

Agricultural Climate Action and Sustainability Program



Inter-American Institute for Cooperation on Agriculture

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AUGUST 2023

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Also published in Spanish

Inter-American Institute for Cooperation on Agriculture (IICA) 2023



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Editorial coordination: Federico Villarreal

Translation: IICA Language Unit

Layout: IICA Communication Unit

Agricultural Climate Action and Sustainability Program/ Inter-American
Institute for Cooperation on Agriculture – San Jose, C.R.: IICA, 2023
32 p.; 21x16 cm.

ISBN: 978-92-9273-084-0

Published also in Spanish

1. Sustainability 2. Climate-smart agriculture
3. Public policies 4. Projects I. IICA II. Titulo

AGRIS
P01

DEWEY
631.584

San José, Costa Rica
2023

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IICA's Technical Cooperation

The Inter-American Institute for Cooperation on Agriculture (IICA), established in 1942, is the specialized agricultural agency of the Inter-American System that supports the efforts of its Member States to achieve agricultural development and rural well-being. The Institute promotes hemispheric cooperation aimed at achieving a more competitive, inclusive and sustainable agricultural sector, capable of feeding the region and the world.

IICA works together with its member countries to identify their needs and demands for technical cooperation, in order to provide the most appropriate responses to these demands through knowledge management led by its specialized technical experts, in coordination with hemispheric programs and the participation of partner institutions and professional networks of recognized prestige.

The Institute's operations are aimed at the implementation of three strategic technical cooperation actions:

- Support the strengthening and transformation of agri-food systems, in accordance with the mandate of the Inter-American Board of Agriculture expressed in resolution 531, in which it endorses the 16 messages presented by the Americas at the United Nations Food Systems Summit of 2021.
- Provide tools and inputs that contribute to the formulation of a new generation of public policies aimed at recognizing the contribution of agriculture in agri-food systems and in solving the climate crisis, as well as addressing science and innovation issues, placing agricultural and livestock producers of all contexts and scales at the center; and

- Support the collective action efforts of member countries in areas linked to their institutional mandate.

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To this end, the new Medium-Term Plan (MTP) established the creation of a new integrating body called the Observatory of Public Policies for the Transformation of Agri-Food Systems. The Observatory carries out cross-cutting actions in all areas of the MTP, and operates in coordination with the Coalition to Build Capacities for the Transformation of Agri-Food Systems, whose objective is to mobilize political, social, financial and technical support between national, regional and global entities with common and complementary objectives, in order to contribute to the development of leadership capabilities, and to the promotion and management of innovation, required to foster the evolution of the agri-food systems of the Americas.

Furthermore, the programs were adjusted to adequately reflect the emerging issues of the new global scenarios and priorities. IICA currently has the following hemispheric programs:

- Innovation and Bioeconomy
- Territorial Development and Family Farming
- International Trade and Regional Integration
- Agricultural Climate Action and Sustainability
- Agricultural Health, Safety and Agri-food Quality
- Digitalization of Agrifood Systems
- Gender Equality and Youth

The seven programs act in a coordinated manner and with an interdisciplinary approach to ensure the provision of articulated responses to the challenges faced by the 34 Member States of the Institute.

Through these changes, we seek to continue consolidating the vision of an IICA that looks outward to the world from the Americas and that, through its network of national delegations and its various regional and subregional technical cooperation mechanisms, provides member countries with technical cooperation of excellence, offering real solutions to the Ministries of Agriculture of the Americas.



Definitions

Below is a list of definitions of relevant terms set out in this report, based on the definitions offered by the Intergovernmental Panel on Climate Change (IPCC) of the United Nations Framework Convention on Climate Change (UNFCCC) (IPCC 2023).

Climate change adaptation. The process of adjustment to actual or expected climate and its effects to moderate or avoid harm or exploit beneficial opportunities. This process, which applies to human systems, is implemented in natural systems through human intervention. This can be done with a gradual approach (to maintain the essence or integrity of a system) or a transformative approach (in order to change its essential attributes). Adaptation has limits or points where, in the face of intolerable risks, the objectives of an agent (or the needs of a system) cannot be assured through adaptation measures.

Climate Change mitigation. A human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHGs).

Climate change. Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period,

typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use

Ecosystem services. Ecological processes or functions having monetary or non-monetary value. These include supporting services (such as productivity or biodiversity maintenance), provisioning services (such as food, fiber or fish), regulating services (climate regulation or carbon sequestration) and cultural services (tourism or spiritual and aesthetic appreciation).

Greenhouse Gas (GHG). Gaseous component of the atmosphere, natural or anthropogenic, that absorbs and emits radiation at certain wavelengths of the terrestrial radiation spectrum emitted by the Earth's surface, the atmosphere and clouds. The modification of the concentration of GHGs generated by anthropogenic emissions contributes to the increase in planetary temperature (IPCC 2013). Water vapor (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄) and ozone (O₃) are the primary GHGs in the Earth's atmosphere.

Resilience. The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation.

Acronyms

COP27	27th Conference of the Parties to the United Nations Framework Convention on Climate Change
EbA	ecosystem-based adaptation
IICA	Inter-American Institute for Cooperation on Agriculture
IPCC	Intergovernmental Panel on Climate Change
NAP	National Adaptation Plan
NbS	Nature-based solutions
NDC	Nationally Determined Contributions
PA	Paris Agreement
UN	United Nations Organization
UNFCCC	United Nations Framework Convention on Climate Change

Context

Latin America and the Caribbean (LAC) generates 14% of global food production and, as a region, aims to strengthen agri-food systems to help feed 10 billion people by the year 2050. Due to its diversity of environments, landscapes, climates and latitudes, agricultural production is key to the region's economy and plays a fundamental role in the food security of its population (ECLAC et al. 2021). Additionally, depending on the country, the primary agricultural sector generates between 2% and 15% of the national gross domestic product and close to 14% of the jobs in the region (Morris et al. 2020).

In LAC, agricultural production is very diverse in terms of scale, crops, practices, contexts and priorities. The climate and natural resources constitute the essential basis of the agri-food systems of the region. There is a two-way relationship between the agricultural sector and ecosystems and their natural resources, as this is an economic activity that not only modifies the environment, but is also conditioned by it. Agriculture is the world's largest user of water resources, with approximately 70% of freshwater used for food production (OECD 2010). Furthermore, in 95% of all food products, soils constitute the basis of production (Weigelt et al. 2015, FAO 2015).

Likewise, the cumulative degradation of ecosystems and natural resources negatively influences the levels of agricultural productivity. It is estimated that 49% of LAC's territory is exposed to water erosion, while approximately 56% of the land is affected by chemical degradation (salinity or acidity) of the soil. In humid regions, deforestation, 80% associated with food production, constitutes one of the main causes of soil degradation (IPCC 2020).

Growing climate risks. In terms of risks to agri-food systems, climate change exacerbates current risks and introduces new ones. Changes in climate and environmental conditions affect many economic sectors and aggravate problems such as poverty, migration, food and nutritional insecurity and environmental degradation, among others. Its impact on agri-food systems is unique, with effects on each link in the value chains and implications for productivity, territorial development and livelihoods, agricultural health and safety, food quality and trade. The 14 million small-scale producers in LAC are particularly vulnerable to climate risks, given that they generally have fewer technological and financial resources to confront them. Some of the impacts experienced by the sector include a greater number of extreme events such as droughts, floods, frosts and hurricanes (especially in the Caribbean and Central America), alterations in

precipitation patterns, changes in pests and diseases and other biophysical consequences that entail a series of socioeconomic impacts.

In recent years, instability in weather patterns, caused by climate change, has accelerated and worsened. According to the IPCC Synthesis Report of the Sixth Assessment Report 2023, extreme events are becoming more serious than expected and future risks will increase as temperatures rise. With 152 million people affected between 2000 and 2019, LAC is the second most prone region to these disasters in the world. Frequent floods, droughts, hurricanes and other phenomena negatively influence the resilience of communities (OCHA 2021). The differences between a world with an increase in average temperature of 2°C and another with an increase of 1.5 °C are alarming, making it urgent to accelerate climate action and the transformation towards a low-emissions economy (IPCC 2018). There are several adaptation options that are effective; however, they are not being implemented at the necessary scale and pace, which is why more transformative incremental actions need to be implemented (IPCC 2023).

Resilient low-emission development. It is possible to affirm that the agricultural sector and food systems are moving towards low-emission development. It is estimated that agri-food systems (including the entire value chain) currently generate approximately one third of global GHG emissions (Crippa et al. 2021); therefore, without a significant contribution from these systems, the 1.5 °C goal will not be reached, and even the 2°C goal would be at risk, which would have a negative impact on the sector. Emissions of CH₄ and N₂O, two particularly strong GHGs, come largely from the agricultural sector (44% and 81% of their global emissions, respectively). The agricultural sector, together with land use changes and deforestation, represents approximately 47% of emissions in LAC, a percentage higher than the world average. All modeled pathways to meet the Paris Agreement (PA) goal of net zero emissions by mid-century require a significant reduction or complete halting and reversal of emissions by 2030 from land-use-based activities. This constitutes a crucial factor for long-term action. According to the IPCC (2023), agriculture, forestry and other land uses must cease to be a net source of emissions. Furthermore, soil carbon sequestration in croplands and grasslands has a mitigation potential of 0.4 to 8.6 CO₂-eq/year and represents an important opportunity in this regard.

Efforts under the UNFCCC. In the field of climate negotiations, for less than a decade agriculture, with its own agenda item, has been explicitly part of the discussions held at the UNFCCC. The AP, adopted in 2015, as well as the Nationally Determined Contributions (NDCs) submitted by countries, include all sectors. However, due to its bottom-up nature, it is the parties that decide which sectors

are incorporated into their NDCs. The agricultural sector can play an increasingly significant role in achieving national and regional goals, both in terms of adaptation and mitigation. The Sharm al-Shaykh joint work on agriculture and food security, the new UNFCCC workspace from 2023 to 2027, follows the previously called Koronivia Joint Work (2017-2023). This new joint initiative aims to facilitate the implementation of climate action in the agricultural sector. The other major environmental conventions of the United Nations (UN), namely the United Nations Convention to Combat Desertification and the Convention on Biological Diversity, also have important links with agri-food systems. Currently, international efforts are moving towards a new sustainability management model that includes climate challenges, for which it is necessary to integrate the management of climate change, natural resources and risk, in order to guarantee the sustainability of the countries' development in the Americas, especially in a post-pandemic recovery scenario.

The agricultural sector as part of the solution. This sector is constantly improving its practices and policies and will continue to be an important part of the solution to address the climate crisis and several of the most important environmental challenges of the century, including soil degradation, water risks and biodiversity conservation. The 1.5°C goal cannot be reached without a substantial contribution from the sector, which requires action on the ground and support for producers to achieve the necessary changes aimed at increasing their resilience and productivity in a sustainable way while also contributing to the reduction of GHGs.

It is clear that one of the main challenges facing agriculture is to continue increasing its productivity levels in a sustainable manner. More than 22% of LAC soils are located in areas with high or very high levels of degradation, hence reversing this situation represents a challenge for the region (UNEP 2016). Furthermore, it is estimated that, if the current conditions of agricultural land use in LAC persist, approximately 50% of them will be subject to desertification processes by 2050, a process that is accelerated by the increase in extreme climate events and the application of inappropriate soil management practices. It is estimated that climate change will have negative effects on the sector (IPCC 2019). Only in LAC, potential reductions are expected in the average yield growth (7.5%), total surface area (1.2%) and production (5.2%) (Prager et al. 2020). The degradation of natural ecosystems negatively affects their capacity to provide ecosystem services of vital importance for agriculture, such as pollination and the regulation of the hydrological cycle, climate and nutrient cycles (Zhang et al. 2007). Science and innovation for resilience, sustainability and net GHG reduction constitute a strategic opportunity to move towards the transformation of the sector.

The sustainability of the sector has a triple endpoint, striking a balance between the environmental, social and economic spheres. Its growth must be based on sustainable intensification and improved productivity rather than an increase in surface area. It is necessary to achieve climate resilience, reduce net emissions or their intensity per unit of product, promote carbon sequestration in forests and soils and, in many cases, increase productivity with sound environmental management practices. At the same time, the sector must be inclusive and offer social benefits to achieve a competitive and profitable agriculture.

A real sense of urgency on the part of science. According to IPCC reports, there is less than a decade to change the situation. It is essential, therefore, to promote an effective transition from current agri-food systems to others that guarantee food and nutritional security, increase agricultural productivity and provide prosperity to present and future generations, without degrading natural resources or ecosystems. To achieve this transition, comprehensive approaches and solid and constant efforts must be applied, supported by science, technology and innovation. There must be incremental and, above all, transformational changes in the agri-food systems of the Americas, in order to effectively address the climate risks facing these systems and strengthen their contribution to global food and nutrition security.

Main opportunities and challenges

The opportunities and challenges for LAC in this context include:

Building capacities to formulate, implement and evaluate sectoral public policies for climate action integrated into development policies. The institutional and operational framework must be strengthened as well as the capacities to advance in the management of climate change and risk in the territories. This, in turn, means improving the quality of the monitoring, reporting and verification (MRV) and monitoring and evaluation (M&E) processes, in keeping with the requirements of the AP Enhanced Transparency Framework. This includes the development and reinforcement of capacities to promote innovation for resilience, mitigation and environmental management in productive systems, so as to lay the foundation for continued evolution towards greater sustainability.

Promoting collective and regional efforts. No person, institution, sector or

country can address the challenge of climate change on its own. In the region there are successful experiences in the definition, implementation and monitoring and evaluation of policy measures, plans, programs and actions to enhance sustainability, resilience and mitigation, which must be shared to accelerate progress. Given the limitations of financial and human resources, regional efforts are important, as well as articulation, coordination and collaboration between multiple stakeholders. Producers and community-based organizations are key interlocutors in the consensus around multi-level climate actions, while the private sector has great potential to accelerate climate action. Institutions, incentives and price signals, public policies and public-private coordination must be generated or consolidated to promote efficiency at different scales.

Participating in national and global climate forums The topic of agri-food systems is currently being discussed in national and international forums on climate change and other environmental issues. The participation of representatives of the sector in global, regional and national forums and organizations is essential to respond to the priorities, realities and needs of agriculture. New initiatives and voluntary commitments such as the Global Methane Pledge, the Agricultural Innovation Mission for Climate and 20x20, among others, offer opportunities to channel resources towards the sector and facilitate its transformation.

Remove barriers and channel resources to facilitate climate action and improve environmental performance. The existing barriers of each context must be fully understood to develop contextualized responses, including taking action with respect to the demand (such as reducing food loss and waste), as well as applying new trade mechanisms to incentivize the implementation of good practices and the compliance with environmental laws and multilateral environmental agreements. The barriers that hinder access to climate financing (long and complex processes, inability to formulate and present projects, mechanisms that increase countries' debt, etc.) must be lifted, especially for the most vulnerable groups in the sector. The financing gap for mitigation in food systems is between USD 184 billion and USD 301 billion per year, while the adaptation support gap in the sector is even larger, requiring investments in research and development, extension and infrastructure, among other aspects, and varying depending on the context of the region (Sulser et al. 2021). Voluntary cooperative approaches to the implementation of NDCs include opportunities to access financing and the participation of producers of all scales and other private

sector actors. The AP recognizes its potential to achieve greater ambition in mitigation, adaptation and promotion of sustainable development measures, as a transition mechanism towards decarbonization.

Agricultural Climate Action and Sustainability Program

Objective and lines of action. Under the UN Sustainable Development Goals, this program aims to promote integrated solutions, based on principles that respond to the priorities of the Member States of IICA, to achieve a sustainable, climate-resilient and low-emission agricultural sector that can continue to sustain food security. The program also supports the implementation of actions to address the national and sectoral priorities indicated in the NDCs and the national adaptation plans (NAPs), and fosters the inclusion of agriculture in future versions of public climate policies, so that it can contribute to the fulfillment of different sustainable development goals.

To achieve this, the Institute has outlined an intervention model, which can act as a bridge between stakeholders, sectors, scales, countries, scientists and decision makers. This model focuses on three lines of work and uses NDCs¹ and NAPs as a focal element for action.

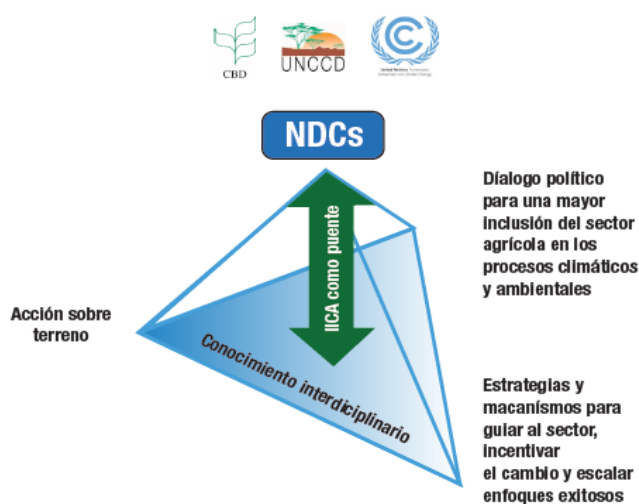


Figure 1. Strategy of the Agricultural Climate Action and Sustainability Program.

¹ The NDCs are instruments that make the AP operational. Countries develop them every five years with greater ambition, and include their mitigation goals, adaptation priorities and support needs. They are related to several other climate public policy instruments, including NAPs, nationally appropriate mitigation actions and long-term low-emission development strategies.

Promotion of a sustainable and climate-resilient agricultural sector

- Promoting political dialogue to position the sector and its priorities in the processes linked to climate change and the environment.

The agricultural sector must play a leading role in order to contribute to achieving the goals of the UNFCCC and the Paris Agreement, and to meet the increasingly ambitious national climate commitments expressed in the NDCs. IICA works at the technical and political levels to increase the participation of the sector within the framework of this convention and the associated commitments at the national and international levels, as well as to provide spaces to find common elements that will help position and visibilize the region and its interests. At the UNFCCC, dialogues are held with agricultural negotiators, for which virtual and in-person discussions and training sessions are organized. In addition, inputs, analysis, tools and spaces for consultation are offered to inform decision-making and for institutional strengthening.

BOX 1

Unprecedented participation of agriculture of the Americas at UNFCCC COP27.

The Institute worked at the technical and political levels to increase the participation of the agricultural sector in the climate negotiation process during the period leading up to the Twenty-Seventh Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27). Throughout 2022, monthly virtual forums were organized for agricultural negotiators from the Americas to develop capacities and generate dialogues without negotiation to advance the discussions. In addition, face-to-face workshops were held before the Bonn and Egypt negotiations. This resulted in unprecedented participation from the Americas in terms of the number of participating countries in the region, as well as their ability to proactively contribute to the negotiations.

In terms of high-level support and participation, on May 31, 2022, after the region's ministerial authorities and agriculture secretaries met virtually to discuss the climate challenge, they agreed on a declaration in which they reaffirmed their willingness to work collectively to strengthen sector participation and leadership in climate processes and develop messages to share in a pavilion on agri-food systems at COP27, to increase the sector's presence at the event. Furthermore, at the close of the 2022 Summit of the Americas, the heads of State and Government adopted a mandate in which they agreed to "strengthen the role of all stakeholders in the agricultural sector in international and national climate efforts, and invite them to present their recommendations at the Meeting of Ministers of Agriculture of the Americas before the 27th Conference of the Parties (COP27), organized by the Inter-American Institute for Cooperation on Agriculture."

In September of that same year, a high-level meeting was held in Costa Rica, in which 31 countries participated, 26 of which were represented by ministers or vice-ministers. This event served as a regional platform to discuss how to best drive innovation and financing in support of the transformation of the agricultural sector in the Americas. In addition, high-level representatives of the Green Climate Fund, the Global Environment Facility, the UNFCCC and the COP27 Presidency were present. The messages from the ministerial authorities and Secretaries of Agriculture of the Americas were confirmed for communication during COP27.

The largest number of LAC Ministers of Agriculture participated in COP27 (14), where the Home of Sustainable Agriculture of the Americas Pavilion was installed, the first one of its kind to be dedicated to the agricultural sector in the region. This pavilion provided a space for participants to have discussions and exchange, and dozens of bilateral meetings and informal discussions were held there to catalyze other actions to strengthen strategic alliances and create networks, in order to promote the implementation of climate processes in the countries. The 53 formal events held during the two weeks of COP27 showcased the sector's progress on climate change, as well as its challenges, priorities and needs. Finally, the consensual messages of the ministries and secretariats of agriculture and livestock of the Americas for the UNFCCC COP27 were presented.



- Develop strategies and mechanisms to encourage changes and expand climate action towards greater sustainability of agri-food systems.

This includes facilitating horizontal cooperation and exchange between countries, supporting the development, implementation and monitoring of climate change policies and programs, capacity building, and innovation and digitalization to contribute to the climate response and the sustainability of the sector. The mobilization and execution of external resources, as well as knowledge management, contribute to expanding, guiding and fostering change in the agri-food systems of the Americas. The Program also organizes the Caribbean Climate Responsive Agriculture Forum (CCRAF), which supports knowledge management in the countries of the region for climate action at different scales.

Actions are promoted at regional and global levels to improve the sector's access to climate financing. Different options are explored such as the development of voluntary carbon markets to ensure their integrity, transparency, and their ability to adequately scale-up the role of agriculture in reducing emissions.

BOX 2

Regional analysis: the AP and agriculture: a look at the implementation of the NDCs in the Americas.

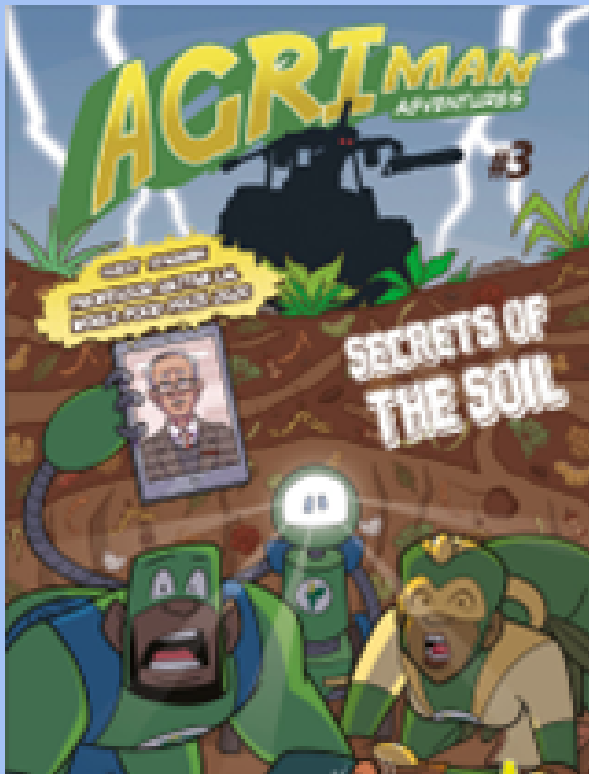
Analyzing the progress, gaps and needs associated with the implementation of the agricultural components of the NDCs, as well as determining the potential of incorporating family farming and the bioeconomy in future updates, allows us to identify lessons learned and success factors for a faster implementation. To this end, a regional and national analysis of nine countries was carried out in Argentina, Colombia, Ecuador, Guatemala, Honduras, Mexico, Peru, Dominican Republic and Uruguay.



BOX 3

The adventures of Agriman: the secrets of the soil.

Different strategies have been established to improve access to technical information for various audiences and, in particular, youth. The adventures of Agriman: the secrets of the soil tells the story of two different areas of a country where there has been a drought and a flood, which have affected the producers and the communities. What is causing this relentless change in climate? What role do soils and agriculture play in this situation? What can we do about it? Read the comic to find out!



BOX 4

Climate action in the Caribbean.

In the Caribbean, the CCRAF offers a neutral space where everyone can share, learn, plan and promote policies, strategies and actions aimed at building more productive, low-emission and sustainable agricultural systems, appropriately adapted to the impacts of climate change. The objectives of CCRAF are:

- Raise awareness and share knowledge on climate-smart agricultural practices, policies and options for the Caribbean region that have the potential to be easily implemented or adopted.
- Foster a community of interested and committed actors at the regional and national levels who can advance the integration of climate change considerations into policies, planning, research and implementation in the agricultural sector.
- Promote greater coordination and collaboration between stakeholders and institutions to achieve optimal results.
- Link technical knowledge with practical action on the ground in climate policy processes and demonstrations for implementation and adoption.

During 2022, 5 forums were held, each with an average of 220 participants.



In addition, 18 adapted training sessions were organized, aimed at more than 115 technical experts working in agriculture and production. These professionals were provided with material and technical assistance to promote the implementation of nature-based solutions (NbS) and ecosystem-based adaptation (EbA) practices to improve climate resilience.

BOX 5

Living Soils of the Americas Initiative.

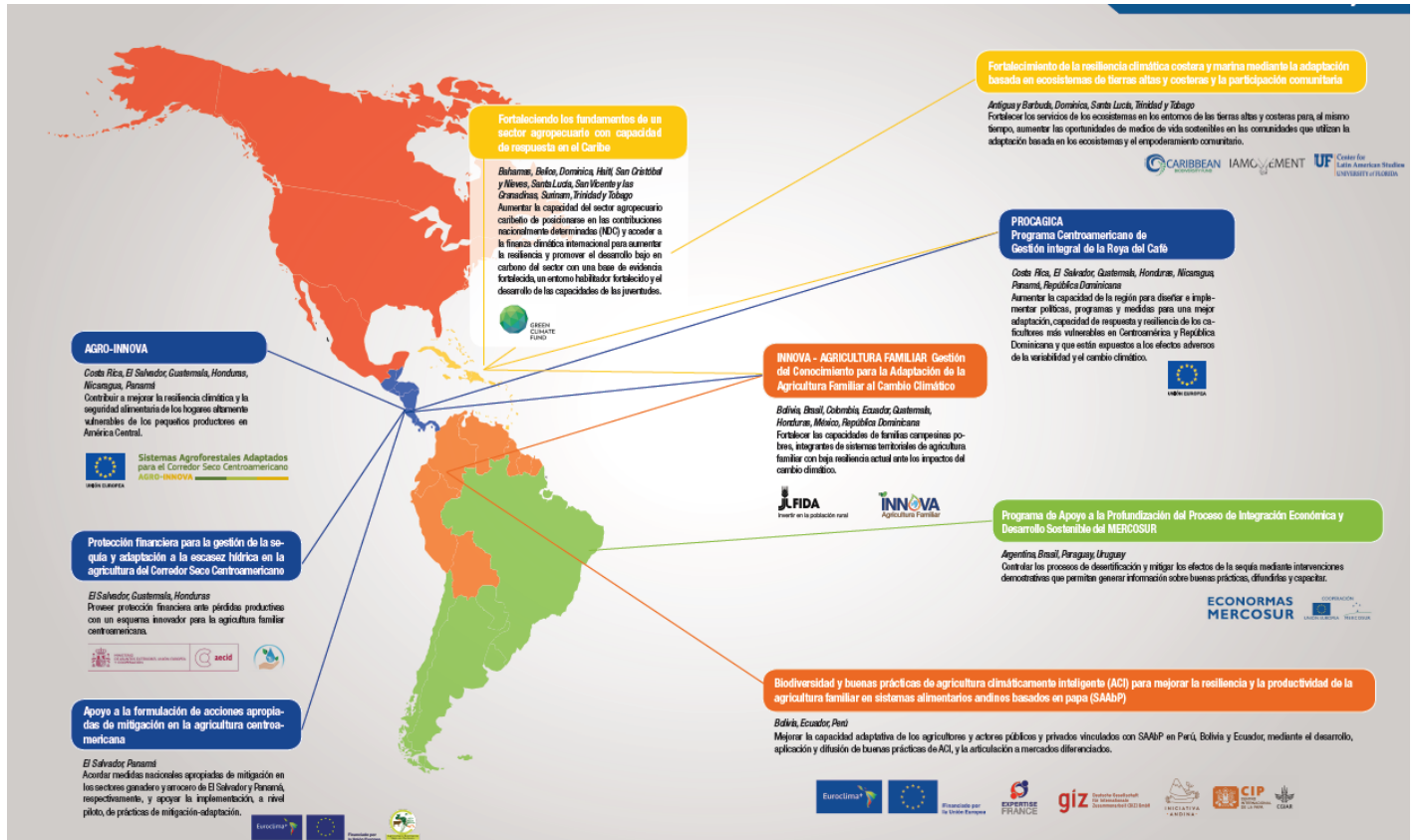
Spearheaded by IICA and the Rattan Lal Center for Carbon Management and Sequestration at The Ohio State University, under the leadership of Dr. Rattan Lal, this initiative is an excellent example of regional and interdisciplinary technical cooperation, approved by the 34 Member States of the Institute. Its objectives are to integrate regional knowledge and guide regional actions to showcase the positive effects of adopting good agricultural practices (GAPs) for carbon sequestration in soils, in order to promote the role of agriculture in GHG mitigation. A concrete product of this regional cooperation is the publication entitled “Soil carbon sequestration through adopting sustainable management practices: potential and opportunity for the American countries”, which shed light on three important issues: the main scientific methodologies that can identify the effects of GAPs on soil carbon sequestration, estimates of soil carbon stocks (0 to 30 cm) in all LAC countries from soil cover, and the calculation of the sequestration potential in the region resulting from the adoption of GAPs.

- Implement actions in the field to validate, test or demonstrate approaches, practices or tools, in order to generate concrete experiences with potential for expansion.

The goal is to articulate initiatives to be implemented directly on the ground to contribute to the fulfillment of the global objectives of the AP, addressing relevant topics in the current context such as: losses and damage, climate-smart agriculture, promotion of EbA and NbS, climate risk management, financing, cooperative mechanisms, soil health and water management. In addition, the aim is to strengthen co-innovation skills and increase the understanding, knowledge and technical capacity of technical experts in agriculture, to work better with producers in the application of measures and practices to manage climate risks in their agricultural ventures and in mixed systems of rice, livestock and coffee, among others.

To advance with these guidelines, IICA strategically articulates and promotes collective work through the establishment of high-impact alliances with various organizations to transform agri-food systems into climate-resilient, sustainable and low-emission systems, which constitute a driver of socioeconomic development in the Americas. In LAC, the great heterogeneity of productive contexts requires contextualized measures to meet the needs of the different actors. This is achieved through continuous coordination with the Institute's Delegations in each of its Member States. Technical specialists and representatives work in a network of continuous exchange to understand and respond to the needs and opportunities for technical assistance at the national, regional and hemispheric levels, with the objective of contributing to the strengthening of agri-food systems and stakeholders' capacities in an integrated manner. At the regional level, the Agricultural Climate Action and Sustainability Program places special emphasis on the Caribbean to help increase resilience in the sector. Finally, aware of the importance of an integrated approach, the program promotes interdisciplinary work with other IICA programs, recognizing that climate change affects all aspects of agriculture.

Below are examples of various multi-country climate projects.



National projects on climate change and natural resources	Geography	Amount in USD	General objective
Terra Viva Project in Colombia.	Colombia	140 185	Contribute to developing a common vision and purpose from the perspective of local actors in the municipality of Planadas, Tolima, to define viable strategies aimed at achieving environmental, social and economic impact at scale, improving climate-smart decision-making on the sustainable use of the landscape.
Implementation of a Training and Technical Assistance Strategy to facilitate the transition to sustainable coffee and cocoa production systems in the provinces that make up the CTEA.	Ecuador	605 100	Implement a training and technical assistance strategy to facilitate the transition to sustainable coffee and cocoa production systems in the Amazon provinces of Ecuador.
Strengthening small-scale rural enterprises to improve environmental sustainability in coastal communities in the Districts of Nickerie and Coronie, Suriname.	Surinam	109 720	Strengthen resilience in small coastal companies, demonstrate and promote alternative sustainable enterprises that guarantee economic benefits for coastal residents and ensure the sustainability of coastal ecosystems.
Design and implementation of a training and technical assistance program for the sustainable production of coffee and cocoa in the provinces that make up the CTEA in Ecuador.	Ecuador	1 000 000	Design and implement a training and technical assistance program for the sustainable production of coffee and cocoa in the provinces that conform to the Amazon Special Territorial Circumscription (CTEA).
Institutional strengthening of the Special Fund for Agricultural Development and the strengthening of rural business organizations promoted by FEDA in the Dominican Republic.	Dominican Republic	2 128 663	Develop a technical cooperation initiative to support the institutional transformation of the Special Fund for Agricultural Development (FEDA), in order to develop a new rural economy within the framework of what the national authorities have defined as the "Government of Change", and to transform rural economic organizations into profitable and permanent rural cooperatives.
Relevance of secondary science and environment education in rural agricultural communities in Costa Rica.	Costa Rica	659 500	Develop and test a model for the relevance of secondary education in science and the environment in rural areas, by comparing different approaches of teachers' training.
Sustainable Land Management and Strengthening Resilience of Agricultural Lands and Forests in Dominica (PISLM -IICA).	Dominica	306 471	The objective of this consultancy is to increase the number of farmers who use sustainable land management mechanisms in agriculture, thus improving food security, the quality of production leading to the certification of farms and better access to the market, respectively.
Water Resources Management: implementation of actions for water resources plans for interstate basins in Brazil.	Brazil	982 006	Expand the capacity to implement the actions identified in the planning instruments, contributing to improving the management of water resources.

Support for the formulation of strategies and the development of actions aimed at improving access to water and revitalizing river basins in Brazil.	Brazil	3 391 102	Contribute to the formulation of strategies and the development of actions aimed at improving water access through the sustainable management of desalination systems and the revitalization of hydrographic basins.
Improve the implementation of integrated management of water resources and their multiple uses in Brazil (INTERAGUAS).	Brazil	2 891 653	Improve the implementation of integrated management of water resources and their multiple uses in Brazil.
Development of the water sector in the Basic Sanitation Area (INTERAGUAS).	Brazil	23 453 372	Support the National Secretariat of Environmental Sanitation of the Ministry of Cities in their mission to implement the Federal Basic Sanitation Policy, by boosting the development of the sector in search of improved quality and the universalization of basic public sanitation services.
Strategies and actions to prevent, control and combat desertification in the face of climate change scenarios and the United Nations Convention to Combat Desertification (UNCCD) in Brazil.	Brazil	4 380 853	Support the Ministry of the Environment in the planning and implementation of strategies and actions to prevent, control and combat desertification in the face of climate change scenarios and considering the Ten-Year Strategic Plan (2008-2018) of the United Nations Convention to Combat Desertification (UNCCD).
Institutional strengthening and development of the water sector under the Ministry of National Integration: water infrastructure, irrigation and civil defense of Brazil (INTERAGUAS).	Brazil	31 229 226	Support the Ministry of National Integration in improving coordination and strengthening the capacity to design, plan and execute initiatives (studies, plans, programs and projects) in the Water Sector, through an integrated approach to the problems and solutions identified within this Sector.

Bibliography

Agriculture for Impact. 2012. Growth with resilience: opportunities in African agriculture: a Montpellier Panel report March 2012 (online). London, United Kingdom. Consulted 08 Feb 2023. Available at <https://www.mamopanel.org/resources/reports-and-briefings/growth-resilience-opportunities-african-agriculture/>.

América Latina y el Caribe: la segunda región más propensa a los desastres (online). 2020. UN News, New York, United States of America; 3 Jan. Consulted 03 March 2023. Available at <https://news.un.org/es/story/2020/01/1467501>.

ECLAC (Economic Commission for Latin America and the Caribbean, Chile); FAO (Food and Agriculture Organization of the United Nations, Chile); IICA (Inter-American Institute for Cooperation on Agriculture, Costa Rica). 2021. Perspectivas de la agricultura y del desarrollo rural en las Américas: una mirada hacia América Latina y el Caribe 2021-2022 (online). San José, Costa Rica. 128 p. Consulted 12 June 2023. Available at <https://rb.gy/tcrdmd>.

FAO (Food and Agriculture Organization of the United Nations, Italy). 2022. The state of the world's land and water resources for food and agriculture 2021: systems at breaking point: main report (online). Rome. Consulted 24 Feb 2023. Available at <https://doi.org/10.4060/cb9910en>.

Gonzales-Iwanciw, J; Witkowski, K; Borda, C. 2022. El Acuerdo de París y el agro: una mirada a la implementación de las NDC en América Latina (online). San José, Costa Rica, IICA. Consulted 09 March 2023. Available at <https://repositorio.iica.int/handle/11324/20781>.

IICA (Inter-American Institute for Cooperation on Agriculture, Costa Rica). 2020. Monitor para la seguridad alimentaria de las Américas: un completo reporte sobre el sector agroalimentario continental frente a la pandemia (online). San José, Costa Rica. Consulted 5 June 2023. Available at <https://www.iica.int/sites/default/files/2020-12/MONITOR%20Covid-19-10%20diciembre.pdf>.

IICA (Inter-American Institute for Cooperation on Agriculture, Costa Rica). 2022. Medium-Term Plan (MTP) for the period 2022-2026 (online). San José, Costa Rica. Consulted 5 June 2023. Available at <https://repositorio.iica.int/bitstream/handle/11324/20969/BVE22098277e.pdf?sequence=5&isAllowed=y>.

IPCC (Intergovernmental Panel on Climate Change, Switzerland). 2001a. Anexo B: glosario de términos (online). Geneva. Consulted 5 June 2023. Available at <https://archive.ipcc.ch/pdf/glossary/tar-ipcc-terms-sp.pdf>.

IPCC (Intergovernmental Panel on Climate Change, Switzerland). 2001b. Climate change 2001: impacts, adaptation, and vulnerability: contribution of Working Group II to the Third assessment report of the Intergovernmental Panel on Climate Change (online). Cambridge, United Kingdom, CUP. Consulted 13 Feb 2023. Available at https://www.ipcc.ch/site/assets/uploads/2018/03/WGII_TAR_full_report-2.pdf.

IPCC (Intergovernmental Panel on Climate Change, Switzerland). 2007. Climate change 2007: impacts, adaptation and vulnerability: contribution of Working Group II to the Fourth assessment report of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom, CUP.

IPCC (Intergovernmental Panel on Climate Change, Switzerland). 2013. Glosario (online). In Cambio Climático 2013: bases físicas: contribución del Grupo de Trabajo I al Quinto informe de evaluación del Grupo Intergubernamental de Expertos sobre el Cambio Climático. Cambridge, United Kingdom, CUP.

IPCC (Intergovernmental Panel on Climate Change, Switzerland). 2018. Calentamiento global de 1,5°C: informe especial del IPCC sobre los impactos del calentamiento global de 1.5°C con respecto a los niveles

preindustriales y las trayectorias correspondientes que deberían seguir las emisiones mundiales de gases de efecto invernadero, en el contexto del reforzamiento de la respuesta mundial a la amenaza del cambio climático, el desarrollo sostenible y los esfuerzos por erradicar la pobreza (online). Geneva. Consulted 6 June 2023. Available at <https://www.ipcc.ch/sr15/>.

IPCC (Intergovernmental Panel on Climate Change, Switzerland). 2023. Summary for policymakers (online). In Climate change 2023: synthesis report: contribution of working groups I, II and III to the Sixth assessment report of the Intergovernmental Panel on Climate Change. Geneva. p. 1-34. Consulted 09 Feb 2023. Available at https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf.

Loboguerrero AM; Birch, J; Thornton, P; Meza, L; Sunga, I; Ba Bong, B; Rabbinge, R; Reddy, M; Dinesh, D; Korner, J; Martinez-Baron, D; Millan, A; Hansen, J; Huyer, S; Campbell, B. 2018. Feeding the world in a changing climate: an adaptation roadmap for agriculture (online). Rotterdam, Netherlands, GCA. Consulted 10 March 2023. Available at https://cgspace.cgiar.org/bitstream/handle/10568/97662/18_WP_GCA_Agriculture_1018.pdf.

Morris, M; Sebastian, AR; Perego, VME. 2020. Panoramas alimentarios futuros: reimaginando la agricultura en América Latina y el Caribe (online). Washington D. C., United States of America, World Bank. 228 p. Consulted 12 June 2023. Available at <https://documents1.worldbank.org/curated/en/159291604953162277/pdf/Future-Foodscapes-Re-imagining-Agriculture-in-Latin-America-and-the-Caribbean.pdf>.

Parra, S. 2022. Estos son los acuerdos alcanzados en cumbre del clima COP27 (online). Spain, National Geographic. Consulted 23 Feb 2023. Available at https://www.nationalgeographic.com.es/ciencia/estos-son-acuerdos-alcanzados-cumbre-clima-cop27_19113.

Sulser, TB; Wiebe, K; Dunston, S; Cenacchi, N; Nin-Pratt, A; Mason-D'Croz, D; Robertson, R; Willenbockel, D; Rosegrant, MW. 2021. Climate change and hunger: estimating costs of adaptation in the agrifood system (online). Washington D. C., United States of America, IFPRI. Consulted 12 June 2023. Available at <https://reliefweb.int/report/world/climate-change-and-hunger-estimating-costs-adaptation-agrifood-system>.

Tres décadas perdidas en la lucha contra el cambio climático: el 2020 y el COVID-19 nos han dado un ultimátum (online). 2021. UN News, New York, United States of America; 19 Apr. Consulted 9 March 2023. Available at <https://news.un.org/es/story/2021/04/1490922>.

UN (United Nations Organization, United States of America). 1992. United Nations Framework Convention on Climate Change (online). Bonn, Germany. Consulted 10 June 2023. Available at <http://unfccc.int/resource/docs/convkp/convsp.pdf>.

UN (United Nations Organization, United States of America). 1997. Glosario de estadísticas del medio ambiente (online). New York, Statistics Division. (Method studies, Series F, n. 67). Available at <https://digitallibrary.un.org/record/232808>.

UNFCCC (United Nations Framework Convention on Climate Change, United States of America). 2022. Sharm el-Sheikh Implementation Plan (online). Consulted 08 Feb 2023. Available at <https://unfccc.int/documents/624444>.

World Bank. 2022. El Banco Mundial hace un llamado urgente a la acción climática en América Latina y el Caribe para acelerar la transición hacia economías resilientes y bajas en carbono (online, website). Washington D. C., United States of America. Consulted 09 Feb 2023. Available at <https://www.bancomundial.org/es/news/press-release/2022/09/13/banco-mundial-accion-climatica-urgente-america-latina-caribe-acelerar-transicion-bajas-emisiones-de-carbono#:~:text=El%20Banco%20Mundial%20hace%20un,resilientes%20y%20bajas%20en%20carbono&text=CIUDAD%20DE%20WASHINGTON%2C%2014%20de%20septiembre%20de%202022>.





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