details the risk profile of accounts receivable under CATIE's allowance matrix:

	<b>December 31, 2020</b>			
	<b>Less than One Year</b>	<b>One to Two Years</b>	<b>Over Two Years</b>	<b>Balance</b>
Accounts receivable - countries	US\$ 428	US\$ 300	US\$ 2,371	US\$ 3,099
Allowance for accounts receivable countries	<u>(217)</u>	<u>(200)</u>	<u>(2,040)</u>	<u>(2,457)</u>
Total	<u>US\$ 211</u>	<u>US\$ 100</u>	<u>US\$ 331</u>	<u>US\$ 642</u>

	<b>December 31, 2019</b>			
	<b>Less than One Year</b>	<b>One to Two Years</b>	<b>Over Two Years</b>	<b>Balance</b>
Accounts receivable - countries	US\$ 335	US\$ 300	US\$ 2,385	US\$ 3,020
Allowance for accounts receivable countries	<u>(229)</u>	<u>(150)</u>	<u>(2,104)</u>	<u>(2,483)</u>
Total	<u>US\$ 106</u>	<u>US\$ 150</u>	<u>US\$ 281</u>	<u>US\$ 537</u>

## 7. INVENTORIES

Inventories as of December 31 are as follows:

	<b>2020</b>	<b>2019</b>
Coffee at coffee mill	US\$ 26	US\$ 29
Forest seed bank	275	267
Materials and supplies	84	62
Others	<u>22</u>	<u>22</u>
Total	<u>US\$407</u>	<u>US\$380</u>

Due to the infrastructure and physical conditions where the inventories are stored and their non-perishable nature, Management considers that there will be a low risk and likelihood of incurring in losses due to the obsolescence or low turnover of the inventories; therefore, it is not appropriate to keep an allowance for obsolescence or slow turnover.

## 8. BIOLOGICAL ASSETS

Biological assets consist of dairy cattle, coffee plantations, sugarcane, and wood.

Biological assets are as follows:

	<b>2020</b>	<b>2019</b>
Wood	US\$186	US\$200
Cattle	<u>318</u>	<u>300</u>
Total	<u>US\$504</u>	<u>US\$500</u>

A summary of the movement of the account of biological assets is shown below:

	<b>2020</b>	<b>2019</b>
Balance at the beginning of the year	US\$500	US\$437
Additions	43	49
Adjustments from a change in the fair value	<u>(39)</u>	<u>14</u>
Balance at the end of the year	<u>US\$504</u>	<u>US\$500</u>

A detail of purchases and births, sales and deaths and valuation adjustments of cattle is as follows:

	<b>Heads of Cattle</b>	<b>Cost</b>
Balances as of December 31, 2018	US\$ 343	US\$263
Purchases and births	187	
Sales and deaths	(164)	
Adjustment for valuation	<u>          </u>	<u>37</u>
Balances as of December 31, 2019	366	300
Purchases and births	195	
Sales and deaths	(162)	
Adjustment for valuation	<u>          </u>	<u>18</u>
SalDOS al 31 de diciembre de 2020	<u>US\$ 399</u>	<u>US\$318</u>

As of December 31, 2020, CATIE had a dairy herd of 171 milk-producing cows (of these, there are 145 producing milk and 26 in rest period). There are also 112 heifers, 20 of them will soon give birth for the first time and 92 are in development stage, in addition to 2 bulls eventually used as stallions. There are 78 breeding heifers, from which 24 heifers were bred in 2018 and 47 heifers in 2019, with the purpose of producing a breeding herd using dairy cow wombs crossed with beef semen. In addition, there 2 breeding bulls for artificial insemination. CATIE produced, in the year ended December 31, 2020, 820,504 milk kilograms, with a reasonable value less the estimates costs in the point of sale of CRC 320.96 colons for each kilogram (value determined at the time of milking).

As of December 31, CATIE has the following wood plantations:

	<b>Number of Hectares Planted</b>	
	<b>2020</b>	<b>2019</b>
Balance at the beginning of the year	143	147
Additions	12	6
Outputs	<u>(5)</u>	<u>(10)</u>
Final Wood Balance	<u>150</u>	<u>143</u>

## 9. TRUST FUNDS

Trust funds as of December 31 are as follows:

	<b>2020</b>	<b>2019</b>
Contributions to the trust:		
COSUDE II/Fundatrópicos Funds	<u>US\$1,584</u>	<u>US\$1,573</u>

FUNDATROPICOS-CATIE-BCT/2014 Investment Fund Management Trust (“the Trust”) was created on May 23, 2014 by the Foundation for Education and Research in the Development and Conservation of Natural Resources in the American Tropics (FUNDATROPICOS) and the Tropical Agricultural Research and Higher Education Center (CATIE) (Trustors), Banco BCT, S.A., (the Trustee) and the Tropical Agricultural Research and Higher Education Center (CATIE) (the Beneficiary). The trust is organized in accordance with the laws of Costa Rica for the management of money, securities, and loans.

The trust is the result of a merger of four trusts: COSUDE I Fundatrópicos Trust, COSUDE II Fundatrópicos Trust and Fundatrópicos Trust, all managed by Banco BCT, S.A, FUNDATROPICOS-CATIE-BCT/2014 Fund and Investment Management Trust, and the last one prevails, which objective is to fund the financial self-sustainability of CATIE, with the development and implementation of research activities, as well as education and other educational activities in the area of agricultural sciences, renewable resources, and other related activities.

Fundatrópicos’ interest in the total balance of net assets in the Trust as of December 31, 2020 is for the sum of US\$11,819 (thousands), (US\$11,798 thousands in 2019), equivalent to 86.60% (86.67% in 2019), and CATIE’s interest is for the sum of US\$1,584 (thousands) (US\$1,573 thousands in 2019) equivalent to 13.40% (13.33% in 2018).

Fundatrópicos through an agreement with the Administrative Board and CATIE might give joint instructions so that, from the net assets of the Trust but not from its returns, payments are made to third parties that have been related to the Trust’s management.

The 8-14/XXVIII and 2-13/extraordinary meetings’ resolutions by the Administrative Board of Fundatrópicos approved allocating to CATIE 85% of the yields generated by the Trust and capitalizing the remaining 15%. CATIE recognized income amounting to US\$603 (thousands) and US\$742 (thousands) in 2020 and 2019, respectively.

## **10. PROPERTY, FURNITURE, BEARER PLANTS, EQUIPMENT AND RIGHT TO USE ASSETS - NET**

Property, furniture, bearer plants, equipment and right to use assets as of December 31, 2020, are as follows:

	<b>2020</b>				
	<b>Note</b>	<b>2019</b>	<b>Additions</b>	<b>Disposals</b>	
Historical cost:					
Lands		US\$ 455			US\$ 455
Buildings		7,033			7,033
Machinery		531	US\$ 6		537
Vehicles		1,126		US\$(25)	1,101
Office furniture and equipment		392	3	(5)	390
Residence furniture and equipment		145	1	(1)	145
Lab equipment		139			139
Computer equipment		584	23	(9)	598
Right to use building and facilities		313			313
Agriculture plantations	6	<u>465</u>	<u>57</u>	<u>(10)</u>	<u>512</u>
Sub-total		<u>11,183</u>	<u>90</u>	<u>(50)</u>	<u>11,223</u>

(Continues)

	2020				
	Note	2019	Additions	Disposals	2020
Accumulated depreciation:					
Buildings		US\$ (4,159)	US\$(142)		US\$ (4,301)
Machinery		(260)	(51)		(311)
Vehicles		(469)	(111)	US\$ 14	(566)
Office furniture and equipment		(236)	(38)	2	(272)
Residence furniture and equipment		(79)	(13)	1	(91)
Lab equipment		(64)	(14)		(78)
Computer equipment		(362)	(74)	7	(429)
Right to use building and facilities		(78)	(71)		(149)
Agriculture plantations		<u>(199)</u>	<u>(71)</u>		<u>(270)</u>
Sub-total		<u>(5,906)</u>	<u>(585)</u>	<u>24</u>	<u>(6,467)</u>
Total		<u>US\$ 5,277</u>	<u>US\$(495)</u>	<u>US\$(26)</u>	<u>US\$ 4,756</u>

Property, furniture, bearer plants, equipment and right to use assets as of December 31, 2019, are as follows:

	Note	2019				2019
		2018	Additions	Disposals	Transfers and Adjustments	
Historical cost:						
Lands		US\$ 483		US\$ (28)		US\$ 455
Buildings		6,987	US\$ 46			7,033
Machinery		530	3	(2)		531
Vehicles		1,220	57	(151)		1,126
Office furniture and equipment		369	47	(24)		392
Residence furniture and equipment		137	14	(6)		145
Lab equipment		126	14	(1)		139
Computer equipment		510	99	(25)		584
Right to use building and facilities			313			313
Agriculture plantations	6	<u>571</u>	<u>8</u>	<u>(114)</u>		<u>465</u>
Sub-total		<u>10,933</u>	<u>601</u>	<u>(351)</u>		<u>11,183</u>
Accumulated depreciation:						
Buildings		(4,017)	(142)			(4,158)
Machinery		(211)	(50)	1		(260)
Vehicles		(449)	(125)	105		(469)
Office furniture and equipment		(196)	(42)	2		(236)
Residence furniture and equipment		(65)	(14)			(79)
Lab equipment		(50)	(14)			(64)
Computer equipment		(289)	(80)	8	(1)	(362)
Right to use building and facilities			(71)		(7)	(78)
Agriculture plantations		<u>(162)</u>	<u>(76)</u>	<u>39</u>		<u>(199)</u>
Sub-total		<u>(5,439)</u>	<u>(614)</u>	<u>155</u>	<u>(9)</u>	<u>(5,906)</u>
Total		<u>US\$ 5,494</u>	<u>US\$ (13)</u>	<u>US\$(197)</u>	<u>US\$(9)</u>	<u>US\$ 5,277</u>

Donations corresponding to machinery, vehicles, furniture, and equipment were received, which amounted to the sum of US\$10 and US\$117 as of the years ended December 31, 2020 and 2019, respectively. Such donations come from the Agreement Fund, which amount to US\$62 (thousands) for 2019, from the Custody Fund, for the sums of US\$10 (thousands) and US\$56 (thousands) for 2020 and 2019, respectively. The previously mentioned transactions did not use or generate any cash.

Additions for US\$601 (thousands) during 2019 include buildings purchased through leases amounting to US\$313 (thousands). The above is the result of adopting IFRS 16 (See Note 16).

As of December 31, CATIE has the following plantations:

	<b>Number of Planted Hectares</b>	
	<b>2020</b>	<b>2019</b>
Coffee		21
Sugarcane	<u>135</u>	<u>151</u>
Total	<u>135</u>	<u>172</u>

The value of coffee and sugarcane was transferred to property, furniture, and equipment since these correspond to bearing plants based on International Accounting Standard No. 16.

During 2020, 257 coffee fanegas were harvested from the different areas of cops in the experimental farm, for a price of US\$112.86, once the estimated costs in points of sale are reduced (amount determined in the harvesting moment.)

Also, during 2020, 6,801 tons of sugarcane were harvested at a selling price of US\$35.50 per ton, they gave to Hacienda Juan Viñas, once the estimated costs in point of sale were reduced (amount determined at cutting time.)

As of December 31, 2020, 93 hectares of sugarcane are at short age.

## **11. OTHER ASSETS**

Other assets as of December 31 are as follows:

	<b>2020</b>	<b>2019</b>
Contribution certificates, Cooperativa de Productores de Leche, R.L. in colonos	US\$ 635	US\$636
Performance bond deposits lease in Bolivia, Guatemala and Peru	15	19
Performance bond deposits in El Salvador, Panama, Costa Rica and Nicaragua	15	15
Others	<u>421</u>	<u>209</u>
Total	<u>US\$1,085</u>	<u>US\$878</u>

The performance bond deposits correspond to deposits given as guarantee of several projects. During the 2018 period the Entity adopted IFRS 9: Financial Instruments (Note 15), so the milk contribution certificates are valued at fair value with changes in results; the effect of that valuation as of December 31, 2020 and 2019 is US\$30 (thousands) and US\$34 (thousands), respectively.

## **12. ACCRUED EXPENSES AND OTHER ACCOUNTS PAYABLE**

The accumulated expenses and other accounts payable as of December 31 are as follows:

	<b>2020</b>	<b>2019</b>
Miscellaneous projects	US\$ 49	US\$ 89
Withholdings	45	78
Accumulated expenses	74	70
Funds in custody	95	87
Interest payable	3	2
Security deposits - bids	18	17
Accounts payable OTN	47	42
Provision for audits	20	19
Payroll C.C.S.S	67	96
Others	<u>101</u>	<u>170</u>
Total	<u>US\$519</u>	<u>US\$670</u>

### 13. LONG-TERM DEBT

Long-term debt as of December 31 is as follows:

	<b>2020</b>	<b>2019</b>
FUNDATRÓPICOS, 3.00% interest per annum, Maturity in September 2033, in dollars, surety bonds, first 3 years only interest is paid	US\$1,000	US\$ 667
FUNDATRÓPICOS, annual interest of 6.50%, maturity in September 2023, in dollars surety bond	<u>196</u>	<u>268</u>
Sub-total	1,196	935
Less: Current portion of long-term debt	(87)	(72)
Estimate of profit from financial liability valuation	<u>(161)</u>	<u>(161)</u>
Net	<u>US\$ 948</u>	<u>US\$ 702</u>

A detail of the long-term debt maturities is as follows:

<b>Year Ended:</b>	<b>2020</b>	<b>2019</b>
Until one year	US\$ 87	US\$ 72
From one to five years	<u>948</u>	<u>702</u>
Total	<u>US\$1,035</u>	<u>US\$774</u>

To grant loans, FUNDATRÓPICOS used funds of the FUNDATROPICOS-CATIE-BCT/2014 trust.

### 14. EMPLOYEE BENEFITS

CATIE's employee benefits are defined in the staff regulations for professional international and national staff. These regulations govern not only employee's duties and rights, but also a series of benefits determined by the institutional authorities. Based on the framework about the benefits defined by CATIE, the costs of these benefits for CATIE are assessed.

#### 14.1 RECOGNITION OF YEARS OF SERVICE

CATIE operates this benefit solely for its international staff and it is estimated based on the following weeks in terms of the years of service:



<b>Years of Continuous Service</b>	<b>Weeks to be Paid</b>
02	08
03	10
04	12
05	14
06	16
07	18
08	20
09	22
10	24
11	26
12	28
13	30
14	32
15 or more	34

The present value of the liability from the recognition of the years of service is calculated in terms of the last base salary of the participants. Therefore, an increase in the salary of participants of the plan will increase the plan's liability.

There is a subsidiary ledger with individual accounts by employee. The benefit is paid at the end of the employment relationship to employees with two years of continuous service at CATIE. Total expense recognized in the comprehensive statement of activities was US\$71 (thousands) in 2019 and US\$62 (thousands) in 2019. Moreover, CATIE recognized payments and adjustments for US\$88 (thousands) in 2020 and US\$31 (thousands) in 2019.

#### **14.2 REPATRIATION AND TRAVEL TO HOME COUNTRY**

CATIE covers the following expenses at the end of the employment agreements of international professional staff:

- a. Travel expenses of the employee and dependent family members to their home country according to the airfare at the time of travel.
- b. Moving expenses of household goods up to an amount of US\$6,000.
- c. A lump sum of US\$2,750.

For this benefit, there is also a subsidiary ledger with individual accounts per employee. The benefit is paid at the end of the employment relationship to employees with two years of continuous service at CATIE. Total expense recognized in the comprehensive statement of activities was US\$101 (thousands) in 2020 and US\$97 (thousands) in 2019. Moreover, CATIE recognized payments and adjustments for US\$92 (thousands) in 2020 and US\$76 (thousands) in 2019.

#### **14.3 VACATION FOR NATIONAL STAFF**

From September to December 2016, CATIE dismissed and rehired the national staff at the main campus as part of a downsizing process thereby eliminating some employee benefits; as a result of this process, all the staff had to take the accumulated vacation days before the liquidation date, which resulted in the

labor liability balance from vacations as of December 31, 2016 to be used entirely; the balance of this benefit became a debt as of December 31, 2017 because the collective vacation days were taken at the end of the year, thereby representing an account receivable from employees for US\$0 and a labor liability for US\$24 (thousands) in 2019. In 2020, this labor liability amounts to US\$24 (thousands).

#### **14.4 SEVERANCE PAY OF NATIONAL STAFF**

The severance pay of the national staff is paid in accordance with the laws in each country. For the Costa Rican employees who are not members of the Employees' Association, CATIE transfers 5.33% of the monthly severance pay to SAFI Banco Popular and the same percentage to ASOCATIE.

For the remaining countries, CATIE monthly charges the amount of the severance pay to expenses and they are provisioned. CATIE is legally liable for this employee benefit which is recognized for each country as follows.

<b>Country</b>	<b>Calculation Method</b>
Honduras and Guatemala	Salaries earned in the last six months, or a fraction of shorter time, including overtime, salary in kind, usual bonuses, or any other salary, if any. The result is multiplied times 14 months (including 50% of the 13th and 14th month) and then divided by 12 months to obtain the average salary for the compensation.
El Salvador	One salary is recognized per each year of service or a fraction of a shorter time, with a maximum of 4 minimum salaries per year for an estimated amount of US\$251,70 in 2015, and the maximum annual compensation was US\$1,006.80.
Nicaragua	Law No.185 was approved on September 5, 1996. One month of salary for each of the first 3 years of work, and 20 days of salary for each year of work, starting on the fourth year of work. Under no circumstance, compensation will be less than one month or more than five months. Fractions between years served will be liquidated on a proportional basis.
Panama	Severance pay or the seniority bonus is calculated based on one week of salary per each year of service (1/52).

The most recent actuarial assessment of the obligation from the aforementioned benefits was conducted on December 31, 2020 and 2019 by Luis Guillermo Fernández Valverde, Mathematician-Actuary, consultant, and founding member of the Costa Rican Association of Actuaries, member No.8963.

The present value of the obligation from the aforementioned benefits and the cost of the current service and past service were measured using the credit method of the foreseen Unit.

The fair value of the employee benefits according to the results of the actuarial study and the amounts of the employee benefits of CATIE as of December 31 are as follows:

2020						
Benefit	Country	Local Currency (in Thousands)	Exchange Rate	Actuarial Value (in Thousands US\$)	Total CATIE (in Thousands US\$)	Difference (in Thousands US\$)
Staff's severance pay	Costa Rica	303.161	611	497		(497)
	Guatemala	63	8	8	76	68
	Honduras	621	24	26	11	(15)
	Nicaragua	167	1	167	97	(70)
	Panamá	33	1	33	7	(27)
	México		20		39	39
	El Salvador		1			
	<b>Subtotal</b>			<b>731</b>	<b>230</b>	<b>501</b>
Years of service and repatriation	Costa Rica	80	1	80	61	(20)
	Costa Rica	19	1	19	22	3
	<b>Subtotal</b>			<b>99</b>	<b>83</b>	<b>(17)</b>
	<b>Severance Transferred to Asocatie and SAFI</b>					<b>478</b>
	<b>Total</b>			<b>830</b>	<b>313</b>	<b>(39)</b>

2019						
Benefit	Country	Local Currency (in Thousands)	Exchange Rate	Actuarial Value (in Thousands US\$)	Total CATIE (in Thousands US\$)	Difference (in Thousands US\$)
Staff's severance pay	Costa Rica	249.751	570	438		(438)
	Guatemala	950	8	124	53	(71)
	Honduras	928	25	35	15	(20)
	Nicaragua	103	1	103	61	(42)
	Panamá	14	1	14	6	(8)
	México	0	19		48	48
	El Salvador	0	1		3	3
	<b>Subtotal</b>			<b>714</b>	<b>186</b>	<b>(528)</b>
Years of service and repatriation	Costa Rica	105	1	105	116	11
	Costa Rica	32	1	32	36	4
	<b>Subtotal</b>			<b>137</b>	<b>152</b>	<b>15</b>
	<b>Severance Transferred to Asocatie and SAFI</b>					<b>466</b>
	<b>Total</b>			<b>851</b>	<b>338</b>	<b>(47)</b>

Reconciliation of employee benefits at December 31 is as follows:

	Year 2020	Year 2019
Years of service and repatriation	US\$ 83	US\$152
Staff's severance pay	230	186
Subtotal	313	338

(Continues)

	Year 2020	Year 2019
Severance provision at foreign entities	US\$478	US\$466
Total	<u>791</u>	<u>804</u>
Balances as actuary:		
Years of service and repatriation	99	137
Staff's severance pay	<u>731</u>	<u>714</u>
Total	<u>830</u>	<u>851</u>
Net actuarial variation	<u>US\$ 39</u>	<u>US\$ 47</u>

## 15. FINANCIAL INSTRUMENTS

A summary of the main disclosures regarding CATIE's financial instruments is as follows:

### 15.1 SIGNIFICANT ACCOUNTING POLICIES

The significant accounting policies and methods approved, including the recognition criteria, the measurement basis, and the basis on which income and expenses are recognized for each type of financial asset, financial liability, and equity instrument are discussed in Note 1 to the financial statements.

### 15.2 FINANCIAL INSTRUMENT CATEGORY

The classification of financial instruments is as follows:

	2020	2019
Cash and banks and investments	US\$6,173	US\$4,896
Financial assets:		
Accounts receivable (at amortized cost)	2,013	1,796
Contribution certificates (at fair value)	<u>635</u>	<u>636</u>
Total	<u>US\$8,821</u>	<u>US\$7,328</u>
Financial liabilities at amortized cost:		
Accounts payable	US\$ 136	US\$ 102
Long - term debt	1,035	774
Financial liability for right of use	<u>185</u>	<u>255</u>
Total	<u>US\$1,356</u>	<u>US\$1,131</u>

**Reconciliation of Liabilities Derived from Financing Activities** - The table below details changes in liabilities arising from financing activities, including cash and non-cash changes:

	Balance at 31-Dec-2019	Cash		No - Cash	Balance at 31-Dec-2020
		Flows Cash Financing (*)	Cash Flows Amortization Leases (*)	Transfers From Debt	
Debt and financial liabilities	<u>US\$774</u>	<u>US\$333</u>	<u>US\$72</u>	<u>US\$</u>	<u>1,035</u>

(\*) It corresponds to the net cash flow generated in debt and other financial liabilities, correspond to new credit transactions received and depreciation made, in the period 2020.

According to the classification levels established by IFRS 7 concerning the degree to which fair values are observable in the market, cash flows are at Level 1, i.e. fair values derived from quoted (unadjusted) prices in the active market. As of December 31, 2020 and 2019, there were no assets or liabilities at fair value in Levels 2 and 3.

### 15.3 LEVERAGE RISK MANAGEMENT

CATIE manages its net asset structure to maximize funds by optimizing the fund and debt balance. The capital structure used consists of debt, cash, and funds. The leverage ratio is as follows:

	<b>2020</b>	<b>2019</b>
Loans and notes payable	US\$ 1,220	US\$ 1,029
Cash and cash equivalents	<u>(6,173)</u>	<u>(4,896)</u>
Available net cash	<u>US\$ (4,953)</u>	<u>US\$ (3,867)</u>
Net assets	<u>US\$13,903</u>	<u>US\$12,790</u>

At 31 December 2020 and 2019 the Bank is not exposed to the risk of leverage.

### 15.4 EXCHANGE RATE RISK

CATIE performs transactions denominated in foreign currency, and therefore, it is exposed to the risk of exchange rate fluctuations in the quotes of these currencies regarding the US dollar, affecting its activities, financial position, and cash flows. CATIE does not have any spread agreements to mitigate such risk.

The balances of assets and liabilities denominated in foreign currencies in thousands are as follows:

	<b>2020</b>								
	Colones	Quetzales	Lempiras	Córdobas	Euros	US Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
<b>Assets:</b>									
Cash and cash equivalents	¢ 138,900	Q3,161	L166	C\$ 737	€57	BZ\$18	RD\$2,390	BS\$1	S/0
Financial investments		500							
Accounts receivable	9,792	28							
Other assets	<u>299,820</u>								
Total assets	448,512	3,690	166	737	57	18	2,390	1	
<b>Liabilities:</b>									
Accounts payable and accrued expenses	<u>(117,897)</u>	<u>(235)</u>	<u>(539)</u>	<u>(4,831)</u>					
Net position (exposure) in thousands	<u>¢ 330,615</u>	<u>Q3,454</u>	<u>L(374)</u>	<u>C\$(4,093)</u>	<u>€57</u>	<u>BZ\$18</u>	<u>RD\$2,390</u>	<u>BS\$1</u>	<u>S/0</u>
	<b>2019</b>								
	Colones	Quetzales	Lempiras	Córdobas	Euros	US Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
<b>Assets:</b>									
Cash and cash equivalents	¢ 25.705	Q1,900	L 131	C\$ 677	€669	BZ\$18	RD\$2,872	BS\$1	S/0
Financial investments		705							

(Continues)

	2019								
	Colones	Quetzales	Lempiras	Córdoba	Euros	US Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Accounts receivable	¢ 6.220	Q 18							
Other assets	<u>324.462</u>								
Total assets	356.387	2,623	L 131	C\$ 677	€669	BZ\$18	RD\$2,872	BS\$1	
Liabilities:									
Accounts payable and accrued expenses	<u>(134.364)</u>	<u>(634)</u>	<u>(753)</u>	<u>(3,392)</u>					
Net position (exposure) in thousands	<u>¢ 222.024</u>	<u>Q1,989</u>	<u>L(623)</u>	<u>C\$(2,715)</u>	<u>€669</u>	<u>BZ\$18</u>	<u>RD\$2,872</u>	<u>BS\$1</u>	<u>S/0</u>

**Foreign Exchange Sensitivity Analysis** - The following itemization shows the sensitivity to a decrease or increase in the exchange rate, 5% is the sensitivity rate used by management and represents the best estimate of a variation in the exchange rate.

#### Sensitivity to an Increase / Decrease in the Exchange Rate -

	2020								
	Colones	Quetzales	Lempiras	Córdoba	Euros	Belize Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Net position (exposure) in thousands	<u>¢330,615</u>	<u>Q3,454</u>	<u>L (374)</u>	<u>C\$(4,093)</u>	<u>€ 57</u>	<u>BZ\$18</u>	<u>RD\$2,390</u>	<u>BS\$ 1</u>	<u>S/</u>
Closing exchange rate	<u>610.53</u>	<u>7.79</u>	<u>24.11</u>	<u>34.83</u>	<u>0.81</u>	<u>1.97</u>	<u>57.55</u>	<u>6.72</u>	<u>3.58</u>
Net position in thousands of dollars	<u>US\$ 542</u>	<u>US\$443</u>	<u>US\$(16)</u>	<u>US\$ (118)</u>	<u>US\$70</u>	<u>US\$ 9</u>	<u>US\$ 42</u>	<u>US\$</u>	<u>US\$</u>
5% increase (loss) profit	<u>US\$ 26</u>	<u>US\$ 21</u>	<u>US\$ (1)</u>	<u>US\$ (6)</u>	<u>US\$ 3</u>	<u>US\$</u>	<u>US\$ 2</u>	<u>US\$</u>	<u>US\$</u>
Decrease of 5% profit (loss)	<u>US\$ (29)</u>	<u>US\$ (23)</u>	<u>US\$ 1</u>	<u>US\$ 6</u>	<u>US\$ (4)</u>	<u>US\$</u>	<u>US\$ (2)</u>	<u>US\$</u>	<u>US\$</u>

	2019								
	Colones	Quetzales	Lempiras	Córdoba	Euros	Belize Dollar	Dominican Peso	Bolivian Peso	Peruvian Sol
Net position (exposure) in thousands	<u>¢222.024</u>	<u>Q 1,989</u>	<u>L (623)</u>	<u>C\$(2,715)</u>	<u>€ 669</u>	<u>Bz\$18</u>	<u>RD\$2,872</u>	<u>Bs 1</u>	<u>S/</u>
Closing exchange rate	<u>570.09</u>	<u>7.70</u>	<u>24.64</u>	<u>33.84</u>	<u>0.89</u>	<u>2</u>	<u>52.45</u>	<u>6.86</u>	<u>3.31</u>
Net position in thousands of dollars	<u>US\$ 389</u>	<u>US\$258</u>	<u>US\$(25)</u>	<u>US\$ (80)</u>	<u>US\$751</u>	<u>US\$ 9</u>	<u>US\$ 55</u>	<u>US\$</u>	<u>US\$</u>
5% increase (loss) profit	<u>US\$ 19</u>	<u>US\$ 12</u>	<u>US\$ (1)</u>	<u>US\$ (4)</u>	<u>US\$ 36</u>	<u>US\$</u>	<u>US\$ 3</u>	<u>US\$</u>	<u>US\$</u>
Decrease of 5% profit (loss)	<u>US\$ (20)</u>	<u>US\$ (14)</u>	<u>US\$ 1</u>	<u>US\$ 4</u>	<u>US\$ (40)</u>	<u>US\$</u>	<u>US\$ (3)</u>	<u>US\$</u>	<u>US\$</u>

## 15.5 CREDIT RISK

The financial instruments subject to the credit risk mainly include cash and cash equivalents, investments and accounts receivable.

Cash and cash equivalents and investments are held in strong financial institutions and pose a minimum risk. The credit risk in the accounts receivable is deemed high because payments of member country fees entail significant political factors. CATIE monitors past-due balances and performs a valuation and recording of the allowance for losses of its accounts receivable.



A description of aged fees is shown in Exhibit 2 of the supplementary information.

The credit risk refers to the risk that a counterparty fails to meet its contractual obligations, thus resulting in financial losses for CATIE. As of December 31, 2020 CATIE's maximum exposure to the credit risk without taking into account any guarantees held or other credit improvements, which would cause a financial loss due to noncompliance with an obligation by counterparties, and the financial guarantees provided arise from:

- The carrying amount of the respective financial assets recognized as indicated in the statement of financial position; and
- The maximum amount that CATIE would have to pay if the financial guarantee is requested, regardless of the probability that the guarantee will be exercised. The related allowance for losses is described in Note 6.

CATIE's exposure is continuously monitored and the added value of concluded transactions is allocated between approved counterparties.

CATIE's current credit risk classification framework comprises the following categories:

<b>Category</b>	<b>Description</b>	<b>Bases for the Recognition of Expected Credit Losses</b>
Realizable	The counterparty has a low risk of non-compliance and has no amount overdue by 12 months	12-month. Expected credit losses.
Doubtful account	The amount is overdue by more than 30 days or there has been a significant increase in the credit risk since initial recognition	Expected lifetime credit loss - no credit impairment.
In default	The amount is overdue by more than 90 days or there is evidence that the asset has credit impairment	Expected lifetime credit loss - credit impairment.
Derecognition	There is evidence that the debtor is in serious financial difficulties and that the Company has a realistic prospect of recovery.	The amount is derecognized.

For receivables, the Company has applied the simplified approach in IFRS 9 to measure the estimate for losses on the expected lifetime credit loss. The Company determines the expected credit losses on these items using a provision matrix, estimated based on historical credit loss experience based on the debtors' overdue status, adjusted as appropriate to reflect current conditions and estimates of future economic conditions. Accordingly, the credit risk profile of these assets is presented based on their expired status in terms of the provisioning matrix.

As of December 31, 2020, the concentration of CATIE receivables is presented in the Member Country Contributions (see Annex 2), which represent approximately 71% of the total receivables.

In general, the concentration of credit risk is limited due to the low amount of living receivables. CATIE has a policy of providing credit to its commercial customers. Management constantly monitors receivables to reduce non-payment of these balances. CATIE constantly monitors the credit capacity of its customers, adjusting credit policies as needed. Also, CATIE maintains an estimate for bad accounts based on the expected recoverability of all of its receivables.

## 15.6 LIQUIDITY RISK

The management of CATIE manages the liquidity risk by keeping adequate cash reserves. Moreover, CATIE constantly monitors its cash flows and the matched maturity analysis, which pays a timely attention to the short-term and medium-term obligations. CATIE prepares an annual budget and gives a constant follow up to the cash balances.

The foreseen recovery of financial assets as of December 31, 2020 is as follows:

Financial Assets	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing instruments	Between 0.01% and 4%	US\$5,676	US\$ 83	US\$ 414		US\$6,173
Non interest-bearing instruments		<u>715</u>	<u>280</u>	<u>1,018</u>	<u>US\$635</u>	<u>2,648</u>
Total		<u>US\$6,391</u>	<u>US\$363</u>	<u>US\$1,432</u>	<u>US\$635</u>	<u>US\$8,821</u>

The scheduled payments of the financial liabilities as of December 31, 2020 are as follows:

Financial Liabilities	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing obligations	Between 6% and 7.75%	US\$13	US\$ 38	US\$103	US\$1,066	US\$1,220
Non interest-bearing obligations		<u>11</u>	<u>125</u>			<u>136</u>
Total		<u>US\$24</u>	<u>US\$163</u>	<u>US\$103</u>	<u>US\$1,066</u>	<u>US\$1,356</u>

The foreseen recovery of financial assets as of December 31, 2019 is as follows:

Financial Assets	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing instruments	Between 0.01% and 4%	US\$4,543		US\$353		US\$4,896
Non interest-bearing instruments		<u>781</u>	<u>US\$544</u>	<u>471</u>	<u>US\$636</u>	<u>2,432</u>
Total		<u>US\$5,324</u>	<u>US\$544</u>	<u>US\$824</u>	<u>US\$636</u>	<u>US\$7,328</u>

The scheduled payments of the financial liabilities as of December 31, 2019 are as follows:

Financial Liabilities	Effective Rate	Less than 1 Month	From 1 to 3 Months	From 3 Months to 1 Year	More than 1 Year	Total
Interest-bearing obligations	Between 6% and 7.75%	US\$12	US\$ 35	US\$92	US\$890	US\$1,029
Non interest-bearing obligations		<u>9</u>	<u>93</u>			<u>102</u>
Total		<u>US\$21</u>	<u>US\$128</u>	<u>US\$92</u>	<u>US\$890</u>	<u>US\$1,131</u>

## 15.7 INTEREST RATE RISK

CATIE has loan obligations that generate fixed interest rates; therefore, it is not subject to fluctuating interest rates.

## 15.8 FAIR VALUE OF FINANCIAL INSTRUMENTS

The estimates of the market fair value are carried out at a specific period of time and are based on relevant market information and information related to the financial instruments. These estimates do not reflect any premium or discount that might result from selling a financial instrument at a given period.

The fair value of financial instruments traded in active markets is estimated based on market price quotations on the dates of the financial statements.

The fair value of the financial instruments not traded in active markets is based on valuation techniques and assumptions based on the market conditions on the dates of the financial statements.

These estimates are subjective and, by nature, they entail uncertainty and a lot of judgment; therefore, they cannot be determined accurately. Any changes to the assumptions and criteria might affect these estimates.

The accounts receivable and payable are assets and liabilities that were not derived from determined or fixed payments and are not quoted in an active market. It is assumed that their carrying amount, less the allowance for impairment, if any, is close to their fair value.

The market value of short-term financial assets and liabilities is close to their carrying amount, mainly due to their maturity.

The methods and assumptions used by CATIE to determine the market fair value of the financial instruments are as follows:

- a. **Cash, Cash Equivalents and Temporary Investments** - The carrying amount of these assets is close to their fair value due to their current nature.
- b. **Accounts Receivable and Payable** - The carrying amount of the financial liabilities in less than one year is close to their fair value due to their short-term nature. CATIE carries out estimates for accounts receivable at their fair value.
- c. **Long-Term Debt** - The estimated fair value of loans payable is estimated based on the discounted amount of the future estimated cash flows. The loan rates are set at market values; therefore, their carrying amount is close to their fair value.

## 16. LEASES

As of December 31, 2019, CATIE has the following leases and the respective assets have been capitalized as lease equipment in accordance with IFRS 16:

Leases of buildings with Fundación Ciudad del Saber., Ministry of Agriculture and Livestock of Nicaragua and Inmobiliaria Megaterra, S.A. The main terms of these lease agreements are as follows:

- a. Agreements have terms ranging from 48 to 108 months.
- b. CATIE absorbs all risks and benefits related to the ownership and use of the properties.
- c. The buildings are located in Panama, Nicaragua and Guatemala.

Leases are detailed below:

	<b>2020</b>	<b>2019</b>
In dollars, a rate of 8.50% per annum, maturity between December 2021 and September 2023	<u>US\$185</u>	<u>US\$255</u>
Subtotal	185	255
Current portion of financial leases	<u>(67)</u>	<u>(67)</u>
Long-term financial leases	<u>US\$118</u>	<u>US\$188</u>

A reconciliation of the future minimum payments associated with these agreements is shown below:

<b>Year Ended on</b>	<b>2020</b>	<b>2019</b>
December 31, 2020		US\$ 67
December 31, 2021	US\$ 74	77
December 31, 2022	79	79
December 31, 2023	8	8
December 31, 2024	8	8
December 31, 2025	8	8
December 31, 2026	<u>8</u>	<u>8</u>
Total	<u>US\$185</u>	<u>US\$255</u>

## 17. OPERATING EXPENSES

According to their functional classification, as of December 31 expenses are detailed below:

	<b>2020</b>	<b>2019</b>
Higher Guidelines, Administrative and Finance and Strategic Services (Institutional Support)	US\$ 1,872	US\$ 2,531
Research Division (Research)	7,350	9,212
Education Division (Teaching)	2,409	2,763
Administrative and Finance Department - Commercial Component (Subsidiary Companies)	1,961	2,413
External Projection Division (Projection)	<u>4,490</u>	<u>4,414</u>
Total	<u>US\$18,082</u>	<u>US\$21,333</u>

## 18. DISBURSEMENTS SUBJECT TO APPROVAL

Some grant agreements entered into with international organizations, detailed in Exhibit 5 of the supplementary information, stipulate that disbursements for agreed-upon programs executed with grant funds are subject to approval or rejection by those organizations, depending on compliance with the terms of each agreement.

As of December 31, 2020 and 2019, CATIE's management is not aware of any amount of disbursements subject to reimbursement that have already been rejected by any donors.

## **19. CONTRACTUAL STATUS OF CATIE**

On September 12, 2000, under Law No.8028, the Costa Rican Legislative Assembly ratified the articles of incorporation of CATIE entered into among the Government of Costa Rica, the Inter-American Institute for Cooperation on Agriculture (IICA) and CATIE. The most significant terms of this Law are as follows:

- a. The Inter-American Board of Agriculture will be the highest governing body of CATIE.
- b. CATIE's members may be regular or special. The regular members will be IICA, the Government of Costa Rica, and the Governments of the remaining member countries of IICA. Special members will include international governmental and non-governmental organizations, international centers, and private organizations with similar purposes as those of CATIE.
- c. IICA will contribute up to a maximum of 5% of IICA fees budget to CATIE's basic budget. The contribution made by IICA in 2020 and 2019 was US\$853 (thousands) and US\$1,000 (thousands). Each member country of CATIE will annually contribute with no less than US\$50 (thousands) to cover CATIE's expenses.
- d. The agreement will be for a 20-year term as of the effective date and may be renewed for equal consecutive terms.

CATIE's equity consists of: i) the usufruct for the entire term of the articles of incorporation, for the equity consisting of lands, buildings, equipment, and other real and personal property contributed by IICA, plus improvements thereof, ii) all assets CATIE has acquired or will acquire in the future.

- e. Upon termination of the contract, all usufruct property as well as improvements thereof, will be returned to IICA. The remaining assets will be distributed between IICA, the Government of Costa Rica, and regular active members based on contributions made.

## **20. TAXES**

Since CATIE is a not-for-profit international organization, it is exempted of any type of taxes, contributions, and national and municipal rates, whether present or future ones, as well as of any fees regarding customs, national licenses ("patentes"), and other.

## **21. RELEVANT AGREEMENTS AND LAWSUITS**

As of December 31, 2020 and 2019, a complaint was filed against CATIE, which is based on the administrative decisions considered by CATIE as illegal, issued in the Administrative Penalizing Procedure for the Termination of Contract CENTA No.02/2014

"Consultancy Services on Social Forestry" from the public call for proposals CENTA-FANTELE No.03 /2014, in El Salvador, on the grounds of expiration, through which CATIE's administrative accountability was established, the execution of a performance bond for about US\$16,000 (sixteen thousand dollars), legal currency of the United States of America, is ordered.

In addition, as a result of the complaint, CATIE is currently disqualified from participating in competitive biddings in that country for a term of five (05) years, starting on January 6, 2016 and ending on January 6, 2021, a term soon to expire.

As part of the lawsuit, a provisional remedy was requested to suspend such administrative decisions, which was denied, and currently CATIE's Special Agent filed a motion to reconsider such a decision, which is pending resolution.

## **22. RELEVANT AND SUBSEQUENT FACTS**

In February 2019, the World Health Organization (WHO) disclosed the existence of the infectious disease COVID-19, caused by SARS-CoV-2, following an outbreak in the city of Wuhan, China. As of 29 March 2020, cases of infection have been confirmed in more than 175 countries around the world.

Like some countries that have taken similar measures to mitigate the effects of COVID-19, on March 16, 2020, the President of Costa Rica Carlos Alvarado Quesada declared a yellow alert throughout the country, thus establishing a series of measures through Executive Order #42227, which states, among other aspects, the declaration of a National State of Emergency, the prevention of the arrival of foreigners, and the suspension of classes at all schools in the country.

For the rest of the countries where CATIE operates through representatives and liaisons, they have been ordered to respect the health measures decreed by the Ministries of Health of each country. Officials have been allowed to do remote work as a protective measure; it is important to point out that in countries where governments have not decreed drastic measures, CATIE has instructed representatives and liaisons to take all necessary forecasts such as those taken in Costa Rica.

In compliance with the measures decreed by the government, CATIE created an Emergency Committee coordinated by the Deputy Director General of CATIE with the participation of heads of the different areas. This committee is responsible for the interpretation and compliance of the Health and Safety protocols recommended by the Government, including the restricted access of people to the campus; the decision was made to allow officials to choose for the option of remote work, a reduction of 25% of the working day was administratively assessed, besides the reduction of salaries for three months, but according to the progress of the pandemic, further drastic measures could be taken regarding working hours, which could reach a 50% reduction. As a last resort if the crisis worsens or if it is not clear when all activities can be resumed, staff could be dismissed and staff in key positions could be recruited again for the basic support of the institution.

The following measures have been recommended: Social distancing, virtual meetings, use of masks in the most vulnerable positions, and daily monitoring of temperature for all people entering the campus. Different communication materials have been developed, i.e., infographics, emails, videos, availability of contacts to answer to queries.



The above-mentioned committee meets at least once a week to assess the impact of the measures that have been implemented and to establish new protection measures. Minutes are taken on these meetings for the specific follow-up of the agreements. With respect to countries, country coordinators have made decisions according to the measures made by each government, and they are informed to the headquarters; for example; some projects have modified their field activities by products that can be carried out at a desk (reports) and the use of communication technologies to comply with the provisions of the agreements.

At a management and finance level, an agreement was entered into with the international professional staff to reduce 25% of their contract for a three-month term as of April to alleviate the financial crisis to be faced by the institution. Moreover, in collaboration with the representative workers' body, i.e., the Permanent Workers' Committee (CPT), an agreement was entered into to reduce the working hours by 25% for a three-month term as of May.

With regard to the implementation of the agreements that CATIE has entered into, no donors so far have expressed the intention of reducing the budget for the implementation of projects during this pandemic, and in accordance with the instructions given to each project leader and representative in the countries, the projects are being implemented on a regular basis by changing field activities which would be carried out after the emergency. At present, all project tasks that do not require field work are being carried out.

The measures taken for these initial months were reducing working hours, amount to about US\$415,000. In terms of liquidity, the cash flow is monitored on a daily basis to analyze future cash requirements. The Board of Directors of Fundatrópico issued a resolution to obtain funds of up to 30% of the total trust managed by Banco BCT. Therefore, the expenses to be made by CATIE would be supported by this resolution.

Financially and in accordance with the analysis and other measures that may be taken in the event of further spread of the pandemic, CATIE hopes not to end this period at a loss.

The financial measures taken with respect to COVID-19 by the administration, which were extended until December 31, 2020, had excellent results that allowed the Institution to finish the year without borrowing and have a positive closure in its states financial

For 2021, CATIE decided to return to normality by paying 100% of the salary to all employees, a measure that will be evaluate at the end of the first six months of the year. As soon as the measures are maintained, teleworking is maintained until the country's sanitary conditions allow it to return to normal.

## **23. APPROVAL OF THE FINANCIAL STATEMENTS**

The financial statements have been approved by CATIE's management, and their issue has been authorized for June 15, 2021.

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**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**AS OF DECEMBER 31, 2020**

**SUPPLEMENTAL FINANCIAL INFORMATION**

**EXHIBIT 1:** Statement of fees of member countries and IICA.

**EXHIBIT 2:** Ageing analysis of pending fees from member countries and IICA.

**EXHIBIT 3:** Budget and execution of income by fund and source.

**EXHIBIT 4:** Budget and execution of expenses by fund and source.

**EXHIBIT 5:** Statement of financial position of agreement funds and funds in custody.

**EXHIBIT 6:** Execution of expenses by fund, division and expense purpose.

## TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER (CATIE)

STATEMENT OF FEES OF MEMBER COUNTRIES AND IICA  
YEAR ENDED DECEMBER 31, 2020

(Expressed in Thousands of U.S. Dollars)

	Fees Receivable at the Beginning of Year	Fees for the Year	Fees Collected During the Year			Fees Collected During the Year		
			Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year	Fees Collected During the Year
Inter-American Institute for Cooperation on Agriculture (IICA)		US\$ 853		US\$ 853	US\$ 853			
Regular Members -								
Government of Bolivia	US\$ 770	50				US\$ 770	US\$ 50	US\$ 820
Government of Colombia	461		US\$141		141	320		320
Government of Costa Rica		50		50	50			
Government of Guatemala		50		50	50			
Government of Honduras	254	50	123		123	131	50	181
Government of Panamá		50		50	50			
Government of Nicaragua	35	50	21	36	57	14	14	28
Government of El Salvador		50					50	50
Government of República Dominicana		50					50	50
Government of México		50		50	50			
Government of Paraguay	800	50				800	50	850
Government of Belice	200	50				200	50	250
Government of Venezuela	500	50				500	50	550
Total	<u>US\$3,020</u>	<u>US\$1,453</u>	<u>US\$285</u>	<u>US\$1,089</u>	<u>US\$1,374</u>	<u>US\$2,735</u>	<u>US\$364</u>	<u>US\$3,099</u>

\* \* \* \* \*

**TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER (CATIE)****AGEING ANALYSIS OF PENDING FEES FROM MEMBER COUNTRIES AND IICA  
YEAR ENDED DECEMBER 31, 2020**

(Expressed in Thousands of U.S. Dollars)

	<b>Años 1979-2009</b>	<b>Año 2010</b>	<b>Año 2011</b>	<b>Año 2012</b>	<b>Año 2013</b>	<b>Año 2014</b>	<b>Año 2015</b>	<b>Año 2016</b>	<b>Año 2017</b>	<b>Año 2018</b>	<b>Año 2019</b>	<b>Año 2020</b>	<b>Total</b>
IICA													
Government of Bolivia	US\$ 270	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 50	US\$ 820
Government of Colombia	(80)	50	50	50	50	50	50	50	50				320
Government of Costa Rica	(57)	29	28										
Government of El Salvador	(350)			50	50	50	50	50	50	50		50	50
Government of Guatemala	(300)	50	50	50	50	50	50	50	50				
Government of Honduras	(269)			50	50	50	50	50	50	50	50	50	181
Government of Nicaragua	(126)	14	14	14	14	14	14	14	14	14	14	14	28
Gobierno de República Dominicana	(400)	50	50	50	50	50	50	50	50			50	50
Government of Belice	(200)			50	50	50	50	50	50	50	50	50	250
Government of Venezuela		50	50	50	50	50	50	50	50	50	50	50	550
Government of Paraguay	300	50	50	50	50	50	50	50	50	50	50	50	850
Government of México	(150)							50	50	50			
Total	<u>US\$(1,362)</u>	<u>US\$343</u>	<u>US\$342</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$464</u>	<u>US\$364</u>	<u>US\$264</u>	<u>US\$364</u>	<u>US\$3,099</u>

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**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**BUDGET AND EXECUTION OF INCOME BY FUND AND SOURCE  
YEAR ENDED DECEMBER 31, 2020**

(Expressed in Thousands of U.S. Dollars)

Income Sources	Basic Fund		
	Budget	Execution	Balance
Member Fees:			
IICA	US\$1,000	US\$ 853	US\$ (147)
Member countries	<u>600</u>	<u>600</u>	<u>        </u>
Sub-total	<u>1,600</u>	<u>1,453</u>	<u>(147)</u>
Trusts:			
Fundatrópicos (COSUDE)	386	265	(122)
Fundatrópicos (USAID)	<u>271</u>	<u>338</u>	<u>67</u>
Sub-total	<u>657</u>	<u>603</u>	<u>(54)</u>
Administration & Finance Division (DAF):			
Administration component	68	233	165
Treasury	25		(25)
Recovery of taxes	25	28	3
Work orders (maintenance)	11	18	7
Recovery of general services		(76)	(76)
Contribution of services	313		(313)
Overhead Funds in custody DAF	1	1	
Other Income	<u>1</u>	<u>134</u>	<u>133</u>
Sub-total	<u>444</u>	<u>337</u>	<u>(107)</u>
Commercial component:			
Overhead for funds in custody commercial	6	11	5
Contributions of commercial farms	<u>274</u>	<u>        </u>	<u>(274)</u>
Sub-total	<u>280</u>	<u>11</u>	<u>(269)</u>
Sub-total	<u>2,981</u>	<u>2,404</u>	<u>(577)</u>
Technical Programs:			
Forestry, biodiversity, and climate change program (PBBYC)	100	74	(26)
Agriculture, livestock, and agro-forestry program (PRAGA)	620	251	(369)
Research Program Development Economics Environment	<u>133</u>	<u>259</u>	<u>127</u>
Sub-total	<u>853</u>	<u>584</u>	<u>(269)</u>
Education Division:			
Master's tuition	564	377	(187)
PhD's tuition	17	28	11
Overhead for professional master's degrees	254	75	(180)
Short course tuition	35	36	1

(Continues)

Income Sources	Basic Fund		
	Budget	Execution	Balance
Exchange students	US\$ 5	US\$ 4	US\$ (1)
Biostatistics unit	8	20	12
Library	24	40	16
Graduation fees	13		(13)
Graduation tests		35	35
Sub-total	<u>12</u>		<u>(12)</u>
Outreach Division:			
Recovery of indirect costs USAID	194	181	(13)
Overhead national technical offices	<u>131</u>	<u>91</u>	<u>(40)</u>
Sub-total	<u>325</u>	<u>271</u>	<u>(52)</u>
Total	<u>5,091</u>	<u>3,875</u>	<u>(1,215)</u>

#### Commercial Fund

Administration & Finance Division (DAF):			
Administration component:			
Transportation	US\$ 245	US\$ 88	US\$ 157
Information technology	<u>260</u>	<u>296</u>	<u>36</u>
Sub-total	<u>505</u>	<u>384</u>	<u>(121)</u>
Commercial component:			
Seed orchard	40	29	(11)
Seed bank	297	160	(137)
Rooting of coffee stem cuttings	10	32	22
Lodging and hotel services	645	552	(93)
Laundry	25	18	(8)
Souvenir store	63	24	(39)
Coffee plantation		10	10
Sugarcane plantation	200	265	65
Finca Lechería	558	556	(2)
Livestock farm	5	31	26
Forest plantation	<u>10</u>	<u>13</u>	<u>3</u>
Sub-total	<u>1,853</u>	<u>1,689</u>	<u>(164)</u>
Total	<u>2,358</u>	<u>2,073</u>	<u>(285)</u>

#### Agreement Fund

Green and Inclusive Research and Development Division (DIDVI):			
Green and inclusive research and development division	US\$ 1,438	US\$ 821	US\$ (567)
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	6,876	2,864	(4,012)
Economic and Environmental Research and Development Program	<u>1,471</u>	<u>2,379</u>	<u>900</u>
Sub-total	<u>9,785</u>	<u>6,105</u>	<u>(3,680)</u>

(Continues)

	<b>Agreement Fund</b>		
<b>Outreach Division:</b>			
PRCC-UICN operations support	US\$ 140	US\$ 487	US\$ 347
National Office Guatemala	103	74	(29)
National Office Honduras	17		(17)
National Office El Salvador	752	1,510	758
National Office Nicaragua	479	823	344
National Office Panamá		40	40
National Office Dominicana	173	218	45
National Office Perú	42		(42)
National Office Belice	<u>1,706</u>	<u>3,152</u>	<u>1,446</u>
Sub-total	140	487	347
<b>Managed Projects:</b>			
National Office Guatemala	<u>                    </u>	<u>686</u>	<u>686</u>
Sub-total	<u>                    </u>	<u>686</u>	<u>686</u>
Total	<u>11,491</u>	<u>9,943</u>	<u>(1,543)</u>
	<b>Fund in Custody</b>		
<b>Administration &amp; Finance Division (DAF)</b>			
Basic services	US\$ 6	US\$ 22	US\$ 16
Human development	3		(3)
Concessions	25	7	(18)
International fair	105		(105)
NRDC - Commercial Farm	20	5	(15)
DCO Investment Fund	<u>1</u>	<u>13</u>	<u>12</u>
Sub-total	<u>160</u>	<u>47</u>	<u>(113)</u>
<b>Strategic Services:</b>			
Specific Fund Managed	123	163	40
Communication and Advocacy unit	<u>100</u>	<u>87</u>	<u>(13)</u>
Sub-total	<u>223</u>	<u>250</u>	<u>27</u>
<b>Technical Programs:</b>			
Forestry, biodiversity, and climate change program (PBBByC)	175	330	155
Agriculture, livestock, and agro-forestry program (PRAGA)	797	859	62
Economic and environmental research and development program	<u>225</u>	<u>593</u>	<u>368</u>
Sub-total	<u>1,197</u>	<u>1,782</u>	<u>585</u>
<b>Education Division:</b>			
Scholarship funds	644	700	56
Scholarship funds and loans	55	7	(48)
Educational services	24	45	(21)
Master in sustainable tourism	60	35	(25)
Practical master in development	21	4	(18)
Online Education	277	240	(37)
Training unit	350	464	114

(Continues)



	<b>Fund in Custody</b>		
Biostatistics unit	<u>US\$ 60</u>	<u>US\$ 30</u>	<u>US\$ (30)</u>
Sub-total	<u>1,492</u>	<u>1,524</u>	<u>32</u>
Outreach directorate and Revolving Fund			
National Office - Guatemala	105	103	(2)
National Office - Honduras	38	1	(37)
National Office - El Salvador	40	4	(36)
National Office - Nicaragua	50	75	25
National Office - Panamá	<u>105</u>	<u>101</u>	<u>(3)</u>
Sub-total	<u>338</u>	<u>284</u>	<u>(53)</u>
TOTAL	<u>3,410</u>	<u>3,887</u>	<u>478</u>
TOTAL BUDGET AND EXECUTION	<u>US\$22,350</u>	<u>US\$19,779</u>	<u>US\$(2,564)</u>

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**TROPICAL AGRICULTURAL RESEARCH AND  
HIGHER EDUCATION CENTER (CATIE)**

**BUDGET AND EXECUTION OF EXPENSES BY FUND AND SOURCE  
YEAR ENDED DECEMBER 31, 2020**

(Expressed in Thousands of U.S. Dollars)

Sources of Expenses	Basic Fund		
	Budget	Execution	Balance
Top Guidelines (DSU):			
General directorate	US\$ 359	US\$ 300	US\$ 59
General sub-directorate	16		16
Board of Directors	85	20	65
High Council	26	1	25
Internal audit	89	66	23
The Tropic Fundation		16	(16)
Strategic planning	25	32	(7)
Sub-total	<u>600</u>	<u>436</u>	<u>164</u>
Administration & Finance Division (DAF):			
Administration component			
Finance and accounting	336	293	43
External audit	36	37	(1)
Human development	183	135	49
General services and production	31	27	5
Surveillance services	197	193	4
Maintenance	242	178	64
Integrated waste management	1		1
Concierge services	61	43	18
Sub-total	<u>1,088</u>	<u>906</u>	<u>182</u>
Commercial component:			
La Lola Farm	21	15	6
Plant genetics collections	80	65	15
Biotechnology laboratory	13	11	2
Sub-total	<u>113</u>	<u>91</u>	<u>23</u>
Sub-total	<u>1,201</u>	<u>996</u>	<u>205</u>
Strategic Services:			
Legal services	47	43	4
Communication and Advocacy unit	135	85	49
Development and outreach office	37	7	30
Strategic alliance office	56	59	(3)
Planning, Monitoring and Evaluation Office	127	134	(7)
Sub-total	<u>401</u>	<u>328</u>	<u>73</u>
Green and Inclusive Research and Development Division (DIDVI):			
Green and inclusive research and development division	426	235	190
Forestry, biodiversity, and climate change program (PBBYc)	394	185	209

(Continues)

Sources of Expenses	Basic Fund		
	Budget	Execution	Balance
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	US\$ 150	US\$ 125	US\$ 25
Sub-total	<u>969</u>	<u>545</u>	<u>425</u>
Education Division:			
Education directorate	258	296	(39)
Fundatrópicos scholarships	125	87	38
Professors technical departments	376	321	56
Educación Virtual		17	(17)
Orton Library	50	94	(44)
Biostatistics unit	<u>91</u>	<u>107</u>	<u>(16)</u>
Sub-total	<u>900</u>	<u>923</u>	<u>(23)</u>
Outreach Division:			
Membership contributions	40	29	11
National Office - Mexico	24	35	(11)
National Office - Guatemala	56	39	17
National Office - Honduras	19	16	3
National Office - El Salvador	40	32	7
National Office - Nicaragua	3	4	(1)
National Office - Panamá	47	44	2
National Office - Dominican Rep.	24	11	13
National Office - Brazil	29	30	(1)
National Office - Perú	34		34
National Office - Paraguay	3		3
National Office - USA	2	17	(15)
National Office - Ecuador	<u>338</u>	<u>275</u>	<u>64</u>
Sub-total	40	29	11
Other Budget Items:			
Reimbursement for vacation		(15)	15
Colombia Payment Agreement		62	(61)
República Dominicana Payment Agreement		56	(55)
Operating Reserve	<u>681</u>		<u>681</u>
Sub-total	<u>681</u>	<u>104</u>	<u>579</u>
Total	<u>5,091</u>	<u>3,606</u>	<u>1,487</u>

### Comercial

#### Administration & Finance Division (DAF):

##### Administration component:

Information technology	US\$ 257	US\$ 245	US\$ 13
Transportation	<u>169</u>	<u>84</u>	<u>85</u>
Sub-total	<u>426</u>	<u>329</u>	<u>97</u>

##### Commercial component:

Lodging and hotel services	431	229	202
Laundry	24	15	9
Coffee plantation		1	(1)
Sugarcane plantation	184	307	(123)

(Continues)

	<b>Comercial</b>		
Forest plantation	US\$ 17	US\$ 7	US\$ 10
Livestock farm	1	24	(23)
General dairy industry	329	473	(144)
Seed bank	233	246	(13)
Seed orchard	40	29	11
Rooting of coffee stem cuttings	10	33	(23)
Souvenir store	<u>58</u>	<u>21</u>	<u>38</u>
Sub-total	<u>1,329</u>	<u>1,385</u>	<u>(56)</u>
Total	<u>1,755</u>	<u>1,714</u>	<u>(41)</u>

	<b>Agreement Fund</b>		
Green and Inclusive Research and Development Division (DIDVI):			
Forestry, Biodiversity, and Climate Change Program (PBBYC)	US\$ 1,612	US\$ 854	US\$ 758
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	2,777	2,350	417
Economic and Environmental Research and Development Program (PIDEA)	<u>5,386</u>	<u>2,066</u>	<u>3,320</u>
Sub-total	<u>9,775</u>	<u>5,270</u>	<u>4,505</u>
Outreach Division:			
Regional climate change program	1,000	1,997	(997)
National Office Guatemala	386	849	(463)
National Office Honduras	160	158	2
National Office Nicaragua	150	492	(342)
National Office Panama	5		5
National Office Dominican Rep.	10	3	7
State of Bolivia	<u>1,716</u>	<u>3,504</u>	<u>(1,788)</u>
Sub-total	1,000	1,997	(997)
Managed Projects:			
National Office Guatemala	<u>          </u>	<u>454</u>	<u>(454)</u>
Sub-total	<u>          </u>	<u>454</u>	<u>(454)</u>
Total	<u>11,491</u>	<u>9,228</u>	<u>2,263</u>

	<b>Agreement Fund</b>		
Administration & Finance Division (DAF):			
Administration component:			
Basic services	US\$ 6	US\$ 3	US\$ 3
Human development	3		3
Infrastructure	25	1	24
NRDC commercial farm	105	5	100
Concessions	20	6	14
International fair	<u>1</u>	<u>          </u>	<u>1</u>
Sub-total	<u>160</u>	<u>14</u>	<u>146</u>
Strategic Services:			
Management of specific funds	100	231	(131)

(Continues)

	<b>Agreement Fund</b>		
Communication and Advocacy unit	<u>US\$ 100</u>	<u>US\$ 44</u>	<u>US\$ 56</u>
Sub-total	<u>200</u>	<u>275</u>	<u>(75)</u>
Green and Inclusive Research and Development Division (DIDVI):			
Green and Inclusive Research and Development Division (DIDVI)	221	347	(126)
Forestry, Biodiversity, and Climate Change Program (PBBYC)	715	740	(26)
Agriculture, Livestock, and Agro-Forestry Program (PRAGA)	<u>284</u>	<u>427</u>	<u>(143)</u>
Sub-total	<u>1,220</u>	<u>1,515</u>	<u>(295)</u>
Education Division:			
Scholarship funds	511	646	(135)
Scholarship funds and loans	50	19	30
Educational services	33	37	(5)
Master in sustainable tourism	12	39	(27)
Practical master in development		5	(5)
Online Education	277	242	35
Training unit	483	489	(6)
Biostatistics unit	<u>127</u>	<u>8</u>	<u>119</u>
Sub-total	<u>1,492</u>	<u>1,485</u>	<u>7</u>
External Projection Division:			
National Office - Guatemala	106	17	89
National Office - Honduras	15		(15)
National Office - El Salvador	19	20	(1)
National Office - Nicaragua	90	90	
National Office - Panamá	<u>108</u>	<u>118</u>	<u>(10)</u>
Sub-total	<u>338</u>	<u>245</u>	<u>93</u>
TOTAL	<u>3,410</u>	<u>3,534</u>	<u>(124)</u>
TOTAL BUDGET AND EXECUTION	<u>US\$21,747</u>	<u>US\$18,082</u>	<u>US\$ 3,667</u>

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## TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER (CATIE)

SUMMARY OF INCOME AND EXPENSES IN AGREEMENT FUNDS  
YEAR ENDED DECEMBER 31, 2020  
(Expressed in Thousands of U.S. Dollars)

Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2019		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2020	
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
2	010	003	DH92	1	Instituto Nacional de Investigación Agropecuaria (INIA) de Uruguay	2				21	11		8
2	011	008	DA50	2	The Center for International Forestry Research	1		1					
2	011	009	DA51	3	The Center for International Forestry Research		196			455	418		234
2	013	036	DE40	4	Banco Internacional de Desarrollo	32				129	98		
2	014	003	DG28	5	Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement					63	65		31
2	014	006	DF33	7	CIRAD- PROYECTO STRADIV					14	13		1
2	014	007	DC30	8	CIRAD-INTENSIFICACION FORESTAL Y ECOLOGICA					2			2
2	019	007	GG14	10	Agencia Suiza para el Desarrollo y la Cooperación		1,773			1,500	1,995		1,277
2	028	005	DG65	13	Fundecooperación para el Desarrollo Sostenible					(1)			
2	029	003	DG47	14	Centre for Agricultural Bioscience International					67	74		2
2	033	013	DC39	15	Agencia de Cooperación Alemana						1		
2	033	014	DH97	16	Cooperación Alemana al Desarrollo					23	49	US\$26	
2	033	015	DL02	17	Cooperación Alemana al Desarrollo					22	1		21
2	041	001	DF03	18	Bioversity International								
2	041	009	DF34	19	Bioversity International		10			120	126		3
2	043	013	DE49	20	Programa de las Naciones Unidas para el Medio Ambiente		45			67	76		37
2	043	018	GI17	21	Oficina de las Naciones Unidas de Servicios para Proyectos	3				21	19		
2	043	019	GI18	22	Programa de las Naciones Unidas para el Desarrollo								
2	043	020	DG72	23	The United Nations Industrial Development Organization	15				127	85		27
2	043	021	DI93	24	Programa de las Naciones Unidas para el Desarrollo					89	48		40
2	043	022	DI96	25	Programa de las Naciones Unidas para el Desarrollo								
2	043	024	DG78	26	Programa de las Naciones Unidas para el Desarrollo					31	155		
2	043	026	GT02	27	Programa de las Naciones Unidas para el Desarrollo								
2	043	027	GQ04	28	Programa de las Naciones Unidas para el Desarrollo								
2	075	002	DG71	30	Lutheran World Relief					94	94		1
2	075	003	DG75	31	Lutheran World Relief						1		
2	082	011	GA28	33	Unión Europea								
2	082	012	GD28	34	Unión Europea								
2	082	013	DG76	35	Unión Europea								
2	084	017	DG57	36	United States Department of Agriculture								
2	084	019	DG61	38	United States Department of Agriculture								
2	095	100	DG63	40	EARTHCORP de Costa Rica Foundation								
2	104	009	DC28	42	University of Gothenburg								
2	104	012	DH91	45	University of Gothenburg								
2	104	013	DC37	46	University of Gothenburg								
					Convenio de Co-Ejecución del proyecto Intensificación Sostenible de la Lechería Ref. FTG/RF-15940-RG	2							
					Forest, Agroforestry Program (FTA)	1			1				
					CGIAR Research Program: Forest Trees and Agroforestry (FTA)		196			455	418		234
					Mecanismos y Redes de Transferencia de Tecnología Relacionada con el Cambio Climático en América Latina y el Caribe No. ATN/FM-14836-RG	32				129	98		
					Agreement between the Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement (CIRAD) and the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)					63	65		31
					Adaptación de la agricultura al cambio climático a través de la cosecha de agua (Cosecha de Agua)		1,773			1,500	1,995		1,277
					Cosecha de agua y uso más eficiente en sistemas protegidos y diversificados en la zona principal hortícola de CR: Fomento de experiencias piloto con productores agroecológicos del Norte de Cartago y otras zonas importantes para la GAM (CODIGO 060-14)					(1)			
					CABI-PLANTWISE					67	74		2
					GIZ- Medidas adaptación basadas en Ecosistemas en America						1		
					NAMA Facility Implementation Call VI - Transforming Honduras Livestock sector into a low -carbon economy					23	49	US\$26	
					GIZ_81254809_Forests, Biodiversity and Ecosystems					22	1		21
					LOA 2013-04 (Convenio Administrativo BIODIVERSITY/CATIE para el año 2013)								
					(LoA 2014/10 Adendum		10			120	126		3
					BIODIVERSITY INT-Apoyo colección Germoplasma Cacao Mocca		45			67	76		37
					Acuerdo de financiación a pequeña escala SSFA/REDD-004/2016	3				21	19		
					Memorando de acuerdo - Modelo Básico - Entre UNOPS y ONG Locales								
					Basadas en la Comunidad y Organizaciones Basadas en la Comunidad Bajo el Programa de Pequeñas Donaciones (GEF)						2		
					PUND-Implementación acciones de Monitoreo y conservación Rio Indio	15				127	85		27
					UNIDO-Desarrollo política forestal integrada Belice					89	48		40
					PNUD- Elaboración de un Plan de Manejo La Selle								
					Elaboration de plan de developpement communal dans les communes des lot 1: Pestel et lot 5 : Jérémie RFP/UNDP/HAI/20.12					94	94		1
					Servicio de Consultoría para Diseñar ECAS Rep. Dominicana						1		
					Diseño e implementación de un Programa de Capacitación y Asistencia Técnica para la producción sostenible de ganadería en las provincias que conforman la Circunscripción Territorial Especial Amazónica (CTEA)							4	4
					00094356 Proyecto Paisajes Productivos Sostenibles					218			218
					LWR-Segundo Convenio Colaborativo					59	60		
					Maximizing Opportunities in Coffee and Cacao in the Americas (MOCCA) / FCC-596-2018/005-00							2	
					Contrato de Subvención, Acciones Exteriores de la Unión Europea, FOOD/2017/386-542 Plataforma de Información nacional sobre Nutrición (PINN)	17				10	2		9
					Contrato de Subvención, Acciones Exteriores de la Unión Europea, FOOD/2017/386-542 Plataforma de Información nacional sobre Nutrición (PINN)								
					Convenio de subdelegación entre el IICA y el CATIE, para implementar el Proyecto Sistemas Agroforestales Adaptados para el Corredor Seco Centroamericano ( AGRO-INNOVA)					270	710		290
					"Evaluation of Improved Cacao (Theobroma cacao) Materials for Agronomic Performance, Reaction to Diseases and Uptake of Cadmium."								
					Development of Clones of Theobroma cacao With Resistance to Frosty Pod and Black Pod Using Genomics-assisted Breeding Methodology AGREEMENT 58-6038-6-009-F								
					Contrato de arrendamiento de instalaciones y terreno en finca La Lola y Cooperación técnica entre el CATIE y EARTHCORP de Costa Rica Foundation								
					Environment for Development Initiative in Central America Work Plan 2017								
					EfD .EEU ref 17002, Sida No 61050043								
					Develop Sustainable Futures for Food Production in The Tropics, Using the CR dairy sector: Optimising environmental and economic outcomes	24				41	18	1	43
					EFD-Worl Plan 2019						118		

Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2019		Ajuste a Períodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2020	
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
2	104	014	DC40	47	The Environmental Economics Unit (EEU) - University of Gothenburg					929	768		162
2	108	006	DE38	48	United Nations Environment Programme		47				33		15
2	108	011	DC41	49	United Nations Environment Programme					90	27		63
2	111	008	DA42	50	Royal Norwegian Embassy	4					4	8	
2	119	005	DH95	53	United States Fish and Wildlife Service					80	61		17
2	129	002	DG50	54	Nestle Ltd.		16			72	14		74
2	159	004	GD33	56	Fundación para la Conservación de los Recursos Naturales y Ambiente en Guatemala				1	139	110		44
2	182	003	GI16	57	Fundación para la Conservación de los Recursos Naturales								9
2	182	004	GI19	58	Fundación para la Conservación de los Recursos Naturales					126	92		48
2	182	005	GI20	59	Fundación para la Conservación de los Recursos Naturales					60	90	20	
2	182	006	GI21	60	Fundación para la Conservación de los Recursos Naturales					324	109		215
2	186	003	DI94	61	Conservation International Foundation		196			2	68		129
2	191	007	DI78	62	Costa Rica Por Siempre	26						26	
2	205	003	DG73	64	Heifer Project International		51	1		120	215	45	
2	208	002	DG55	66	Texas A&M Agrilife Reserach		7			7	6		8
2	215	002	DC38	68	Department of State United States of America					65	77	12	
2	216	005	CC01	69	Sistema Nacional de Áreas de Conservación		106			230	282		53
2	223	001	DG58	70	Rural Development Administration		1			30	1		30
2	223	002	DG64	71	KoLFACI of the Rural Development Administration (RDA)					65	35		232
2	223	003	DG77	72	Rural Development Administration					102	12		90
2	227	002	GE18	73	Secretaria de Energía Recursos Naturales, Ambiente y Minas	21						21	
2	227	004	GI14	75	Ministerio de Ambiente Panamá		1			186	114		73
2	229	001	DI82	76	Westfaelische Wihelms-Universitaet			1					1
2	231	001	DE45	77	Fundecooperación para el Desarrollo Sostenible	19				26	8		
2	232	001	DG59	79	World Coffee Research		12						12
2	233	002	DG62	80	Instituto Interamericano de Cooperación para la Agricultura	41				684	444		200
2	233	003	DC36	81	Instituto Interamericano de Cooperación para la Agricultura					10	7		3
2	237	001	GJ03	82	Ministerio de Educación Superior Ciencia y Tecnología			2		40			42
2	244	001	DI84	83	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety	37				248	216	5	
2	244	002	DH85	84	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety	106		5		711	548		52
2	244	003	DG68	85	International Center for Research in Agroforestry	21				79	60	2	
2	248	001	DE50	86	Centro Tecnológico Forestal de Cataluña		36				3		33
2	249	001	DI91	87	Oxfam Intermon	23						23	
2	250	001	DC34	88	Johns Hopkins University (Maryland)			29			10		19
2	251	001	DC35	89	National Environment & Planning Agency			23		236	197		62
2	252	001	GD31	90	Proatec SRL	1					(1)		



Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre del Proyecto	Saldo al 31 de Diciembre de 2019		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2020	
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
2	253	001	DB26	91	Instituto Mixto de Ayuda Social		16				16		
2	254	001	DH96	92	Belize Livestock Producer Association					19	32	11	
2	255	001	DI92	93	The National Institute for Forest Science					45	39		35
2	256	001	DG70	94	Gaia Artisan Coffee	3	30					3	
2	257	001	DA52	95	University of Greenwich	20				386	218		148
2	258	001	DG74	96	Global Nature Technology	1					1	2	
2	259	001	GE21	97	Programa de Desarrollo Económico Inclusivo Territorial (Honduras)					44	129	85	
2	260	001	DI95	98	Caribbean Bioversity Fund					124			123
2	261	001	GE22	99	American Bird Conservancy					30	30		
2	263	001	DI97	100	Sistema Banca para el Desarrollo					5			5
2	264	001	GD36	101	Fundación para el Ecodesarrollo y la Conservación (Guatemala)					62	31		31
2	265	001	GG16	102	Centro de Evaluación y Desarrollo (C4ED)					10	4		6
2	266	002	DC44	103	Ministry of Economic Development & Petroleum (Belize)						1	1	
2	267	001	DG79	104	Agronomes et Vétérinaires sans Frontières					25			25
2	268	001	DI98	105	Natural Resources Canada								
<b>Total Convenios</b>						<b>474</b>	<b>3,891</b>	<b>8</b>	<b>3</b>	<b>9,252</b>	<b>8,775</b>	<b>419</b>	<b>4,308</b>

Fondo	Fuente	Convenio	Costo	Nombre Donante	Nombre Proyecto	Saldo al 31 de Diciembre de 2019		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2020	
						Deudor	Acreedor	Débitos	Créditos	Ingresos	Egresos Gastos	Deudor	Acreedor
3	024	009	GD21	107	Organización de las Naciones Unidad para la Alimentación y la Agricultura (FAO)		24			71	67		28
3	043	023	GD34	108	Programa de las Naciones para el Medio Ambiente					206	26		180
3		028	GI22	109	United Nations Environment Programme					40			40
3	097	039	GD13	109	Comisión Nacional de Áreas Protegidas		2						2
3	097	058	GD16	110	Ministerio de Agricultura y Ganadería (MAGA)		109			2	1		111
3	262	001	GD35	111	Fundación Ayuda en Acción Guatemala					372	359		13
<b>Total Fondos en Administración</b>						<b>---</b>	<b>135</b>	<b>---</b>	<b>---</b>	<b>691</b>	<b>454</b>	<b>---</b>	<b>373</b>

\* \* \* \* \*

## TROPICAL AGRICULTURAL RESEARCH AND HIGHER EDUCATION CENTER (CATIE)

## SUMMARY OF INCOME AND EXPENSES IN FUNDS IN CUSTODY AND MANAGED PROJECTS

YEAR ENDED DECEMBER 31, 2020

(Expressed in Thousands of U.S. Dollars)

Fondo	Fuente	Convenio	Costo	Nombre del Centro de Costo	Saldos al 31 de Diciembre de 2019		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2020	
					Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor
8	085	010	EB59	USAID - Becas PRCC		9						9
8	092	005	DH01	Ganadería y Manejo del Medio Ambiente		151				99	187	42
8	092	025	DE01	Cambio Climático y Cuencas		13				131	121	23
8	092	026	DC11	Investigación en Desarrollo Economía y Ambiente		185	62			40	92	71
8	092	029	BE11	Conseciones		26				7	6	27
8	092	030	DA05	Laboratorio de Suelos		26				12	24	14
8	092	035	GI02	OTN Panamá		30				102	118	14
8	092	040	GM02	OTN Bolivia		2						
8	092	047	BE15	Feria Internacional del CATIE		2						2
8	093	004	EC01	Unidad de Capacitacion		58				464	489	34
8	093	006	EB29	Textos y Materiales		4				43	36	11
8	093	007	EB32	Vida Estudiantil		1				2	1	2
8	093	014	EB37	Becas DAAD	8					57	55	6
8	094	002	GF01	OTN El Salvador	246					4	20	16
8	094	042	DA15	Dirección de Investigación y Desarrollo		29				8	3	33
8	094	046	GG01	OTN - Nicaragua	14		1			75	90	30
8	094	054	DD10	Grupo Manejo de Cuencas Hidrográficas		9				61	15	55
8	094	061	DB01	Unidad de Desarrollo de Agronegocios		55				151	114	93
8	094	070	DG33	Cacaocultura Latinoamericana		70	1	3		339	289	124
8	094	084	DG36	Grupo Café, Rentabilidad y Diversidad		52				86	50	88
8	094	092	DG38	Cacao Comercial		5				65	46	24
8	094	101	FI06	NRDC Finca Comercial		29				5	2	32
8	095	022	BB08	Servicios Básicos CATIE		1				7	3	5
8	095	033	GD02	Adm. Proyectos Guatemala	12					103	23	68
8	095	063	FH01	Jardín Botánico CATIE		6				34	35	5
8	095	075	GE02	OTN - Honduras	25					1		24
8	095	082	DG35	Ensayo de Café- Bonilla II		9				26	18	18
8	095	086	CB01	Oficina de Comunicación e Incidencia		13				87	44	57
8	095	097	GA04	Apoyo Dirección Proyección Regional	3							3
8	095	101	CA03	Gestion de Fondos Específicos OAE		8	48	52		163	164	12
8	096	001	EB08	Becas - CONACYT		6				43	38	11
8	096	003	EB34	Becas OEA								
8	096	018	EB58	Educación Virtual		15		5		240	242	17
8	096	028	EE01	Unidad Bioestadística		14				30	8	36
8	096	034	EB19	Fondo Estudiantil para Emergencias								
8	096	039	EB17	Medicas		13						13
8	096	044	EB14	Fondo Educativo		14				7	19	2
8	096	044	EB14	Becas por Donación		29						29
8	096	049	EB10	Becas Estudiantes		25	1			550	535	39
8	096	054	EB54	IICA - Legado Académico H. Wallace						50	10	40
8	104	015	DL01	EFD-Capital de Trabajo						127	2	126
8	136	001	FI10	Fondo de Inversión DCO		34				13	3	45

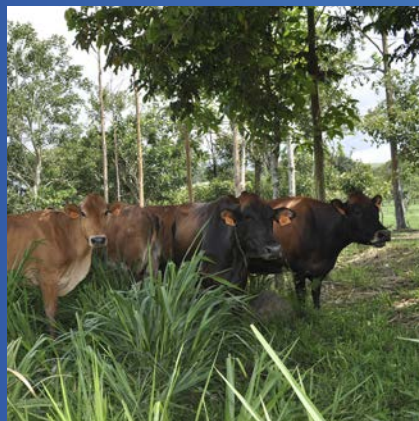
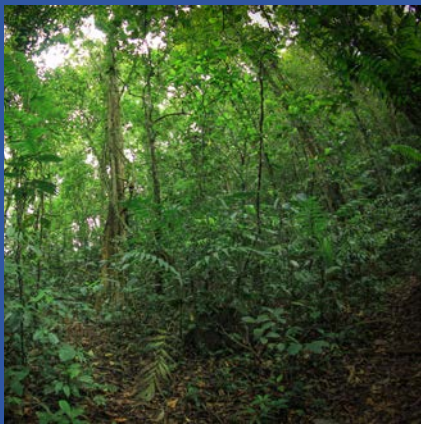
Fondo	Fuente	Convenio	Costo	Nombre del Centro de Costo	Saldos al 31 de Diciembre de 2019		Ajuste a Periodos Anteriores		Movimientos del Año		Saldos al 31 de Diciembre de 2020		
					Deudor	Acreedor	Débitos	Créditos	Ingresos	Gastos	Deudor	Acreedor	
8	137	001	BA02	Fondo de Inversión DSC					15	1		14	
8	145	001	EB42	Maestría en Turismo Sostenible		8			35	39		4	
8	150	001	FI12	BIOTECH Operativo		182	246		31	62	96		
8	155	001	GC03	Generación de Fondos OTN Mexico		5						5	
8	156	001	GA14	Unidad de Gestion de Oportunidades UGO		5	52	48	91	67		25	
8	165	001	FI15	Colecciones Fitogenéticas		30			88	54		63	
8	171	001	EB47	Maestría Practica para el Desarrollo		2			4	5			
8	179	001	AA03	Generación de Fondos Alvaro Umaña MFA - Noruega MAP Territorio clave	1				63	58		4	
8	183	002	DA41	Trifinio		2	2						
8	201	001	EB52	Capital Semilla Fondo Educativo		1						1	
8	221	001	DI76	Conferencia Wallace		26						26	
8	242	001	DI16	Curso Manejo Diversificado de Bosques		394	100	100	329	342		377	
<b>Total Fondos en Custodia</b>						<b><u>309</u></b>	<b><u>1,596</u></b>	<b><u>521</u></b>	<b><u>207</u></b>	<b><u>3,887</u></b>	<b><u>3,534</u></b>	<b><u>442</u></b>	<b><u>1,756</u></b>

\* \* \* \* \*

**CATIE**

Solutions for environment and development  
Soluciones para el ambiente y desarrollo

# Annual Report 2020



# Presentation

In 2020, CATIE, its member countries, and the rest of humanity faced health and climatic emergencies that have affected the achievement global society of some of the proposed goals, as the countries have been forced to modify – at least in the short and medium-term – the priorities and ways of working of institutions, producers, rural families, and even consumers.

The crisis generated by the COVID-19 pandemic began to manifest itself in the region in March 2020, and in the following months, the problem escalated until it seriously compromised the economy of families and countries. This reality forced the countries to implement health emergency measures on the spot, which implied adjustments at all levels. This also required CATIE to adjust the modes of operation and support to the countries through its services. One of the most impacted sectors, where it was necessary to act quickly, was in the attention of local economies and food security.

At the time of the issuance of this Annual Report, many countries are still going through the third wave of very strong infections accompanied by more aggressive variants of the original virus and, in some cases, more deadly. The CATIE region does not escape this situation; therefore, the impacts of the Pandemic, in all aspects, cannot be accurately estimated yet.

Fortunately, CATIE has taken health protection measures and austerity in expenditure, which have allowed it to advance in the direction of its institutional mission, as shown in this 2020 Annual Report. This can be seen with the progress made in the modernization of educational programs, the management of new projects, the consolidation of research actions in the region and the countries, the start of institutional modernization processes by having a new enterprise and financial resource management system (ERP), and finalize its new Institutional Strategic Plan 2021–2030.



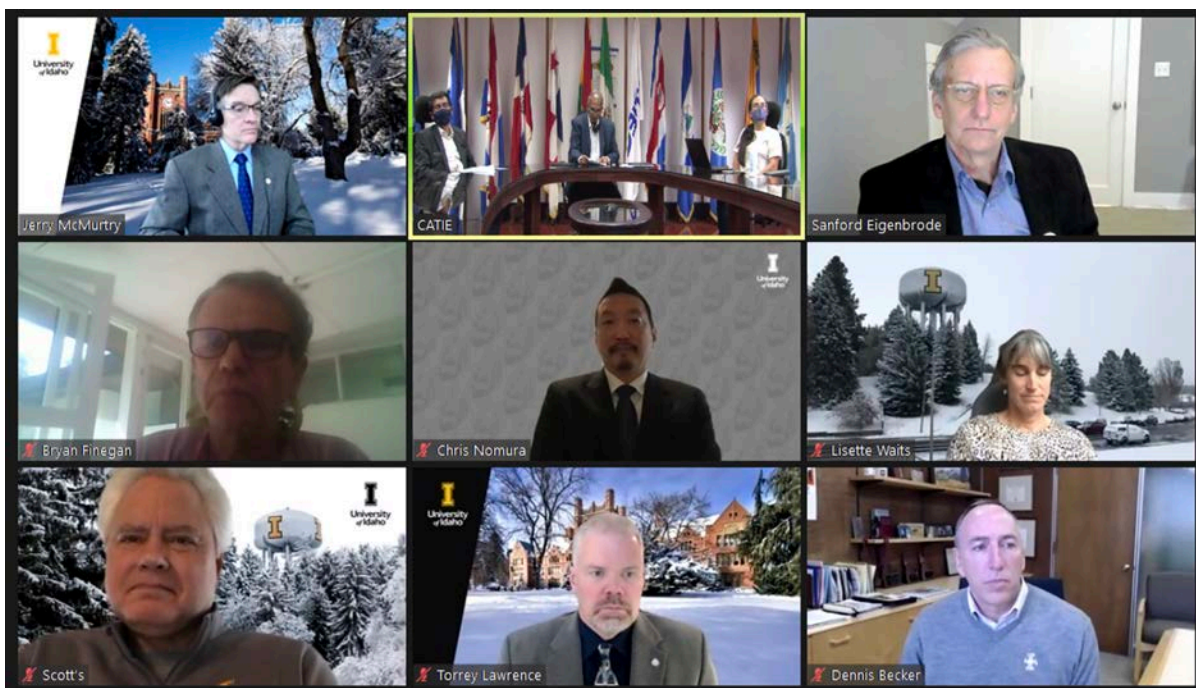
# CATIE a quick view

## Joint Doctoral Program CATIE and the University of Idaho: 20 years of training professionals

Since June 2001, CATIE and the University of Idaho have jointly taught a doctoral program, from which a total of 33 professionals (17 men and 16 women) have graduated. All from the United States, Mexico, Puerto Rico, Nicaragua, Costa Rica, Colombia, and Japan. In 2020, both institutions virtually signed an agreement through which they agreed to continue this program until July 2025.

This program has been an extraordinarily successful international partnership since its inception and has provided a unique opportunity for doctoral students interested in conducting interdisciplinary research focused on the sustainability of forestry, agriculture, and the health of rural communities in the American tropics. Its continuity will help to continue providing solutions to global problems, as well as to strengthen the international reputation of both universities.

In this doctoral program, whose official language is English, the student is awarded the title of Doctor of Philosophy, which is accredited by the University of Idaho and the National Accreditation System for Higher Education of Costa Rica (SINAES, by its acronym in Spanish); therefore, guaranteeing its quality and excellence.



## A graduate of CATIE is the new coordinator for Central America of the *World Migratory Bird Day*

Leticia Andino, salvadorian, biologist-ornithologist, graduated from CATIE with a master's degree in Management and Conservation of Tropical Forests and Biodiversity, is the new coordinator for Central America of the World Migratory Bird Day, a program of the NGO Environment for the Americas.

Leticia mentioned that, at CATIE, she acquired knowledge on management and conservation of natural resources, ecosystem restoration, livelihoods, ecosystem services, connectivity, etc. All have been key to awakening her interest in working closely with people and promoting social change towards the sustainable use of natural resources.

*“It is an honor for me to have been considered for this position, and I hope to ensure that all Central American countries have a participation year after year in the World Migratory Bird Day campaign and that they are seen as a single region that works towards the conservation and protection of birds and their habitats” Leticia stated.*





## Progressing with solidarity in the Dominican Republic

The national program Progressing with Solidarity (PROSOLI, by its acronym in Spanish), executed by the Presidency of the Government of the Dominican Republic, has the CATIE seal of approval. Fausto Abel Ortiz Núñez, who graduated from CATIE's master's degree in Agroforestry and Sustainable Agriculture in 2020, is the current deputy director of the Family Farming project.

PROSOLI is the main social protection program of the Dominican government and it also is a major strategy for the eradication of poverty. Families in vulnerable situations are involved in this program, and it directs its actions towards comprehensive development through co-responsibilities for income generation, promoting food and nutritional security, health, and education.

*“The experience at CATIE was, has been, and will be an achievement of which I will be extremely proud, for the simple fact of improving my knowledge to contribute directly to sustainable human well-being, inclusion, and the development of communities. Likewise, knowing and sharing this experience with friends, colleagues, and people from other cultures makes this another achievement in my professional life”.*

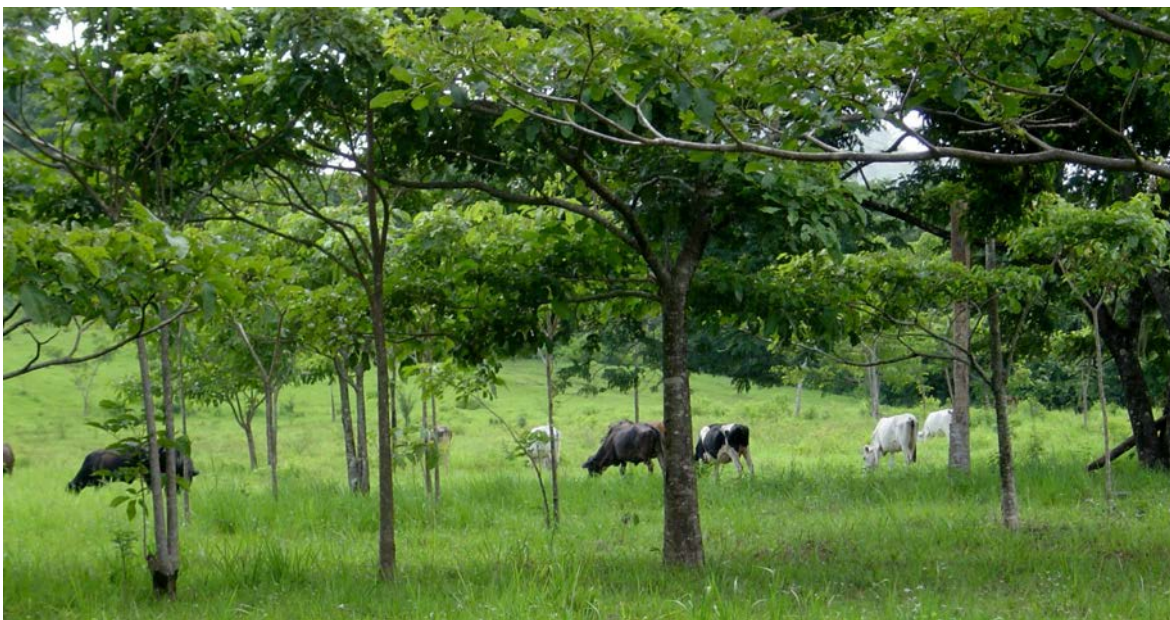


## Organizations and leaders of the Honduran livestock sector align efforts to transform Honduran livestock into a low-carbon economy

National authorities and leaders of the public and private sectors, unions, NGOs, universities, and international cooperation institutions collectively invested many hours to propose ideas, discuss intervention strategies and achieve a consensus to design the Livestock NAMA Support Project (NSP). This project seeks to transform Honduran livestock through a technical assistance approach, which promotes the adoption of low-carbon and profitable technological packages for livestock farmers. It is accompanied by innovative financing to catalyze adoption in a massive and timely manner, and aligning policies and incentives to break down the barriers that limit the sector to reach levels of higher productivity and profitability, lower emissions, more carbon sequestration, and achieve sustained growth.

*“What amazes me about the exercise we are doing with this Livestock NAMA is that the opinions of all sectors are being considered and agreed upon. This will really set a precedent for projects of this category”, stated Carmen García, representative of the National Milk Chamber (CAHLE, by its acronym in Spanish).*

CATIE, as project leader, is coordinating with its local and international partners the formulation of the development document for the Livestock NAMA Project in Honduras. The expectation is to start project activities in 2021.





## Strengthening community water management in vulnerable communities in Costa Rica through alliances and innovative actions

In the framework of the WAPP project, the Sustainable Economy, Environment and Agribusiness Unit and the global network *Environment for Development* (EfD) organized a hackathon in 2020, i.e., a virtual contest based on collaboratively solving a specific problem, using technology. Through the hackathon “Connecting youth + technology + water”, young Costa Ricans between the ages of 15 and 25 got involved in water management in their communities and designed solutions to improve the communication between the ASADAS (communal aqueducts) and the beneficiaries of the potable water service, to improve this service. The proposals of the young people will serve as input for the design of a mobile application (App) that will improve the water service in vulnerable rural communities through communication and community participation in the management of water resources.

Along with this important result, alliances were established, and they had the support of the United States Embassy in Costa Rica, through the Central American Regional Security Initiative (CARSI, by its acronym in Spanish). They were also endorsed by private companies and public institutions, such as the Ministry of Science and Technology (MICITT, by its acronym in Spanish) of the government of Costa Rica.

*“The contribution of young people will improve access to water, economic growth, and the reduction of inequality through the technologies created by each project”, Sharon Day, Ambassador of the United States in Costa Rica.*



## Improving food and nutrition security

CATIE and the Secretariat for Food and Nutrition Security of the Presidency of the Republic of Guatemala (SESAN, by its acronym in Spanish), with the support of the European Union, are working to strengthen the National Food and Nutrition Security System (SINASAN, by its acronym in Spanish). They are considering the municipality of Momostenango as the pilot site to develop multisectoral knowledge and information management processes, to prevent chronic malnutrition and improve food and nutrition security. The project of the Guatemalan National Nutrition Information Platform (PiNN, by its acronym in Spanish) integrated, in a platform, information derived from censuses, surveys, and specific studies, as well as administrative data from the public sector. This was done as a basis to rethink municipal management strategies, highlighting the population vulnerable to food insecurity and child malnutrition. The project seeks to strengthen the capacity of SESAN and municipal governments to operate and maintain the platform, monitor progress in achieving national goals to reduce chronic malnutrition, and use the information and evidence for the design and improvement of policies and multisectoral nutrition programs.





## Harvesting water to adapt to climate change

The Water Harvest Project in Nicaragua, executed with the support of the Swiss Development Cooperation (SDC), aims to help 2500 families of small and medium producers, from 10 municipalities of the Dry Corridor in the north-central part of the country, establish systems more resilient to climate change and improve their food and nutritional security, ensuring an adequate systematization of learning. Some achievements, in 2020, were: the design and validation of a methodology for the selection of sites and beneficiaries of water harvesting, the diagnosis of 2304 family units as potential beneficiaries, the development of a new, more durable and lower-cost tank for water harvesting, and the formulation of a research agenda on water harvesting for the country. In addition, in the face of the COVID-19 emergency, a humanitarian aid initiative was developed with food packages and productive reactivation for a total of 1105 families in four municipalities (CATIE/MEFCCA/MAG/INTA/IICA, with support from SDC).



## Sentinel Landscape Project of Nicaragua-Honduras

Through the Sentinel Landscape of Nicaragua and Honduras, research and long-term monitoring have been promoted as a key to the sustainable management of trees and forests in landscapes through 39 investigations. The majority were in Nicaragua (85 %), where 41 CATIE master's students were involved. 75 % of the theses are related to processes and drivers of changes in land use and governance.

## GEOCATIE: geospatial information platform that integrates innovation and cutting-edge technologies

GEOCATIE is an intelligent digital platform that takes advantage of the many benefits of ESRI's ArcGIS tools and licenses, to empower and proactively satisfy the needs and institutional capacities for the management and processing of geospatial information. It is a platform of the new digital era, which creates connectivity in all areas of Research, Development, and Innovation (R+D+I) and allows monitoring, managing, and optimizing the educational, research, and administrative infrastructure of the institution. GEOCATIE has led CATIE to be at the forefront of digital technologies, promoting digital transformation strategies to boost institutional changes at an external and internal level. One of the great successes in 2020 was the institutionalization of a tool developed for monitoring governance in food and nutrition security within the National Information Platform on Nutrition of Guatemala. In addition, GEOCATIE positioned itself at the national and international level through open data on the different systemic approaches, projects, research, and institutional educational programs, which are available to partners, students, the scientific community, the government, etc.





## CATIE and SESAN design a new tool that improves decision-making on food nutrition security in Guatemala

As part of the process of designing and implementing strategic tools for local planning, CATIE, in coordination with SESAN, the Delegation of the European Union in Guatemala, and the Municipality of Momostenango in Guatemala, officially presented the Municipal Information System of Food and Nutrition Security (SIMSAN, by its acronym in Spanish).

SIMSAN is a strategic computer tool for municipal planning, which has been generated within the framework of the activities of the National Nutrition Information Platform (PiNN) project. This tool is supported by the National Food and Nutrition Security Policy, and by the Law of the National Food and Nutrition Security System.

For CATIE, this municipal information system is strategic, since it facilitates political and technical decision-making to improve the effectiveness of interventions. In addition, it helps planning and monitoring how the interventions make it possible to achieve municipal, short, medium, and long-term goals. It also generates inputs to improve municipal investment and contributes to improving coordination between programs and projects aimed at preventing child malnutrition and improving food and nutritional security at the municipality level.

*“CATIE’s support in the design and implementation of SIMSAN makes it possible to contribute effectively to the Municipality and the Municipal Food and Nutrition Security Commission in the analysis of information and decision-making. Thus, achieving better impacts through the different multisectoral interventions guided by SIMSAN”, Muhammad Ibrahim, general director of CATIE.*





## Livestock producers from the state of Jalisco in Mexico win national award for forestry merit

For its actions towards sustainability in livestock systems, the Local Livestock Association of El Limón, in Jalisco, Mexico, won the National Award for Forest Merit in the category of Water Management and Healthy Ecosystems. A total of 20 cattle producers from this municipality, belonging to the El Limón Field School, developed by the BioPaSOS project, were awarded.

BioPaSOS is implemented by CATIE, with the support of the Inter-American Institute for Cooperation on Agriculture (IICA), in coordination with the National Commission for the Knowledge and Use of Biodiversity (CONABIO, by its acronym in Spanish) and the Secretariat of Agriculture and Rural Development (AGRICULTURE), with funding from the International Climate Initiative (IKI, by its acronym in German).

In this Field School, the producer families strengthened their capacities in different topics, such as natural resource management, silvopastoral systems, good livestock practices, management of grazing areas, animal feeding and reproduction, and animal health, highlighting the great benefit of the implementation of silvopastoral systems (SSP, by its acronym in Spanish) and good livestock practices in their production units.

*“With the arrival of the BioPaSOS project, we have begun to implement silvopastoral systems and carry out good livestock practices. When we entered the Field School, we were 20 livestock producers who implemented this type of system for production. Today, we are more than 70 producers. It is something we are doing to combat climate change, because we are planting trees, and at the same time, we obtain more forage for our cows”, said Antonio Jiménez, president of the El Limón Livestock Association and member of the BioPaSOS project Field School in Jalisco.*



## CIRAD and CATIE support Costa Rica in its goal towards decarbonization

With funding from the French Agency for Development (AFD, by its acronym in Spanish), the Center for International Cooperation in Agricultural Research for Development (CIRAD, by its acronym in Spanish) and CATIE will work together to build and execute a technical assistance package, which will support the government of Costa Rica in the strengthening and development of actions associated with the national decarbonization plan.

The work is focused on providing technical assistance to the National System for the Monitoring of Land Cover and Use and Ecosystems (SIMOCUTE, by its acronym in Spanish), which belongs to the National Center for Geoenvironmental Information (CENIGA, by its acronym in Spanish), as well as the National Forest Financing Fund (FONAFIFO, by its acronym in Spanish).

The national decarbonization plan is a radical transformation approach for Costa Rica. A political planning instrument and a long-term development vision that keeps the country in a global position of environmental leadership. In addition, this plan will allow the country to chart the transformative path towards a green, sustainable, and low-carbon economy. Specifically, it is an example of how the countries of the world can convert their development models towards low-carbon processes. For CATIE and CIRAD, it is a privilege to support these innovative lines of climate action.

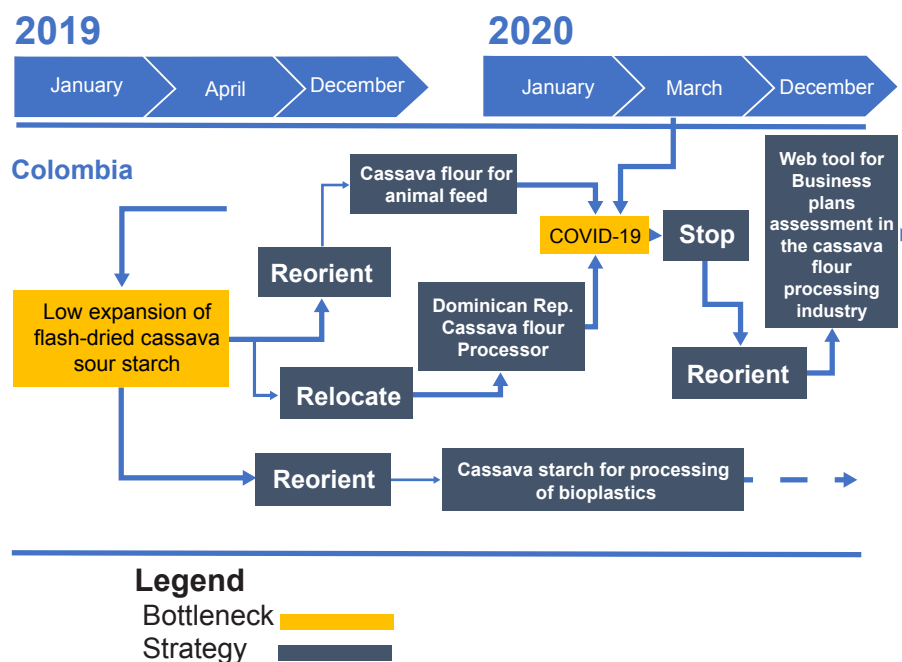


## Assessing the benefits of using the “scaling up of technological innovations in agriculture” approach to achieve impacts on rural development: Bioversity International-CIAT and CATIE collaboration

One of the main challenges that research centers face is to ensure that the innovations resulting from their research lead to an impact on large-scale development. Important resources are invested in the design and testing of innovations to tackle challenges such as food insecurity, low productivity, and environmental degradation. However, many promising innovations fail to achieve large-scale impacts. A cost-efficient approach that facilitates the scaling of innovations through tools that support the development, implementation, and monitoring of scaling strategies can be of great help.

Bioversity International-CIAT, in collaboration with CATIE, is working on the analysis of the costs and benefits derived from the use of the Scaling Readiness Approach (SRA), which was designed by the CGIAR to support organizations, projects, and programs in their interest, to scale innovations and achieve large-scale impact. The cost-benefit analysis consists of measuring the costs and benefits related to the process of scaling up innovations in agriculture, comparing it with scaling actions that follow traditional processes.

The joint Bioversity International-CIAT and CATIE project estimates the benefits and costs of scaling up the innovation of a fast fresh cassava dryer for cassava flour production in Colombia, Nigeria, and the Democratic Republic of the Congo, as case studies. So far, progress has been made in the mathematical models, which will allow establishing the differentiated costs and benefits of scaling innovation, both at the level of cassava producers and processors.



# CATIE in numbers

## Graduates 2020



**62** graduates  
60 M.Sc. y 2 Ph.D.

**28**  
women



**34**  
men





## Total CATIE graduates



**2689** graduates  
2624 M.Sc. y 65 Ph.D.

**797**  
women



**1892**  
men




## Training events



**240** training events: diplomas, courses and workshops (virtual and on-site).

**16 816** trained professionals.

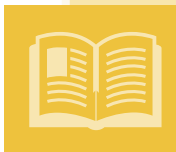
38%  
women



62%  
men



## Publications



**132**  
publications

- Articles in reference scientific journals.
- Articles in technical journals.
- Monograph.
- Articles in conference proceedings.
- Reports and other publications.
- Software.
- Thesis.
- Multimedia.

## Genetic improvement of coffee and cacao



### The **DNA of almost 2000 coffee accessions**

was characterized using molecular techniques, an extremely important basis for understanding and managing the genetic diversity of this crop.



More than **100 cacao clones** were evaluated for the detection of resistance against diseases, monilia and black pod.



More than **4000 materials** (seeds, twigs, grafted plants) for cacao production were delivered to producers in Costa Rica and Guatemala.

## Implemented or Approved Projects



**32 projects** implemented for a total amount of **USD 6 163 000.**

EI CATIE responds through its Projects to 10 of the 17 SDGs, but with greater emphasis due to the nature of the institution to SDGs: 1, 2, 5, 6, 13 y 15.





## New strategic alliances... new proposals



- Total proposals submitted: **122**
- Total proposals won: **27**
- Total amount of won proposals: **USD 15,7 millions**
- Total of Alliances with strategic organizations: **120**
- Global and regional: **9**
- Local: **115**



# CATIE in the details

## Higher education and capacity building for excellence

### *A certified quality Graduate School*

After a rigorous evaluation process carried out by prestigious universities in Costa Rica, South America, and North America, the National System of Higher Education Accreditation (SINAES, by its acronym in Spanish) granted CATIE, on December 2, 2020, the reaccreditation for its International Doctorate in Sciences programs and its four academic master's degrees. Thus, guaranteeing that they comply with international quality standards.

The re-accreditation process is continuous, and it involves a permanent commitment to improve teaching methodologies, infrastructure, equipment, admission processes, and communication, as well as the constant improvement of teaching and administrative staff.

*“The re-accreditation demonstrates the quality of the education we are receiving. It commits us to excellence and gives us enormous competitive advantages at the labor level”, with these words Mabel Arcos, a second-year student of the Master’s degree in Agroforestry and Sustainable Agriculture at the Graduate School, reflected the feelings of the entire CATIE student community in the re-accreditation ceremony.*



## Education in times of pandemic

On March 11, 2020, the World Health Organization (WHO) raised the public health emergency caused by COVID-19 to an international pandemic. As a result of this statement, everyday life was modified, and how people related, taught, and learned was changed.

Even so, the demand for quality education offered by CATIE was maintained and, for the cohort that began in 2020, there were 250 applications. A total of 243 applicants were admitted, 85 for on-site master's degrees and 158 for virtual ones.

Given the privileged situation of CATIE's headquarters, where most of the students and professors reside on campus, on May 8 on-site classes were re-established, with all the biosafety measures instructed by the Costa Rican Ministry of Health.

For the Training Unit, the start of the health crisis caused by the COVID-19 pandemic was challenging, but it quickly focused on identifying demands and topics of interest, and on designing and implementing training and education activities in a virtual modality. The students, who were receiving on-site training, completed their respective courses and, subsequently, returned to their countries of origin. The virtual training offer started with great acceptance and obtained excellent evaluations from the students.

### First virtual graduation

After 74 years of existence of the Graduate School, the 2020 academic cycle culminated with the first virtual graduation.

A total of 60 students, 27 women and 33 men received their respective master's degrees, and two students (one female and one male), their doctoral degrees.

See ceremony at <https://bit.ly/3bmQRgm>



All of this planned work allowed for important achievements, which are detailed below:

**Internship program (on-site).** With the National Program of Agrarian Innovation of the National Institute of Agrarian Research (PNIA/INIA, by its acronym in Spanish) of Peru, the implementation of the internship program was completed, which sought to strengthen individual and collective capacities in agroforestry, forests, coffee, cacao, climate change, agribusiness, hydrographic basins, protected areas, productive chains, biostatistics, geographic information systems, etc. Among the actions implemented, a total of 119 interns were received.

**Peruvian technicians strengthen their capabilities (virtual).** About 31 technicians (27 men and four women) from the National Institute of Agrarian Innovation (INIA, by its acronym in Spanish) of Peru received training to strengthen their skills in research management, technological development, agricultural innovation, technical assistance, and agricultural extension. During the closing event of the course, the participants highlighted the technical capacity that exists in CATIE, the pedagogical mediation that the teachers carried out in the virtual environments, the continuous support they received, and thanked the institution for contributing to the formation of human capital in Peru.

**Certificates in climate finance (virtual).** Through the strategic alliance between EUROCLIMA, CATIE, and professionals from the region, two certification courses on climate finance were implemented. In the certificate courses, 68 professionals (37 men and 31 women) were trained in the formulation of proposals for climate finance, who prepared 23 concept notes, and group work on livestock, agriculture, food security, and agroforestry issues.

**Updating of programs and use of technology.** As part of the constant improvement process, the Graduate School carried out an external analysis of the master's degrees it offers. Among the recommendations, the need to review and update the common core of all master's degrees is highlighted to ensure that all students understand the holistic nature (ecological-social-multiscale) of CATIE's work since its foundation. On the other hand, it was recommended to evaluate the possibility of teaching courses and programs in a bimodal way (on-site-virtual), to increase the incidence in the region. As a complement to the academic improvements that are being made, funds were sought to renovate the equipment and property of the Graduate School. These improvements will be implemented in 2021, thanks to the generous support of the American Schools and Hospitals Abroad (USAID-ASHA) office.



## Research for Inclusive Green Development

### *Towards a new strategy to face the challenges*

The operational adaptations that CATIE had to carry out in its activities in the region, due to the COVID-19 pandemic, are likely to become permanent changes in the way it works from now on.

In 2020, it became clear that CATIE's partner countries and donors expect that, by 2030, institutional projects will contribute to reducing the risk of new zoonoses and mitigating the effects of existing ones. The capacities of the technical team that make up the Research Division for Inclusive Green Development place CATIE, favorably, in the face of this challenge. This is because many of the strategic measures related to zoonoses are based on issues in which CATIE is a leader: 1) participatory landscape management, 2) reduction of degradation of ecosystems and their biodiversity, 3) restoration and sustainable use of ecosystems and their biodiversity, 4) sustainable livestock farming, and 5) adaptation to climate change.

The pandemic has left two great lessons: the first one is that the human being is extremely vulnerable at this time, which for many should be called the Anthropocene. The second one is that the need is evident for the year 2020 to be considered as a year of transition towards a new decade, in which paradigm shifts and transformations such as those proposed in the Sustainable Development Goals and the goals of the United Nations Decade for Ecosystem Restoration, must be achieved.

Under this scenario, CATIE's work commitment will be to support the countries, non-governmental organizations, indigenous people, producers, and the private sector, for the necessary transformations are achieved.

For decades, CATIE has stood out in the origin and evolution of strategies for the sustainable use of land and water – always focused on improving human well-being – with its units of Agroforestry and Genetic Improvement of Coffee and Cacao (UAMGCyC, by its acronym in Spanish), Forests and Biodiversity in Productive Landscapes (UByBPP, by its acronym in Spanish), Livestock and Environmental Management (GAMMA, by its acronym in Spanish), and of Watersheds, Water Security and Soils (UCSHyS, by its acronym in Spanish). The work of these units remains at the forefront in their respective issues, along with other units that have more recent lines of work, but where CATIE has also been a protagonist, such as the Economy, Environment and Sustainable Agribusiness (UEAyAS, by its acronym in Spanish), Climate Action (UAC, by its acronym in Spanish), and Agrobiodiversity and Food Security (UAYSA, by its acronym in Spanish).

The two units that represent collaborations with strategic international partners are, firstly, evidence of CATIE's international prestige as a partner and, secondly, key instances for supporting countries such as the Scientific Collaboration Platform (PCP, by its acronym in Spanish) CIRAD/CATIE, which is dedicated to modern agroforestry, and the Central American office of the global Environment for Development (EfD) network, coordinated from Sweden, and innovative in its mission of generating science for decision-making.

## *Interdisciplinary and collaborative work of the units*

The work carried out by the institution is interdisciplinary and collaborative, and based on three important elements:

**1. The territorial approach.** As an outstanding example of joint actions in territories for research, technical assistance, and education for development at multiple scales are the actions developed by the Livestock and Environmental Management Unit, with the support of the Watersheds, Water Security and Soil Unit, in three Mexican states through the BioPasos project. This project promotes the conservation of biodiversity through climate-smart agrosilvopastoral practices in landscapes dominated by livestock. In the same way, collaboration with the Latin American Model Forest Network gave rise to a new project: Restoration, which will promote actions to restore ecosystems at a territorial scale, strengthening capacities while promoting climate action within the framework of the United Nations Decade goals for ecosystem restoration. Another new strategic project, managed during this year, is the one to be implemented with GIZ and IUCN, and with funds from IKI/BMUB to promote adaptation, based on ecosystems at the territorial scale.

**2. Cross-cutting contribution of economics.** CATIE was a pioneer in the application of environmental economics to the development of the scientific bases for the policies that govern the use of land and water in the region. This approach has been established in the work of the Environmental Economy and Sustainable Agribusiness Unit and the consolidation of the global Environment for Development (Efd) network as part of the Center's research units. An important achievement for CATIE is having successfully negotiated the extension of the global network for the period 2021-2024.

**3. Emphasis of our work on climate action.** The current Climate Action Unit (UAC, by its acronym in Spanish) is the technical and scientific nucleus of this line of work. The UAC develops its projects, innovating in the areas of blue carbon in urban areas and collaborating closely with the other units, each of which works on climate action. For example, in the development of livestock with low greenhouse gas emissions with the Livestock and Environmental Management Unit, in the adaptation to climate change in cacao production with the Agroforestry and Genetic Management of Coffee and Cacao Unit, in the demonstration of the importance of trees in the resilience of urban watersheds with the Watershed, Water Security and Soil Unit, and in the improvement of water management in vulnerable areas of Costa Rica with the Efd global network. With IICA, the AGROINNOVA project was implemented, which promotes resilient agroforestry systems in the dry corridor in Central America, to improve food and nutrition security for vulnerable rural populations.

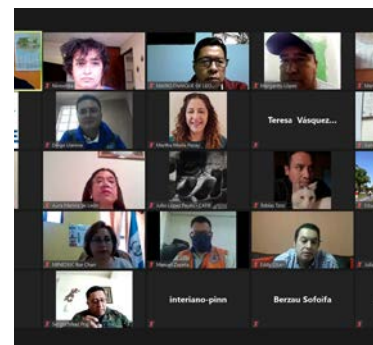


## Development of ICT applications and leadership in environmental management

Information and Communication Technologies (ICT) are a diverse group of practices, knowledge, and tools related to the consumption and transmission of information. They were developed from the disruptive technological change of recent decades, especially in the framework of the rise of the Internet. During 2020, CATIE made progress in the development of ICT applications in the management and monitoring of silvopastoral and agroforestry systems, as well as mangroves, in Central American countries.

The emergence of the COVID-19 pandemic, significantly, affected the plans of the projects carried out by CATIE. This condition was due not only to restrictions for CATIE personnel to move around the region but also within the countries themselves, because of the rigorous health measures that governments took to control the pandemic. At the institutional level, various sanitary measures were taken, and it was necessary to make significant adjustments to operating procedures. They went from regular visits to the use of virtual media, informal means of communication were used, such as WhatsApp, and groups were created for frequent consultations and real-time meetings, also the Teams and Zoom platforms were used for training activities with producers and technicians. This had a negative impact on the delivery of products (delays) and, therefore, on the execution of funds and project progress. However, the institution reformulated its work plans and asked partners and donors for new product delivery dates, who understood the situation without inconvenience.

Furthermore, the leading role of research units in the growth of environmental management in urban areas and the urban-rural interface is highlighted, as well as the development of knowledge, which will be the basis for the sustainability of the ecosystem services provided by protected wild areas to the growing urban populations of the countries in the region. The Climate Action Unit supported municipalities of the city of San José, Costa Rica, in the development of a Digital Atlas and the knowledge of ecosystem services provided by green infrastructure. While the Watershed, Water Security, and Soil Unit fostered its knowledge of the importance of trees in urban watersheds. The Unit for Forests and Biodiversity in Productive Landscapes developed, based on scientific evidence published in international journals, a proposal for the management of protected mountain areas (ASP, by its acronym in Spanish) for the adaptation to climate change, which is an urgent need for the maintenance of the ecosystem services that these ASPs provide to urban areas. Finally, the Environment for Development Unit (EfD) demonstrated, with scientific evidence, that ASPs in Costa Rica play a fundamental role in mitigating the effect of floods on the human population that lives near them.



## Innovative tools and methodologies

In 2020, the Climate Action Unit used unmanned aircraft and cloud processing to generate 3D images and submeter digital elevation models for the development of ecological assessments, the detection and characterization of mangrove degradation, and the planning of interventions for the rehabilitation of these ecosystems. Also, they used the geospatial information technology platform GEOCATIE as an integral solution in the various projects developed by the Ecosystem Modeling Laboratory. This fostered an innovation and process control structure that monitors, manages, collaborates, and optimizes workflows in an open, distributed, and extensible nature in all of CATIE's strategic areas.

On the other hand, within the framework of the Livestock Transformation program in Honduras, the Life Cycle Analysis methodology was promoted to calculate the mitigation potential of the proposed technologies and practices. This consists in the calculation of the emissions of greenhouse gases (GHG), applying the attributional life cycle principles with a farm scope, using estimates that consider Tier 1 and Tier 2 levels of the Intergovernmental Panel on Climate Change (IPCC). On-farm carbon sequestration was subtracted from total emissions using factors calculated by CATIE in Central America. To avoid favoring practices that reduce emissions at the expense of productivity, total net GHG emissions were expressed in units of GHG emission intensity, such as kg CO<sub>2</sub>e per kg of beef or milk. In the application, a diagnosis was made on the farm and the variables of the model were collected. Based on the diagnosis, the most appropriate technological package is defined, and the simulation is run again. Finally, the difference between the current scenario versus the intervention is the mitigation potential of the intervention. This ex-ante evaluation is useful for making timely decisions before intervening on a farm and it has to be systematized, for decision-making to be instantaneous.

CATIE's Biostatistics Unit developed object detection algorithms using convolutional neural networks (artificial vision field) for the identification and counting of the coffee berry borer (*Hypothenemus hampei*, Coleoptera: Curculionidae), and algorithms for the segmentation of satellite images or drones, also using convolutional neural networks, regression trees or a vector support machine. For the project Socioeconomic and Environmental Sustainability of Agroforestry Coffee (SEACAF, by its acronym in Spanish), the Biostatistics Unit developed an instrument for collecting biophysical information, and built and refined the databases of socioeconomic and biophysical information. Likewise, with the Scientific Cooperation Platform (PCP, by its acronym in Spanish) CATIE/CIRAD validated the estimation of the sample size, according to the observed incidence and number of farms per category, and mapped the incidence of coffee rust based on the climatic conditions in Central America and the Dominican Republic.



## *Policies that have had an impact*

Through the blue carbon work package, CATIE worked together with the Costa Rican Climate Change Directorate to include goals for the restoration, conservation, and sustainable management of mangroves in the new Nationally Determined Contribution of Costa Rica to the United Nations Framework Convention on Climate Change (UNFCCC).

Moreover, the actions implemented have made it possible to carry out political advocacy at different levels, involving local, national, and regional actors, in the work areas of the unit. Emphasizing climate action and economic development, all aligned with national plans, including:

- The promotion of the circular economy with municipal governments contributed to Costa Rica's circular economy roadmap (2030 goals, OECD, by its acronym in Spanish) and national commitments, such as the 2020-2050 Decarbonization Plan and the Sustainable Development Goals (SDGs).
- At a community level, work was done with leaders, young people, and other key actors in aspects of governance, accountability, transparency, and involvement of the population in decision-making at the local level. This allows promoting processes with a bottom-up approach, focused on the needs of rural communities, such as community water management, which is responsible for providing this resource to more than a quarter of the Costa Rican population and higher percentages in other countries in the region.

In the region, CATIE has supported the different national authorities of Mexico, Honduras, Panama, and Costa Rica, to generate technical inputs for the implementation of projects for the fulfillment of the country's goals and commitments of their nationally determined contributions (NDC), and strategies and plans for the conservation of biodiversity. All as a contribution from the productive livestock sector.





## *Commitment to gender equality and social inclusion: creation of the Social Inclusion and Gender Unit*

CATIE's Inclusive Green Development approach promotes the actions necessary to ensure intergenerational equity, the real participation of various groups in society, as well as the maintenance of the capacity of our natural capital to provide ecosystem services, on which the well-being of people depends.

At CATIE, we have promoted institutional policies that respond to the inclusion of social groups whose rights have historically been violated, such as indigenous people: their autonomy, sovereignty, governance, and the prior informed consent that should prevail whenever working together with our native people. On the other hand, the institutional gender equity policy has shown effective results in the real participation of women in the decision-making processes of programs and projects promoted from headquarters and in the institution's mandate countries, as well as in our educational offer. Women's roles are especially crucial in the agricultural workforce, with a critical nexus regarding food security, sustainable enterprise development, research, academia, and policymaking and setting. In the same way, the importance of the knowledge of our indigenous people and the need to revitalize their wisdom, the vindication of their rights, their development, and defense of their territories and natural resources is key to generate genuine and sustainable development processes following the identity of this sector of the population.

CATIE, as a regional center, assumes leadership in gender and social inclusion issues in higher education and research and takes them further through external projection, as well as in the implementation of affirmative actions for the recognition of spaces of access to resources, opportunities, and the well-being of all people. For this reason, in 2020, CATIE, at DIDVI, has created a new Research Unit on Social Inclusion and Gender. From this Unit, CATIE will promote the design and implementation of gender and social inclusion approaches in all phases of the Center's research and development activities. We look forward to having our team of specialists, and technical and support staff by 2021.



## Climate action

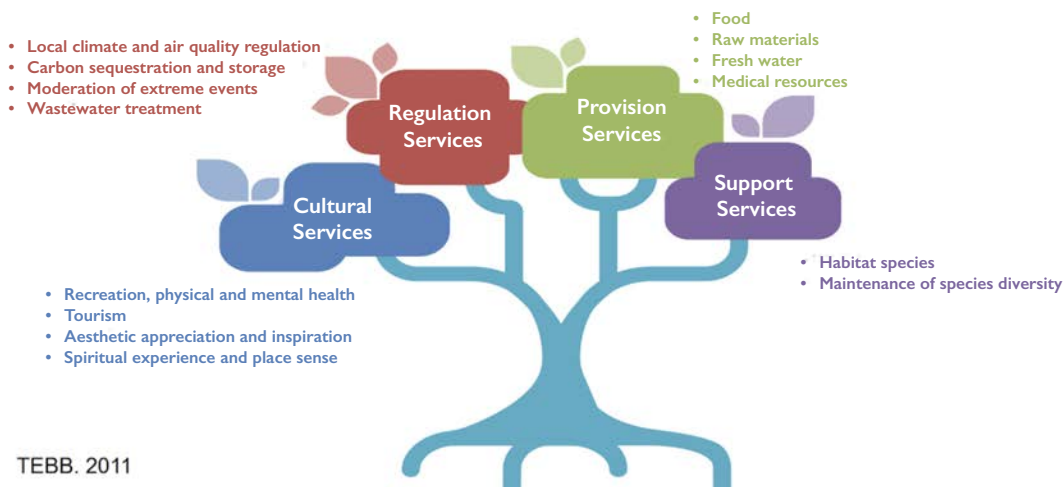
The Climate Action Unit successfully developed several projects in numerous Latin American and Caribbean countries, with funding from various sources. In urban and peri-urban areas, the Digital Atlas of the Greater Metropolitan Area of Costa Rica was developed (<https://sites.google.com/view/atlas-v1-1/inicio>). This Atlas is a geospatial platform that brings together the main and most recent information related to ecosystem services, biodiversity, urban warming, green infrastructure, use and vegetation cover, and ecological connectivity of the 32 metropolitan cantons. The Atlas, the first of its kind in Costa Rica and the region, is an extremely important tool to support decision-making in the management of the metropolitan territory, such as ministries, public entities, decision-makers, local governments, management committees of interurban biological corridors, researchers, and civil society in general. In addition, an evaluation of the green infrastructure and its relationship with the heat islands in the canton of La Unión, Costa Rica, was initiated. This project will conclude in 2021.

### Success story

In 2020, the implementation of the project Mechanisms and Networks for the Transfer of Climate Change Technologies in LAC was successfully completed. Through it, we advise governments and build state-of-the-art digital platforms for forest monitoring in Suriname, Dominican Republic, Mexico, Brazil, and Costa Rica. The final presentation of the project is available on the website: <https://vimeo.com/475078355>

On the subject of blue carbon, three significant initiatives were developed in the Dominican Republic and Costa Rica. The first two are focused on rehabilitating the social, environmental, and economic resilience of mangroves in the face of incremental climatic threats from extreme events and human action. Both projects are in the initial stages of implementation, and the significant restrictions imposed on fieldwork by the pandemic have delayed their progress, which is expected to recover during 2021. Through these two projects, an innovative climate action model is being tested, which includes integrated interventions at the landscape level in combination with sustainable productive transformations to promote the rehabilitation of favorable ecological conditions, to maintain the stability of mangrove ecosystems, and restore their functioning. During the first phase of the third initiative, we advised the Government of Costa Rica for the inclusion of blue carbon goals and metrics in its Nationally Determined Contribution sent to the UNFCCC at the end of 2020.

## Urban Ecosystem Services



## Livestock and environmental management

In each territory where actions were carried out, the BioPaSOS sustainable livestock project managed to establish and consolidate a learning platform, a research agenda, and joint work with the Ministries of Agriculture to promote sustainable livestock and influence policies. In each territory, a network of plots was created for researching and monitoring sustainable livestock issues, to obtain databases on geospatial aspects on farms, on the water footprint in livestock landscapes, and carbon monitoring on livestock farms. Likewise, the project prepared and distributed, for each territory, an analysis document on livestock value chains in the territories of influence, as well as numerous documents and tools, to communicate sustainable livestock production issues. In three learning communities, through Field Schools, BioPaSOS graduated 1231 producers trained in sustainable livestock issues, 70 % were men and 30 % women.

The Livestock and Environmental Management Unit made a great effort in its key functions of characterization of model farms, implementation, monitoring, and evaluation of improvements in livestock production systems. This included the use of digital tools of climate-smart innovations (among them were the silvopastoral options to contribute to climate resilience), and training on these topics. These investments for both, cattle (beef) and dual-purpose, were made through the *Livestock Belize* projects, financed by IDB-MIF through the *Belize Livestock Producers Association* (BLPA), the LACTIS project funded by FONTAGRO (INIA Uruguay), and the DEIT project funded by the Help in Action Foundation and Technoserve consortium, within the framework of the Inclusive Territorial Economic Development Program (DEIT, by its acronym in Spanish), in the Honduran sector of the Gulf of Fonseca. In this last project, a diagnosis for the livestock production chain was carried out, as well as for the investment climate for the livestock chain in the region. A protocol was developed for the entry or registration of farms in the NAMA Livestock program.

### Success story

Livestock producers from the states of Mexico: Jalisco, Chiapas, and Campeche, within the framework of the BioPaSOS project (with funds from IKI/BMUB), acquired new knowledge and developed skills to motivate and sensitize other actors about the benefits of livestock sustainable production, with the implementation of good production practices. They recognize the importance of their work and are empowered in their role as livestock farmers to be agents of change. In total, 277 Mexican women have actively participated in the BioPaSOS Field Schools.

*“BioPaSOS has given us tools to realize all that we contribute to livestock. Now, we are putting into practice what they taught us on our farm, and we are seeing better results. When I learned about the experience of other women, I found things that helped to me.”, stated Laura Madera, farmer from Jalisco.*





Along the same lines, the productive, socioeconomic and environmental evaluation of credits granted to milk producers in Costa was developed, and financial and environmental analyzes were obtained. A great contribution to the offer of technical assistance on the sustainable intensification of livestock and natural resource management was achieved with the support of *The eco.business Sustainability Academy*, holding five webinars with a total of 487 participants from Latin American countries.

The most important strategic advance achieved during 2020 was in the Program to Support the Transformation of the Honduran Livestock Sector into a Low Carbon Economy, which is financed by the NAMA Facility, through GIZ. For this program, the proposal was structured for the preparation of the Proposal Development Document (PDD), which is designed to overcome the barriers that currently limit the development of an efficient and low-carbon livestock sector.

### *Agroforestry and genetic improvement of coffee and cacao*

Under a strategic research approach, the PROCAGICA project (IICA-CATIE-EU) continued with important contributions to the agroforestry coffee growing in the region. It contributed to the strengthening of research and transfer platforms such as PROMECAFE and national coffee institutes. In addition, research work and participatory demonstration of technologies continued in a network of 200 plots in Central America, where important issues such as the design and comprehensive management of agroforestry systems, improved coffee varieties, effective chemical and organic control protocols for pest and disease control, and mechanization in the management of shade in coffee plantations are discussed and evaluated.

Research on new breeds of Coffee Rust was also an important action in 2020. The collaborative action, coordinated by CATIE-PROCAGICA-IICA, with the participation of PROMECAFE, the National Coffee Institutes, and the support of the Federal University of Viçosa -Brazil, allowed to update the knowledge about the changes generated in the compound of rust races present in the region. This largely explains the greater virulence and impact of the disease, even making coffee varieties that were previously tolerant/resistant susceptible to it. Methodologies have been developed, and regional capacity has been strengthened, to continue the monitoring and studies of the races that will be decisive for the technical assistance, capacity building, and genetic improvement programs with new improved varieties of coffee.



#### **Success story**

In 2020, an 18-month extension to the KOLFACI cacao project was approved. This is a regional initiative that is training researchers and technicians, and producing important information on the costs and benefits of modern cacao agroforestry systems (improved varieties, good practices, well-designed shade canopy) in a network of plots established in eight countries: Honduras, Guatemala, Nicaragua, Panama, Costa Rica, the Dominican Republic, Colombia, and Peru.

On the other hand, the project called Socioeconomic and Environmental Sustainability of Agroforestry Coffee (SEACAF, by its acronym in Spanish), developed by the University of Greenwich (United Kingdom), CATIE, and the University of the Valley (Guatemala), advanced in its actions to evaluate costs, benefits, and trade-offs between intensification and sustainability of coffee plantations.

The effects of climate change on the sustainability of coffee and cacao in the region, and on the livelihoods that depend on these crops, were another strategic research topic that was worked on in 2020, with the culmination of the Collaborative Framework for Cacao Evaluation on Climate Change project, which was funded by The Bioversity, CIAT Alliance, and WCF. It had the participation of partners from Brazil, Colombia, Costa Rica, Ivory Coast, the United Kingdom, France, and international institutions. Likewise, the coffee trial turned 20 years old, and a new cacao trial was established, which is shaping up to produce valuable information for cacao farming in future years.

CATIE continued with its research on the production of healthy cacao pods and with the analysis of an 18-year trial on the incidence of climate-related diseases. In the second phase of this trial, the effect of climate change will be assessed from the evaluation of physiological criteria in cacao clones, to define new selection criteria in genetic improvement programs.

Technical assistance and training were key in Honduras, where CATIE worked with the Heifer International consortium in the Chocolate4All project. The local technical team trained more than 400 families in pruning, integrated pest management, genetics, and cocoa grafting. While the researchers analyzed the soil fertility and nutrient balance of 450 farms and developed a drone-software device called Shademotion, which will allow an advanced agroforestry diagnosis to improve cocoa plantations.



Within the framework of the Trees on Farms Project (IKI-TONF), a series of webinars were offered, where advances related to the use of participatory tools for the design of agroforestry intervention options and the development of intervention opportunities with trees in farms in the project areas were presented.

CATIE has been a member since 2012 of the Forests, Trees, and Agroforestry (FTA) consortium of the CGIAR system, a long-term applied research initiative that seeks to understand why, how much, how, where, and what to do to guide changes in the presence of forests, and trees outside the forest, in any territory or landscape. In 2020, the products contributed to the FTA include technological devices and applied research to evaluate the ecological functions of trees in agricultural landscapes. The information generated is key in the design of good practices and in determining the associated ecological and economic costs and benefits. In 2020, these actions were presented at the FTA international virtual scientific conference, and the preparation of technical and scientific articles began. For example, it was estimated in Catacamas, Olancho, Honduras that, in an area of 25 thousand hectares of agricultural landscape, farmers have established 1,730,295 linear meters of fences, where 67 % of which are living fences that cover 1,590 hectares (6.36 % tree coverage). About 571,301 m of dead fences could be converted to live fences. If we think about wood production, it is estimated that 1 km of living fence is equivalent to 1 ha of pure block forest plantation. Honduras has about 3 million hectares of pastures; therefore, the timber production potential for the fences of cattle farms is equivalent to 207,630 ha of pure forest plantations. In addition to serving to regulate grazing intensity and animal productivity, living fences provide producers and society in general with other goods (wood, fruit, firewood) and ecosystem services (shade, habitat for flora and fauna by improving connectivity in the landscape, regulation of the hydrological cycle, atmospheric carbon storage and others) of great value.

Finally, in 2020, the new policy for the acquisition and distribution of germplasm of CATIE was defined and approved, and financing was obtained for the conservation of germplasm of cacao, coffee, fruit trees, and orthodox seeds. With the support of the Crop Trust, the coffee collection was evaluated, and the recommendations of the study are being implemented to improve the conditions of the collection, with an emphasis on wild and ancient genetic groups. Furthermore, important projects, industries, and institutions such as MOCCA (Maximizing Opportunities in Coffee and Cacao in the Americas), PROCAGICA, Nestlé, Felco, San Francisco Bay Coffee, USDA, WCR, and FAO have contributed funds. The work in the collections is complemented by innovations in the management of the Botanical Garden, achieving important improvements in infrastructure and labeling, and the preparation of two more gardens, one of the Bromeliaceae family with 35 identified species and a garden of plants for medicinal use.

In 2020, work was done with the Mesoamerican Scientific Platform for agroforestry (PCP, by its acronym in Spanish – <https://www.pcpagroforestry.com>). The researchers of this platform contributed to 16 projects of CATIE, and its partners in Latin American and Caribbean countries, and have generated at least 60 publications (50 % indexed scientific articles).



## Sustainable economy, environment, and agribusiness

In 2020, CATIE carried out various actions to support, from the perspective of environmental economics, initiatives focused on low-emission development, addressing the challenges derived from climate change and variability. This is how it generated applied research, provided advice and strengthened the capacities of key actors, including technicians from the ministries of agriculture, environment, and development institutions from various countries in the region, such as Belize, Guatemala, Costa Rica, Jamaica, and Paraguay, among others.

Other achievements in this area include support for key platforms such as the Scientific Council on Climate Change (4C) and the Citizen Consultative Council on Climate Change (5C) of Costa Rica, to solve the knowledge gaps identified in the first phase of the LATINOADAPTA project (a research initiative that seeks to identify and analyze knowledge gaps in adaptation, which affect the development and implementation of policies and measures related to climate change in six Latin American countries), the participatory development of the climate change research agenda as a basis for climate action in Jamaica, and the development of a vulnerability analysis in the extended dry corridor in Guatemala, focusing on broadening the understanding of adoption processes by the most vulnerable populations.

In 2020, one of these actions focused on promoting the circular economy approach. This approach seeks to break the linear logic of extracting, producing, consuming, and discarding, by modifying the current production and consumption patterns to make the most of resources and minimize waste generation. Thus, avoiding negative impacts on the environment and health. To this end, the project “Towards a circular economy of local governments” was successfully implemented. As a result, the “Step-by-Step Guide to Facilitate the Transition of Local Governments Towards a Circular Economy: The Case of Costa Rica” and a study on solid waste management in the Municipality of Turrialba was developed. In this way, it is expected to facilitate the contribution of local entities to the achievement of climate action objectives, including NDC, decarbonization plans, and strategies for the adaptation and mitigation of climate change.

Within the framework of the Socioeconomic and Environmental Sustainability of Agroforestry Coffee project (SEACAF, by its acronym in Spanish), the gathering of information was successfully developed to evaluate the economic, social, and environmental trade-offs between agroforestry systems and coffee monocultures. In this study, the contribution of different capitals to livelihoods was emphasized. The results of this initiative will provide evidence to support the formulation of agricultural and environmental policies in the region.

### Success story

In 2020, CATIE promoted the successful, sustainable, and inclusive insertion and escalation of MSMEs (especially, associative companies) in value chains, through the implementation of the Virtual Exhibition of Costa Rican Artisanal Chocolate, where it created a space for interaction in which the MSMEs of Costa Rica shared their products with the population and potential buyers.



## *Watersheds, water security, and soils*

The processes of the hydrological cycle represented the main research topic, particularly regarding the relationship of silvopastoral practices, or sustainable livestock farming, with the infiltration of water into the soil. On this topic, the Watersheds, Water Security, and Soils Unit collaborated with the BioPaSOS project by investigating the water ecosystem service in livestock landscapes in the Mexican states of Jalisco, Campeche, and Chiapas. It also implemented a simplified methodology that made it possible to compare the water footprint of producers with different levels of intensification and livestock practices. These investigations made it possible to contribute to decision-making at multiple levels. Finally, the BioPaSOS project was supported in the analysis of the planning process for adaptation to climate change in the Mexican states where it operates, where water resources are a key axis for mobilizing adaptation actions.

Another main research topic was the work developed in urban watersheds and their resilience. In 2020, the research entitled “Measuring sustainability in cities: valuing trees and their services” was followed up, submitting an article to an international scientific journal. Through other means of communication, awareness was raised about the importance of trees in urban watersheds and the role of riparian vegetation as a key point to maintain green infrastructure in cities that have watercourses.

### **Success story**

In 2020, technical assistance was provided to Haiti, responding to the urgent needs of one of the countries with the greatest demand for technical cooperation in the region under CATIE's mandate. The projects developed in Haiti focused on watershed planning and commune development, aiming at food security and evaluating the resilience of their territories to the impacts of climate change and variability. The actions were financed by GEF Canada, KOIKA, and UAE, all channeled through UNDP.





## Forests and biodiversity in productive landscapes

CATIE collaborated with the CGIAR international agricultural research consultative group within the framework of its Forests, Trees, and Agroforestry (FTA) research program. In the priority on the restoration of FTA, four research works were developed on the restoration of tropical forests through natural regeneration: 1) development of a decision-making tool, 2) the potential for wood production in secondary forests of Costa Rica and Nicaragua, 3) the storage and productivity of biomass above the ground and its relationship with environmental variables in natural forests in Costa Rica, in collaboration with the Forest Ecosystem Observatory of that country, and 4) the restoration and governance of landscapes forest in the Nombre de Dios National Park of Honduras.

In 2020 and despite the effects of the COVID19 pandemic, the project Development of Sustainable Forest Models and Links with Private Financing for Secondary Forests, financed by the International Climate Initiative (IKI, for its acronym in German), continued its actions in Costa Rica, Honduras, El Salvador, and Guatemala. It contributed to strengthen the governance of the forest sector in each country and to generate enabling conditions for the management of secondary forests. In 2020, the project carried out a diagnosis of the systems of the Forest Conservation Institute (ICF, by its acronym in Spanish) of Honduras, to facilitate the approval of online management plans, and it supported the National Forest Institute (INAB, by its acronym in Spanish) of Guatemala with the preparation of a technical proposal for the implementation of the Credit Guarantee Program (PGC, by its acronym in Spanish) for its forestry sector. Regarding investment opportunities for secondary forests, two business models were developed for demonstration areas of secondary forest forestry management in El Salvador and at the Zamorano University in Honduras. In both, the sustainable management of secondary forests is related to business opportunities in the countries, which promotes the sustainability of these forest ecosystems. In the demonstration areas, a long-term investigation was developed on the productivity of the forest, and the investigations were evaluated during 2020. Finally, on management techniques, the project implemented an international virtual course, two on-site workshops for officials of the National System of Conservation Areas (SINAC) of Costa Rica, and a workshop on tools for entrepreneurship in the forestry sector.

### Success story

The Socio-ecological Restoration of Forests, Landscapes, and Ecosystem Services Resilient to Climate Change project, funded by the National Institute of Forest Sciences of the Republic of Korea (NIFOS), researched the adaptation of highly vulnerable mountain forests to climate change, in the mountain range of Talamanca, Costa Rica. To disseminate its actions, it held two webinars with the participation of 150 officials from the National System of Conservation Areas (SINAC, by its acronym in Spanish), with whom the results of the research were shared and management measures for adaptation were discussed. In addition, a participatory training plan was developed for key actors related to the management of mountain forests in protected wild areas and biological corridors, and based on this plan, five courses were designed in the on-site and virtual modality.





## Global network: *Environment for Development, EfD*

The Environment for Development Unit (EfD), with international and national partners, completed several research and development initiatives that generated evidence for decision-making. Through these, it contributed to the strengthening of the capacities of different actors, some methodologies and tools were developed to improve decision-making, and transition processes to more resilient development models were supported.

Among these initiatives, stands out the project “Accountability, use of technology and citizen participation for the improvement of water supply services in vulnerable communities in Costa Rica” (WAPP) supported by the Costa Rican Institute of Aqueducts and Sewers (AyA) and the United States Embassy in Costa Rica. WAPP aims to improve local water management and accountability mechanisms in at least 50 community water organizations in vulnerable rural areas of Costa Rica. Regarding technical assistance, EfD along with Costa Rican government organizations supported 15 Costa Rican municipalities to make the transition towards circular economy models. Knowledge and tools were generated, which allow municipalities to overcome the barriers to sustainable economic development to reduce the pressure on ecosystems and promote the reactivation of the economy and the generation of employment. Within the framework of the project, workshops were held to consult and validate the Guide Towards a Circular Economy Approach in Local Governments of Costa Rica: the case study of Turrialba, with representatives from 14 municipalities in the country. Through this process, EfD and CATIE facilitate local governments to include the circular economy in their territorial and financial planning tools to contribute to the achievement of Costa Rica’s NDC and climate policy objectives.

Finally, the year 2020 saw the implementation of CMaR (Sustainable Management of Marine-Coastal Resources), an ambitious long-term research program that has the technical support of the University of Gothenburg and members of the network EfD centers around the world. The objective of CMaR is to advise decision-making regarding the management of ecosystems in marine-coastal areas, specifically on issues of improving waste management that negatively impact them, the sustainable management of small-scale fisheries, and the design of public policies that favor the well-being of vulnerable populations (women and youth) directly dependent on marine resources.

### Success story

In 2020, two investigations were completed, one in collaboration with the University of Vermont, on the role that protected areas play in Costa Rica in reducing the risk of hydrological disasters, as well as the indirect effects of these areas (such as tourism) on the population, and the other one, in collaboration with universities in three countries, to determine the negative effects of high temperatures and abnormal rainfall.



## Agrobiodiversity and food security

The AGRO-INNOVA (IICA-CATIE) project is part of the DeSira Program of the European Union, whose general objective is to contribute to improving climate resilience and food security in highly vulnerable households of small producers in Central America. The project began actions in May 2020, after delays due to the pandemic, and is expected to be completed in September 2023. CATIE's participation in this project contributes to the execution of two great results: the first one is to work with small producers for them to have management models for the development and establishment of strategies for innovation, by strengthening capacities in agricultural production and livestock, through multi-layer agroforestry systems (SAFM, by its acronym in Spanish); and the second one is to work to articulate strategies for knowledge management in SAFM that strengthen the capacities of research institutes, ministries of agriculture, universities, organizations of small producers, and producers and their families.

### Success story

In 2020, CATIE worked with IICA on the AGRO-INNOVA project, which applies concepts and tools from ecological agriculture that improve mitigation and adaptation technologies to climate change for the production of basic crops, through public-private research, innovation, and extension in multi-layer agroforestry systems (SAFM, by its acronym in Spanish). This project aims to preserve the biodiversity of seeds, increase productivity and improve food security for highly vulnerable families in the Dry Corridor of Central America.



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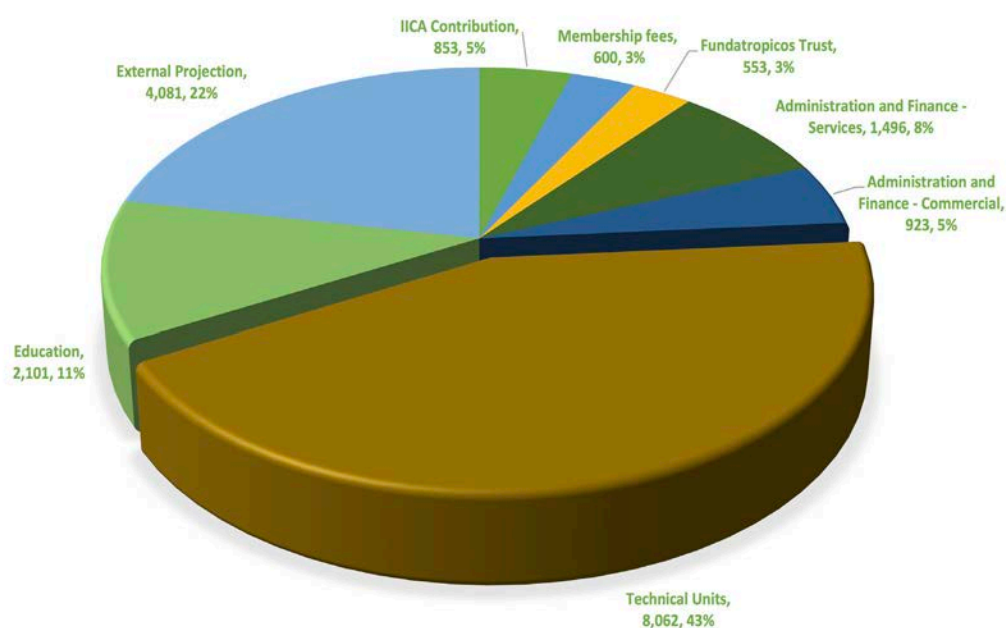


## Our finances

The year 2020 represented one of the most challenging periods for the financial health of the institution since its creation. The impact of the pandemic, caused by COVID-19, on the global economy also directly affected access to donation and financing resources, which affected the financial health of the institution.

CATIE had to take extreme measures to prevent the economic impact of the pandemic from having a strong impact on the operation of the Center. For this, a weekly monitoring system was established, which allowed a permanent assessment of the financial health of the institution and, thus, take measures in time to avoid impacts of greater dimensions. Commercial activities also suffered an important impact, especially those dedicated to the attention of visitors, such as the Botanical Garden, the lodging area, the cafeteria, and transportation.

Despite everything, at the end of the 2020 period, CATIE closes with a positive balance of USD 13,000. The entire CATIE family made a valuable contribution to avoid a greater impact on the financial health of the institution.



### Structure and source of income

IICA Contribution	853.000
Membership fees	600.000
Fundatropicos Trust	553.000
Administration and Finance - Services	1.496.000
Administration and Finance - Commercial	923.000
Technical Units	8.062.000
Education	2.101.000
External Projection	4.081.000
<b>Total</b>	<b>USD18.669.000</b>

## *CATIE enters a new era by adjusting its Fundraising Strategy and modernizing its trust*

In January 2020, the Board of Directors of the Tropics Foundation met in Atlanta, United States, to redefine its strategic approach to update its role within CATIE's institutional fund management strategy. As a result of this exercise, the foundation has a clear vision and mission, as well as a consolidated strategy to regain its relevance and, once again, represent an important way of managing funds for the institution in the United States of America. Clear advances have been made in collaborative fundraising management strategies with partner universities, such as the University of Idaho and Pennsylvania State University. In addition, the Tropics Foundation, in partnership with CATIE, secured the first grant from USAID's American Schools and Hospitals Abroad (USAID/ASHA) for almost USD 500,000 to finance the renovation of furniture and the technological update of the Graduate School of the CATIE.

Fundatropicos, for its part, began a transition towards a much more modern, agile, and efficient operating structure and corporate governance, which will allow it to improve its administration, governance, and decision-making processes. This, in turn, will lead to an increase in revenue due to the interest generated by the CATIE trust, which allows it to finance an important part of the basic budget. In addition, the Board of Directors is defining how to expand this trust to increase the economic contribution to CATIE and have a direct impact on the long-term financial sustainability of the institution.





# CATIE in the region

## New alliances... new proposals: challenges, achievements, and opportunities

In 2020, CATIE, its member countries, and the rest of humanity faced health and climatic emergencies that have affected the achievement of some of the proposed goals, as the countries have been forced to modify – at least in the short and medium-term – the priorities and ways of working of institutions, producers, rural families, and even consumers. The crisis generated by the COVID-19 pandemic began to manifest itself, in the region, in March 2020, and in the following months, the problem escalated, until it seriously compromised the economy of families and countries.

In the case of the Central American countries, the problem was exacerbated at the end of the year with the appearance of hurricanes Eta and Iota, with strong consequences of destruction in the productive and communication infrastructure. Coordinated action between the National Offices, the Directorate for External Projection, and Global Alliances were essential to monitor the impacts of these emergencies on CATIE's actions in the countries. Also, to seek mechanisms to continue operating and, thus, to respond to existing commitments with countries and donors. In addition, these challenges made it possible to analyze how to generate new opportunities for post-pandemic recovery and increase resilience capacity in the face of future events.

In the early stages of the pandemic, the efforts of governments and donors were focused on the development of mechanisms and options to control the spread of the virus and the treatment of patients, which affected in many cases the production and natural resource management processes. These are CATIE's thematic areas of strength. This led to the postponement and even cancellation of contests for proposals where CATIE was participating or was going to partake. Likewise, the possibility of face-to-face interaction with national partners affected, in the first stage, our actions in the countries. However, after adjusting to the new reality, it has been possible to exceed the goals proposed for the number of projects and strategic alliances that CATIE had proposed.

Despite the crisis caused by the pandemic, fundraising goals were exceeded, reaching a total of USD 15.7 million in approved proposals. This was achieved thanks to good coordination and permanent communication with CATIE's technical units and National Offices in the member countries, who played a key role in the success of these initiatives.

Moreover, the Office of Global Alliances contributed to reposition and strengthen CATIE's presence in South America. In 2020, five successful proposals for an amount of USD 3 million were managed in Colombia, Peru, Ecuador, and Bolivia. Furthermore, alliances were consolidated with some strategic partners such as UNDP in the Amazon (Ecuador and Peru), Guatemala, Haiti, the Dominican Republic, and Panama.

CATIE's actions in the countries did not stop as a consequence of the pandemic, instead they were adjusted to the new reality. Perhaps the most important change was the greater use of digital media and a detailed review of CATIE's actions in each of the countries, through a series of virtual seminars that allowed to learn about the successful experiences and the limitations that the countries faced.

The National Offices provided administrative and technical support to regional or binational projects and facilitated their operation. This action was necessary due to the impossibility of the headquarters technicians to visit the countries, given the international travel restrictions associated with the COVID-19 pandemic. Therefore, they facilitated and participated in the development of new project proposals to be developed in the countries. An example of the latter is the case of the PROAMAZONIA projects in Ecuador, and Sustainable Amazon Landscapes in Peru, both with UNDP. These are now part of the agenda of the Livestock and Environmental Management Group (GAMMA, by its acronym in Spanish). Nevertheless, the Representatives of CATIE, in Ecuador and Peru, collaborated in the design of these projects and participated actively in facilitating contacts with the UNDP officials responsible for the project, as well as in identifying and contacting the national partner institutions in those projects. Both cases illustrate the catalytic role of the National Offices in the identification of partners and new opportunities for CATIE action in the countries, but also contribute to the analysis of the institutional context in which the projects will operate.

Additionally, the National Offices successfully conducted national projects such as the National Information Platform on Nutrition (PiNN, by its acronym in Spanish) in Guatemala, the Adaptation of Agriculture to Climate Change through Water Harvesting in Nicaragua, the Climate Vulnerability Diagnosis and Climate Change Adaptation Plan for the Santa María River Basin in Panama, the Sustainable Management of Forests in the Andean Region in Colombia, the Development of an Integrated and Comprehensive Agroforestry Policy Framework in Belize, the Technological-Financial Alternatives for the Renovation, Rehabilitation, and Promotion of Coffee Plantations in the Dominican Republic, among many others. The National Offices were also key actors in obtaining scholarships for postgraduate studies at CATIE, provided by the governments in the case of Colombia, Honduras, and the Dominican Republic. The most relevant actions in each country are detailed below.

## Belize

CATIE, in this member country, developed several projects during 2020. Among them, we can mention the Development of an Integrated and Comprehensive Agroforestry Policy Framework for Belize, executed in conjunction with the Office of Climate Change of the Ministry of Sustainable Development, Climate Change, and Disaster Risk Management of Belize, along with funds from the Office of Climate Change and the Center for Climate Technology (CTCN, by its acronym in Spanish). This project seeks to promote agroforestry, silvopastoral, and agrosilvopastoral systems, which should contribute to increasing the well-being and income of the rural Belizean population. In this context, the policy seeks not only to contribute to achieving food security but also to meeting national and international goals for the conservation of natural resources. It was formulated and validated through a broad participatory and inclusive process, which took about a year and a half, with consultation workshops with the different actors, both from public institutions, non-governmental organizations (NGOs), academia, and producers. An important aspect of this effort was to incorporate the perspective of the stakeholders involved to ensure the effective participation of rural women in agroforestry policy, which constitutes a milestone for Belize and the Central American region in general.

Other projects that were supported were the Resilient Rural Belize, under the Ministry of Economy and Petroleum; the Improving Livestock Productivity and Climate Resilience in Belize, conducted with the Association of Livestock Producers of Belize (BLPA, by its acronym in Spanish) with financing from the Innovation Laboratory of the Inter-American Development Bank; the project Value Chain Market Assessment for Each Priority Area identified in the Resilient Rural Belize Program (RRB); and the Climate Vulnerability Assessment for eEach Priority Area identified in the Resilient Rural Belize (RRB) Programme, both with IFAD financing.



## Bolivia

While the process to formalize CATIE's National Office in Bolivia is being reactivated, in 2020, the project "Evaluation of the interaction of varieties due to pruning in coffee cultivation" was continued. It is developed by the Unit for Genetic and Agroforestry Improvement of Coffee and Cacao of CATIE, in collaboration with the National Institute for Agricultural and Forestry Research (INAF, by its acronym in Spanish). This is part of a study conducted in eight countries with funding from KOLFACI, which seeks to develop innovative technologies that combine promising and traditional coffee varieties subjected to different types of pruning, and to determine the most appropriate fertilization doses for each combination, based on a projection of the balance of nutrients, costs, and income. In addition, this project is the basis for actions to strengthen the capacities of researchers and students in the participating countries.

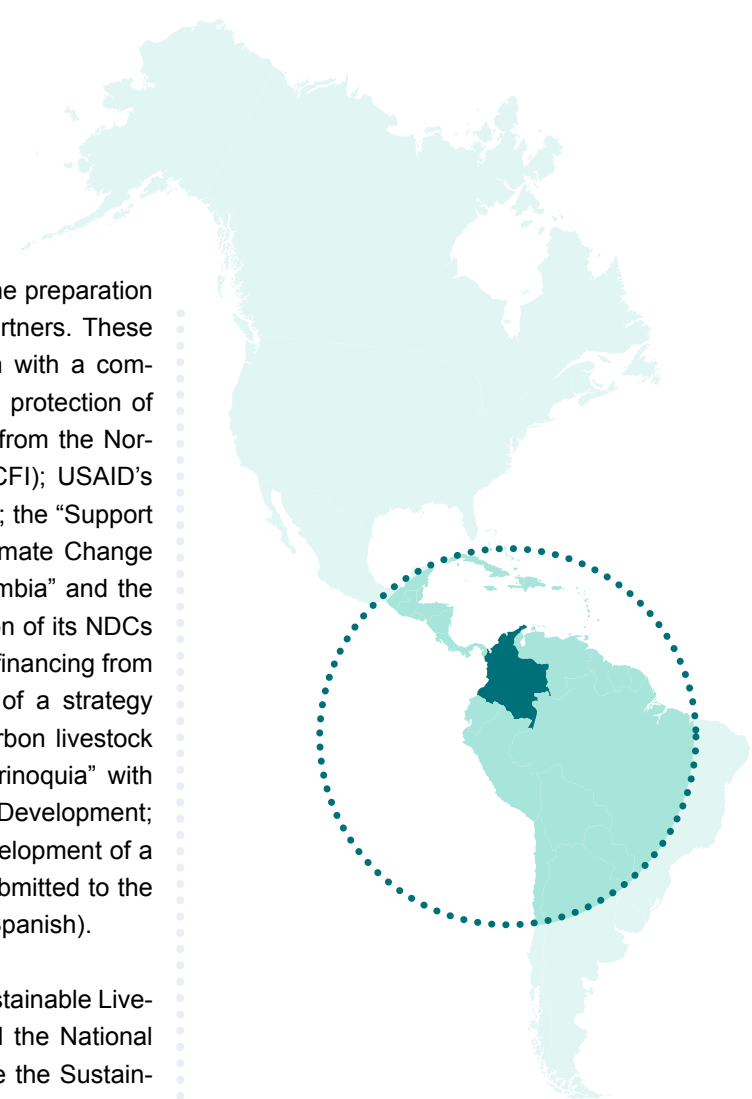
Also, a course was developed for the Certification for the Training of Azero and Guadalquivir Watershed Managers, which was developed in coordination with the Gabriel René Moreno Autonomous University (UAGRM, by its acronym in Spanish), in conjunction with the Vice Ministry of Water Resources and Irrigation (VRHR, by its acronym in Spanish), dependent on the Ministry of Environment and Water (MMAyA, by its acronym in Spanish) and the support of GIZ. In this course, developed in virtual format for six months, 16 women and 24 men, among which there were municipal technicians, representatives of different universities, leaders, and authorities of the municipalities of the Azero and Guadalquivir watersheds, who were selected for their leadership and active work, favoring the management of watersheds and the management of their natural resources.



## Colombia

CATIE's Office in Colombia actively participated in the preparation of various proposals with local and international partners. These include: Promoting sustainable livestock production with a comprehensive territorial management approach for the protection of Amazon and its populations, submitted for funding from the Norway International Climate and Forest Initiative (NICFI); USAID's appeal titled Amazon Forest and Biodiversity Activity; the "Support Program for the implementation of the National Climate Change Strategy (NDC) in agricultural value chains in Colombia" and the "Support Program for Colombia in the implementation of its NDCs – Strengthening MRV and M&E systems", both with financing from GIZ; the project "Formulation and implementation of a strategy to support the sustainable transformation of low-carbon livestock agroecosystems in prioritized landscapes of the Orinoquia" with funds from the Ministry of Agriculture and Rural Development; and the proposal "Design of a Roadmap for the Development of a Green Growth Plan for the Department of Huila", submitted to the Sustainable Trade Initiative (IDH, by its acronym in Spanish).

Likewise, CATIE, in Colombia, partnered with the Sustainable Livestock Table of Colombia, FAO-Colombia, CIAT, and the National University of Colombia/Medellín campus to organize the Sustainable Livestock Discussion, which consisted of four modules: 1) greenhouse gases, 2) biodiversity, 3) markets, and 4) consumption and agricultural extension. CATIE was responsible for organizing the second module entitled "Biodiversity, landscapes, and ecosystem services", in which CATIE researchers participated as speakers. The panels had a participation of more than 1800 people from 21 countries.



## Ecuador

The CATIE Office in Ecuador made efforts to consolidate agreements with government institutions, such as the Ministries of Agriculture and Livestock and the Ministry of Environment and Water; the IKIAM Amazon Regional University and the Secretary of the Environment of the Metropolitan District of Quito. The latter is interested in learning about CATIE's experience in the payment system for environmental services and its potential application in livestock systems. Also, it requested CATIE, in coordination with the Embassy of Costa Rica in Ecuador, to facilitate meetings with the government to analyze the country's Decarbonization Plan. Subsequently, the municipal authorities will share their experiences with the establishment of the urban trains (subway) that are of interest to Costa Rica.

At the end of November 2020, after several phases, partly delayed by the COVID emergency, the Agreement was signed between the Responsible Parties of the Comprehensive Amazon Program for Forest Conservation and Sustainable Production *PROAmazonía* and CATIE. In this case, CATIE will be responsible for the design and implementation of a Training Program and the technical assistance for the sustainable production of livestock in the provinces of the Special Amazon Territorial Circumscription (CTEA, by its acronym in Spanish). These actions will be coordinated by CATIE's Livestock and Environmental Management Unit (GAMMA, by its acronym in Spanish) in collaboration with CATIE's office in the country.

## El Salvador

In 2020, the Office in El Salvador has provided support to regional projects operating in the country, such as the Central American Program for the Comprehensive Management of Coffee Rust (PROCAGICA, by its acronym in Spanish) with IICA and CIRAD, the Adapted Agroforestry Systems Project for the Central American Dry Corridor (AGRO-INNOVA, by its acronym in Spanish) with IICA and the EU, and the Project Development of Sustainable Forest Models for Secondary Forests in Central America, with links to Private Financing with IKI funds.





## Guatemala

CATIE's Office in Guatemala conducts three projects at a national level. a. "National Information Platform on Nutrition (PiNN, by its acronym in Spanish)", which operates in the municipality of Momostenango as a pilot site. It works in coordination with SESAN and with financial support from the European Union, whose purpose is to develop management processes of information and multisectoral knowledge for the prevention of malnutrition, and improving food and nutrition security, serving as a model for actions at a national level. b. "Territorial Co-management for the Conservation and Sustainable Management of the Volcanic Complex Acatenango-Fuego, Cerro Sanay, and Montaña El Socó", in collaboration with the Fund for the Conservation of Tropical Forests (FCA, by its acronym in Spanish) and the participation of various government institutions (CONAP, INAB, INGUAT, and the Municipalities of Acatenango and San Andrés Itzapa). This project strengthens and promotes local and municipal alliances for the conservation and sustainable management of forests, soils, and water in the forest landscape, as well as the development of community and nature tourism in the territory. And, c. "Sustainable Economic Development and Territorial Governance Project in the Sarstun River Adjacency Zone", with the Foundation for Ecodevelopment and Conservation (FUNDAECO, by its acronym in Spanish), which aims to strengthen the capacities of partner institutions to implement rural extension processes in agroforestry systems with cacao, cardamom, pepper, and other crops, as well as silvopastoral systems. These systems contribute to the sustainable management of natural resources, the generation of economic benefits for communities, and the construction of processes for social participation, to reduce conflicts in the Sarstun River Adjacency Zone, located between Guatemala and Belize.

In addition, it supported the development of various projects that operate at a regional level, in which CATIE participates, such as the Central American Program for the Comprehensive Management of Coffee Rust (PROCAGICA, by its acronym in Spanish), the Adapted Agroforestry Systems for the Central American Dry Corridor (AGROINNOVA, by its acronym in Spanish) project; both in collaboration with IICA. It also supported the Ibero-American Model Forest Network (RLABM, by its acronym in Spanish) with FAO, CIFOR, and CUSO as strategic partners. CATIE was key in the implementation of the Scaling of Ecosystem-Based Adaptation



Measures (EbA) project in rural Latin America, the project Development of Sustainable Forestry Models for Secondary Forests in Central America with links to private financing (IKI), the Promotion of the Management of the Trinational Ecosystem of the Mayan Forest Mexico-Belize-Guatemala initiative, had the collaboration of the institutions responsible for the management of natural resources and protected areas in the three countries that operate with IDB funds/regional public goods. Furthermore, CATIE, in Guatemala, was selected to administer the project Strengthening and Scaling up Biosafety Capacities for the Full Implementation of the Cartagena Protocol on Biosafety, which was executed by CONAP with UNEP funds. Also, it administers the project Strengthening the Transparency Framework through the Creation of National Capacities to Implement the Paris Agreement in Guatemala (CBIT, by its acronym in Spanish), which is managed by the Ministry of the Environment, with the financial support of UNDP.

On the other hand, it was a facilitator of the organization and development of webinars with the Low Emissions Livestock Group, where the ministries of Agriculture and Livestock, and the Environment, universities, and the private livestock sector, among others, participated.

The purpose of this project is to contribute to the conservation and restoration of forest landscapes in the Central Volcanic Chain, emphasizing the goods and services of the ecosystems that improve the livelihoods of its inhabitants. Therefore, in 2020, efforts were developed to strengthen the local institutional capacities aimed at the conservation, sustainable management, and restoration of the forest landscape and the development of a knowledge management process with the participation of municipal officials, institutions, community leaders, local organizations, forest rangers, and families. All this with the participation of institutions of national responsibility, such as CONAP, INAB, and INGUAT, but also the municipalities of the districts of Acatenango and San Andrés Itzapa. In addition, a biological monitoring system based on camera traps and acoustic monitoring was implemented in areas of high importance for biological conservation, and more than 200 ha of natural forests were incorporated for conservation, with forest incentives. Likewise, Farmer Field Schools (ECA, by its acronym in Spanish) were established on issues of soil conservation and the use of agroforestry systems.



## Haiti

The Republic of Haiti has gone through a period of strong political instability in 2020, which did not allow the development of fieldwork with the required intensity. However, there was a strong interaction with the Ministries of Agriculture and Environment for the elaboration of proposals on the topics of interest of each ministry. Also, work was carried out on the development of the *Kafe Makaya* project, under the leadership of OXFAM/Quebec, and in collaboration with the *Fondation Nouvelle Grand'Anse*. This project aims to strengthen the coffee sector and improve the income of 2600 producer families in southern Haiti, through the application of agroecological and organic production approaches using agroforestry systems.

## Honduras

CATIE, in Honduras, dedicated efforts to consolidate and update existing agreements, such as the one signed with the Secretary of Agriculture and Livestock (SAG, by its acronym in Spanish), as well as new agreements with the National University of Agriculture of Catacamas (UNAG, by its acronym in Spanish) for the training of its human capital at the of masters and doctorates. Likewise, agreements with the Presidential Commissioner for Climate Change on the issue of decarbonization, with the Presidential Watershed Commission to present proposals for the comprehensive management of the post-hurricane IOTA and ETA watersheds, and a strategic alliance with INNOVATERRA to address-land use planning in urban areas.

The Office facilitated CATIE's contract, with the NGO Help in Action, for the Sustainable Livestock project in the region of the Gulf of Fonseca (DEIT, by its acronym in Spanish), which has technical support from CATIE's Livestock and Environmental Management Unit (GAMMA, by its acronym in Spanish). It also developed studies on the competitiveness of the chain and the investment climate for the livestock sector. In addition, it worked on the establishment of model farms, which will be used for the training of producers, as well as for the development of environmental and climatic indicators, and a protocol for the registration of information on the farms. Moreover, CATIE, in Honduras, supported other institutional projects that operated in the coun-

try, such as the project Taking Advantage of the Potential of Trees on Farms for Biodiversity (IKI TonF) with ICRAF, the initiative Transforming the Honduran Livestock Sector into a Low-carbon Economy (NAMA-Livestock) with the participation of SAG-DICTA, MiAMBIENTE, UNAH, and others. Also, the project Digitizing the Cacao Value Chain in Honduras: Innovative Technologies to Increase the Value, Profitability, and Resilience of Cacao Producers in Olancho (Chocolate4All), in consortium with Heifer International and UNAH, and with the financial support of the IDB; and the Conservation of Migratory Birds in Olancho project with the American Bird Conservancy Association. Additionally, in 2020, regional projects were supported from Honduras, such as the Ibero-American Model Forest Network (RLABM, by its acronym in Spanish), the project Scaling Up Ecosystem-Based Adaptation Measures in Rural Latin America, and the Sentinel Landscape Network of the CGIAR Program on Forests, Trees, and Agroforestry (FTA) led by ICRAF.

A relevant fact in 2020 was the procurement of financing for five master's students with the Presidential Scholarship Program 2020, and others with the Agroforestry Scholarship Program of the Presidency of the Republic for the Forest Conservation Institute (ICF, by its acronym in Spanish).



## Nicaragua

In 2020, CATIE, in Nicaragua, was part of several regional projects operating in the country, such as the Central American Program for the Comprehensive Management of Coffee Rust (PROCAGI-CA, by its acronym in Spanish), the project Agroforestry Systems adapted for the Central American Dry Corridor (AGROINNOVA, by its acronym in Spanish), both in collaboration with IICA; the CGIAR Program on Forests, Trees, and Agroforestry (FTA, by its acronym in Spanish), and the initiative Development of Sustainable Forestry Models for Secondary Forests in Central America, with links to private financing with IKI funds.

Other strategic actions include the Study on the Adaptive Capacity of Agricultural Landscapes in 10 Municipalities of the Country, with the collaboration of the Ministry of Family, Community, Cooperative, and Associative Economy (MEFCCA, by its acronym in Spanish), and the project Adapting Agriculture to Climate Change Through Water Harvesting, with financial support from SDC. In support of the latter, CATIE and IICA established an alliance to promote agribusiness and the design of municipal public standards related to water harvesting, to contribute to making the productive and economic development of small producer families living in the territory more sustainable and diversified. In addition, the response to a request from the Ministry of Agriculture and Forestry (MAGFOR, by its acronym in Spanish) was coordinated for the training of 20 professionals from the National System of Production, Consumption, and Trade in Artificial Insemination Techniques, who in turn will train and accompany technicians and leading producers in the application of these animal biotechnology tools.

The Nicaragua-Honduras sentinel landscape is part of the Mesoamerican Biological Corridor, and it is part of a network of seven sentinel landscapes in different regions of the world (Africa, India, Asia), which present marked differences in culture, ecology, natural resources, and land use. Especially, tree coverage as a result of deforestation processes, and in some cases, reforestation, often linked to national and regional development policies and social processes such as migration. In 2020, the project developed 39 publications conducted in Nicaragua, which analyzed the drivers of change in land use and governance. Some of these publications are master's research theses from CATIE's Graduate School.



## Panama

In 2020, the following projects were executed at a national level with the financial support of the Adaptation Fund, and administered by the World Bank: Detailed Diagnosis of Climate Vulnerability and Proposal of an Adaptation Plan to Climate Change for the Santa María River Watershed, and Establishment of Riverside Reforestation and Agroforestry Projects with Coffee Systems and Soil Conservation in the Caisán River Sub-Watershed (Renacimiento, Chiriquí province). Likewise, through the PROCUENCAS initiative, the technical capacities of professionals and strategic partners of the Ministry of the Environment were strengthened with financial support from CAF.

Additionally, it supported, together with FAO and IICA, the review of the National Climate Change Plan for the agricultural sector, prepared by MIDA and MiAmbiente, as well as the elaboration of the National Strategic Plan of the Agricultural Sector. Also, CATIE, in Panama, together with the Livestock and Environmental Management Unit (GAMMA, by its acronym in Spanish), is acting as a catalyst in the development of the NAMA Strategy for the livestock sector, to turn it into a green, recovered, and low-carbon economy. These actions are coordinated with the Ministries of the Environment (MiAmbiente, by its acronym in Spanish) and of Agricultural Development (MIDA, by its acronym in Spanish), along with private sector institutions such as ANAGAN.

On the other hand, on the issue of integral management of hydrographic watersheds, CATIE, in Panama, prepared a study on climate vulnerability and a plan for the adaptation to climate change for the Santa María River watershed. This study was implemented by the NATURA Foundation and the Ministry of the Environment, with funding from the Adaptation Fund. It collects basic, biophysical, and socioeconomic information for planning actions in one of the largest and most populated watersheds in Panama. The Santa María River watershed presents situations of poverty in its upper part, and strong pressures for agricultural activities along it. The study, which was carried out in a participatory manner, made it possible to detail the environmental situation and generate a complete geodatabase but, in addition, it expanded its contribution with a vulnerability study on variation and climate change, as well as a proposal for adaptation measures.



## Peru

CATIE's Office in Peru concentrated its efforts on two projects of importance to the country, which were assigned to CATIE. One was to support the CARAL 2020 contest, aimed at the selection and promotion of impact innovations for the improvement of family agriculture, which was organized by the National Program for Agrarian Innovation (PNIA, by its acronym in Spanish) of Peru. In this contest, three CATIE officials participated, one in the organization and coordination of the entire process, and two as members of the evaluation committee. The contest was designed to promote agricultural innovation by documenting, disseminating, and awarding successful cases of technological, institutional, and organizational innovations, to make visible and recognize the agricultural research and innovation efforts developed in the country by different actors, such as academia, NGOs, private companies, and organized groups of producers. It also sought to facilitate the application of the results achieved through partnerships, knowledge management, and training. A total of 169 cases were received, and 20 of them were awarded in topics such as agrobiodiversity, resilience to climate change, food and nutrition security, and the valuation of local genetic resources for the agricultural sector. The winning cases directly impacted 50 650 families, and indirectly, another 200 778. The contest made it possible to demonstrate that investment in research for development is profitable, but requires a period of growth; also, associativity, strategic alliances, and the value chain approach are essential for success.

The other project was the achievement of the component "Strengthening Capacities for the Sustainable Intensification of Livestock in the Ucayali And Huánuco Regions", which is part of the Sustainable Productive Landscapes in the Peruvian Amazon project, administered by UNDP, with resources from the Global Environment Fund (GEF). The technical actions of this initiative are in charge of CATIE's GAMMA unit.

On the other hand, another area of action was to facilitate activities for the development of capacities of leading professionals and farmers in various areas, in which CATIE has recognized strength. For example, agroforestry systems of coffee and cacao, natural resource management, and sustainable livestock. These activities ranged from theoretical-practical training events at CATIE

headquarters, lasting from two weeks to five months, in which there were a total of 101 participants. On the other hand, two virtual courses were offered, one on governance and management of biodiversity in forests (SEFOR-GIZ) with 40 participants, and the other one was the 32nd International Course on Forest Management (FAO-EU-FLEG) with 12 participants.






## Dominican Republic

CATIE, in the Dominican Republic, worked actively in the search for new projects to position CATIE in the country, emphasizing actions related to capacity building through short-term and post-graduate events. Under the coordination of the Higher Institute of Agriculture (ISA, by its acronym in Spanish) and the Autonomous University of Santo Domingo, 60 professionals were trained in integrated pest management and on competitive sustainable livestock with low carbon emissions. These were coordinated with the Directorate of Change Climate of the Ministry of the Environment and CEDAF, and more than 50 professionals from different Dominican institutions were trained.

About 27 Dominicans (seven women and 19 men) were part of CATIE's master's program, with scholarships from the Ministry of Agriculture and the Ministry of Higher Education, Science, and Technology (MESCYT, by its acronym in Spanish). Sixteen of them graduated in 2020, and the remaining 10 completed courses and traveled to their country to develop their thesis work. The country has recognized the importance of investing in the education of its graduates in CATIE's Postgraduate Program, for this reason, a new agreement was worked out between MESCYT and CATIE. The agreement constitutes an opportunity for quality training and personal and professional growth for up to 30 young Dominicans, who will join in the next two years. Additionally, the agreement considers CATIE's support in the formulation of joint master's degrees with Dominican universities, prioritizing the areas of sustainable agribusiness, watershed and water resources management, and sustainable low-emission livestock farming.

In addition, agreements were established with private universities, such as the National Evangelical University (UNEV, by its acronym in Spanish) and the Technological Catholic University of Cibao (UCATECI, by its acronym in Spanish). With the latter, the formalization of a joint master's degree in sustainable agribusiness is being completed.

Regarding research, several initiatives have been developed. Among them, there are Technological-Financial Alternatives for the Renovation, Rehabilitation, and Promotion of Coffee Plantations, and Training in the Design and Agroforestry Management of



Coffee Plantations to Increase Yield and Ecosystem Services, both in collaboration with the Dominican Coffee Institute (INDOCAFE, by its acronym in Spanish). The projects Evaluation of the Behavior of Eight Cocoa Clones Developed in the Experimental Cocoa Farm in Mata Larga, in collaboration with the National Cocoa Commission; Measurement of Biomass and CO<sub>2</sub> in Non-forested Plantations in the Dominican Republic; and Use of Geographic Information Systems to Monitor Agroforestry Systems and their Contribution to Reducing GHG Emissions were developed in coordination with the Climate Change Directorate of the Ministry of the Environment..

# Acronyms

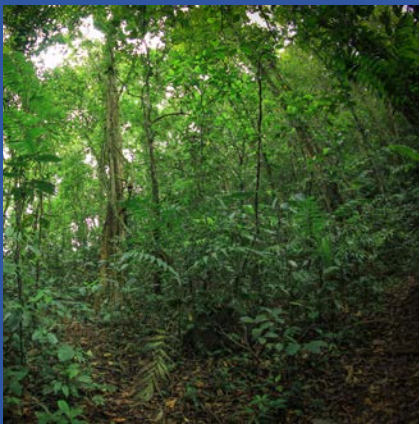
AFD	(French Agency for Development)
AGRICULTURA	(Secretariat of Agriculture and Rural Development)
ANAGAN	(National Association of Cattlemen of Panama)
IDB	(Inter-American Development Bank)
IDB-MIF	(Multilateral Investment Fund of the Inter-American Development Bank)
Bioversity-CIAT	(Bioversity Alliance and International Center for Tropical Agriculture)
CAF	(Development Bank of Latin America)
CARSI	(Central American Initiative for Regional Security)
CATIE	(Tropical Agricultural Research and Teaching Center)
CENIGA	(National Center for Geoenvironmental Information)
CGIAR	(Consultative Group on International Agricultural Research)
CIFOR	(Center for International Forestry Research)
CIRAD	(Center for International Cooperation in Agronomic Research for Development)
CONABIO	(National Commission for the Knowledge and Use of Biodiversity)
CONAP	(National Council of Protected Areas of Guatemala)
CTCN	(Office of Climate Change and Climate Technology Center)
CUSO	(Canadian University Service Overseas)
DICTA	(Directorate of Agricultural Science and Technology of Honduras)
EfD	(Environment for Development)
EU	(European Union)
FAO	(Food and Agriculture Organization of the United Nations)
FCA	(Fund for the Conservation of Tropical Forests of Guatemala)
FONAFIFO	(National Forest Financing Fund)
FONTAGRO	(Regional Fund for Agricultural Technology)
GIZ	(German Society for International Cooperation)
GEF	(Global Environment Fund)
ICF	(Forest Conservation Institute of Honduras)
IICA	(Inter-American Institute for Cooperation on Agriculture)
IKI	(International Climate Initiative)
INAB	(National Forest Institute of Guatemala)
INAF	(National Institute of Agricultural and Forestry Research)
INDOCAFE	(Dominican Coffee Institute)
INGUAT	(Guatemalan Tourism Institute)
INIA	(National Institute of Agricultural Research of Uruguay)
INIA	(National Institute of Agrarian Innovation of Peru)
IPCC	(Intergovernmental Panel on Climate Change)

IUCN	(International Union for Conservation of Nature)
KOICA	(Korea International Cooperation Agency)
KoLFACI	(Korean Cooperation for Food and Agriculture in Latin America)
MAGFOR	(Ministry of Agriculture and Forestry of Nicaragua)
MiAmbiente	(Ministry of the Environment of Panama)
MiAmbiente	(Ministry of the Environment of Honduras)
MICITT	(Ministry of Science and Technology of Costa Rica)
MIDA	(Ministry of Agricultural Development of Panama)
MESCYT	(Ministry of Higher Education, Science and Technology of the Dominican Republic)
MMAyA	(Ministry of Environment and Water)
PCP	(Scientific Collaboration Platform)
PNIA/INIA	(National Agrarian Innovation Program of the National Institute of Agrarian Research of Peru)
PROMECAFE	(Regional Cooperative Program for Technological Development and Modernization of Coffee Growing)
SAG	(Secretariat of Agriculture and Livestock of Honduras)
SESAN	(Secretariat of Food and Nutrition Security of the Presidency of the Republic)
SINAES	(National Accreditation System for Higher Education of Costa Rica)
SIMOCUTE	(National Monitoring System for Land Cover and Use and Ecosystems)
SIMSAN	(Municipal Information System on Food and Nutritional Security)
SINASAN	(National Food and Nutrition Security System)
SINAC	(National System of Conservation Areas of Costa Rica)
SDC	(Swiss Development Cooperation)
SDG	(Sustainable Development Goals)
UCATECI	(Technological Catholic University of Cibao of the Dominican Republic)
UAGRM	(Gabriel René Moreno Autonomous University)
UNAG	(National University of Agriculture of Catacamas of Honduras)
UNAH	(National Autonomous University of Honduras)
UNEP	(United Nations Environment Program)
UNEV	(National Evangelical University of the Dominican Republic)
UNDP	(United Nations Development Program)
UNFCCC	(United Nations Framework Convention on Climate Change)
USAID/ASHA	(American Schools and Hospitals Abroad de USAID)
USDA	(United States Department of Agriculture)
VRHR	(Vice Ministry of Water Resources and Irrigation of Bolivia)
WCR	(World Coffee Research)
WHO	(World Health Organization)





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# Budget Program 2021

## Meeting of the Council of Ministers

December , 2020 - Turrialba, Costa Rica



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## Presentation

December, 2020

Minister Council  
Gentlemen

Centro Agronómico Tropical de Investigación y Enseñanza – CATIE  
*(Tropical Agricultural Research and Higher Education Center)*

Dear Sirs:

In accordance with the provisions of Section c of Article 91 of CATIE's General Regulations, the projection of the 2021 budget is presented below.

The accumulated results contained in this report have been presented and reviewed with the General Director of CATIE and also discussed with the Executive Committee composed of the Director and Deputy General Director, Divisional Directors, as well as Program Leaders and the Internal Audit Office, among others.

We hope that the data presented in the report is clear and would appreciate your comments to improve this report

Sincerely,

Francisco Jamieson Fonseca  
Director of Administration and Finance, a.i.

**C.c.: Muhammad Ibrahim, General Director**  
**Walter Solis, Internal Auditor**

## I. Executive Summary

Dear members of the Council of Ministers.

What is proposed below for discussion and analysis, is a summary of the budget for the year 2021.

CATIE's income and expenses budget is made up of the core funds, Commercial activities, Agreements with projects, and institutional funds. The segregation of the budget by funds is originated by the nature of the activities carried out, by the origin of resources that finance them and the existing restrictions in each one of them.

The Financial Statements of the Center identify the restricted or unrestricted nature of the controlled funds in the following categories:

**Basic Activities Fund or core funds:** classified as unrestricted funds, made up of resources from IICA contributions and member countries quotas from CATIE, income from teaching activities, surpluses from service activities and commercial farms, amounts received for indirect cost recovery (RCI) and Overhead (OH) from projects, donations and specific contributions from different organizations and governments, as well as administrative, treasury management and trust returns.

**Service Activities Fund and Commercial Farm:** cataloged as unrestricted funds, it includes the activities carried out in the sugar cane, coffee, breeding and fattening of beef cattle, dairy, forestry and sale of forest seeds. It also includes institutional services, such as accommodation, hotels, transportation, laundry and souvenirs sale, among others.

**Agreement Fund:** its use is strictly restricted to the activities that the entity which finances the agreement has previously indicated. These resources are not the property of CATIE. The Center is responsible for the execution of the resources in accordance with the terms and regulations established in the respective agreement, contract or letter of understanding.

**Plant Fund:** it is made up of the fixed assets owned by the Center (land, buildings, machinery, equipment, vehicles, biological and intangible assets, etc.), as well as those that have been donated to the institution. They have no restrictions and are a necessary part of the resources available to CATIE to achieve its institutional goals.

**Institutional funds:** are created to control income and expenses at the divisional level as a result of small donations and projects with specific purposes and to be developed in a short term. Small consultancies and/or projects for amounts less than US\$ 50 (thousand), educational scholarships for scientific and professional master's degrees, scholarships for training courses and technical communication services, among others, are also part of this fund income.

## II. Global Budget of Income and Expenses 2021

To estimate the 2021 budget, a participatory process was carried out with the administrative and technical officials in order to validate the different project proposals, and the expected level of execution for 2021. In view of the negative impacts of COVID and the need to manage risk, three criteria were established to consider the probabilities of projects achievement, this exercise included signed agreements (green category) and projects with a high probability of being approved (yellow category), and low probability (category red); as presented in the table below:

WEIGHTING OF AGREEMENTS	
Component	Probability
3-SIGNED	100%
2-HIGH PROPOSAL (OPTIMIST)	90%
1-LOW PROPOSAL (PESSIMIST)	50%

During the year 2021, CATIE will continue to periodically monitor financial risk, cash income, reducing costs and looking for new sources of financing. In addition, trying to create a cash reserve that allows mitigating possible delays in the arrival of resources due to the different conditions in the agreements and projects execution in the region.

On the other hand, we will continue in constant relationship with the Board of Directors of Fundatrópicos, to continue having the financial support to face different situations that may arise in the Pandemic context.

Next, a preliminary budget is presented considering the projects and agreements that are being executed and new projects that are expected to be executed in 2021. It should be mentioned that this budget may change over the next four months depending on approval of proposals submitted and commercial activities, and it will be updated and presented to the board.

**Table 1 Comparative income 2020-2021**

Fund/Directorate/Program	Budget 2020	Budget 2021	Absolute	Variation Percentage variation
<b>BASIC ACTIVITIES FUND</b>	<b>5 091</b>	<b>4 373</b>	<b>-718</b>	<b>-14%</b>
IICA Contribution	1 000	1 000	0	0%
Membership fees	600	600	0	0%
Fundatropicos Trust	657	635	-22	-3%
Administration and Finance - Services-Commercial	724	456	-268	-37%
Technical Units	853	716	-137	-16%
Education	932	509	-423	-45%
External Projection	325	457	132	41%
<b>FUND FROM COMMERCIAL ACTIVITIES</b>	<b>2 358</b>	<b>2 063</b>	<b>-295</b>	<b>-13%</b>
Administration and Finance - Services	1 237	832	-405	-33%
Administration and Finance - Commercial	1 120	1 231	111	10%
<b>AGREEMENTS FUND</b>	<b>11 491</b>	<b>11 556</b>	<b>65</b>	<b>1%</b>
Technical Units	9 785	6 005	-3 780	-39%
External Projection	1 706	5 551	3 845	225%
<b>INSTITUTIONAL FUND</b>	<b>3 410</b>	<b>2 649</b>	<b>-761</b>	<b>-22%</b>
Administration and Finance - Services-Commercial	99	245	146	147%
Strategic Services	285	73	-212	-74%
Technical Units	1 197	610	-587	-49%
Education	1 492	1 641	149	10%
External projection	338	80	-258	-76%
<b>TOTAL BUDGET</b>	<b>22 350</b>	<b>20 641</b>	<b>-1 709</b>	<b>-8%</b>

The budget may have variations due to the new proposals that are won in the coming months. The Office of Strategic Alliances is coordinating with the different Research and external projection units to achieve success in the proposals preparation; there is an estimate of US\$ 8.2 million in project proposals not included in this budget and which will be incorporated as they are ratified by the donor and CATIE.

Among the most important proposals we can highlight the following:

**Table 3. Main proposals**

Unit	Donor/Financing	Project name	Amount
Climate action	Governments/Local universities/IKI	IKI moorlands and peatlands	\$ 4,063,150
Climate Action	R2030	ETP mangrove restoration	\$ 1,000,000
Watershed	NOFO- USA	A Program on International Shared Waters Cooperation	\$ 950,000
Watershed	Agro en Acción, CFM and Grades	Offre technique pour l'implantation des champs-écoles-paysans (cep) dans le département du sud au levels des communes d'intervention du Pitag-haïti	\$ 515,000
Watershed	<i>Caribbean Biodiversity Fund</i>	<i>Strengthening Connectivity by Reciprocal Horizontal Cooperation in the Caribbean Biological Corridor</i>	\$ 488,163
Climate Action	Government of Costa Rica/CATIE/AF	AFD decarbonization	\$ 235,500



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Biennial plan

2021-2022

Inclusive Green Development  
for Latin America and the  
Caribbean

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## Biennial plan (PB) 2021- 2022

### Summary

The biennial plan of a new Institutional Strategic Plan (*PEI, by its Spanish acronym*), as is the case here, poses important challenges of all kinds: Closure of knowledge and strategy gaps, adjustments in the institutional structure and its operations, communication strategy for the empowerment of the plan, among others. In the particular case of this biennial plan, we must add other very important ones at the juncture. For example, attention to the crisis caused by the Covid-19 pandemic is particularly important. The strategic plan for the next decade is formulated in the midst of this crisis, under the unclarity of visualizing its end, its marked effects on economies and the new order of relations that society globally proposes in the short and medium term: as are planetary limits, global health, food systems, the degradation of ecosystems, the loss of biodiversity and ecosystem services, climate change and variability, among the main.

In CATIE, we assume the challenges and adjust institutionally to them according to our possibilities that are framed by research and knowledge generation for Inclusive Green Development (*DVI, its Spanish acronym*) in the tropics of Latin America and the Caribbean (*ALC, its Spanish acronym*); the training of leaders, through their graduate



education programs and capacity building in the professional, technical, agricultural producers and rural communities levels, adapting the means to different levels and adjusting the technology available for distance education and training. Finally, through external outreach, to go further through our national offices and our local and international strategic partners; through the formation of platforms and knowledge management networks. This model already tested over the years shows the ability to achieve transformations, based on the synergistic effect that generates an impact in favor of the

transformations that the IGD (*DVI*) demands. The figure shows the value offer to which we refer and which the CATIE appropriates as its own.

At CATIE we still anticipate and make institutional commitments to one-off events, such as the beginning of the decade of the degraded ecosystems' restoration instituted by the United Nations. So is the start of the decade of accomplishments by 2030 of the United Nations Sustainable Development Goals.

At CATIE, we propose ambitious but achievable macro targets for each strategic objective of the ISP (*PEI*): *SO1. Generation of scientific knowledge for Inclusive Green Development (DVI, its Spanish acronym)*, the main challenge is the restoration of productive ecosystems and food systems, the recomposition of short food value chains taking advantage of agrobiodiversity resources, through the sustainable businesses of family farming. For this purpose, DIDVI is restructured and functionally organized in such a way as to ensure systemic approach and to meet current demand in the context of post-pandemic economic recovery and synergistic action of climate change adaptation and mitigation.

For the *SO2. Training of leaders with professional competences that affect the IGD (DVI)*, at CATIE we propose to have an academic offer in education and flexible training adapted to the current demands that includes face-to-face, semi-presence and distance education in its different modalities. This through an efficient review of its doctoral, master's and training programs. Having a common course log, which transfers to the new generations the essence of the CATIE school, colloquially its DNA, this in a functional and cost-efficient way, that ensures its technical and financial sustainability to the graduate school and its training programs.

In the *SO3 case. External outreach through knowledge management and institutional strengthening for the IGD (DVI)*, it is key for CATIE to achieve the increase in its capacity to impact countries, through its national offices, through the formation and development of platforms and networks of knowledge management and local and international alliances, to enable the negotiation of additional new projects and resources, for the transfer of innovative tools, proposals for appropriate policies and strategies for the inclusive green development in the tropics of LAC (*ALC*).

In order to achieve these macro goals, CATIE raises the *SO4. Institutional development and modernization*, for the efficient use of human resources with gender equity and inclusiveness, of its capital goods and its operating resources; that allow effective research, human resources training and external outreach according to demand and needs in the region. To achieve this at CATIE, we propose the implementation of a new Enterprise Resource Planning (*ERP*), which allows the development of a unified system of practical and efficient institutional management. Another important component in this objective is the formation of CATIE Inc., which streamlines commercial activities, in order to achieve better efficiency and competitiveness of these, for the strengthening of institutional finances.

## Introduction

CATIE (*Tropical Agronomic Research and Higher Education Center*) is a particular regional organization that, based on the synergy between graduate education, research, innovation and external outreach, affects the transformation of agricultural and natural resource systems in the tropics of Latin America and the Caribbean (*LAC*), in order to increase productivity, meet the demand for healthy and nutritious foods and conserve ecosystem services. Its contribution to sustainable development is carried out in close coordination with partners and allies, both regional and international.

The CATIE planning system provides, on the basis of the Institutional Strategic Plan (*PEI, its Spanish acronym*) for 10 years, the biennial plans every two years. From which the annual operating plans derive. Biennial plans like PEIs are approved by the Junta Directiva del CATIE (*CATIE's Board of Directors*) and ratified by the Consejo Superior de Ministros del CATIE (*CATIE's Higher Council of Ministers*). From 2021 and then every two years, the biennial plan must be updated; one of its main challenges in this first PB is to position and achieve the empowerment of the institution and of our local and international partners of the Strategic Plan 2021 2030. That is why this biennial plan includes empowerment as one of our specific strategic actions. Then, every two years until 2030, this biennial plan must be adjusted according to the changes that the environment poses depending on the challenges and opportunities the joint presents.

This PB 2021 2022 is formulated amid very significant challenges and opportunities. Among the first are the threats of climate change and its variability, extreme events (hurricanes of catastrophic dimensions taking human lives in the region, and forest fires), the degradation of natural resources, the pandemic caused by the Covid-19, which, in 2020 has negatively impacted human health, employment, income and the disruption of food systems. The duration of its effects is not yet clear at the time of preparation of this document. But its institutional implications have been felt in the different actions of CATIE. For example, regarding education and training in 2021, it is visualized as a year of transition to the virtualization of the educational offer, including one that will be face-to-face due to institutional convenience. This is the case of academic and doctoral master's degrees, which could be taught semi-presential in the coming years.

Specific events, such as the start of the decade of degraded ecosystems' restoration instituted by the United Nations, are considered as well. CATIE, as an academic center specialized in the field finds it as an opportunity to position itself in 2021 as a regional leader in the alliance with strategic partners. It also begins the decade of accomplishments by 2030 of the United Nations Sustainable Development Goals and, CATIE institutionally continues to refer to them as part of its institutional commitments for the next decade.

## Institutional policies, vision, mission and values

The starting point for CATIE's action in the coming years is the articulation between its institutional policies, the 2021-2030 PE, the biennial plans and the annual operational plans. The policies represent the orientation of the institution's work and some of these are listed below:

- CATIE is an international body and its priority is to generate regional public goods that strengthen and complement member countries' efforts in research, innovation, knowledge management and capacity building.
- CATIE's area of responsibility is sustainable production systems with added value and articulated to markets; the conservation and sustainable use of natural

resources in rural areas and the functional relationship between rural and urban areas from the outlook of natural resources and ecosystem services.

- The center effectively integrates education, research and external outreach, in such a way that it consolidates a unique institutional model that has proven to be effective in generating quality and value products based on the efficient use of resources.
- From an operational perspective, CATIE maintains a headquarters in Costa Rica and representations or links in the member countries, being the role of these to serve as a gear in institutional outreach to strengthen networks and projects of generation, analysis and validation of new knowledge and technologies, as well as the different training and education initiatives.

### **Vision**

CATIE reaffirms its position as a reference in research, education and innovation at the service of the Latin America and the Caribbean tropics' people, seeking a balance between the needs of use and protection of landscapes, ecosystems and production systems that are the base of people's sustainable health and well-being aspirations and all forms of life that are part of the planet.

### **Mission**

We promote Inclusive Green Development through scientific knowledge and new leaders' training, managing ecosystems, landscapes, and food systems. Their permanence favors the sustainable well-being of populations in the tropics of Latin America and the Caribbean.

### **CATIE values**

At CATIE, we recreate fundamental and operational values. The first reflect the institutional nature of CATIE and form the foundations that inspire thinking and action with the ethical-scientific foundations that the academy demands. Operational values represent the patterns of institutional action that seek transformative outcomes attached to fundamental values.

The fundamental values are: knowledge at the service of transformation, appreciation for plurality and diversity, inclusion, solidarity, respect, empathy and the good common. In addition to the operational values are: excellence, integration, accountability and the spirit of entrepreneurship for innovation.

# The Biennial Plan (PB): 2021 2022

## 1) Theory of change and strategic objectives:

The CATIE's Biennial Plan (PB) aligns with the strategic plan by aiming to promote a path favorable to Inclusive Green Development (*DVI, its Spanish acronym*). Defining this as one that ensures intergenerational equity, the full participation of society's different groups, and the maintenance of the natural capital's ability to provide the ecosystem services on which human well-being depends. Everything, through the construction of human capital, research for development, external outreach and advocacy in the search for the transformations that DVI requires.

This still follows the path marked by the application of the theory of change to define the causal path that shows how the products generated by CATIE (sphere of control) are transformed into results (sphere of influence) and impacts. This represents the basis and starting point for the definition of the implementation strategy, the planning and scheduling processes of institutional activities during the 2021 2022 biennium.

A key aspect includes the institutional capacity of CATIE that is reflected in its institutional model, human and financial resources, and fixed assets, adding partnerships and collaboration with other actors as well. This allows CATIE to achieve products, results and impacts of its research, innovation, education and capacity building.

CATIE, as already said, recognizes and proposes an inclusive green development model in Latin America and the Caribbean (*LAC*) committed to a balance between economic growth conditions, social inclusion, conservation and use of natural resources, and an integral climate action that has a need and a particularly relevant expectation for the tropics. In order to achieve the transformations that this model requires, CATIE proposes the following theory of change:

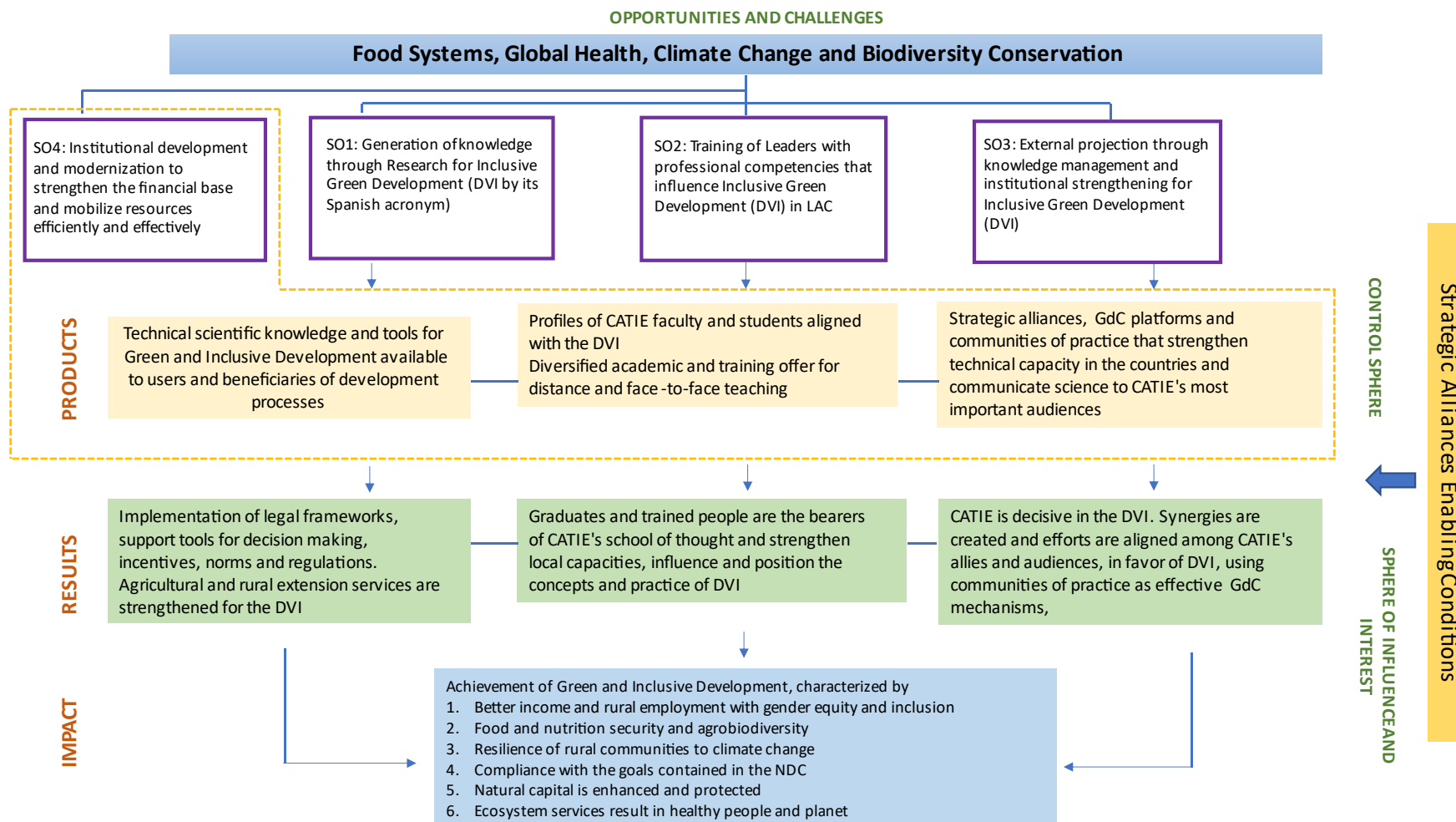


Figure 1. The CATIE's theory of change of the 2021-2030 Institutional Strategic Plan (PEI)



In the control sphere of CATIE, we propose the following products, for each strategic objective defined within the framework of its theory of change:

***SO1. Generation of scientific and technical knowledge, through systemic research for Inclusive Green Development (DVI)***

1. Food security based on agrobiodiversity and food systems
2. Intensified livestock production based on good practices in agrosilvopastoral systems
3. Genetic improvement of coffee and cocoa
4. Modern agroforestry for annual and perennial crops
5. Climate action in all its areas
6. Conservation and sustainable use of biodiversity and its ecosystem services
7. Sustainable economy, environment and agribusiness in the field of family farming and value chain competitiveness
8. Water safety and sustainable watershed management
9. Restoration of productive and natural ecosystems (soil component is particularly critical)
10. Use and production of renewable energy in agriculture

***SO2. Training leaders with professional skills that impact the DVI***

1. A renewed and competitive graduate school that differs from similar ones by its systemic approach, its programs in alliances with high-prestige international universities, the care for professional functionality in the English language of its graduates and the emphasis on critical research and development matters that have been eroded in recent years.
2. A cloister of PhD-level teachers (preferably) with strengths in knowledge and skills aligned with the scientific and technical principles of the DVI.
3. A flexible academic offer adapted to current demands that includes face-to-face, semi-presence and distance education in its modalities (assisted and self-managed).
4. Professional, technical and producer-level upgrade training programs, both in face-to-face, remote or mixed versions, through the use of technology and training materials appropriate to each level and contributing to the expectations of the DVI.

***SO3. External outreach through knowledge management and institutional strengthening for the DVI***

1. Increasing the capacity of CATIE in countries to facilitate alliances and the negotiation of additional new projects and resources, as well as the transfer of novel and appropriate digital tools for agriculture 4.0.
2. Development of the concept of representative offices' nesting with national and multilateral institutions that promotes the dissemination, validation, escalation and evaluation of technologies and opportunities for education and the negotiation of new projects and additional resources.

3. New (or renewed) thematic platforms for development and governance in countries or regions, through which knowledge is managed, relevant results are validated and scaled and form communities of practice in favor of the DVI.
4. A strengthening of bilingual institutional strategic communication (Spanish/English) on social networks and other means to position, before different audiences, achievements and results of CATIE and its allies.

**SO4. Institutional development and modernization**

1. Efficient use of gender-equity human resources, capital goods and operating resources.
2. Effective research and human resources training actions with gender equity that generate high-value knowledge for member countries.
3. A strong financial base with medium- and long-term perspectives on sources of resources.
4. Efficient and effective negotiation and mobilization of resources and establishment of strategic alliances.

The PB resumes the EP’s implementation strategy by showing the critical areas in which CATIE will work to improve its effectiveness, efficiency and impacts, focusing on institutional capacity building. A unified institutional management system and alliance building are proposed as the main components of this strategy.

**2) The planning and scheduling process**

Planning makes sense if you follow good scheduling that aligns the strategic plan with the biennial and operational plans. The 10-year plan provides strategic guidance, the biennial plan adjusts the strategic gaze with the short-term situation, setting planned institutional goals and milestones, and the annual operational plan, allocating human and financial resources that align institutional effort in the direction of institutional strategic objectives.

Planning makes sense if directions and operating units are empowered through the plan, because at the end of the process they are the ones that schedule activities by allocating resources to the product generation process in annual operational plans. The Biennial Plan (PB) should be a highly participatory exercise, with detailed schedule-level planning and managers included in the annual operational plans.

Below is a matrix that outlines the main strategic actions that make up this 2021 2022 biennial plan, for the 4 strategic objectives that make up the Institutional Strategic Plan (PEI, its Spanish acronym).

Table 1. Strategic actions for the execution of the 2021-2022 biennial plan.

ISP (PEI) empowerment / Responsible structure	Year 2021	Year 2022
<b>Communication strategy for the positioning and institutional empowerment of the ISP (PEI): Executive Committee</b>	<ul style="list-style-type: none"> <li>• Development and implementation of the communication strategy for the positioning and institutional empowerment of the 2021 2030 Institutional Strategic Plan (PEI), both at headquarters and in CATIE's member countries</li> <li>• Develop institutional structure to optimize synergistic interactions between management, local and international partners</li> </ul>	<ul style="list-style-type: none"> <li>• Consolidation of the communication process with CATIE's VIP hearings: Political decision-making and international cooperation; academy and scientific sector; civil society and private sector</li> </ul>
Strategic objective / CATIE's management	Year 2021	Year 2022
<b>Knowledge generation:</b> Research directorate for Inclusive Green Development (DVI)	<ul style="list-style-type: none"> <li>• Consolidation of DIDVI structure: Final formation of technical teams. Implementing instances for coordination with the other directorates</li> <li>• Implementation of research lines already defined in correspondence with the ODS, the decade of restoration of United Nations' ecosystems and the Paris agreements</li> <li>• Dissemination of results and communication of science (resume the production of a CATIE's scientific journal)</li> <li>• Scientific and administrative coordination of research projects, for the DVI</li> </ul>	<ul style="list-style-type: none"> <li>• Management and execution of research and escalation projects</li> </ul>
<b>Leadership training:</b> Graduate and training directorate	<ul style="list-style-type: none"> <li>• Achieve content virtualization of all educational and training programs, even those of face-to-face or semi-face-to-face that allow a flexible and diverse offer</li> <li>• Development and implementation of the common trunk for all CATIE masteries</li> <li>• Strengthen technology support systems for distance education.</li> <li>• Implementation of the new PhD professional update programs</li> <li>• Adjustment of the new business model of the graduate and training's directorate, to achieve financial self-sustainability</li> </ul>	<ul style="list-style-type: none"> <li>• Diverse and flexible CATIE's academic and training offer based on international and regional demand</li> </ul>

<p><b>External outreach for incidence:</b> External outreach and global alliances' directorate</p>	<ul style="list-style-type: none"> <li>• Strengthening national offices, technically and administratively</li> <li>• Development and strengthening of knowledge management and institutional strategic communication platforms</li> <li>• Develop and consolidate the process of accountability for key institutional actors</li> <li>• Consolidation of local and international alliances for the incidence and search for transformations</li> <li>• Strengthening the office of project management in coordination with DIDVI</li> </ul>	<ul style="list-style-type: none"> <li>• Processes of outreach and incidence through national offices, alliances and development projects in the consolidated countries and regions</li> </ul>
<p><b>Institutional development:</b> Directorate of finance and corporate services</p>	<ul style="list-style-type: none"> <li>• Year of transition to unified institutional management, following the implementation of the new ERP and SIGI system</li> <li>• Completed implementation of the new ERP system, which provides for the training of related teams</li> <li>• Implementation of CATIE Inc.: Legal, technical and commercial feasibility underway</li> <li>• CATIE's fundraising is developed and strengthened through its foundations</li> <li>• The IICA-CATIE alliance strengthens and its joint efforts consolidate financial sustainability processes</li> </ul>	<ul style="list-style-type: none"> <li>• CATIE's funding sources are consolidated through a stable portfolio with medium- and long-term outreach: IICA fees, countries; commercial activities; fundraising and foundations; indirect costs of international cooperation projects</li> </ul>

### 3) The path of causation in the theory of change: Challenges and opportunities for results' management

The challenge in using the theory of change as a planning tool is to accurately identify those actions that accompany the generation of institutional products (sphere of control) and that are part of a causality path towards the obtaining of results in the sphere of influence. In this sphere of influence, CATIE has identified local and international allies that accompany our institutional action. Following the same path, the achievement of impacts lies in the sphere of institutional interest, where the participation of political decision-making actors, both in central and local governments, is decisive through the implementation of public policies that seek transformations for Inclusive Green Development (*DVI*). In the following diagram, we succinctly show this process, identifying institutional management actions that allow products (findings and innovations) and consequent results of CATIE's work, to achieve the expected transformations.

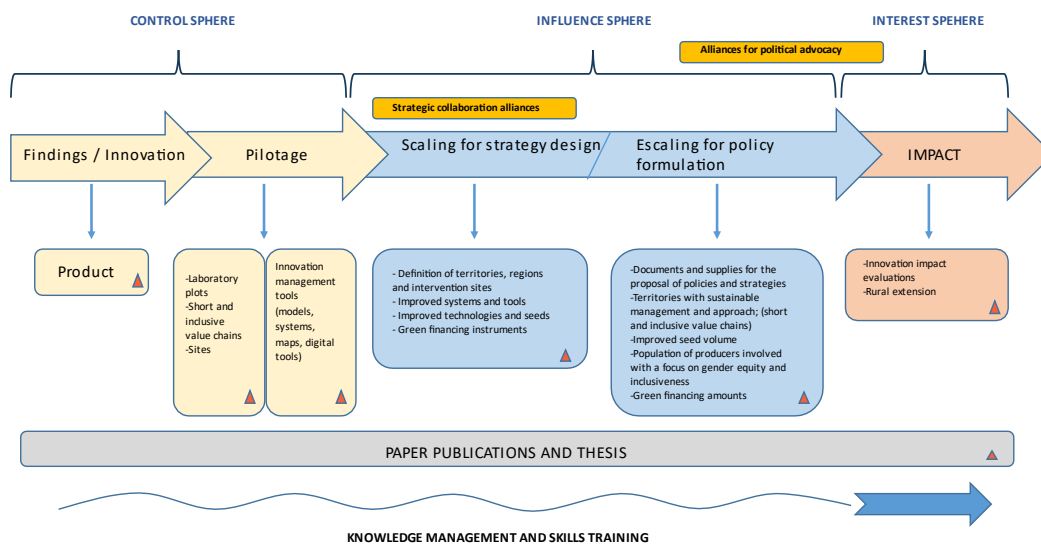


Figure 2. Product and results management: Path towards the impact.

### 3.1) Indicator matrices: Tangible progress on the path towards the impact

The following matrices correspond to the product indicators (sphere of control) and results (sphere of influence) for each strategic objective. The baseline, if available, corresponds to the year 2020, or to an average of the last years, in order to reduce the bias that the context of the year 2020 brings. The targets correspond to the years of the 2021 and 2022 biennium, which frame the work of this plan. It is important to note that indicators that refer to the number of people (students, technical teams, farmers, professionals, etc.) will be disaggregated by gender, following the gender and equity approaches established as a priority in the Institutional Strategic Plan (PEI).

#### a) Structure of matrices:

For each strategic objective, we introduce an initial matrix representing a compendium/summary of indicators for results management, both in the CATIE's sphere of control and in the spheres of influence and interest, for the 2021-2022 period. This initial matrix will be used by the planning team in conjunction with CATIE's directorates for biannual reports.

The two subsequent tables, for the case of SO1 and the table after SO2 and SO3, represent the main tools to be used by CATIE's directorates and their respective units. These are operational tools that, following the same causal logic, will provide the inputs of execution and monitoring by product, always following the path exemplified in the results management diagram at the beginning of this section (Figure 2).

For strategic goal 4, a different table format is shown as this objective is to accompany the achievement of products, results and impacts, however, the table follows the logic of the goals for the biennium, with its respective baseline.

It should be noted that both the results management analysis process and the input generation process for these matrices is framed within the adaptive management approach, in a way that, in the course of this 2021-2022 biennium, the accompaniment to the links in the units by the planning team will be carried out to work together on the necessary adjustments to the formats, in order to better adapt them to the operational needs and particularities of our units.



Table 2. Strategic objective 1: Summary matrix of indicators for biennial goal reporting.

	Chain of impact on the theory of change	OE1: Knowledge generation indicators	Biennial goals to define			Research directorate for the DVI: Responsible units & institutional alliances
			Baseline	2021	2022	
CATIE's products, results and impacts	1. Findings (sphere of control)	• Findings and innovations				Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); Bioversity – CIAT.
		• Publications				Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); CIRAD; Bioversity – CIAT.
	2. Piloting (sphere of control and influence)	• Validation tests (plots, laboratory, short and inclusive value chains, sites)				Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); CIRAD; Bioversity – CIAT.
	3. Tool development (sphere of control)	• Tools for innovations management (models, systems, maps, digital tools)				Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); Climate Action ( <i>Acción Climática</i> ), Biostatistic ( <i>Bioestadística</i> ); Economy,
		• Publications				

						Environment & ANS ( <i>Economía, Ambiente &amp; ANS</i> ), CIRAD; Bioersity – CIAT.
4. Scaling (sphere of influence)	• Definition of territories, regions and intervention sites					Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); Climate Action ( <i>Acción Climática</i> ), Biostatistic ( <i>Bioestadística</i> ); Economy, Environment & ANS ( <i>Economía, Ambiente &amp; ANS</i> )
	• Improved systems and tools					
	• Improved technologies and seeds					
	• Green financing instruments					
5. Knowledge management (sphere of influence)	• Inputs and tools for knowledge management platforms					Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); Climate Action ( <i>Acción Climática</i> ), Biostatistic ( <i>Bioestadística</i> ); Economy, Environment & ANS ( <i>Economía, Ambiente &amp; ANS</i> )
6. Development of policy proposals (sphere of influence)	• Documents and inputs for proposing policies and strategies					Agrobiodiversity and SA ( <i>Agrobiodiversidad y SA</i> ); AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y Ambiente</i> ); BB and productive landscapes ( <i>BB y paisajes productivos</i> ); SH Basins and Soils ( <i>Cuencas SH y Suelos</i> ); Climate Action ( <i>Acción Climática</i> ), Biostatistic ( <i>Bioestadística</i> ); Economy, Environment & ANS ( <i>Economía, Ambiente &amp; ANS</i> )
7. Trade escalation (sphere of trade influence)	• Area of Influence (Territories with sustainable management and					AF & Coffee and Cocoa ( <i>AF &amp; Café y Cacao</i> ); Livestock and Environment ( <i>Ganadería y</i>

		<p>approach; Short and Inclusive Value Chains)</p> <ul style="list-style-type: none"> <li>• Improved seed volume</li> <li>• Population of producers involved with a focus on gender equity and inclusiveness</li> <li>• Amounts of green financing</li> </ul>				<p><i>Ambiente</i>); Economy, Environment &amp; ANS (<i>Economía, Ambiente &amp; ANS</i>)</p>
	8. Building human capital, for innovation (sphere of control)	<ul style="list-style-type: none"> <li>• Researcher update programs</li> </ul>				<p>Agrobiodiversity and SA (<i>Agrobiodiversidad y SA</i>); AF &amp; Coffee and Cocoa (<i>AF &amp; Café y Cacao</i>); Livestock and Environment (<i>Ganadería y Ambiente</i>); BB and productive landscapes (<i>BB y paisajes productivos</i>); SH Basins and Soils (<i>Cuencas SH y Suelos</i>); Climate Action (<i>Acción Climática</i>), Biostatistic (<i>Bioestadística</i>); Economy, Environment &amp; ANS (<i>Economía, Ambiente &amp; ANS</i>)</p>
	9. Rural and agricultural extension (sphere of influence)	<ul style="list-style-type: none"> <li>• Documents and inputs for rural and agricultural extension policies</li> </ul>				<p>Agrobiodiversity and SA (<i>Agrobiodiversidad y SA</i>); AF &amp; Coffee and Cocoa (<i>AF &amp; Café y Cacao</i>); Livestock and Environment (<i>Ganadería y Ambiente</i>); BB and productive landscapes (<i>BB y paisajes productivos</i>); SH Basins and Soils (<i>Cuencas SH y Suelos</i>); Climate Action (<i>Acción Climática</i>); Economy, Environment &amp; ANS (<i>Economía, Ambiente &amp; ANS</i>)</p>
		<ul style="list-style-type: none"> <li>• Training manuals</li> </ul>				
	10. Impact Assessments (area of control and interest)	<ul style="list-style-type: none"> <li>• Impact assessments of innovations</li> </ul>				<p>Economy, Environment &amp; Sustainable Agribusiness (<i>Economía, Ambiente &amp; Agronegocios Sostenibles</i>); Development Projects (<i>Proyectos de Desarrollo</i>)</p>
<ul style="list-style-type: none"> <li>• Publications</li> </ul>						

Table 3. Strategic objective 1: Product indicators (sphere of control), for the M&E associated with the results

SO1: Knowledge generation expected results	Expected products related to:	Product monitoring indicators*		
		Finds	Piloting	Tool development
1. Transformation of production systems that increase productivity in a sustainable way to contribute to the DVI. 2. Promotion of sustainable businesses of family farming in short value chains. 3. Resilience of agricultural and livestock systems to climate events. 4. Conservation and optimization in water resource use and water safety. 5. Restoration, conservation and sustainable use of natural and productive ecosystems. 6. Implementation of policies and incentives, by member countries, of measures to achieve NDC and DVI goals. <sup>1</sup>	1. Food security based on agrobiodiversity and food systems	-Findings and innovations -Publications	- Plots - Laboratory tests - Short and inclusive value chains - Pilot sites	- Tools for innovations managing (models, systems, maps, digital tools) - Publications
	2. Intensified livestock production based on good practices in agrosilvopastoral systems			
	3. Genetic improvement of coffee and cocoa			
	4. Modern agroforestry for annual and perennial crops			
	5. Climate action in all its areas			
	6. Conservation and sustainable use of biodiversity and its ecosystem services			
	7. Sustainable economy, environment and agribusiness in the field of family farming and value chain competitiveness			
	8. Water safety and sustainable basin management			
	9. Restoration of productive and natural ecosystems (soil component is particularly critical)			

<sup>1</sup> Nationally Determined Contribution (NDC). It is the national commitment on the level of greenhouse gas emissions with the United Nations Climate Change Forum.

	10. Use and production of renewable energy in agriculture			
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\*The topics with which these indicators relate may vary depending on the nature of the product. More spaces or lines of action can be generated through which CATIE ensures that the generation of its products continues in a subsequent management process on its path towards the impact.

Table 4. Strategic objective 1: Product management indicators towards the achievement of transformations (impact results)

OE1: Knowledge generation expected results	Expected products related to:	Results management monitoring indicators				
		Escalation for policy design	Development of policy proposals	Escalation resulting from policy-adopting	Rural and agricultural extension	Impact assessments*
<ol style="list-style-type: none"> <li>1. Transformation of production systems that increase productivity in a sustainable way to contribute to the DVI.</li> <li>2. Promotion of sustainable businesses of family farming in short value chains.</li> <li>3. Resilience of agricultural and livestock systems to climate events.</li> <li>4. Conservation and optimization in water resource use and water safety.</li> <li>5. Restoration, conservation and sustainable use of natural and productive ecosystems.</li> <li>6. Implementation of policies and incentives, by member countries, of measures to achieve NDC and DVI goals.<sup>2</sup></li> </ol>	1. Food security based on agrobiodiversity and food systems	- Definition of territories, regions and intervention sites - Improved systems and tools - Improved technologies and seeds - Green financing instruments	- Documents and inputs for the proposal of policies and strategies	-Area of influence (territories with sustainable management and approach; short and inclusive value chains) -Improved seed volume -Population of producers involved with a focus on gender equity and inclusiveness -Green financing amounts	-Documents and inputs for rural and agricultural extension policies -Training manuals	-Assessments of the impact of the innovations -Publications
	2. Intensified livestock production based on good practices in agrosilvopastoral systems					
	3. Genetic improvement of coffee and cocoa					
	4. Modern agroforestry for annual and perennial crops					
	5. Climate action in all its areas					
	6. Conservation and sustainable use of biodiversity and its ecosystem services					
	7. Sustainable economy, environment and agribusiness in the field of family farming and value chain competitiveness					
	8. Water safety and sustainable basin management					

<sup>2</sup> Nationally Determined Contribution (NDC). It is the national commitment on the level of greenhouse gas emissions with the United Nations Climate Change Forum.



	9. Restoration of productive and natural ecosystems (soil component is particularly critical)					
	10. Use and production of renewable energy in agriculture					

\* Impact assessments have their framework of reference with indicators in Annex 2 of the Institutional Strategic Plan (PEI).

Table 5. Strategic objective 2: Summary matrix of indicators for the biennial goals reporting.

	Chain of impact on the theory of change	SO2: Leader training indicators	Biennial goals to define			Graduate and training directorate: Decan, training and support units
			Baseline	2021	2022	
CATIE' s products, results and impacts	1. Findings (sphere of control)	<ul style="list-style-type: none"> <li>Updates in curriculum of face-to-face graduates and distance education (<i>EAD, its Spanish acronym</i>)</li> </ul>				Decan, CAM, CAD, cloister
		<ul style="list-style-type: none"> <li>Master's and PhD's thesis</li> </ul>				Decan, CAM, CAD,
	2. Piloting (sphere of control and influence)	<ul style="list-style-type: none"> <li>Individual or group internships</li> </ul>				P/C directorate, UC
		<ul style="list-style-type: none"> <li>Alliances with universities</li> </ul>				Decan
	3. Tool development (sphere of control)	<ul style="list-style-type: none"> <li>Master's and PhD's thesis</li> </ul>				Decan, CAM, CAD
		<ul style="list-style-type: none"> <li>Up-to-date training plans</li> </ul>				P/C directorate, UC
	4. Scaling (sphere of influence)	<ul style="list-style-type: none"> <li>Internships</li> </ul>				P/C directorate, UC
		<ul style="list-style-type: none"> <li>University co-participation</li> </ul>				Decan
		<ul style="list-style-type: none"> <li>Joint training programs</li> </ul>				P/C directorate, UC
	5. Knowledge management (sphere of influence)	<ul style="list-style-type: none"> <li>Conferences and webinars with researchers, teachers and students</li> </ul>				PMEG, directorates (DVI, P/C, PE)
	6. Development of policy proposals (sphere of influence)	<ul style="list-style-type: none"> <li>Master's and PhD's thesis</li> </ul>				Decan, CAM, CAD
	7. Commercial escalation (sphere of commercial influence)	<ul style="list-style-type: none"> <li>Graduates who have an impact on development actions</li> </ul>				P directorate, PE directorate, ONs coordination
	8. Building human capital, for innovation (sphere of control)	<ul style="list-style-type: none"> <li>Master's and PhD's students (face-to-face and distance)</li> </ul>				Decan, CAM, CAD
		<ul style="list-style-type: none"> <li>Exchange of teachers and students (sabbatical and internships)</li> </ul>				Decan
9. Rural and agricultural extension (sphere of influence)	<ul style="list-style-type: none"> <li>Diplomas, rural and agricultural extension courses</li> </ul>				P/C directorate, UC	
	<ul style="list-style-type: none"> <li>Master's and PhD's thesis</li> </ul>				Decan, CAM, CAD	

	10. Impact assessments (sphere of control and interest)	• Courses and internships				P/C directorate, UC
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Table 6. Strategic objective 2: Product indicators (sphere of control), for the M&E associated with the SO2 results.

SO2: Leader training expected results	Expected products related to:	Reference indicators for product monitoring
<ol style="list-style-type: none"> <li>1. LAC agriculture leaders trained in CATIE strengthen academic institutions, research centers and government and private sector institutions, improving their institutional profile in favor of the DVI.</li> <li>2. Professional critical mass in the region and institutional positioning allows CATIE and its allies to have a greater impact on decision-makers for the achievement of the DVI.</li> <li>3. The professional update program at the PhD's and master's level allows the development of new professional skills on key issues for the DVI (which over the years have eroded in the region).</li> </ol>	<ol style="list-style-type: none"> <li>1. A renewed and competitive graduate school that differs from similar ones by its systemic approach, its programs in alliances with high-prestige international universities, taking care of the professional functionality in the English language of its graduates and the emphasis on critical research and development issues that have been eroded in recent years.</li> </ol>	<ul style="list-style-type: none"> <li>• Updates to its systemic approach through a common trunk with CATIE's DNA</li> <li>• Alliances with international universities and joint programs</li> <li>• English level of their graduates in master's programs</li> <li>• Professional update programs that incorporate DVI's critical topics</li> </ul>
	<ol style="list-style-type: none"> <li>2. A cloister of PhD-level teachers (preferably) with strengths in knowledge and skills aligned with the scientific and technical principles of the DVI.</li> </ol>	<ul style="list-style-type: none"> <li>• Percentage of the cloister with a PhD</li> <li>• Updating the cloister with the scientific and technical principles of the DVI</li> </ul>
	<ol style="list-style-type: none"> <li>3. A flexible academic offer adapted to current demands that includes face-to-face, semi-presence and distance education in its modalities (assisted and self-managed).</li> </ol>	<p>Flexible academic offer of master's and PhD's degrees disaggregated by:</p> <ul style="list-style-type: none"> <li>• Face-to-face programs</li> <li>• Semi-presential programs</li> <li>• Distance programs</li> </ul>
	<ol style="list-style-type: none"> <li>4. Professional, technical and producer-level upgrade training programs, both in face-to-face, distance or mixed versions, through the use of technology and training materials appropriate to each level and contributing to the expectations of the DVI.</li> </ol>	<p>Training program updated and aligned with the DVI disaggregated for the following levels:</p> <ul style="list-style-type: none"> <li>• Professional</li> <li>• Technical</li> <li>• Producers</li> <li>• Community</li> </ul>

Table 7. Strategic objective 3: Summary matrix of indicators for the biennial goals reporting.

	Impact chain on the theory of change	SO3: External outreach indicators	Biennial goals to define			Directorate of external outreach and global alliances: Office of alliances and projects, office of coordination of national offices, ONs
			Baseline	2021	2022	
CATIE's products, results and impacts	1. Findings (sphere of control)	<ul style="list-style-type: none"> <li>Scientific information on website, social networks, blogs and newsletters</li> </ul>				Office of Communication (OC), PMEG
		<ul style="list-style-type: none"> <li>Accessible and diverse EAD opportunities</li> </ul>				P/C and PE directorates
	2. Piloting (sphere of control and influence)	<ul style="list-style-type: none"> <li>Alliances with INIAS and its national plans</li> </ul>				PE directorate, ONs and Ons coordination
		<ul style="list-style-type: none"> <li>Alliances with the private sector</li> </ul>				PE directorate, ODA, ONs and Ons coordination
	3. Tool development (control sphere)	<ul style="list-style-type: none"> <li>Alliances with INIAS and Ministries of Agriculture and Environment (<i>Ministerios de Agricultura y Ambiente</i>)</li> </ul>				PE directorate, ODA, ONs and Ons coordination
		<ul style="list-style-type: none"> <li>Alliances with the private sector</li> </ul>				PE directorate, ODA, ONs and Ons coordination
	4. Scaling (sphere of influence)	<ul style="list-style-type: none"> <li>Escalation projects (international cooperation)</li> </ul>				PE directorate, ONs and ONs coordination
		<ul style="list-style-type: none"> <li>Alliances with governments and the private sector</li> </ul>				PE directorate, ODA, ONs and Ons coordination
		<ul style="list-style-type: none"> <li>Alliances with indigenous people's organizations</li> </ul>				PE directorate, ODA, ONs and Ons coordination
	5. Knowledge management (sphere of influence)	<ul style="list-style-type: none"> <li>Platforms, knowledge management &amp; communities of practice</li> </ul>				PE directorate, DIDVI, PMEG
	6. Development of policy proposals (sphere of influence)	<ul style="list-style-type: none"> <li>Policies &amp; national strategies</li> </ul>				PE directorate, DIDVI, ONs and ONs coordination
		<ul style="list-style-type: none"> <li>IICA, FAO, governments and local partners alliances</li> </ul>				PE directorate, ODA, ONs and ONs coordination

	7. Trade escalation (sphere of trade influence)	<ul style="list-style-type: none"> <li>Hectares with commercially improved production systems</li> </ul>				PE directorate, DIDVI
		<ul style="list-style-type: none"> <li>Alliances with governments and multilateral and local development financial sector</li> </ul>				PE directorate, ODA, ONs and ONs coordination
	8. Building human capital, for innovation (sphere of control)	<ul style="list-style-type: none"> <li>Joint master's and PhD's degrees with local universities and alliances with prestigious international universities</li> </ul>				EDP decan, PE directorate, ODA, ONs coordination
	9. Rural and agricultural extension (sphere of influence)	<ul style="list-style-type: none"> <li>Rural and agricultural extension systems</li> </ul>				PE directorate, ONs and ONs coordination
		<ul style="list-style-type: none"> <li>Development projects with rural extension and technical assistance</li> </ul>				PE directorate ONs and ONs coordination
10. Impact Assessments (area of control and interest)	<ul style="list-style-type: none"> <li>Recommendations incorporated into development projects and new research</li> </ul>				PE directorate, DIDVI, ONs and ONs coordination	



Table 8. Strategic objective 3: Product indicators (sphere of control), for the M&E associated with the SO3 results.

SO3: External projection and alliances results	Expected products related to:	Reference indicators for product monitoring
<p>1. Institutional strengthening in the region and, in countries, creates new research, innovation and education opportunities, and CATIE is positioned as a technical benchmark and preferential ally for the DVI.</p>	<p>1. Increasing the capacity of CATIE in countries to facilitate alliances and the negotiation of additional new projects and resources, as well as the transfer of novel and appropriate digital tools for agriculture 4.0.</p>	<ul style="list-style-type: none"> <li>• Representations consolidate their administrative and technical capacity, for the establishment of alliances and negotiation of projects</li> <li>• ONs make digital tools available to local partners, which are made available at the headquarters</li> </ul>
<p>2. An institutionalized model of rural extension systems that allow the escalation of programs aligned with the DVI.</p>	<p>2. Development of the concept of the representative offices' nesting with national and multilateral institutions that promotes the dissemination, validation, escalation and evaluation of technologies and opportunities for education and the negotiation of new projects and additional resources.</p>	<ul style="list-style-type: none"> <li>• National offices sharing resources and spaces with local partners</li> <li>• ONs coordinate with the headquarters: <ul style="list-style-type: none"> <li>• Validation, escalation and evaluation of innovations;</li> <li>• Education and training programs</li> <li>• New regional or national projects</li> </ul> </li> </ul>
<p>3. Member countries, in partnership with CATIE, develop a growing forward-looking skill in analyzing and developing opportunities and a better bargaining capacity to finance them.</p>	<p>3. New (or renewed) thematic platforms for development and governance in countries or regions, through which knowledge is managed, relevant results are validated and scaled and form communities of practice in favor of the DVI.</p>	<ul style="list-style-type: none"> <li>• Regional or national thematic networks and platforms operating in the country and forming communities of practice</li> </ul>
<p>4. CATIE's strategic alliances are functional and generate synergies in favor of national and regional transformations that target the DVI, with national funds or multilateral development banking.</p>	<p>4. A strengthening of bilingual institutional strategic communication (Spanish/English) on social networks and other means to position, before different audiences, achievements and results of CATIE and its allies.</p>	<ul style="list-style-type: none"> <li>• Level of strategic communication in media such as: <ul style="list-style-type: none"> <li>• Social media</li> <li>• Websites</li> <li>• Landing pages</li> <li>• Blogs and webinars</li> <li>• Socialization platforms</li> </ul> </li> </ul>
<p>5. The communities of practice developed from development platforms become an effective mechanism for managing and disseminating knowledge in favor of the DVI.</p>		

Table 9. Strategic objective 4: Summary matrix of indicators for the biannual goals reporting.

SO4: Institutional development results	Products in the strategic plan related to:	Institutional development product indicators	Biennial goals to define			Directorate of finance and corporate services: Related units and offices
			Baseline	2021	2022	
<p>1. CATIE performs successfully and achieves, endorsed by formal evaluations, the accomplishment of its strategic objectives.</p> <p>2. The organization gains increasing prestige at the regional and international level demonstrated in publications, forums, social networks and other media.</p> <p>3. The organization strengthens and consolidates its financial position and administrative efficiency and outreach its action</p>	<p><b>Product 4.1:</b> Efficient use of human resources with gender equity, capital goods and operating resources</p>	<ul style="list-style-type: none"> <li>• <b>% of implementation of the Integrated Institutional Management System (SIGI):</b></li> </ul>				Office of planning, M&E and Knowledge Management (PMEG, its Spanish acronym)
		<ul style="list-style-type: none"> <li>○ Staff performance assessment system</li> </ul>				Human development
		<ul style="list-style-type: none"> <li>○ Technical performance assessment system</li> </ul>				PMEG
		<ul style="list-style-type: none"> <li>○ Activity budget implementation system</li> </ul>				Office of finance
	<p><b>Product 4.2:</b> Effective human resources research and training actions that generate high-value knowledge for member countries</p>	<ul style="list-style-type: none"> <li>• Organizational climate observance based on the attributes of an index to be defined</li> </ul>				Human development, PMEG
		<ul style="list-style-type: none"> <li>• Number of publications in all categories of the BCO institutional repository</li> </ul>				BCO, PMEG
		<ul style="list-style-type: none"> <li>• Unit cost per CATIE’s publications</li> </ul>				PMEG, BCO and finance
	<p><b>Product 4.3:</b> A solid financial base with medium- and long-term perspectives on sources of resources</p>	<ul style="list-style-type: none"> <li>• Unit cost per CATIE’s graduate</li> </ul>				PMEG, decan, finance
		<ul style="list-style-type: none"> <li>• % of the basic budget covered by financial reserves for the strategic areas of central activities, such as risk management and control strategy.</li> </ul>				Directorate of finance, finance
		<ul style="list-style-type: none"> <li>• <b>% of the basic budget diversified by different sources of funding:</b></li> </ul>				Finance directorate
		<ul style="list-style-type: none"> <li>○ Contributions from CATIE Inc.</li> </ul>				Management of CATIE Inc.
		<ul style="list-style-type: none"> <li>○ Fundraising / trusts</li> </ul>				Foundations and trusts
	<ul style="list-style-type: none"> <li>○ Indirect cost collection</li> </ul>				Finance and contracts	
<ul style="list-style-type: none"> <li>○ Membership fees + IICA</li> </ul>				Finance directorate		

and influence before partners and allies.		<ul style="list-style-type: none"> <li>○ Graduate</li> </ul>				Finance management, decan	
		<ul style="list-style-type: none"> <li>● The % of the trust's growth to finance the basic long-term budget.</li> </ul>				Foundations and trusts management	
	<b>Product 4.4:</b> Efficient and effective negotiation and mobilization of resources		<ul style="list-style-type: none"> <li>● <b>% share of annual revenue from the various sources of funding disaggregated by</b></li> </ul>				Finance directorate
			<ul style="list-style-type: none"> <li>○ CATIE Inc.</li> </ul>				Management
			<ul style="list-style-type: none"> <li>○ Projects / consultancies</li> </ul>				Finance and contracts
			<ul style="list-style-type: none"> <li>○ Fundraising / trust</li> </ul>				Foundations directorate
			<ul style="list-style-type: none"> <li>○ IICA fees and countries</li> </ul>				Finance directorate
			<ul style="list-style-type: none"> <li>○ Graduate school</li> </ul>				Finance directorate, decan



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# Institutional Strategic Plan 2021-2030

## Inclusive Green Development for Latin America and the Caribbean



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# Presentation

The Institutional Strategic Plan (ISP) of CATIE (Tropical Agricultural Research and Higher Education Center) for the period 2021-2030 is the result of an institutional effort that included the analysis of the experience, capacity and products generated by the institution, as well as face-to-face consultations with professionals who work in the different units and directorates. The directorates of CATIE (Research for Inclusive Green Development, Education, Outreach and Global Partnerships, Finance and Corporate Services) coordinated internal consultations and provided important inputs for the development of this plan. We received opinions from key stakeholders through consultations made by CATIE offices in member countries, meetings held with the President and members of the Board of Directors, as well as with strategic allies such as IICA, CIRAD, GIZ, the Bioversity Alliance - CIAT and people with noteworthy experience in the work and mandate of the institution. In the process, we had the support and facilitation of external consultants, doctors Nicolas Mateo and Carlos Pomareda, who are recognized hereby for their efforts.

The document is structured in three sections: 1) the institutional context, 2) the strategic framework, and 3) the implementation strategy. The plan begins with the synthesis of CATIE's institutional contributions and capacities in recognition of the aspects that define the turning point for the new ISP. It is also recognized that CATIE is an organization of high value for agriculture in the tropics and in particular for the Latin America and the Caribbean (LAC) countries.

Then, the document presents the context in which CATIE has developed and how changing scenarios (global and regional) could affect the work of our organization in the coming years. The demands for CATIE's contributions and its response will undergo adjustments and therefore this section considers the elements that will influence them.

Further on, it shows the vision, mission, values and institutional policies are presented, whose compliance is essential to ensure effective synergy between CATIE's directorates and allied institutions. The document also presents the strategy of the plan, showing the restatement of the principles and then defining the route and the strategic objectives. The inclusion of the objective on institutional capacity development is considered essential and necessary to achieve the other objectives. The operational strategy and the elements required to achieve it are also presented and are the basis for CATIE's transition towards a more functional organization model.

The document concludes with the regarding planning, monitoring and evaluation, and the institutional commitment of actions to be taken as part of the planning and programming process of the Biennial Plan and Annual Operative Plan.

This document reflects CATIE's prospective vision within the framework of its mandate, the context in which it has performed in recent years, the lessons learned, and possible future scenarios.

We thank each of the people and organizations consulted for their participation, time, contribution of ideas and perspectives for the construction of our ISP 2021-2030.



# Executive summary

CATIE's Institutional Strategic Plan (ISP) aims to promote a favorable path to achieve Inclusive Green Development (IGD), through the construction of human capital, institutional strengthening for research and development, and outreach.

This plan is the result of an institutional effort that includes the analysis of the demands of the countries and the consultation with strategic allies and the Board of Directors of CATIE. This review includes detailed attention to the products generated by CATIE, as well as the policies, mission, vision and institutional values, and strategic objectives. For the design of these objectives, the theory of change approach was applied, all within the current and prospective context in the LAC region.

The application of the theory of change defines the causal path that shows how the products generated by CATIE (sphere of control) are transformed into results (sphere of influence) and impacts. This represents the basis and starting point for the definition of the implementation strategy and the monitoring and evaluation plan that are part of this ISP.

The starting point is CATIE's institutional contributions, embodied in products that constitute the basis for sustainable agricultural production, sustainable management of natural resources in the tropics and human capital development. These products represent the *raison d'être* of the organization. Among the most outstanding are: agroforestry systems with coffee and cocoa; intensification of livestock production and environmental management; silvopastoral systems; climate action; management, conservation and restoration of tropical forests; environmental and agricultural economics; territorial approach to landscapes and hydrographic basins, and human capital development to influence the transformations towards IGD.

A key aspect comprises CATIE's institutional capacity, which is reflected in its institutional model, its human and financial resources, its fixed assets, and genetic collections, also adding alliances and collaboration with other actors. This has allowed CATIE to achieve products and results in research, innovation, education, capacity building, and outreach.

The review of the current and prospective context raises the scenarios in which CATIE has been immersed in recent decades. Socio-economic and environmental conditions are taken into account, such as poverty, social exclusion, and migration; food and nutrition security; impacts of climate change and water scarcity, as well as degradation of ecosystems and loss of biodiversity. In addition, key issues such as gaps in productivity in agri-food systems and human resources in agriculture are considered.

## **Inclusive Green Development (IGD)**

*ensures intergenerational equity, the full participation of different groups in society, and the maintenance of the capacity of natural capital to provide the ecosystem services on which human well-being depends.*

In the future context, an analysis is presented on the implications for CATIE of the practices of small-scale agriculture and commercial agriculture based on monocultures, as well as technological progress and climatic instability. The possibility that some conditions may worsen is contemplated, such as the case of migration, poverty, and inequality. Other conditions are exposed and uncertain, among them, the demand for food and its composition (associated with the generation and distribution of income), the availability of food in the international market, and the possibilities of continuing to export the products that have dominated the market until now. No less important are the issues that link ecosystem health with human health (One Health).

In the same contextual line, among the future opportunities in this plan are the development of agri-food systems aligned with the conservation of ecosystem services and health, as well as new technologies, digital tools, and agribusiness models. Climate action as a whole, the restoration of degraded areas, and the management and sustainable use of biodiversity continue to be an important part of the institutional lines of work, always in the interests of a new vision of agriculture and the IGD for the LAC region, as a promising space to address urgent issues such as gender equity and social inclusion.

To this end, CATIE's mission is to:

*Promote Inclusive Green Development, through scientific knowledge and the training of new leaders, managing ecosystems, landscapes, and food systems, which with their permanence favor the sustainable well-being of populations in the tropics of Latin America and the Caribbean.*

The structure of ISP includes three components: 1) the principles of the plan, 2) the theory of change, and 3) the strategic objectives (SO). The principles include a comprehensive analysis of the synergies among research, education-training and outreach, the importance of agriculture, inclusive production systems, ecosystems, biodiversity, and climate; it also details CATIE's response to the demands of member countries. Functional alliances and interactive complementarity with them also appear as key points of the strategy and contribute to organizational cohesion and alignment.

The theory of change exposes the causal foundations to define the pathway towards the achievement of results and impacts. Through the design of conceptual models, the activities that will be carry out for the 2021-2030 period are synthesized to achieve strategic objectives, transformations and impacts, and, consequently, achieve the institutional mission. The actions that we will carry out for this purpose will focus on the areas of research, knowledge management, capacity building, and outreach.

We recognize the need for an IGD model for agriculture in Latin America and the Caribbean, committed to a balance between the conditions of economic growth, social inclusion, the conservation and use of natural resources, and a greater capacity for adaptation to climate change, the latter being a need and an expectation of particular relevance for the tropics. It is in response to the need for such development model that CATIE conceptualizes IGD. To achieve the transformations that the IGD requires, the following strategic objectives are proposed:

## SO1. Generation of scientific and technical knowledge, through systemic research for Inclusive Green Development (IGD)

1. Food security based on agrobiodiversity and food systems
2. Intensification of livestock production based on good practices in agrosilvopastoral systems
3. Genetic improvement of coffee and cocoa
4. Modern agroforestry for annual and perennial crops
5. Climate action in all its areas
6. Conservation and sustainable use of biodiversity and its ecosystem services
7. Economy, environment and sustainable agribusiness in the field of family farming and competitiveness of value chains
8. Water security and sustainable watershed management
9. Restoration of productive and natural ecosystems (the soil component is particularly critical)
10. Use and production of renewable energy in agriculture

## SO2. Training leaders with professional competencies that influence Inclusive Green Development (IGD)

1. A renewed and competitive Graduate School that differs from other similar ones by its systemic approach, its programs in alliances with highly prestigious international universities, the care of the professional functionality in the English language of its graduates, and the emphasis on critical research topics and development that have been eroded in recent years.
2. A faculty with doctoral-degree (preferably) with strengths in knowledge and skills aligned with the scientific and technical principles of IGD.
3. A flexible academic offer adapted to current demands that includes face-to-face, hybrid, and distance education in its modalities (assisted and self-paced).
4. Professional growth training programs, at the technical level and with producers at the community level, through face-to-face, remote or mixed versions, using technology and training materials appropriate to each level and that contribute to the expectations of IGD.

### SO3. Outreach through knowledge management and institutional strengthening for Inclusive Green Development (IGD)

1. Increasing CATIE's capacity in the countries to facilitate alliances and the negotiation of new projects and additional resources, as well as the transfer of innovative and appropriate digital tools for agriculture 4.0.
2. Development of the concept of nesting CATIE's country offices with national and multilateral institutions that promote the dissemination, validation, scaling, and evaluation of technologies and educational opportunities and the negotiation of new projects and additional resources.
3. New (or renewed) thematic platforms for development and governance in countries or regions, through which knowledge is managed, relevant results are validated and scaled, and communities of practice are formed in favor of IGD.
4. A strengthening of bilingual institutional strategic communication (Spanish/English) in social networks and other media to position CATIE's achievements and results with a broader audience and allies.

### SO4. Institutional development and modernization

1. The efficient use of human resources with gender equity, capital goods and operating resources.
2. Effective actions for research and training of human resources with gender equality that generate knowledge of high value for the member countries.
3. A solid financial ground with medium and long-term regarding sources of funding.
4. Efficient and effective negotiation and mobilization of resources and establishment of strategic alliances.

The ISP lays out an implementation strategy highlighting critical areas in which CATIE will work to improve its effectiveness, efficiency, and impacts. Finally, the monitoring and evaluation plan explains the conceptual model and framework of reference used for the design of the theory of change, on which CATIE's pathway for the 2021-2030 period is based. It also shows the portfolio of indicators of CATIE's products, results, and impacts for each strategic objective. This monitoring plan constitutes the basis for biennial and annual operational planning of the institution's operational units.

# Institutional context

## I. Introduction

CATIE (Tropical Agricultural Research and Higher Education Center) is a unique regional organization that, based on the synergy among postgraduate education, research, innovation, and outreach, influences the transformation of agricultural systems and natural resources of the tropics in Latin America and the Caribbean (LAC), to increase productivity, meet the demand for healthy and nutritious food and conserve ecosystem services. Its contribution to sustainable development has a history of just over 75 years, and it has made relevant contributions, in close coordination with partners and allies, to the solution of socio-economic, productive, and environmental problems.

The institution also has a mandate of a political nature, given the structure of its Board of Directors, the Higher Council of Ministers of Agriculture, and its source of basic resources provided by the member countries, which allows CATIE to be close to the decision-makers who influence the development of agriculture and the rural environment and demands the generation of practical solutions applicable in the short and medium-term. This contributes to its uniqueness, represents an attraction for CATIE's allies, and is taken into account when defining this Institutional Strategic Plan (ISP).

The ISP 2021-2030 has been developed amid very significant challenges and opportunities. Among the former, the threats of global change remain a priority: the degradation and loss of natural resources, increasing urbanization and migration within and between nations, and the increase in climate change and variability. It is in the face of these challenges that the countries of the region have adhered to two transcendental international agreements: the Paris agreements on climate action and the 2030 Agenda with its 17 Sustainable Development Goals. The pandemic caused by COVID-19 and the occurrence of extreme natural events in 2020 have had a negative impact on the loss of life and human health, employment, income, and the disruption of food systems and ecosystem services. The duration of the effects of the pandemic was not clear at the time of writing this document, although important trends were seen such as the post-COVID “green-blue” recovery proposed by the Government of Costa Rica and calls for proposals for projects that focus on that recovery. However, an increase in the frequency and intensity of extreme natural events is expected with a high degree of probability.

The opportunities target to value the richness of the tropics in LAC and Inclusive Green Development (IGD) that requires the acknowledgement of sociocultural and ecosystem particularities and the integration of diversity of resources, knowledge, and potential of people and ecosystems from the local to the regional scale. CATIE has a great opportunity to continue its contribution to development, which implies that the work must be supported by alliances with public and private actors that share interests and complement the capacities to overcome the challenges and take advantage of the opportunities derived from multiple demands.

*Although it is true, the date of creation of CATIE was in 1973; from the beginning as the Inter-American Institute of Agricultural Sciences (IICA), today the Inter-American Institute for Cooperation on Agriculture, in 1942 it was born as an academic center and remains faithful to its founding spirit since those years.*



The challenges and opportunities ratify the need for our institution to continue systemic research focused on IGD for production systems and the conservation of natural resources, ensuring gender equity and social inclusion, actions that, by its founding mandate, CATIE has carried out since its inception by combining research and innovation with the strengthening of human capital and outreach.

The ISP includes a prospective analysis that considers the environment of change in the economic and environmental aspects and in the social dynamics and internalizes the adjustments in the priorities of international cooperation, with the objective to improve its positioning and strengthening its substantive activities. The strategy outlines innovations in research, in postgraduate education, in outreach and impact, as well as in institutional development and the modernization of its processes.





## 2. CATIE: institutional contributions and capacities

### 2.1 Institutional contributions of CATIE

Our products constitute, both in sustainable production systems and in the management of natural resources in the tropics and the formation of human capital, the *raison d'être* and the response to the institutional nature. The most outstanding ones are summarized below.

***Agroforestry systems with coffee and cocoa.*** We have contributed to ensuring the future of both crops, maintaining for more than 70 years international collections of coffee and cocoa that are globally recognized and available in the public domain. They have allowed us, together with the genetic improvement programs of many countries, the development and use of superior materials, differentiated by quality, productivity, and resistance to pests and diseases. We have also developed modern methodologies and tools that have facilitated the establishment of successful and innovative agroforestry models throughout the tropical belt of the continent. These diversified systems have improved the livelihoods of rural families, in association with the generation of ecosystem services such as water conservation, carbon sequestration, improved soil quality, and the pollination service of crops by beneficial insects.

***Intensification of livestock production based on good practices in agrosilvopastoral systems.*** Thanks to intensive work over the past decades, we have achieved a leading role in promoting the sustainable intensification of livestock production systems. An improvement in efficiency and productivity per unit area is sought in livestock systems. The benefits are obtained as a result of the release of areas of less vocation for livestock, which are destined for restoration, helping to reduce environmental degradation, increasing tree cover, improving habitat for wildlife, and increasing carbon sequestration. Parallel to this, these systems and good practices make it possible to improve the management of resources within the properties, reduce emissions and promote adaptation and resilience to climate change. The protection and restoration of the ecosystem, based on the productive intensification and the approach of One Health, contributes to improving the interaction and harmony among biodiversity, livestock, and human beings for the better health of the planet.

***Management, conservation and restoration of tropical forests.*** We are internationally recognized as a leading institution for its contribution to the scientific knowledge of tropical forests, their biodiversity, and the ecosystem services they provide, in the context of landscapes and societies resilient to climate change and natural disasters. Our medium- and long-term research on the effects of global change drivers on tropical forest ecosystems and ecosystem services is widely reported. Our contribution to the promotion of sustainable forest management in general, community forest management in particular, and the restoration of forests and landscapes in LAC has been key in the development of the region.

*CATIE is a founding member of the 20x20 Initiative for the restoration of ecosystems in Latin America and the Caribbean.*

***Climate action.*** We are pioneers in proposing science-based solutions with an ecosystem and sustainable landscape vision, developing cutting-edge technologies for analysis, action, and monitoring of ecosystems facing the effects of climate change. Among our achievements, the pioneering concept of synergies between adaptation and mitigation to climate change (SAM) stands out, which includes adaptation actions based on ecosystems, support for the construction of the REDD + mechanism, and blue carbon. Since 2011, we have been the leading regional actor in blue carbon, developing scientific and political actions with innovative climate action tools that strengthen the flows of ecosystem services and the livelihoods of rural marine-coastal populations in the region. In addition, we are first-line actors in instances of the United Nations Framework Convention for Climate Change (UNFCCC), the Intergovernmental Panel of Experts for Climate Change (IPCC) and we promote the construction and implementation of new mechanisms of action under the Paris Agreement as REDD +, National Appropriate Mitigation Actions (NAMA) and National Determined Contributions (NDC).

***Environmental economics and strengthening of value chains and sustainable agribusiness.*** We have actively participated in the design and evaluation of public policies, development, and validation of market instruments that affect the protection of the environment, the sustainable management of natural resources, and the reduction of poverty. We are pioneers in the conceptualization and implementation of payment for ecosystem services schemes and with leadership on the circular economy approach. Since 2007, we host the regional center of the global *Environment for Development* (Efd) network, which consists of 15 research centers in environmental economics. This network contributes to the generation of relevant scientific knowledge to strengthen environmental management and economic development (<https://www.efdinitiative.org/>). In addition, we innovate in the analysis, creation, and promotion of inclusive value chains and sustainable green businesses considering indicators and parameters that reveal viability from a sustainability perspective, the connection with livelihoods, competitiveness, and its adequate connection with the differentiated multilevel markets (local, national, regional and international). It is important to mention that this transversal action is the one that links family agriculture (small producers) with their organizations (cooperatives and associations) and the markets, through processes that increase the competitiveness of the actors and ensure long-term commercial alliances with private companies. CATIE has extensive experience strengthening value chains in tourism, cocoa, coffee, and livestock, among others.

***Territorial approach of sustainable landscapes and hydrographic basins.*** For more than 45 years, we have proposed models for integrated management of hydrographic basins, which now contribute to water security strategies and increase resilience having water as integral core. At the same time, we have recognized the need for multi-scale approaches in the conceptualization, communication, and implementation of land and landscape management measures. Through this approach, we have generated solutions not only in watershed management and the conservation of water resources for multiple uses (particularly irrigation) but also in the biological corridor programs of the Central American countries. In addition, we have positively influenced the more than 31 million hectares in 15 countries where landscapes are managed applying a participatory approach through the Latin American Model Forest Network.

***Human capital training to influence transformations towards sustainable development.*** Through postgraduate education programs (masters and doctorates) in agricultural, natural, and social sciences, we have graduated more than 2,600 professionals from the countries in the region, without discrimination of any kind, as part of CATIE's inclusion and gender policies. The ratio of women has increased from

10% during the first 10 years to 51% in the last 10 years of institutional life. It also stands out that 30% of master's degree graduates have pursued doctoral degrees, mainly in Europe and North America. Our graduates work in research, teaching, technological innovation, extension, and other strategic endeavors in public and private spheres (many of them lead the management of public policies at the highest levels of government and educational matters). Some hold positions in senior management of universities, such as deans or provosts, which has undoubtedly improved the educational offer in the region.

The work of the Graduate School has been complemented with training programs that offer the opportunity to thousands of Latin American decision-makers, technicians, and producers to update their knowledge and improve skills as the situation demands or to meet structural needs. An average of 6500 professionals are trained each year by our programs. Always in terms of training, CATIE through its projects has trained hundreds of field promoters through Field Schools, promoting human resources with better knowledge and skills who remain in the same rural communities and contribute to their cooperatives, producer associations, and their families.

## 2.2 Capabilities<sup>1</sup>

CATIE's institutional capacity is reflected in our institutional model, which is composed by its human and financial resources, fixed assets, genetic collections, alliances, and collaboration with other actors, which has allowed it to achieve products and research results, innovation, education, and capacity building.

CATIE's headquarters are located on a green and sustainable campus in Turrialba, Costa Rica. Our campus has an important natural capital that is combined with other valuable capitals such as human resources and infrastructure (functional laboratories in soils, biotechnology, Geographic Information Systems, and environmental modeling). It also has facilities for higher education and training. It is important to highlight our genetic collections that have allowed it to intertwine research, higher education, training, and external projection under an integrated model. This unique form of intervention has proven to be very attractive to international cooperation, donors, prestigious international universities, and scientific organizations. In addition, we have highly qualified personnel with transdisciplinary training that integrates experience and prestige with very promising young scientists.

Our research and teaching support structures, such as the Orton Memorial Library, which together with IICA offers collections of historical value and the most recent literature, and provides, through the Online Documentation Center, access to databases and better documentary platforms for researchers, professors, and students of the CATIE community. Our headquarters are permanently connected to the national offices, so most of the remote facilities are of equal benefit to the member countries of the Center. Very important is the feedback that the headquarters receives from the countries in relation to the adjustment of the needs and demands for services that they require from CATIE in matters of research, education, training, and the requirements in the implementation of projects at different scales.

***The institutional model.*** The synergy between research, training of human resources, outreach, and incidence in the member countries has been decisive for the configuration of a school of thought that aims at the sustainable use of biodiversity, social inclusion, the use of systemic and integrative approaches to the tropical agriculture and livestock, the management of natural resources and the promotion of

<sup>1</sup> Some paragraphs in this section have been taken from the contents of the presentation of the institutional document: CATIE Facing the Challenges of the 21st Century, still in preparation.

successful participatory management schemes. These notions have laid the foundations for the promotion of sustainable agricultural, livestock, and forestry production schemes and combinations of these, in different systems and scales in the territories and landscapes, some of which are part of the centers of origin of plants and animals that make up the current agri-food systems.

**Graduate education and training.** CATIE's capacity to train human resources is reflected in the quality of its faculty, the structure of the programs and courses, and the orientation of these programs towards the creation of capacities to achieve innovative solutions. A very important element of the capacity has been built through the participation of the researchers in the delivery of the courses and the participation of the students in research through theses with the support of the researchers. Short-term training experience is also relevant. Our institution, ahead of the times, ventured into distance education and has three professional master's degrees in virtual mode. Training programs under this modality are very active and their dynamism has increased as a result of the pandemic. As long as pandemic conditions prevent a safe return to presence, the Graduate School has made the decision to convert all its academic offerings into distance education.

**Projection and impact.** Projection and advocacy work in member countries is another strength, having made our technical-scientific contributions available to priority development subjects in the countries and in the region. For this purpose, the institution will accompany them at different times and circumstances with technical assistance, provision of resources, through projects and capacity building that make the proposed development initiatives viable.

CATIE's National Offices have achieved an institutional anchor over the years, thanks to their technical skills and the development of alliances with local institutional actors, through which a synergistic action in political advocacy has been achieved. Likewise, our offices have been strengthened and positioned in these spheres of advocacy and our allies have strengthened in their technical positioning, based on their interaction with CATIE.

**Alliances.** CATIE's global alliances are an essential part of its strength and include some of a strategic and long-term nature such as IICA, CIRAD, the Bioversity-CIAT Alliance, the World Agroforestry Center, and GIZ. While others are specifically associated with specific programs, projects, and initiatives of a different nature. These alliances are usually part of the scientific platforms led by CATIE or in which CATIE participates. On the other hand, although they are not defined as alliances in the strict sense, the donor agencies and the member countries, with their contributions, have largely supported the institutional work. The alliance with IICA (established by legal mandate) is critical to achieving political impact and scaling up CATIE's results in Tropical America. Therefore, strengthening this alliance is essential. The two institutions are working to renew their cooperation agreement that includes the new challenges for the region described in this ISP.

## 3. Current and prospective contexts

The current context in which we are immersed is briefly developed in this section. Subsequently, some future scenarios are considered, which determine our pathway.

### 3.1 The situation today

***The Anthropocene and emerging threats.*** The range of Earth System conditions that enables human life, as we know it has been named as the safe operating space. This space can be defined in thresholds characterized by nine key indicators that comprise the planetary boundaries. These planetary limits have been exceeded, perhaps irreversibly, in at least three cases already documented: the integrity of the biosphere and the biogeochemical fluxes of nitrogen and phosphorus. In addition, the most recent evidence suggests that the stability of the large Amazon forest mass and the polar and boreal caps, and the functioning of the “great ocean conveyor belt” could irreversibly collapse within the next 30 years.

The effects of the Anthropocene are negatively manifested on agricultural productivity and food and nutritional security due to the considerable degradation of soils, in the variability of precipitation in the Pacific zone of Mesoamerica in fires and pests that destroy pine forests and the livelihoods that depend on them in Honduras and Guatemala, and in the fires in Amazonian forests that accelerate the risk that this unique ecosystem, until now considered perpetual, will become savanna, affecting the climate of the entire planet. It is also shown in the degradation of soils and the associated reduction in agricultural production. Combating desertification and soil degradation is a top priority in mountainous countries with high population density, such as Haiti, Guatemala, Honduras, El Salvador, and the Andean countries. In addition, water scarcity afflicts urban and rural areas more strongly, requiring radical changes in national regulation, such as Costa Rica that have declared access to water as a constitutional right (in quantity and quality).

Finally, the COVID-19 coronavirus pandemic and the risk of future pandemics of other zoonoses (125 emerging infectious diseases), created or exacerbated by the destruction and degradation of biodiversity, add to climate change as the main modern threats to human beings. As climate change and emerging infectious diseases are interdependent, both must be monitored as major threats together.

***Economic growth and environmental deterioration.*** The alarming environmental deterioration as a result of the political guidelines for a global development model based only on economic growth, which began in the 1970s, reached a turning point with the Earth Summit Agreement in Rio de Janeiro. However, instead of making the necessary adjustments in development patterns, humanity accelerated its negative impact on the Earth System (Steffen, Broadgate, et al. 2015) originally published in 2004 to show socio-economic and Earth System trends from 1750 to 2000, have now been updated to 2010. In the graphs

#### *What is the Anthropocene?*

*Human life depends on the conditions of the Earth System. The biosphere (biodiversity) provides human beings with the ecosystem services on which we all depend. However, the current magnitude of human influence causes such profound changes in the conditions of that system that for some the present era is now known as the Anthropocene.*

of socio-economic trends, where the data permit, the activity of the wealthy (OECD). Progress has been made in the conceptualization of the place of the human being on the planet through the framework of Nature's Contributions to People (Díaz et al. 2015), but not in the implementation of effective actions that can keep us within a safe operating space for human and planet health (Steffen, Richardson, et al. 2015) introduced in 2009, aimed to define the environmental limits within which humanity can safely operate. This approach has proved influential in global sustainability policy development. Steffen et al. provide an updated and extended analysis of the PB framework. Of the original nine proposed boundaries, they identify three (including climate change).

In the last 20 years, trade liberalization policies have been added within the framework of free trade agreements. The result of these changes can be analyzed from two major trends observed. On the one hand, the countries of the tropics accelerate their agri-food exports, via large international consortiums and concentrated on few primary products with low added value, and at the same time, they increase their imports of basic foods (especially grains).

The concern of some European countries to counteract this trend made resources available to cooperating organizations that would support a development model that recognizes and values measures to protect natural resources. Concurrently, there was a decrease in support for the public agricultural sector, which had an impact on policies that affect it, especially commercial ones.

In the context described, relevant processes have been observed that have influenced CATIE's work, such as aggravation of rural poverty in some territories, environmental degradation, greater effects of climate change, acceleration of migration, threats to biodiversity, limited increase in productivity in agriculture and gaps in human resource training. These processes are briefly considered below.

**Poverty, social exclusion and migration.** An important phenomenon in the region is the accelerated urban growth and the persistence of rural poverty, especially in some territories, those most affected by the degradation of natural resources (FAO 2019; CEPAL 2012) published by the Food and Agriculture Organization of the United Nations (FAO). The lack of opportunities in rural areas - and in some countries, violence - accelerates the migration of young people to urban areas and other countries in the north of the hemisphere. In addition, gender gaps have increased, as have inequalities in indigenous populations. Urbanization and rural-urban and extra-regional migratory processes require a reconsideration of the role of agriculture, particularly in Mesoamerica and the Caribbean, as well as a greater articulation between agricultural and livestock production, agro-industrial, and markets to make value chains more functional.

**Food and nutrition security.** Food insecurity has increased especially for the population with limited resources, including rural communities, located in ecologically fragile areas and in spaces with limited access. Recently, the food problem has also affected the group of small agricultural producers and their families, who are limited in their ability to obtain complementary income from jobs, such as day laborers on larger farms or in urban areas, due to limited access problems. A phenomenon generally observed is that the prices that small producers receive are a decreasing proportion of what consumers pay, this being a condition that affects globally, since "the human cost of our imperfect food systems is that almost one billion people starved and nearly 2 billion overconsume inappropriate foods<sup>2</sup>", which contribute to malnutrition, obesity, and up to 11 million premature deaths per year (GBD 2018).

<sup>2</sup> Lucas and Horton (2019)



**Climate change impacts.** Meso-America and the Caribbean are among the region's most vulnerable to the negative effects of climate change. The chain of impacts is long and challenging: from 71% of agricultural areas and half of the largest cities under risk of periodic water deficit (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services 2019), a higher and growing incidence of extreme events including storms, hurricanes, storm surges, droughts, and fires, as well as the proliferation of pests and diseases, change of conditions in optimal areas for crops considered raw materials (*commodities*), such as coffee and cocoa; to the extreme of migration and replacement of entire ecosystems and/or biomass. The latest IPCC reports suggest that we are dangerously approaching the limits of planetary functioning that will put all basic systems for human subsistence at risk of collapse. For this reason, broad, forceful and concerted climate action, implemented from specific scales (farm) to regional ones, is urgent and an operational space where we will continue to lead processes that we started more than 15 years ago.

**Ecosystem degradation, loss of biodiversity and ecosystem services.** The degradation of biodiversity and ecosystems is a reality in the American tropics. In its 2019 report, the IPBES reveals that 23 of the 27 indicators (85%) for 18 ecosystem services show negative or very negative trends in the last 50 years. The two main drivers of the deterioration of nature, responsible for more than 50% of the loss of biodiversity in the world, are land-use change and direct overexploitation, followed by climate change, pollution, and invasion by exotic species. The loss of biodiversity has led to immense economic losses, as exemplified by the reduction in the number of bees and the reduction in crop yields.

**Population and food and nutritional security (SAN).** The innovations of the green revolution, mainly achieved thanks to the genetic improvement of crops and the use of agrochemicals and machinery on farms of all sizes, have contributed to meeting the food needs of the current population. The gains from the green revolution approach can be further increased, as long as access to food is improved and post-harvest losses that can reach, and even exceed, 30% are reduced. However, this same revolution causes considerable negative impacts on the stability of production systems: the global food system is the largest emitter of greenhouse gases (GHG), the largest driver of the destruction of terrestrial ecosystems and the loss of biodiversity, the biggest consumer of fresh water and the biggest cause of soil and water pollution due to the excessive use of nitrogen and phosphorus. Most of the environmental impacts of agri-food systems are generated by large monocultures managed with high doses of chemical inputs under an industrial model.

However, the impacts of smaller-scale production cannot be ignored. Small farmers and family agriculture provide more than 70% of the food of the human population, using 25% of natural resources (land, water, and energy). In LAC, family farming encompasses about 81% of agricultural holdings, generates between 57% and 77% of agricultural employment, employing more than 60 million people; it provides, depending on the country, between 27% and 67% of total food production; and occupies between 12% and 67% of the agricultural area. We recognize that family farming is key in any agri-food and environmental development strategy and will surely demand more attention from us in the future.

Considering a projected increase in the population of LAC to 770 million until the year 2050 and an increase in the standard of living, it is necessary to increase agricultural production by 50-60%. However, we face the challenge of reaching this goal in the face of increasing land degradation. Therefore, the need to restore productively and ecologically the extensive agricultural and livestock landscapes of Latin America and the Caribbean is well known and is already part of the national restoration strategies of several of their countries in the context of the United Nations Decade of the Restoration.

On the other hand, the experiences of the long fight against hunger and malnutrition have shown that this problem cannot be overcome with simple increases in production since, apart from serious limitations on access to food in many regions of the world, the poor quality of many foods plays an essential role in human health. The great biophysical and population variability between countries and regions in LAC generates marked differences in their capacity to provide food as a function of national production and their financial capacity to import foreign products. At the national level, the countries most affected by food insecurity are Haiti, Guatemala, Bolivia, Peru, and Venezuela, especially in rural and indigenous populations, but the central challenges for food and nutrition security (FNS) apply in all member countries of the CATIE.

**Human resources in agriculture.** The migration of rural youth is a growing phenomenon, with the consequent loss of work capacity in the countryside. The lack of opportunities is pointed out as a factor that affects this process; however, there are two other aspects that are usually not analyzed. The first is the low adoption of technology that allows greater productivity of work and therefore wages improve. The other is the negative image that is often generated about agriculture, including its role as a greenhouse gas emitter. The absence of more robust and better-funded national systems for research and extension in tropical agriculture has contributed to the observed situation. From the described context, the need to train human resources for the development of agriculture with a renewed vision in the region is evident.

*Some areas where knowledge gaps are observed and that may become part of the new programs include integrated soil management, new tools for genetic improvement, integrated management of pests and diseases, watershed management and water security, management of the geospatial science, geographic information systems, rural extension, circular economy and bio-economy, blue carbon and agri-food systems.*

## 3.2 Future context (prospective vision)

This section addresses some important elements in the context of the coming years and refers to their possible implications for CATIE. There are structural conditions associated with the tropics that are likely to change, but more gradually (for example, small-scale agriculture and monoculture-based commercial agriculture). Other aspects are changing very quickly such as technological advancement and climatic instability. Some conditions could be aggravated, for example, the migration process, poverty and inequality. Other conditions are exposed as uncertain, among them, the demand for food and its composition (associated with the generation and distribution of income), the availability of food in the international market, and the possibilities of continuing to export the products that have dominated the market until now.

Faced with this complexity and uncertainty, in this decade —the most challenging in history to date in terms— of sustainability, the Paris Agreements, the 2030 Agenda, and the Decade of Restoration represent essential frameworks for international collaboration and orientation of national strategies. No less important are the issues that link the health of ecosystems with human health. As indicated below, this concept of One Health refers to the interdependence between the health of the planet and human

health; for example, the establishment of regulations for the safeguarding of food safety (such as the maximum level of pesticide residues allowed in imported agricultural products imposed by the European Union); the zero-deforestation initiative in supply chains; the implications of free trade between Central America and the Dominican Republic and the United States and Canada as of 2025 in the framework of DR-CAFTA; changes in the national institutionalism; budget allocations and adjustments in international cooperation. The analysis of these issues is essential for CATIE, in order to define its response and the adjustments to its scientific, technical and operational strategy.

***Development of agri-food systems aligned with the conservation of ecosystem services and health.*** The One Health initiative recognizes the interdependence between human health, animal health, environmental health, and possible changes in agri-food systems, in order to align these with the considerations of global health (EAT-Lancet Commission 2019). It will be necessary to apply systemic approaches and use the genetic collections of vegetables, tropical fruits, and other species to improve the productivity and resilience of food systems with healthy and highly nutritious products that improve the diet of rural families and increase the availability of products in local markets. CATIE's coffee and cocoa collections will remain relevant for the development of new varieties that are integrated into modern agroforestry systems. Livestock systems will provide another opportunity since CATIE is a leader in approaches and technologies for the sustainable intensification of silvopastoral systems that reduce the impact of climate change, strengthen environmental services, and responsible and equitable consumption (EAT-Lancet Commission 2019).

***New technologies and digital tools.*** In the coming years, nanotechnology, biotechnology, bio-inputs, integrated pest management, precision agriculture, circular economy, and bio-economy are emerging as positive development options to improve the performance of agri-food systems and preserve natural capital. The circular economy is changing the paradigm of linear development, generating positive results from the design of products, maximizing life-of-the-product, and promoting natural regeneration. As part of the technological evolution, the application of digital tools to generate knowledge for production and food systems will be intensified. When exploring the fourth industrial revolution "4RI" three megatrends are identified: 1) physical (such as robotics), 2) digital and biologically derived from genetic technology and 3) synthetic biology. All three areas offer opportunities for CATIE, its partners and allies. For example, the development of digital platforms that integrate geospatial information with climate databases, forest, agroforestry, and silvopastoral models and the operation of on-farm production to optimize productivity, traceability (for example, with block-chain), and links with the markets. Automation, precision agroforestry, and regular use of drones, remote images, and other virtual means will be consolidated within the framework of this ISP. These elements will impact virtual education, the operation of Digital Field Schools, and new extension models for young people.

***Sustainable agribusiness models.*** Technological innovations for the use of biodiversity will generate new and better opportunities for sustainable agribusiness of public and private interest. Innovative market information systems, vertical integration with local markets, and short value chains of healthy food products are already observed in the region. This opens up opportunities for CATIE's support to family farming to improve systems based on agrobiodiversity, the organization of producers, and their insertion in differentiated markets with an emphasis on creating value for rural women and youth.

**Climate action.** Climatic conditions characterized by instability and severity will require public and private investment strategies for ecosystem-based-adaptation and the promotion of synergies between adaptation and mitigation to climate change (SAM)—, an innovative concept of global relevance that emerged from CATIE and which we will continue to develop and promote. In addition, our institution is a pioneer in the scientific and technical development of blue carbon policy proposals for the creation of innovative tools that ensure the provision of ecosystem services and the livelihoods of marine-coastal populations. We will continue to conceptualize our innovative climate interventions, considering broad contexts to reinforce ecological, economic, and social resilience in the landscapes where we work.

**Water security.** CATIE will continue to deepen its knowledge on the integrated management of water resources for the sustainable intensification of agriculture, inclusive water security, and the reduction of water availability gaps in marginal groups. In this context, we will work on the design and management of production systems that improve efficiency levels in the use of water and the water footprint of agricultural products. Additionally, CATIE will generate innovations for integrated watershed management and management of water harvesting systems, mainly in those areas where the water deficit is critical, as is the case of the Dry Corridor in Central America.

**Restoration of degraded areas for the management and sustainable use of biodiversity.** We anticipate that within the framework of the United Nations Decade of Ecosystem Restoration (<https://www.decadeonrestoration.org>) countries will strengthen transformational policies and tools for the restoration of degraded areas, recovery, and sustainable management of biodiversity. These are areas where CATIE is recognized worldwide for its work on systemic approaches at the landscape level (for example, model forests, biological corridors, mosaics of productive landscapes, and protected areas) and the development of knowledge and tools on restoration of degraded landscapes and analysis of climate change impacts on biodiversity. CATIE will recognize the role of biodiversity as a natural capital that generates multiple services.

**Development of economic tools applied to IGD.** At CATIE, through transdisciplinary approaches, we will advance in the development of modern tools to quantify and value environmental services, such as measuring the economic impact of pollination by bees on agricultural crops; promote production chains identified with zero-deforestation or *net forest gains* and develop market instruments; for example, *blended finance* and *climate finance*; to promote the conservation of biodiversity and ecosystem services. In addition, at CATIE we intend to use behavioral economics methodologies to evaluate the effectiveness of different policies, supporting the implementation of the most effective strategies that encourage the adoption of low-emission technologies and practices.

**A new vision of development: Inclusive Green Development.** The recognition of the need for a development model committed to a balance between the conditions of economic growth, social inclusion, the conservation and use of natural resources, and the greater capacity to adapt to climate change, is a need and an expectation of particular relevance to the tropics. This is precisely one of CATIE's strengths and the starting point for redefining its future actions. Based on this prospective analysis, we perceive the global trend to prioritize agriculture and support its development in a manner consistent with the economic and social needs of the region as an opportunity. Transformations must include, not only mitigation and adaptation to climate change and the conservation of biodiversity and the ecosystem services it provides, but also those that ensure better levels of productivity, efficient use of water, restoration of degraded

ecosystems, carbon sequestration, the appropriate use of external inputs such as nutrients and pesticides, and finally, the resilience of natural ecosystems. On the other hand, market preferences will be analyzed, that is, the consumer's perspective regarding the attributes that encourage the willingness to pay for more environmentally friendly products, and the implications at the level of competitiveness in value chains in LAC. All this, in a marked context of social inclusion and gender equity, as discussed below.

***The region (Latin America and the Caribbean) as a promising space.*** The region poses challenges and shows opportunities for progress in light of global challenges. The main challenges are based on finding ways to overcome poverty, reduce migration, less severe the fragility of their ecosystems and face climate vulnerability. The region, of course, does not only pose challenges, it also shows opportunities for progress in light of global challenges. The opportunities will derive from the good road, natural and digital connectivity, and regional institutions and agreements that promote trade over and above political differences between countries. In this framework, approaches have been emerging to renew the model in agriculture and rural areas, and visions of territories, landscapes, ecosystems, and basins for increasing resilience and reducing emissions in productive systems, conservation, valuation and use of biodiversity, and the creation of added value in some agri-food chains.

***Gender and social inclusion.*** This is an issue that will gather new importance in the ISP. At CATIE, we have promoted institutional policies that respond to the inclusion of development subjects and social groups whose rights have historically been violated (as in the case of indigenous peoples). On the other hand, the institutional gender equity policy has shown effective results in the educational offer, as well as in the real participation of women in the decision-making processes of the programs and projects promoted from headquarters and in the countries of the mandate of the institution. At CATIE, we recognize the urgency of adopting measures to mitigate and eliminate the causes of discrimination that restrict women's rights, as well as their equitable participation in decision-making at all levels and equal access to resources.

***The institution at the national, regional and international level.*** We operate closely with national, regional and international partners and allies. The stakeholder groups of interest to CATIE include national organizations (Ministries of Agriculture, INIAS, Ministries of the Environment, Universities, NGOs, and the private sector); cooperation agencies (IICA in particular); entities of the multilateral development financing system (IDB, WB, CABEL); the international centers of the CGIAR, CIRAD and technical cooperation institutions (FAO, UNDP, UNEP, among others). In all cases, it is necessary to know their strategies, as well as their availability of resources and their interest in making alliances for effective action and fundraising. Within the framework of this new ISP, CATIE will conduct a strategic and aggressive negotiation action that will allow it to strengthen its capacities to achieve results and impacts. It is anticipated that the regional institutional framework will be strengthened in order to achieve more integrated efforts of regional organizations within the framework of SICA, CAC and CCAD in Mesoamerica and through cooperation with IICA, the Caribbean Community (CARICOM) and the Agricultural Council of the South (CAS). On the other hand, robust negotiations with CABEL and other financial entities are required to face the opportunities and changes in the scenarios described in this document. We also anticipate having greater recognition within the regional and international institutions based on the evidence of our scientific, technological and human resource training achievements. As a second-tier instance, we will have a qualified partner position for joint work and the development of synergies.

# Strategic framework

## 4. Institutional policies, vision, mission and values

### 4.1 Institutional policies

The starting point for CATIE's action in the coming years is the articulation between its institutional policies, the ISP 2021-2030, and the Biannual Operational Plans. The first represent the orientation of the institution's work and are listed below:

- CATIE is an international organization, and its priority task is to generate regional public goods that strengthen and complement the efforts of the member countries in research, innovation, knowledge management, and capacity building.
- CATIE's area of responsibility is sustainable production systems with added value and linked to markets, the conservation and sustainable use of natural resources in rural areas, and the functional relationship between rural and urban areas from the viewpoint of natural resources and ecosystem services.
- The Center effectively integrates education, research, and outreach, in such a way that this consolidates a unique institutional model that has proven to be effective in generating quality and valuable products based on the efficient use of resources.
- CATIE, in addition to generating public goods, can create complementary instances of a commercial nature that allow it to develop products and services related to research and teaching and generate economic resources in support of its strategic objectives.
- CATIE is one and the programs, units, and projects are an integral part of an institutional structure and are governed, without exception, by common standards that ensure complementarity and capacity building within the framework of the strategic objectives.
- Although CATIE's governance rests with the Ministers of Agriculture of the member countries and its Board of Directors, the Center also builds alliances with other ministries related to its mandate and partners with the capacity to promote scientific, technical, and educational platforms regionally.
- CATIE's relationship with IICA is close and rests on a set of legal provisions, commitments to contribute resources, and agreements from its higher governance bodies.
- From an operational point of view, CATIE maintains its headquarters in Costa Rica and representations or liaisons in the member countries, their role being to gearing institutional outreach to strengthen the networks and projects to generate, analyze, and validate new knowledge and technologies, as well as the different training and education initiatives.



## 4.2 Institutional vision, mission and values

### *Vision*

CATIE positioned as a benchmark in research, education, and innovation at the service of the peoples of the tropics of Latin America and the Caribbean, seeking a balance between the use and protection of landscapes, ecosystems, and production systems that are part of sustainable well-being and the health of the people, as well as of all forms of life that are part of the planet.

### *Mission*

We promote Inclusive Green Development, through scientific knowledge and training of new leaders, managing ecosystems, landscapes, and food systems, which with their permanence favor the sustainable well-being of populations in the tropics of Latin America and the Caribbean.

### *CATIE values*

At CATIE, we recreate fundamental and operational values. The former reflect the institutional nature of CATIE and form the foundations that inspire thinking and acting with the ethical-scientific bases that the academy demands. The operational values represent the institutional action guidelines that seek transformative outcomes aligned to the fundamental values.

Our values reflect the institutional way of being and acting, which permeates all levels of action and professional, administrative, financial, and support profiles, from our field staff to the highest-level of executives, our external consultants and collaborators. They respond to a broad internal dialogue process and reflect our aspiration as leaders of change inside and outside the institution.

### *Core values*

- ***Knowledge at the service of transformation:*** taking into account its institutional nature, CATIE favors the generation of rational knowledge for innovation and the transformation of realities towards states of the well-being of people and their natural and social environment. It values the synergistic relationship between scientific knowledge and ancestral knowledge that is available thanks to the multi and intercultural work that is developed. It also recognizes that knowledge must be adequately mediated to optimize its transformative potential, taking into account the particularities of the communities where it develops its work.
- ***Appreciation of plurality:*** CATIE recognizes and values that people, even belonging to the same social group, have particular ways of living and expressing themselves, have different tastes, ideologies, and customs. This appreciation favors coexistence, inclusion, and enhances interpersonal relationships.
- ***Appreciation for diversity:*** CATIE recognizes the benefits of natural, cultural, and social diversity. In the first case, it ensures the permanence of ecosystems, species, and genes as the material and spiritual basis for the well-being of peoples. In the second case, it appreciates the differences among

people in terms of their ethnicity, sexual orientation, race, origin, language, religion, opinion, and gender, that define the particular identity of each person and peoples. It considers that this value is fundamental in favoring coexistence, inclusion and is at the basis of the recognition and exercise of universal human rights.

- **Inclusion:** at CATIE, we privilege intra- and inter-generational equal opportunities without discrimination based on class, ethnicity, gender, age, religion, or any other form of discrimination that violates universal human rights.
- **Solidarity:** at CATIE, we promote day-to-day good relations between people, between work teams, and within them, fostering relationships that are based on unity, fraternity, and good correspondence.
- **Common good:** CATIE seeks that its actions, strategies, and work tactics ensure that individual benefits do not compromise the benefit of the majority (especially those groups at a clear disadvantage in terms of power and capabilities), observing the applicable national and international regulations.

### *Operational values*

- **Excellence:** CATIE serves its partners and its target audience with the highest technical and administrative efficiency and quality. It generates commitment for professional development and quality improvement in the delivery of results, promoting group and individual initiatives, encouraging creativity and innovation.
- **Integration:** CATIE strengthens interdisciplinary work to promote systemic and collaborative approaches at local, national, and global scales. The spirit of alliances and the construction of mutually beneficial connections with other personal and institutional actors are fostered.
- **Transparency:** CATIE creates an environment of trust necessary to promote cooperative relations with partners, donors, and counterparts and adopts a culture of accountability, monitoring, and evaluation of the performance of the impact attributed to institutional actions, necessary feedback for improvement of CATIE's vision and mission.
- **Entrepreneurship spirit for innovation:** we develop new ideas, methodologies, and technologies that propose solutions to the challenges of a changing environment. We seize and generate opportunities with leadership, energy, and enthusiasm to attract the necessary resources for a successful and sustainable operation.

## 5. The Institutional Strategic Plan (ISP)

The ISP is presented in three parts: 1) the principles, 2) the conceptual framework (based on the theory of change tool) and 3) the objectives.

### 5.1 Core principles of the strategy

This section presents the principles that underpin the ISP based on the elements that distinguish CATIE from other research and higher education centers.

**Synergy of research, education/training and outreach.** This has historically been our key differentiator from other entities that have fulfilled the three functions independently or that have specialized in one of them. The added value of these three functions in an integrated way is significant: research products are harnessed in higher education and training, and students carry out their graduation assignments in research projects. The products of both activities constitute the base of the diffusion and the relation with other organizations of the public and private sectors for the design and execution of scaling and development and advocacy projects.

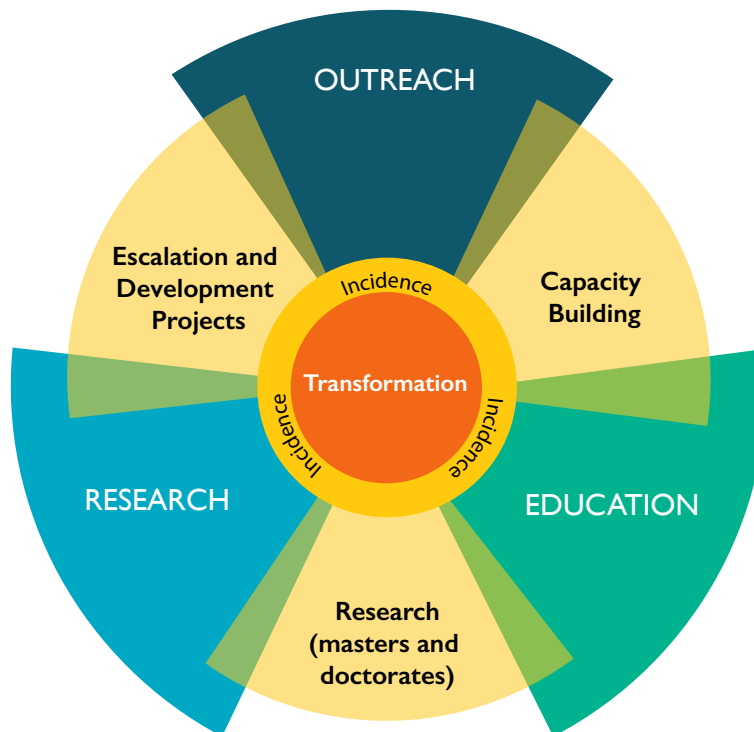


Figure 1. CATIE's offer of value

Figure 1 shows the interactions and highlights that advocacy actions result from the synergistic action among the three pillars that make up this value offering from CATIE. It is clear that in order to achieve substantive transformations, it is necessary to have partners that strengthen and complement CATIE's actions since normally, both the results and the impacts are outside the scope of institutional control.

Similarly, the intersections between the pillars generate other important externalities to be noted, for example, training requirements arise from regional demand and the Graduate School and the Training Unit respond to this.

***Agriculture, inclusive productive systems, ecosystems and climate action.*** We are committed to increasing sustainable productivity in agriculture, improving social conditions in rural areas and especially the well-being of women and young people, the conservation, restoration, and sustainable use of terrestrial and marine-coastal ecosystems, its biodiversity and the ecosystem services it provides, and the creation of means to cope with instability and climate change.

***Response to the demands of the member countries.*** Our principle is that our research program, in addition to being continually enhanced by scientific progress, must respond to specific problems in the territories and in rural society. In many situations, for example in the adaptation of small-scale agriculture to inter-annual climate variability, the emphasis should be on the short and medium-term. In others, it requires long-term research, for example, on the restoration of ecosystems and adaptation to climate change in key forested areas for the provision of water and hydroelectric energy. This implies a close relationship with research centers that have carried out pioneering work, as well as government organizations, non-governmental organizations, the private sector, and civil society.

***Functional alliances.*** This expression reveals CATIE's willingness to establish alliances for research, human resource training, and external projection with entities that meet a basic condition: the willingness to cooperate to generate complementary added value in a defined period. In this sense, agreements and memorandums of understandings that do not comply with this principle will be avoided.

***Use of assets to generate goods and services inside and outside CATIE.*** We use high-value assets to generate goods and services in synergy with research, postgraduate education, training, and external projection activities. The international collections of cocoa, coffee, tropical fruits, the botanical garden, and the vegetable and forest seed banks are unique spaces in which we conserve high-value genetic material. Added to this is the dairy farm that is managed under a climate-smart production model. In all these spaces, we will develop profitable activities and programs that allow strategic alliances with other partners. In coordination with IICA, we will design a Master Plan for the development of the farms, favoring the best use and the highest productivity of these lands. We will also promote alliances with universities and other organizations for research-training tours and graduate thesis using these assets as a source of income.

***Organizational cohesion.*** The nature of the tropics demands a multidisciplinary effort for research and training of human resources. For this reason, the complementarity of efforts, inside and outside CATIE, with other partner institutions from the public and private sectors will be privileged. CATIE's own experience shows that these collective action efforts have been possible and fruitful.

## 5.2 The theory of change <sup>3</sup>

The theory of change, which is presented in Figure 2, outlines the pathway for the implementation of the ISP and synthesizes the set of actions that CATIE will take during the period of 2021-2030 to carry out its mission, achieve its strategic objectives, generate the products in accordance with these objectives and thus contribute to the achievement of results and impacts. The magnitude and quality of the latter will depend on the good use that decision makers in the countries make of the products generated by CATIE in synergy with partners and allies that allow policies and programs to be aligned with IGD. It is within this framework of CATIE's actions in research, knowledge management, capacity building, and outreach and advocacy actions that results and impacts can be achieved.

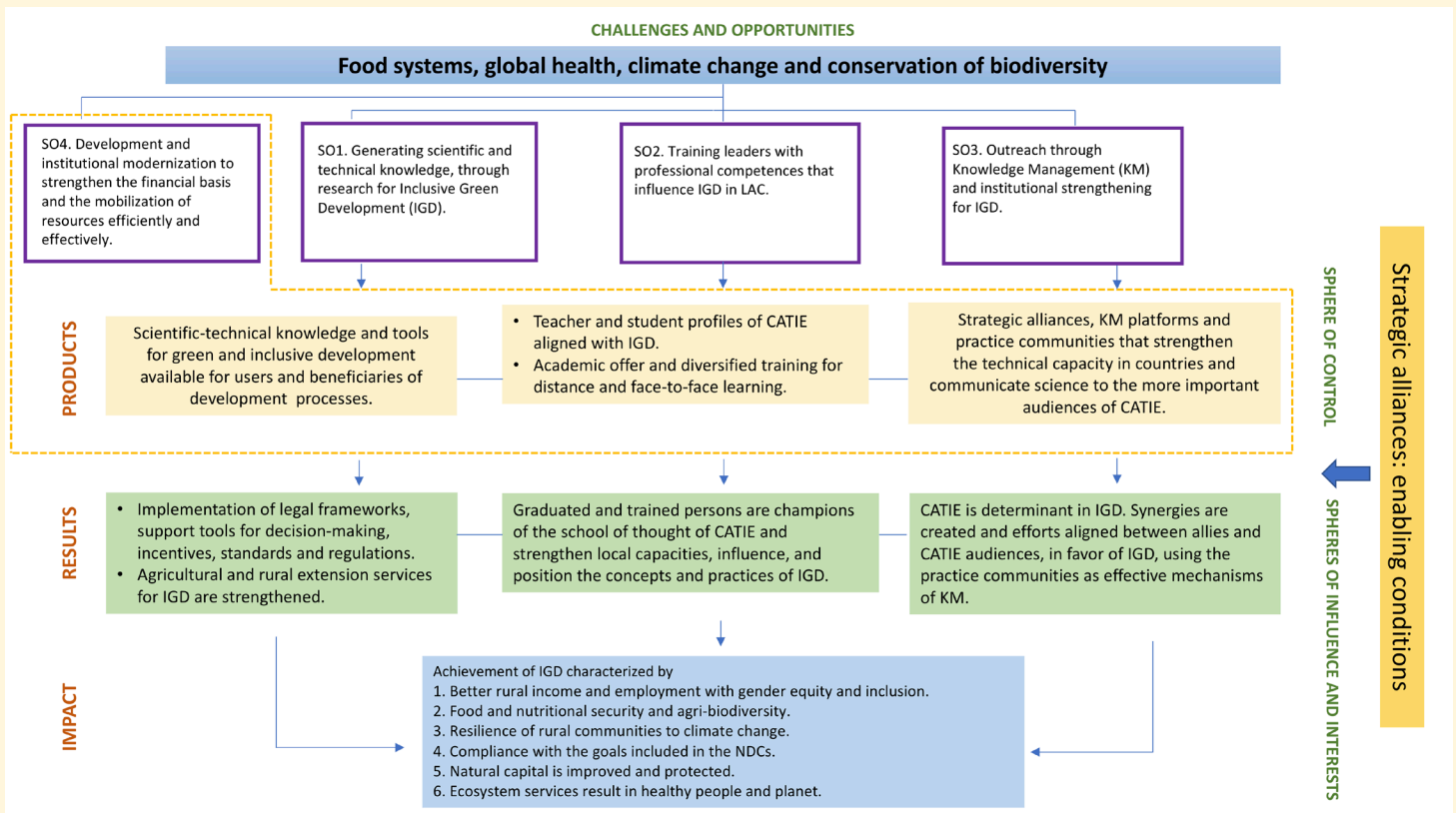


Figure 2. CATIE's theory of change of the Institutional Strategic Plan (ISP) 2021-2030

<sup>3</sup> This section has been built through a highly participatory process, benefiting from inputs provided in external consultations which support the theory of change.

## 5.3 The strategic objectives, products, results and expected impact

### *SO1. Generation of scientific and technical knowledge, through systemic research for Inclusive Green Development (IGD)*

Products associated with this objective include knowledge (publications<sup>4</sup>) and tools (technologies, methodologies, digital tools, models, roadmaps, databases, etc.) for

1. Food security based on agrobiodiversity and food systems
2. Intensification of livestock production based on good practices in agrosilvopastoral systems
3. Genetic improvement of coffee and cocoa
4. Modern agroforestry for annual and perennial crops
5. Climate action in all its areas
6. Conservation and sustainable use of biodiversity and its ecosystem services
7. Sustainable economy, environment and agribusiness in the field of family farming and competitiveness of value chains
8. Water security and sustainable watershed management
9. Restoration of productive and natural ecosystems (the soil component is particularly critical)
10. Use and production of renewable energy in agriculture

**Expected results.** CATIE with its allies achieve the enabling conditions (the assumptions of the theory of change) that allow the implementation of legal frameworks, support tools for decision-making, incentives and extension services for the IGD that favor changes in

1. Transformation of production systems that increase productivity in a sustainable way to contribute to IGD.
2. Promotion of sustainable family farming businesses in short value chains.
3. Resilience of agricultural and livestock systems to climatic events.
4. Conservation and optimization in the use of water resources and water security.
5. Restoration, conservation and sustainable use of natural and productive ecosystems.
6. Implementation of policies and incentives, by member countries, of measures to achieve the NDC goals<sup>5</sup> and the IGD goals.

<sup>4</sup> Books and monographs, book chapters, publications in conference proceedings, articles in referenced scientific journals, articles in technical journals, conference presentations (posters, abstracts, etc.), reports and other publications, technical series, and theses.

<sup>5</sup> Nationally Determined Contribution (NDC). It is the national commitment on the level of greenhouse gas emissions agreed with the United Nations Climate Change Forum.



## *SO2. Training leaders with professional competencies that influence the Inclusive Green Development (IGD)*

The products associated with SO2 are summarized as follows:

1. A renewed and competitive Graduate School that differs from other similar ones by its systemic approach, its programs in alliances with highly prestigious international universities, caring for the professional functionality in the English language of its graduates, and the emphasis on critical research topics and development that have been eroded in recent years.
2. A faculty with doctoral-degree (preferably) with strengths in knowledge and skills aligned with the scientific and technical principles of the IGD.
3. A flexible academic offer adapted to current demands that includes face-to-face, hybrid, and distance education in its modalities (assisted and self-paced).
4. Professional growth training programs, at a technical level and with producers at the community level, both in face-to-face, remote or mixed versions, through the use of technology and training materials appropriate to each level and that contribute to the expectations of the IGD.

**Expected results.** Based on the products in training of human resources, CATIE, under the assumption that CATIE graduates are the champions of the school of thought, contributes to the achievement of the following transformations:

1. LAC agricultural leaders trained at CATIE strengthen academic institutions, research centers, and government and private sector institutions, improving their institutional profile in favor of IGD.
2. The professional critical mass in the region and the institutional positioning allows CATIE and its allies to have a higher greater impact on decision-makers to achieve IGD.
3. The professional growth program at the doctorate and master's level allows the development of new professional skills in key subjects for IGD (which over the years have eroded in the region).

### *SO3. Outreach through knowledge management and institutional strengthening for Inclusive Green Development (IGD)*

The products associated with this objective are the following:

1. Increasing CATIE's capacity in the countries to facilitate alliances and the negotiation of new projects and additional resources, as well as the transfer of innovative and appropriate digital tools for agriculture 4.0.
2. Development of the concept of nesting CATIE's country offices with national and multilateral institutions that promotes the dissemination, validation, scaling, and evaluation of technologies and educational opportunities, while allowing for the negotiation of new projects and additional resources.
3. New (or renewed) thematic platforms for development and governance in countries or regions, through which knowledge is managed, relevant results are validated and scaled, and communities of practice are formed in favor of IGD.
4. A strengthening of bilingual institutional strategic communication (Spanish/English) in social networks and other media to position CATIE's achievements and results with a broader audience and allies.

**Expected results.** Strengthened presence of CATIE in the countries is the assumption of the theory of change that allows advocacy actions, with allies and partners, that contribute to the achievement of the following results:

1. Institutional strengthening in member countries and in the region generates new opportunities for research, innovation, and education, and CATIE is positioned as a technical reference and preferential ally for IGD.
2. An institutionalized model of rural extension systems that allow the scaling of programs aligned with IGD.
3. Member countries, in partnership with CATIE, develop a growing prospective ability to analyze and develop opportunities and a better-negotiating capacity to finance them.
4. CATIE's strategic alliances are functional and generate synergies in favor of national and regional transformations that aim at IGD, with national funds, or from the multilateral development banks.
5. The communities of practice that are developed from the platforms for development become an effective mechanism for the management and dissemination of knowledge in favor of IGD.

### *SO4. Institutional development and modernization*

Lessons learned by CATIE in recent years, the results and recommendations of the latest evaluations, the current environment described in the previous sections, and in particular the prospective vision of the new decade, motivates the development and implementation of an institutional modernization objective. For practical purposes, this objective is crosscutting in nature and includes a very diverse range of strategies, implementation actions, and negotiations.

Unlike the objectives indicated above, SO4 requires not only to specify products, results, and potential impacts, but also a description of strategies, routes, and concrete actions (discussed in Section III on implementation strategies) aimed at institutional modernization.

The products associated with this objective are the following:

1. The efficient use of human resources with gender equity, capital goods and operating resources.
2. Effective actions for research and training of human resources with gender equality that generate knowledge of high value for the member countries.
3. A solid financial base with medium and long-term perspectives in terms of sources of resources.
4. Efficient and effective negotiation and mobilization of resources and establishment of strategic alliances.

As main results, the following are anticipated:

1. CATIE performs successfully and achieves, endorsed by formal evaluations, the achievement of its strategic objectives.
2. The organization gains increasing prestige at the regional and international level, demonstrated in publications, forums, social networks and other media.
3. The organization strengthens and consolidates its financial position and its administrative efficiency and projects its action and influence to partners and allies.

### *Expected impacts as synergy of the four strategic objectives*

These impacts correspond to what CATIE means for IGD. His expression and achievements are manifested as follows:

1. Increasing rural income and jobs, ensuring gender equity and social inclusion.
2. The reduction of food and nutritional insecurity as a result of the improvement of food systems based on agrobiodiversity.
3. Increasing the resilience of rural communities and productive ecosystems to climate change and other extreme events.
4. The fulfillment of the goals contained in the NDC in the member countries.
5. The improvement and protection of natural capital.
6. The alignment of ecosystem services for the health of people and the planet (One Health).

# Implementation framework

## 6. Implementation strategy

The following summarizes the critical areas in which CATIE will work in the new ISP to improve its effectiveness, efficiency, and impacts.

### 6.1 Strengthening institutional capacity for a unified management system

The focus will be a simplified organizational structure to capitalize on synergies among education and training, research and outreach programs, and liaison with country offices. The unified management system will help to simplify systems and procedures and will reinforce the institutional culture in the areas of information technology, communication, and knowledge management. With this in mind, we will modernize institutional processes with advanced digital technologies and a modern Enterprise Resource Planning System (ERP), as well as the implementation of the Integrated Institutional Management System (SIGI), which is referred to later.

**Modernization of infrastructure for research and education.** We will modernize our infrastructure to support the programs, through a transformation and integration of virtual tools, including distance education, training, and dissemination through digital marketing. We will strengthen biotechnology laboratories to support research and commercialization of genetic material from their collections, as well as to improve geographic information systems in the soil and ecosystem-modeling laboratory, all with the support of modern software and equipment. It also includes the expansion of the capacity of the greenhouses for research and commercial activities, as well as the improvement of the housing infrastructure for residents and students that make the CATIE campus a climate-smart environment, using renewable energies (for which it is planned the development of a photovoltaic park).

**Development of human resource capacities.** We will strengthen capacities with a transdisciplinary approach and with an emphasis on gender equity in terms of salaries and management positions. We will review and update hiring policies to ensure equal opportunities. We will do a knowledge gap analysis and develop a strategy to close these gaps. We will ensure that staff has the tools or equipment to maintain adequate research for development, education, training, and outreach purposes. We will continue to attract, motivate and train high-level professionals to comply with a culture based on pursuing excellence, both in research and in education.

## 6.2 Resource mobilization, sustainability, efficiency and financial effectiveness

CATIE's financial model is based on high dependence on financing from external cooperation. The changing socio-economic and political environment has resulted in the migration of many donors outside of the Latin American region, which makes CATIE financially vulnerable. Furthermore, the finance management system results in relatively high transaction costs. For this reason, work will be done on the development of an innovative financial management model and processes will be implemented for the management and transparent handling of funds. The main elements are as follows:

- Identify and adapt to changing donor mechanisms and requirements and develop alliances with strategic partners to leverage resources and reduce transaction costs.
- Establish and strengthen a private social enterprise that can conduct CATIE's commercial activities, that is aligned with the institutional mission and that has the appropriate legal statutes. This company will facilitate relationships and business with private sector organizations and investors that will generate complementary income for CATIE. This initiative will aim to increase the productivity and economic efficiency of the commercial areas and the commercialization of products and services, including varieties of coffee and cocoa, seeds of forest species and species from CATIE's Botanical Garden.
- Implement a strategy with member countries to mobilize financial resources that governments are investing through loans and/or donations from multilateral banks. This strategy should finance activities aligned with CATIE's knowledge and experience, such as agri-food systems, conservation of natural resources, watershed management, and water security, as well as capacity building.
- Revitalize The Tropics Foundation in the United States so that it can fulfill its mission of securing funding for the institution by providing the tools and support necessary to restart its operations. Its board of directors will be reorganized to incorporate people with credibility and connections in the world of philanthropy. CATIE will continue with the Crop Trust, which will allow it to create a trust fund for the maintenance of the International Coffee Collection and explore other venues of financial support for the International Cocoa Collection.
- With the support of The Tropics Foundation and other people and organizations with capacity and experience, CATIE's senior management will promote the establishment of a network of philanthropists by identifying and negotiating with champions (prominent people in the business world) who can summon their peers and support specific projects or initiatives designed by CATIE.
- The institution will put into operation a financial model that ensures scholarships and financing for the Graduate School and training programs. In addition, it will redesign the educational program with a transition to high-quality distance and blended education that increases the critical mass of students. Additionally, it will build strategic alliances with prestigious universities to offer joint doctorates. The Training Program will be restructured to respond to the demand of the countries and may become an important source of income for the institution.

- CATIE's senior management will implement a modern system to track and analyze financing opportunities and will assign internal responsibilities for managing these opportunities. In addition, the capacities of the country liaison offices will be strengthened to support resource mobilization.
- This financial plan and strategy will be updated regularly with the support of market research that can map potential sources of financing. The plan includes metrics to evaluate the correspondence of the funds with the priorities of the institution and the total recovery cost.

## 6.3 Alliances

CATIE is a relatively small institution with a large regional mission and a clear expectation of working with other actors related to its mandate. To achieve the products, results, and impacts embodied in the theory of change (Figure 2), the following strategies are required:

- **Strengthening cooperation.** At the national level, we will collaborate with other international institutions (for example, CIRAD, Bioversity-CIAT alliance, ICRAF-CIFOR, GIZ, EfD) to work with and strengthen the INIA and other organizations in the validation and scaling of research results in agricultural systems. The new ISP will include the strengthening of cooperation with the private sector and industry to work in areas of common interest such as coffee and cocoa, tropical fruits, dairy products; as well as, water resources, carbon footprint, renewable energies, among the main ones.
- **Partnership program for higher education.** Over the next few years, the Graduate School will negotiate with top-tier universities to strengthen their doctoral programs. This alliance will make it possible to increase the number of highly qualified and experienced associate faculties to increase CATIE's capacity in new areas of interest.
- **Alliances for policy advocacy.** We will develop closer cooperation with IICA, which is a mandate of its governing bodies, and we will take advantage of the synergies between both institutions, through a technical cooperation plan to generate impacts, among others, on policies related to the diet systems with a One Health approach. Additionally, we will increase cooperation with strategic regional organizations (for example, SICA CCAD, CAC, OEA, CABI, IDB, WB) so that the knowledge generated can influence the establishment of policies.
- **Alliances for innovation platforms.** To achieve its objectives, we will partner with individuals and organizations from the public and private sectors that have the skills and experiences to catalyze functional coalitions that allow for setting-up dynamic networks, multi-actors, communities of practice, and innovation platforms that influence decision-making on the main challenges and opportunities in the region.



# 7. Planning, monitoring and evaluation (PME)

## 7.1 PME framework

Planning at CATIE has the purpose to align all institutional activities with policies and strategic objectives, in order to fulfill its mission and achieve the proposed vision, responding personally to its fundamental values and institutionally to its operational values. It is certainly a facilitated activity, but it depends on each of the directions and operational units of the institution. CATIE's planning cycle is 10 years, and this begins with the issuance of the ISP. The current plan covers the period 2021 to 2030 and it is adjusted every two years, with the issuance of biannual plans, which take into account changes in context, short-term situations and identifies the goals of its main indicators and institutional milestones. The programmatic unit is the Annual Operating Plan and this is aligned with both: the ISP and the Biennial Plan.

On this occasion, CATIE has used the theory of change approach to define its strategic pathway, which lays out the foundations of the impact chain and causal link among the activities of the annual operating plans, the products, and the results. Figure 3 shows the path and logic that the theory of change follows from challenges to impacts and new challenges.

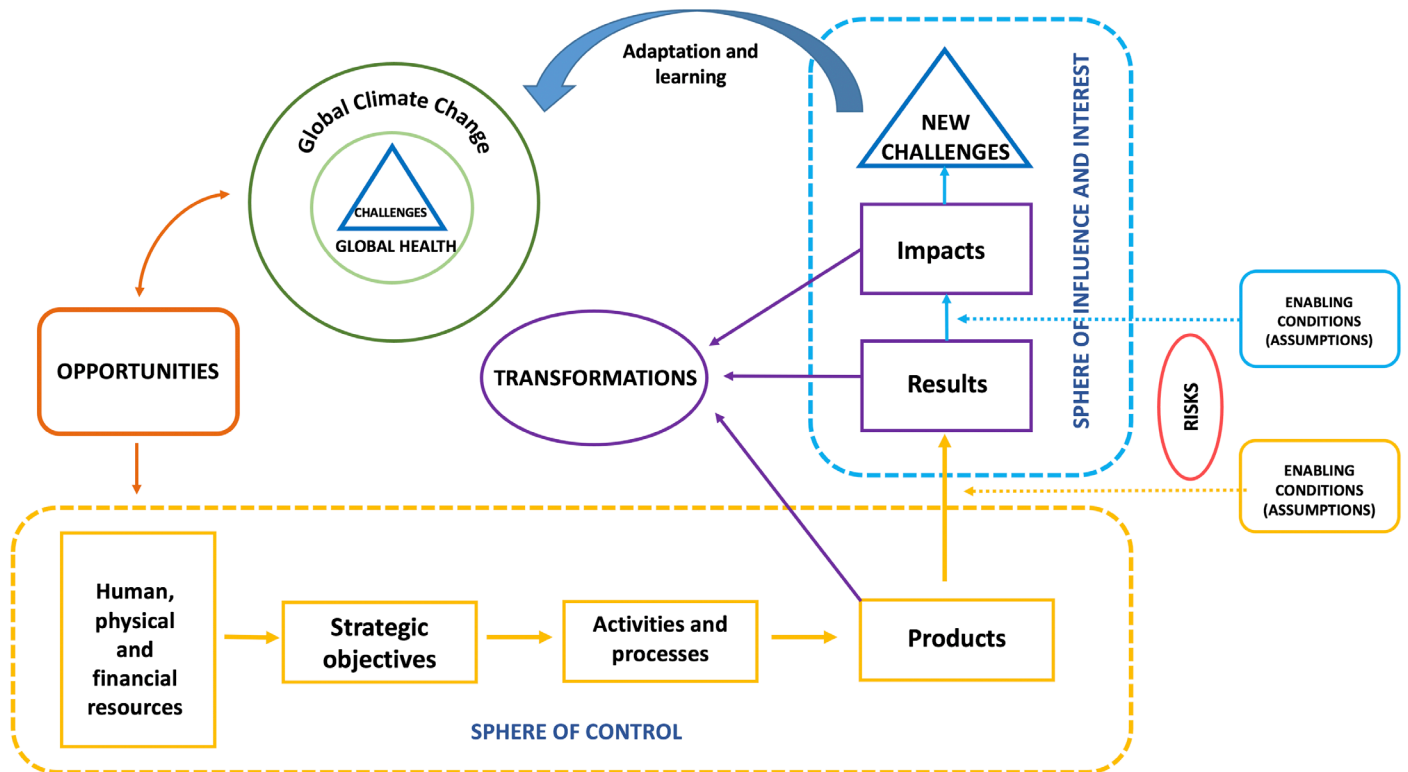


Figure 3. The theory of change model

This figure clearly shows the scope of the control sphere where the planned and programmed activities generate the institutional products, starting from the challenges and opportunities. These in turn, already in the sphere of influence and interest and in collaboration with partners and allies, achieve results and impacts by generating the desired transformations. It is important to bear in mind that, in this phase, the theory of change contemplates that certain conditions should be met to enable the achievement of said transformations. It is for this reason that alliances and partners are central elements in the scope of these transformations, as they remain outside of institutional control, which always poses significant risks in achieving the results.

The following matrix (Figure 4) succinctly presents the strategic objectives, and the key indicators related to the expected results, which derive from the theory of change used in the formulation of this ISP, based on specific products that are generated under CATIE's sphere of control up to results that can be verified in its sphere of influence. It is important to clarify that all those indicators that refer to the number of people are disaggregated by gender. To understand the matrix better, Annex I presents a series of related definitions.

	Chain of impact in the theory of change	SO1. Knowledge generation	SO2. Leadership training	SO3. Outreach
	Indicadores			
Products, results and impacts of CATIE	1. Findings (control sphere)	<ul style="list-style-type: none"> <li>Findings and innovations</li> <li>Publications</li> </ul>	<ul style="list-style-type: none"> <li>Updates in the curriculum of the face-to-face postgraduate courses and distance education (DE)</li> <li>Master's and PhD theses</li> </ul>	<ul style="list-style-type: none"> <li>Scientific information on website, social networks, media, blogs and newsletters</li> <li>Accessible and diverse DE opportunities</li> </ul>
	2. Piloting (sphere of control and influence)	<ul style="list-style-type: none"> <li>Validation tests (e.g., plots, laboratory, short and inclusive value chains, sites)</li> </ul>	<ul style="list-style-type: none"> <li>Internships</li> <li>Alliances with universities</li> </ul>	<ul style="list-style-type: none"> <li>Alliances with the INIAs and their national plans</li> <li>Partnering with the private sector</li> </ul>
	3. Tool development (sphere of control)	<ul style="list-style-type: none"> <li>Tools for innovation management (e.g., models, systems, maps, digital tools)</li> <li>Publications</li> </ul>	<ul style="list-style-type: none"> <li>Master's and PhD theses</li> <li>Updated training plans</li> </ul>	<ul style="list-style-type: none"> <li>Alliances with INIA and Ministries of Agriculture and Environment</li> <li>Partnering with the private sector</li> </ul>
	4. Scaling-up (sphere of influence)	<ul style="list-style-type: none"> <li>Definition of territories</li> <li>Improved systems and tools</li> <li>Improved technologies and seeds</li> <li>Green financing instruments</li> </ul>	<ul style="list-style-type: none"> <li>Internships</li> <li>University partnership</li> <li>Joint training programs</li> </ul>	<ul style="list-style-type: none"> <li>Scaling-up projects (international cooperation)</li> <li>Partnerships with governments and the private sector</li> <li>Alliances with indigenous people organizations</li> </ul>
	5. Knowledge management (sphere of influence)	<ul style="list-style-type: none"> <li>Inputs and tools for knowledge management platforms</li> </ul>	<ul style="list-style-type: none"> <li>Conferences and webinars with researchers, professors and students</li> </ul>	<ul style="list-style-type: none"> <li>Platforms, knowledge management and communities of practice</li> </ul>
	6. Development of policy proposals (sphere of influence)	<ul style="list-style-type: none"> <li>Documents and inputs for the proposal of policies and strategies</li> </ul>		<ul style="list-style-type: none"> <li>National policies and strategies</li> <li>Alliances IICA, FAO, governments and local partners</li> </ul>
	7. Scaling up of business (business sphere of Influence)	<ul style="list-style-type: none"> <li>Area of influence (e.g., territories under sustainable management and approach; short and inclusive value chains)</li> <li>Increased volume of improved seeds</li> <li>Population of producers involved with a gender equity and inclusiveness approach</li> <li>Green financing amounts</li> </ul>	<ul style="list-style-type: none"> <li>Graduates who influence development actions</li> </ul>	<ul style="list-style-type: none"> <li>Hectares with commercially improved production systems</li> <li>Alliances with governments and the financial sector for multilateral and local development</li> </ul>
	8. Building human capital for innovation (sphere of control)	<ul style="list-style-type: none"> <li>Professional growth programs for researchers and the faculty of the Graduate School</li> </ul>	<ul style="list-style-type: none"> <li>Master's and PhD students (face-to-face and distance)</li> <li>Exchange of teachers and students (sabbaticals and internships)</li> </ul>	<ul style="list-style-type: none"> <li>Joint master's and doctoral degrees with local universities and alliances with prestigious international universities</li> </ul>
	9. Rural and agricultural extension (sphere of influence)	<ul style="list-style-type: none"> <li>Documents and inputs for rural and agricultural extension policies</li> <li>Training manuals</li> </ul>	<ul style="list-style-type: none"> <li>Diplomas, rural and agricultural extension courses</li> </ul>	<ul style="list-style-type: none"> <li>Rural and agricultural extension systems</li> <li>Development projects with rural extension and technical assistance</li> </ul>
	10. Impact evaluations <sup>6</sup> (sphere of control and interest)	<ul style="list-style-type: none"> <li>Impact evaluation of innovations</li> <li>Publications</li> </ul>	<ul style="list-style-type: none"> <li>Master's and PhD theses</li> <li>Courses and internships</li> </ul>	<ul style="list-style-type: none"> <li>Recommendations incorporated in development projects and new research</li> </ul>

Figure 4. Key indicators of the theory of change

6 Annex 2 presents a table that lists CATIE's areas of interest and the benchmark indicators for impact evaluations. It is expected that other indicators will be determined with the technical design of each of the impact studies.

## 7.2 The planning and scheduling process

Planning only makes sense if it is accompanied by good programming that aligns the strategic plan with the biennial plan and operational plans. The ISP will only be a good intention, if a good programming of resources does not follow it. This 10-year plan provides strategic guidance, the biennial plan adjusts the strategic outlook with the short-term situation, setting the institutional goals and planned milestones, and the annual operating plan assigns the human resources and financial resources that align the institutional effort in the direction of the institutional strategic objectives.

Planning only makes sense if the divisions and operating units are empowered by the plan, because at the end of the process they are the ones that schedule the activities by allocating the (usually scarce) resources to the product generation process in the annual operating plans. Although it is true, the allocation of resources is a vertical activity, it must correspond to a two-way exercise where priorities are aligned with the programming of activities and institutional processes.

CATIE, at this programmatic level, will establish the Integrated Institutional Management System (SIGI-CATIE) as part of the integration and monitoring of indicators. The technical product indicators correspond to the budget allocation and the allocation of personnel in each of the activities of the Annual Operating Plan. The current implementation of the institutional ERP will make the operation of the SIGI more effective. The output boards of this SIGI relate technical indicators, with budgets and personnel through an ERP's own business intelligence system. These relationships between the technical performance of the institution, the execution of the budget, and the performance of its personnel are key for institutional management not only for the allocation of resources but also in the alignment of priorities with the institutional strategic objectives and therefore, guides the mobilization of external resources that the institution manages on a permanent basis.

The Biennial Plan is prepared once at the beginning of the new ISP and is updated every two years. This should be a highly participatory exercise, with well-detailed programming at the level of the schedule and responsible. This must be approved by the Executive Committee, by the Board of Directors and be ratified by the Superior Council of Ministers at its second ordinary meeting every two years, respectively. In the case of the Annual Operational Plan (AOP), the programming is similar to the case of the Biennial Plan, but on an annual basis and with the specificities of the AOP.

## 7.3 The monitoring and evaluation process

The process of monitoring verifiable indicators will strengthen transparency, while measuring the progress and level of success of the institution. We will review the strategic planning every two years through the biennial plans, where the institution adjusts its indicators and the goals associated with them in its AOP.

The monitoring process has several levels and therefore different roles are necessary: 1) the monitoring of institutional management is conducted by the Office of Planning and Knowledge Management and this is done based on indicators of key institutional products and for this purpose, SIGI has been conceptualized and implemented, as already noted in previous sections; 2) monitoring of result indicators, which are achieved by synergistic action between CATIE's directorates (research, education, and outreach), its allies and partners. At this level, the monitoring of indicators will be a joint action of CATIE in the countries, and 3) the monitoring of indicators of the scaling-up and development projects takes place within the

executing units of these and follows a programming cycle of the projects themselves. Normally, monitoring at this level is a joint action between the executing unit, the development partners, and the donors.

The report must be an institutionalized practice that fulfills the function of timely and reliable feedback for decision-making at the different levels. In formal terms, both the Executive Committee and the Board of Directors know and approve the annual reports that include a section of the key institutional indicators. CATIE's Higher Council of Ministers ratifies these reports.

The evaluation process is also presented at different levels: the first is the institutional performance analysis, which is usually periodic external evaluations that under specific terms of reference make a targeted analysis and use, as far as possible, quantitative information from records of key indicators, but also use qualitative and perceptions information by consulting qualified institutional and individual stakeholders. Normally, these types of evaluations are made at the request of the Board of Directors and, therefore, the recommendation reports are approved at this level, and CATIE's senior management is responsible for incorporating these in the most effective way possible. Second, project evaluation is normally carried out as a requirement of the donor and is a commitment that CATIE acquires on a contractual basis. A third party carries out this evaluation. There are mid-term project evaluations, and, in this case, the reports are used to adjust the actions of the project that are subject to change to correct or improve their actions. Normally, project evaluations take place at the end of the project, and in this case, they are the main source of systematization of the lessons learned. Lastly, impact evaluations are gaining particular importance and are required to establish the level of attribution that CATIE has in a transformation that benefits populations or the environment. Usually, this type of impact occurs in CATIE's sphere of interest. Annex 2 lists the areas of interest and the benchmark indicators for these impact evaluations. These require a very rigorous methodology statistically speaking that allows estimating the level of attribution of the intervention. For this, we will make an effort to have the technical capacity to carry out this type of study.

## Annex I. Definitions

**Product.** Knowledge, technical or institutional progress produced through research, participation, and/or capacity building activities (higher education and training). Some examples of results include new research methods and tools, policy analysis, genetic sequencing and maps, new crop varieties and varieties, improved systems, new graduate programs, institutional innovations, and other products of research work. These are generated under the sphere of institutional control.

**Result.** An outcome is a change in knowledge, skills, attitudes, or relationships, manifested as a change in behavior, contributed to by the products of research, training or higher education, outreach, as well as activities related among people, groups, or organizations. These require the participation of external actors to the institution, normally partners and institutional allies that influence the decision-making processes. Results are typically achieved under the institutional sphere of influence.

**The impact.** The impacts of the results should be described according to their maturity and scale, from early changes in behavior in the direct partners to long-term and large-scale changes in factors such as health, food security, wealth or environment to which the research, outreach, education, and training have contributed. These are achieved in the sphere of institutional interest and normally depend on variables external to the control and actions of institutional incidence.

**Impact assessment.** This is a study that conclusively demonstrates that the observed transformations can be attributed to the results of the interventions of CATIE and its partners. To carry out these evaluations, CATIE must align itself with its institutional partners at the regional or country level and carry out these exercises to the extent possible.

**Innovation indicators (research for development).** New or significantly improved (adaptive) products or product groups, including important research management practices, knowledge, technologies, findings / methods / tools.

### *Number of disaggregated research and development innovations*

- By leading organizations and partners
- By type of innovation
- Geographic scope
- By stage marked by the end of the investigation:
  - **Stage 1:** discovery / proof of concept
  - **Stage 2:** the successful pilot test
  - **Stage 3:** available/ready for third party use
  - **Stage 4:** adopted by third parties



## Examples of innovations

- Genetic materials (varieties, hybrids and races)
- Production systems and management practices, agroforestry systems, forestry systems (concessions)
- In social and environmental sciences
- Biophysical research
- Research and communication methodologies and tools
- Methods for the quantification of ecosystem services
- Methods for the conservation and management of water
- Methods for economic valuation and incentive systems

## Policy indicators

Number of policies, legal instruments, economic instruments or investments in the design and implementation of the policies. This indicator can be disaggregated:

- By policy/type of investment
- By the lead organization
- By geographic scope of change
- By level of maturity of the process, the policies are presented in three levels:
  - **Level 1:** policy inputs are incorporated by the decision maker or an intermediary
  - **Level 2:** approval and implementation of the policy (based on its instruments)
  - **Level 3:** evidence of the impact of the change on people or the natural environment due to the implementation of the policy

## Examples

- **Policy or strategy:** a written decision or commitment to a particular course of action by an institution (policy) or a high-level plan that describes how a particular course of action (strategy) will be carried out.
- **Legal instruments:** laws (a bill approved by the highest elected body) or regulations (a rule or norm adopted by the central government or local governments, backed by some threat of criminal or civil consequences).
- **Economic instruments:** positively or negatively affect economic activities in favor of desirable or undesirable transformations.
- **Budgets or investments for development:** public or private funds destined to the development of actions in favor of people and the environment.
- **Curriculum development policies:** the planned means and materials with which students will interact, in order to achieve the identified educational results, at any level of their training or for target groups, ranging from university degrees, training of trainers, design Farmer Field Schools or any proposed rural extension program.

## Annex 2. Summary of impacts of the Institutional Strategic Plan

### *Expected impacts, strategic objectives and indicators of expected impacts*

Expected impacts (CATIE Sphere of Interest)	Strategic Objectives	Benchmark Indicators (To be defined in the Impact Studies)
1. Increased income and rural employment with gender equity and inclusion	<p><b>SO1:</b> Generation of scientific and technical knowledge, through systemic research for Inclusive Green Development (IGD)</p> <p><b>SO2:</b> Training of leaders with professional competencies that affect Inclusive Green Development (IGD) in LAC</p> <p><b>SO3:</b> Outreach through knowledge management and institutional strengthening for Inclusive Green Development (IGD)</p>	<ul style="list-style-type: none"> <li>• Per capita expenditure at the household level, as a proxy for income (remittances, as a critical variable)</li> <li>• Level of formal and informal rural employment</li> <li>• Women’s empowerment index</li> <li>• Increased income with gender equality</li> <li>• Income from compliance with climate action in indigenous people</li> </ul>
2. Food and nutrition security and agrobiodiversity		<ul style="list-style-type: none"> <li>• Prevalence of chronic malnutrition among children under-five years</li> <li>• Improvement in the diversity and level of diet in households</li> </ul>
3. Resilience of rural communities to climate change		<ul style="list-style-type: none"> <li>• <b>Quantitative indices related to quality of life strengthened with an emphasis on rural areas:</b> <ul style="list-style-type: none"> <li>○ Reduction in crop losses</li> <li>○ Level of local food sovereignty</li> </ul> </li> <li>• Reduction in the migration of men and women (proxy for quality of life levels)</li> <li>• Capacity to recover from climatic shocks and stress</li> </ul>
4. Compliance with the goals contained in the NDC		<ul style="list-style-type: none"> <li>• Climate change metrics and national reports to the UNFCCC, enhanced by data generated by CATIE:                             <ul style="list-style-type: none"> <li>○ Emission reduction compared to baseline</li> <li>○ Increase in carbon capture</li> <li>○ Reduction of the carbon footprint of agricultural sectors: livestock, coffee, cocoa</li> </ul> </li> </ul>
5. Natural capital is enhanced and protected		<ul style="list-style-type: none"> <li>• The area of natural ecosystems that is maintained or increased in sustainable landscapes:                             <ul style="list-style-type: none"> <li>○ Improved forest cover</li> <li>○ Increased connectivity for biodiversity</li> </ul> </li> </ul>
6. Ecosystem services result in healthy people and planets		<ul style="list-style-type: none"> <li>• The magnitude and quality of key ecosystem service flows:                             <ul style="list-style-type: none"> <li>○ Level of water security in rural areas (dry corridors)</li> <li>○ Quantification and valuation of ecosystem services (modeling)</li> </ul> </li> </ul>

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# List of acronyms

<b>AOP</b>	Annual Operating Plan
<b>CABEI</b>	Central American Bank for Economic Integration
<b>CAC</b>	Central American Agricultural Council
<b>CAFTA</b>	Dominican Republic–Central America Free Trade Agreement
<b>CARICOM</b>	Caribbean Community
<b>CAS</b>	Southern Agricultural Council
<b>CATIE</b>	Tropical Agricultural Research and Higher Education Center
<b>CCAD</b>	Central American Commission for Environment and Development
<b>CIAT</b>	International Center for Tropical Agriculture
<b>CIFOR</b>	Center for International Forestry Research
<b>CIRAD</b>	French Agricultural Research Center for International Development
<b>DE</b>	Distance Education
<b>EAT</b>	Science-based global platform for food system transformation
<b>EfD</b>	Environment for Development
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GIZ</b>	German Corporation for International Cooperation
<b>ICRAF</b>	World Agroforestry Center
<b>IDB</b>	Interamerican Development Bank
<b>IGD</b>	Inclusive Green Development
<b>IICA</b>	Interamerican Institute for Cooperation on Agriculture
<b>INIA</b>	National Institutes of Agricultural Innovation
<b>IPBES</b>	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
<b>IPCC</b>	Intergovernmental Panel of Experts on Climate Change
<b>ISP</b>	Institutional Strategic Plan of CATIE
<b>LAC</b>	Latin America and the Caribbean

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<b>NAMA</b>	Nationally Appropriate Mitigation Actions
<b>NDC</b>	Nationally Determined Contribution
<b>NGO</b>	Non-Governmental Organization
<b>OAS</b>	Organization of American States
<b>PME</b>	Planning, monitoring and evaluation
<b>RDIGD</b>	Research Division for Inclusive Green Development
<b>REDD+</b>	Reducing Emissions from Deforestation and Forest Degradation
<b>SICA</b>	Central American Integration System
<b>SIGI-CATIE</b>	CATIE's Integrated Institutional Management System
<b>SO</b>	Strategic objective
<b>UNCCD</b>	United Nations Convention to Combat Desertification
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>WB</b>	World Bank

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# Institutional Strategic Plan 2021-2030

## Inclusive Green Development for Latin America and the Caribbean

