



Annual Report

2024

*Building alliances, creating impact
for a sustainable and resilient
future.*





FONTAGRO is a cooperation mechanism administered by the Inter-American Development Bank (IDB) with membership, governance, structure and assets of its own. FONTAGRO is internationally recognized for strengthening agri-food and agro-industrial innovation in a sustainable way, through the strategic co-financing of projects that constitute international innovation platforms. As of 2021, FONTAGRO's Technical Administrative Secretariat (TAS) is located at the Inter-American Institute for Cooperation on Agriculture (IICA) until 2023. This publication is a summary of the XXVIII Annual Meeting of the Board of Directors of FONTAGRO, where the results and achievements of the 2024 period are presented.

Credits and Contributions

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Washington D.C., December 2024

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FONTAGRO

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Technical Administrative Secretariat (TAS)



Annual Report 2024

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Acknowledgments

At FONTAGRO, we want to express our deepest gratitude to everyone who contributed to the success of our initiatives during 2024. In particular, we recognize the commitment and active participation of the members of the FONTAGRO Board of Directors, who played a key role in the ordinary and extraordinary meetings and the various activities that marked this period.

We are profoundly grateful to our sponsors, the Inter-American Development Bank (IDB) and the Inter-American Institute for Cooperation on Agriculture (IICA), for their unwavering support, which has been essential in consolidating our operational management model. Specifically, we extend our recognition to the IDB and its teams within the Vice Presidency of Sectors, particularly in the areas of Climate Change and Sustainability, Rural Development and Risk Management, Knowledge and Innovation, Communication, Strategic Partnerships, as well as the Grant Management, Finance, Legal, and Human Resources Units. Similarly, we thank IICA, under the leadership of Dr. Manuel Otero, and the teams from the General Directorate, Technical Cooperation, Corporate Services, and External Relations for their continuous commitment and support.

We wish to highlight the tireless efforts of project leaders, researchers, and technical and administrative teams. Their dedication and excellence strengthen science, foster capacity-building, and significantly contribute to knowledge in the region, driving sustainable transformation in agri-food systems.

We also express our gratitude to the Government of New Zealand, through the Ministry for Primary Industries (MPI), the Global Research Alliance on Agricultural Greenhouse Gases (GRA), and its team, for their invaluable support in promoting science, technology, and innovation aimed at adapting to and mitigating the effects of climate change in the agri-food sector.

Furthermore, we extend our thanks to international, regional, and local organizations, as well as universities in Latin America, the Caribbean, the United States, and other regions of the world, for their commitment and active collaboration in our initiatives. Their contributions are key to advancing more sustainable, resilient, and inclusive agri-food systems.

Lastly, we wish to pay special tribute to the team at FONTAGRO's Technical Administrative Secretariat and the external support staff. Their dedication and tireless efforts have been fundamental to achieving our goals and responding effectively to the needs of the region.

Thank you all for being part of this shared mission of innovation and progress in agriculture and sustainable development.

Technical Administrative Secretariat

About FONTAGRO

FONTAGRO is a unique global mechanism designed for the strategic and sustainable co-financing of agricultural research, development, and innovation (R&D&I) in Latin America and the Caribbean (LAC). It also serves as a forum for discussing priority science and innovation topics for LAC and the rest of the world. FONTAGRO was created to increase the competitiveness of the agri-food sector and reduce poverty through the sustainable management of natural resources. [It is made up of 15 member countries](#): Argentina, Bolivia, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Honduras, Nicaragua, Panama, Paraguay, Peru, Spain, Uruguay, and Venezuela. These countries are represented by the highest authorities of their national agricultural research and innovation institutes (INIA), who lead national policies on these topics and form FONTAGRO's Board of Directors. The Inter-American Development Bank (IDB) and the Inter-American Institute for Cooperation on Agriculture (IICA) are its sponsors.

FONTAGRO was created in 1998 in an effort to promote agricultural research and development and offset the decline in investment in the sector in recent decades. Its members have contributed a total of USD\$83.05 million in capital, with a portfolio of investments totaling USD\$97.4 million as of December 31, 2023. [The governance structure](#) includes the Board of Directors, the Executive Committee, the Financial Committee, and the Technical Administrative Secretariat led by an Executive Secretariat. Key institutional documents include the [Constitutive Agreement](#), the [Operations Manual](#), and the [2020–2025 Medium-Term Plan \(MTP\)](#). Additionally, annual external audit reports and publications analyzing FONTAGRO's [results and impact](#) are made available.

The co-financed projects are regional and international platforms that involve at least two FONTAGRO member countries, although other non-

member countries may also participate by contributing their own funds. To date, FONTAGRO has co-financed 204 regional research and innovation projects, totaling USD\$150.7 million. FONTAGRO contributed USD\$30.5 million (20%), other agencies USD\$21.3 million (14%), and participating institutions (counterpart funding) USD\$98.9 million (66%). This means that for every dollar invested by FONTAGRO from 1998 to 2024, more than three dollars were leveraged from other organizations. These efforts have supported operations across 35 countries, involving 1,809 public and private institutions, including national research institutes, universities, companies, NGOs, and regional and international organizations.

FONTAGRO facilitates and develops [strategic alliances in science, technology, and innovation](#) with regional and international partners from both the public and private sectors. This has solidified a unique organizational and institutional model that integrates diverse stakeholders to advance research, innovation, and development in agriculture and food systems. Over the years, FONTAGRO's outcome and impact studies have highlighted significant achievements, not only in technical advancements but also in building networks, generating spillovers and spin-offs, and, notably, strengthening the capacities of stakeholders across the value chains. Approximately 77% of FONTAGRO project results contribute to the scientific knowledge base of national agricultural research systems, and 69% are being utilized by end beneficiaries. Furthermore, 74% of the results constitute regional public goods.

In recent years, FONTAGRO has strengthened its position as a key co-financing mechanism for science and innovation in Latin America and the Caribbean, generating public goods with international reach and underscoring its strategic role in the global arena.

Letter from the President

We are pleased to present the 2024 Annual Report, which reflects FONTAGRO's commitment and achievements in transforming the agri-food sector in Latin America and the Caribbean (LAC). This document not only highlights the results achieved over the past year but also underscores FONTAGRO's strategic role as a catalyst for innovation and a model for leveraging resources to benefit sustainable development.

Through project co-financing, FONTAGRO has demonstrated that science, technology, and innovation are key to addressing the challenges faced by our region. Since its creation in 1998, FONTAGRO has mobilized over USD\$150 million, a significant portion of which comes from counterpart contributions by participating institutions. This collaborative approach has ensured that every dollar invested by FONTAGRO has a multiplier effect, generating tangible impacts in capacity-building, knowledge generation, and the development of innovative technologies.

In 2024, we promoted initiatives that not only reinforce our financial sustainability but also accelerate the transformation of the agri-food sector. The extraordinary call for proposals, "Innovations to improve the sustainability and resilience of productive systems to the impact of climate change in Latin America and the Caribbean without increasing GHG emissions," exemplifies how FONTAGRO continues to lead efforts to address global challenges. These initiatives benefit member countries while positioning FONTAGRO as a benchmark for creating innovative solutions with global impact.

Knowledge management remains a cornerstone of ensuring that the results of our projects are widely disseminated and contribute to evidence-based decision-making. In 2024, we achieved a total of 1,310 knowledge products and organized over 100 workshops and webinars, strengthening collaboration networks that transcend regional boundaries.

Our work has also been bolstered by the renewal of our operational strategies aimed at increasing synergies with partners and sponsors, thereby improving the efficiency and impact of our actions. This modernization process ensures that FONTAGRO remains a reliable and effective ally for all stakeholders in the agri-food ecosystem.

On behalf of FONTAGRO, we extend our gratitude to all participating institutions, partners, researchers, and communities that have been part of this journey. Your commitment inspires us to continue working on transforming the agri-food sector in LAC, proving that together we can create meaningful and lasting change.

With renewed enthusiasm, we reaffirm our commitment to strengthening FONTAGRO as a mechanism for innovation and sustainability that connects the region with the world.

Nicolás Bronzovich

President of the FONTAGRO Board of Directors
(October–December 2024)

Juan Cruz Molina Hafford

President of the FONTAGRO Board of Directors
(January–October 2024)

Message from the Executive Committee

With great satisfaction, we present the 2024 Annual Report, which summarizes the progress and achievements made during this period. This year, more than ever, we reaffirm the importance of interdisciplinary and multidisciplinary collaboration, as well as multi-stakeholder projects, as indispensable tools to address the major challenges facing agriculture in our region and the world.

Since its creation in 1998, FONTAGRO has evolved to establish itself as a benchmark in promoting science, technology, and innovation in Latin America and the Caribbean (LAC). Our strategic approach has enabled us to mobilize resources, generate knowledge, and develop technologies that strengthen the resilience and sustainability of agri-food systems. These accomplishments have been made possible thanks to the commitment and collective effort of our Board of Directors, our sponsors IDB and IICA, partner agencies, research teams, and the Technical Administrative Secretariat.

Throughout this year, we have strengthened the multidisciplinary nature of our initiatives by integrating diverse sectors, disciplines, and actors. This methodology enables the development of more comprehensive and holistic solutions that not only address immediate needs but also build long-term capacities. The inclusion of farmers, students, professionals, institutions, and organizations in our initiatives ensures that the knowledge generated is relevant and applicable, further strengthening collaboration networks across the region.

During this period, we consolidated a portfolio of 59 active projects with a total investment of USD\$46.5 million. These projects address priority issues such as climate change, sustainable intensification, value chains, and natural resources. They stand as testimony to the transformative impact that can be achieved through strategically coordinated efforts and resources.

A highlight of this year has been the incorporation of new initiatives aligned with the strategies of the 2020–2025 Medium-Term Plan. These initiatives reflect our capacity to innovate and adapt to emerging priorities, such as sustainability and climate change adaptation, while maintaining a focus on inclusive and healthy agri-food systems.

We wish to express our deepest gratitude to all stakeholders who have made these achievements possible: the Board of Directors, our sponsors IDB and IICA, strategic partners, and the research teams leading the projects. Your dedication and commitment have been instrumental in ensuring FONTAGRO continues to solidify its role as a pillar of innovation and sustainability in the region.

With optimism and enthusiasm, we look to the future, confident that joint efforts, inclusion, and innovation will remain the foundation for overcoming agricultural challenges and contributing to the sustainable development of our region and the world.



Nicolás Bronzovich
President of FONTAGRO
President of INTA
Argentina



Jorge Juan Ganoza Roncal
Vice President of FONTAGRO
Head of INIA
Peru



Eugenia Saini
Executive Secretary
FONTAGRO

Board of Directors

Country	First Name	Surname	Representative
Argentina	Nicolás	Bronzovich	Primary Representative
	María Beatriz	Giraudó	Alternate Representative
Bolivia	Windson July	Martínez	Primary Representative
Chile	Iris	Lobos Ortega	Primary Representative
Colombia	Jorge Mario	Díaz Luengas	Primary Representative
Costa Rica	José Roberto	Camacho Montero	Primary Representative
Dominican Republic	Eladio	Arnaud Santana	Primary Representative
Ecuador	Raúl	Jaramillo Velasteguí	Primary Representative
Honduras	Arturo	Galo	Primary Representative
Nicaragua	Miguel	Obando Espinoza	Primary Representative
Panama	José	Villarreal	Primary Representative
Paraguay	Edgar	Esteche	Primary Representative
Peru	Jorge Juan	Ganoza Roncal	Primary Representative
Spain	Cristina	Ovilo Martín	Primary Representative
Uruguay	José	Bonica Henderson	Primary Representative
Venezuela	Giomar	Blanco	Primary Representative

Our Philosophy

In the context of profound global and regional changes and challenges impacting investment in research, development, and innovation (R&D&I) for agriculture and food systems, FONTAGRO has revitalized its philosophy by defining a mission, vision, and values that reinforce its role as a sustainable mechanism for strategic co-financing. This approach seeks not only to consolidate its position as a forum for discussion on agri-food innovation but also to align all involved stakeholders under shared principles, guiding the sector toward a more resilient and sustainable future.

VISION

FONTAGRO's **Vision** is:
"To transform agri-food systems through the use of knowledge to make them more inclusive and sustainable for the environment and society."

MISSION

FONTAGRO's **Mission** is:
"To lead regional coordination, cooperation, and dialogue through the sustainable co-financing of public goods initiatives that contribute to knowledge and innovation in agri-food systems and improve the quality of life of the population."

VALUES

Our Values are: Integrity, Solidarity, Efficacy, Transparency, and Respect.

The three strategies



Strategy I:
Networked, resilient, and sustainable farms.



Strategy II:
Sustainable production systems, agroecosystems, and territories.



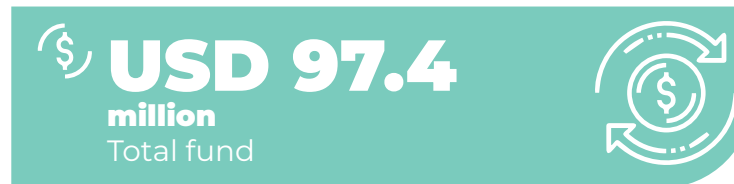
Strategy III:
Food, nutrition, and health.

FONTAGRO Today

Thanks to its Board of Directors, sponsors (IDB and IICA), and other partner agencies, FONTAGRO has built strong collaborative capacities to promote science, technology, and innovation in the agri-bioindustrial sector. We have become a key mechanism for scientific and technical coordination in Latin America and the Caribbean. During the pandemic, we transformed. On one hand, we digitized our operations; on the other, we reviewed our management model to achieve greater effectiveness and efficiency, facilitating the achievement of results and impacts. Since 2021, FONTAGRO's Technical Administrative Secretariat (TAS) has been relocated to the IICA offices, where it has since collaborated closely to implement activities alongside numerous offices and representations across various countries. We have expanded our team and our commitment to providing closer support to the region.

Administration and Finance

With an initial ordinary capital of USD\$83.05 million, contributed by the Southern Cone (36%), Andean Region (33%), Spain (18%), and Central America and the Caribbean (14%), the fund has now grown to USD\$97.4 million while mobilizing USD\$150.7 million in operations. [See financial statements.](#)



Southern Cone



Andean Region

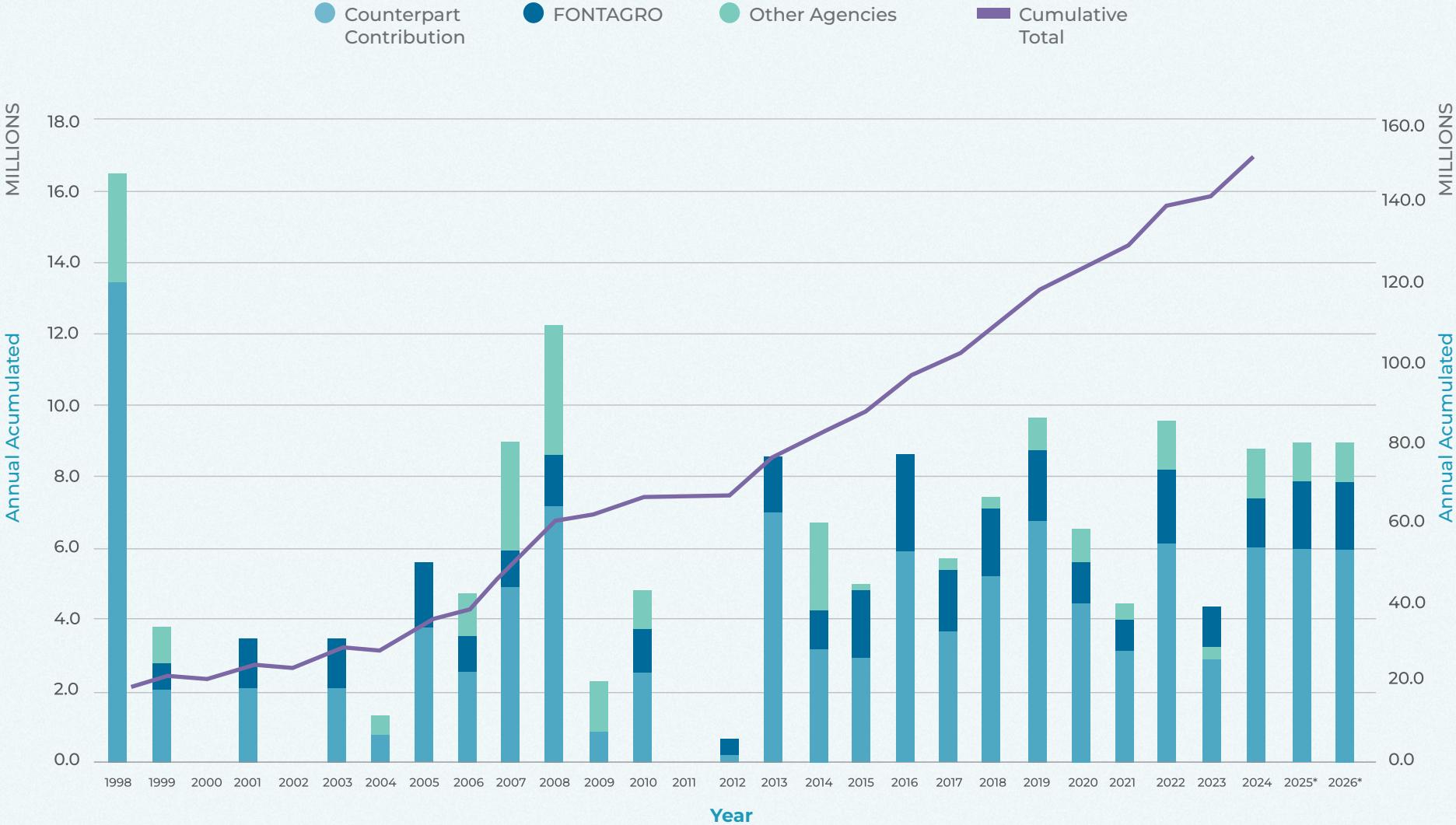


Spain



Central America and the Caribbean

Evolution of co-financing by FONTAGRO and its strategic partners (in millions of \$)



Highlights

204

Innovation Laboratories

executed since 1998



3

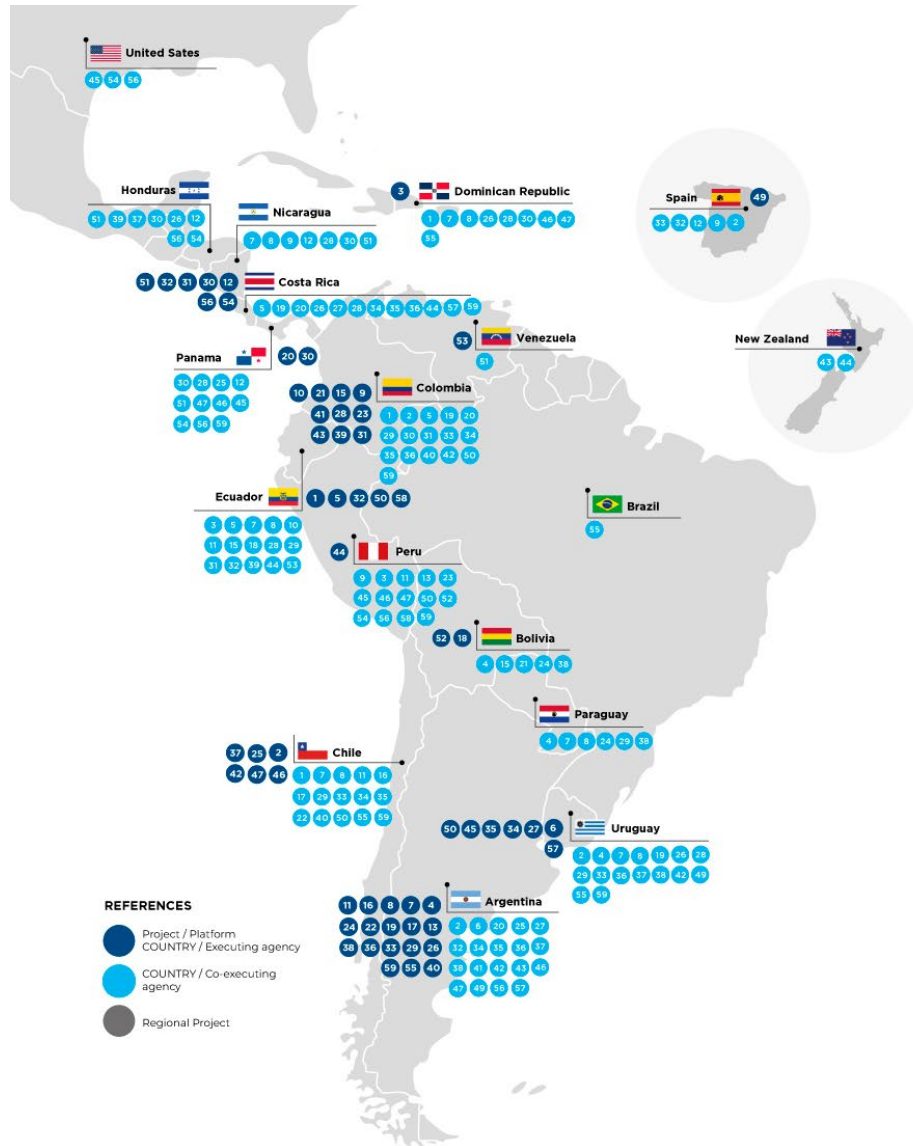
150.7 million

USD FUNDS



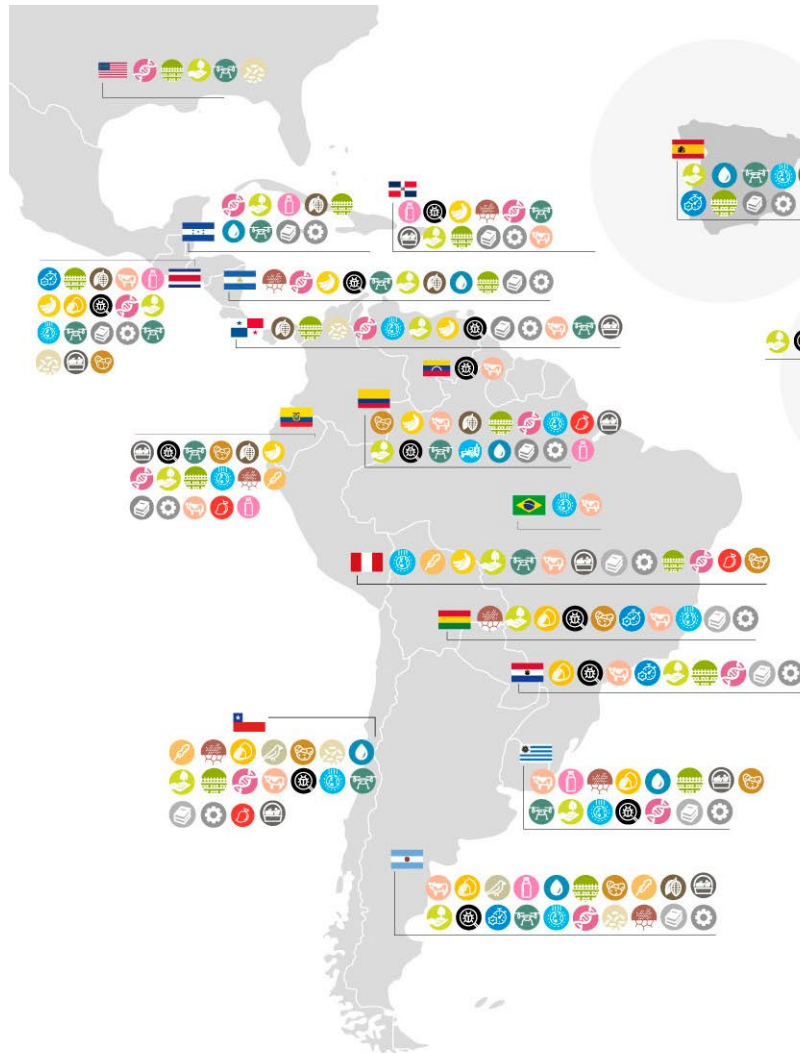
- SDG 1: No Poverty
- SDG 2: Zero Hunger
- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 5: Gender Equality
- SDG 6: Clean Water and Sanitation
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth
- SDG 9: Industry, Innovation and Infrastructure
- SDG 10: Reduced Inequalities
- SDG 11: Sustainable Cities and Communities
- SDG 12: Responsible Consumption and Production
- SDG 13: Climate Action
- SDG 14: Life Below Water
- SDG 15: Life on Land
- SDG 16: Peace, Justice and Strong Institutions
- SDG 17: Partnerships for the Goals

Our projects in Latin America, the Caribbean and Spain



- 1** Multifunctional bio-protectors for fruits
UTN, Ecuador)
- 2** Water management in agriculture platform 2030 - 2050
INIA, Chile
- 3** Scaling continuous improvement in family organic export banana (BOFX)
IDIAF, Dominican Republic
- 4** Sustainable control of citrus greening vector in family farming
Fundación Argentina/INTA, Argentina
- 5** 2030 Cacao Platform
ESPOL, Ecuador
- 6** Multifunctional landscapes in extensive agroecosystems
CEUTA, Uruguay
- 7** Sustainable intensification with legumes (NZ)
Fundación Argentina/INTA, Argentina
- 8** Livestock Systems with Legumes
Fundación Argentina/INTA, Argentina
- 9** Strengthening the competitiveness of mango
UT, Colombia
- 10** Sustainable tropical dairy systems
UNICAUCA, Colombia
- 11** Sustainable management of irrigation and fertilization in quinoa
Fundación Argentina/INTA, Argentina
- 12** Geographical indications for Mesoamerican cacao
UNA, Costa Rica
- 13** Innovating and intensifying livestock farming to adapt and grow
Fundación Argentina/INTA, Argentina
- 14** FONTAGRO Seed Fund
Projects executed by the TAS
- 15** Climate change-resilient potatoes for the Andean Region
AGROSAVIA, Colombia
- 16** Climate-smart resilience of indigenous agriculture NZ
Fundación Argentina/INTA, Argentina
- 17** Climate-smart resilience of indigenous agriculture FTG
Fundación Argentina/INTA, Argentina
- 18** Nanotechnology in agricultural soil moisture management
PROINPA, Bolivia
- 19** Satellite monitoring of quantity and quality of available biomass in pastoral livestock systems in LAC (NZ)
Fundación Argentina/INTA, Argentina
- 20** Viability of vertical farming technologies in LAC
IICA - IDIAP, Panama
- 21** Improving the yield of potatoes and other Andean tubers - Root to Food
PUJ, Colombia
- 22** Agroecological model for avian coccidiosis
Fundación Argentina/INTA, Argentina
- 23** Multipurpose silvopastoral systems and family farming
AGROSAVIA, Colombia
- 24** Bovine productivity in the South American Chaco region
Fundación Argentina/INTA, Argentina
- 25** Towards more productive and sustainable rice cultivation
INIA, Chile
- 26** Agtech for Climate-Smart Dairy
Fundación Argentina/INTA, Argentina
- 27** Innovation for pasture management and forage reserves
INIA, Uruguay
- 28** Prevention and management of Fusarium wilt
AGROSAVIA, Colombia
- 29** Gene editing for improvement in plant and animal species
Fundación Argentina/INTA, Argentina
- 30** Biofortified beans
IICA - IDIAP, Panama
- 31** Nanofertilizers in soils and nitrous oxide emissions
IICA - UIS, Colombia
- 32** Bioprocess for reducing the solubility of rhizospheric cadmium
IICA - UTM, Ecuador
- 33** Greater agricultural production with lower nitrous oxide emission
Fundación Argentina/INTA, Argentina
- 34** Carbon Sequestration NZ
INIA, Uruguay
- 35** Carbon Sequestration FTG
INIA, Uruguay
- 36** Satellite monitoring of quantity and quality of available biomass in pastoral livestock systems in LAC (FTG)
Fundación Argentina/INTA, Argentina
- 37** Online crop management support platform
UAC, Chile
- 38** Network of resilient farms with sustainable forest management
Fundación Argentina/INTA, Argentina
- 39** Tropical Agriculture 4.0: efficient water management
AGROSAVIA, Colombia
- 40** One Welfare for resilience of livestock production
Fundación Argentina/INTA, Argentina
- 41** Innovations for reduced methane emissions in ruminants
AGROSAVIA, Colombia
- 42** Platform for the transfer and efficient use of biologicals
CEAZA, Chile
- 43** Biological products for creating resilience to climate change
AGROSAVIA, Colombia
- 44** Sustainable livestock farming in the Amazon of Peru and Ecuador
UNAM, Peru
- 45** Satellite methane monitoring in rice
INIA, Uruguay
- 46** Nitrogen Optimization FTG
INIA, Chile
- 47** Nitrogen Optimization NZ
INIA, Chile
- 48** Knowledge and Communication
Proyectos ejecutados por la STA
- 49** Climate-resilient wheat
UdL, Spain
- 50** Strengthening potato purple top complex management
INIAP, Ecuador
- 51** Biologicals for sustainable agriculture
INTA, Costa Rica
- 52** Resilient native potatoes
UMSA, Bolivia
- 53** Sustainable integration of creole cattle
INIA, Venezuela
- 54** Regional network for genetic improvement in LAC
INTA, Costa Rica
- 55** Resilient production to mitigate climate change
Fundación Argentina/INTA, Argentina
- 56** Sustainable intensification of production in Central America
INTA, Costa Rica
- 57** Scaling innovation in pastoral systems
INIA, Uruguay
- 58** Reducing GHG emissions in potato-pasture systems in Ecuador and Peru
INIAP, ECUADOR
- 59** Potato production and trade
Fundación Argentina/INTA, Argentina

Our projects and their contribution to the Sustainable Development Goals



SECTOR

- TUBERS AND ROOTS
- KNOWLEDGE
- CITRUS
- CROPS
- POULTRY
- LIVESTOCK
- COCOA
- SOIL AND WATER
- QUINOA
- FRUITS
- RICE
- WATER
- BANANA
- DAIRY

TOPIC

- CLIMATE CHANGE AND SUSTAINABLE INTENSIFICATION
- PEST AND DISEASE MANAGEMENT
- GENETIC IMPROVEMENT
- AGRIFOOD VALUE CHAIN AND MARKETS
- DIGITAL AGRICULTURE & PRODUCTIVITY
- KNOWLEDGE MANAGEMENT & COMMUNICATION
- SUSTAINABLE INTENSIFICATION
- PRODUCTIVITY

SUSTAINABLE DEVELOPMENT GOALS



New Zealand, Latin America and the Caribbean

Global Alliances for agricultural sustainability and resilience.

The agri-food systems for meat and dairy production in New Zealand, Latin America, and the Caribbean play a vital role in global food security, meeting the growing demand for high-quality food while addressing the challenge of doing so in an environmentally sustainable manner. Achieving this balance is essential to ensure resilience to climate change and the preservation of natural resources.

In this context, the alliance between FONTAGRO, New Zealand's Ministry for Primary Industries (MPI), and the Global Research Alliance on Agricultural Greenhouse Gases stands as an outstanding example of international collaboration to address these challenges. Together, we have advanced 20 strategic initiatives aimed at improving sustainability, efficiency, and innovation in meat and dairy production systems, with a total investment of \$19.4 million.

These projects have been instrumental in generating knowledge, fostering the development of advanced technologies, and promoting agricultural practices that minimize greenhouse gas emissions. The alliance has also strengthened the capacity of producers

and participating institutions, contributing to the sustainable transformation of the agri-food sector both regionally and globally. This joint effort reinforces the commitment of the three institutions to innovation and sustainability, consolidating a model of cooperation that inspires and leads the way toward more responsible and resilient systems.



**Te Kāwanatanga
o Aotearoa**
New Zealand Government





The Inter-American Institute for Cooperation on Agriculture (IICA) has established itself as a strategic and indispensable partner for FONTAGRO, enhancing its impact in promoting science, technology, and innovation in Latin America and the Caribbean (LAC). This alliance has been pivotal in the implementation of 20 regional and international projects, representing an investment of USD\$13.9 million aimed at transforming the region's agri-food systems. Through this collaborative effort, FONTAGRO and IICA have advanced evidence-based policies and innovative technological solutions that address the challenges of food security, environmental sustainability, and social inclusion, making a significant contribution to the sustainable and resilient development of LAC. These include:

Bioprocess for reducing the solubility of rhizospheric cadmium

Climate change Strategy 1, Resilient Farms Technological Applied Agronomic Practices 2020 ACTIVE

Code:	ATN-RF-18951-RG	FONTAGRO Amount:	USD 110,311	Execution time:	42 Months
Initiative:	Call for Proposals	Counterpart Amount:	USD 312,500	Total Amount:	USD 422,811

Nanotechnology in agricultural soil moisture management

Climate change Technological Applied Agronomic Practices 2021 ACTIVE

Code:	ATN/RF-20630-RG	FONTAGRO Amount:	USD 200,000	Other agencies:	USD 0
Initiative:	Call for Proposals	Counterpart Amount:	USD 428,211	Total Amount:	USD 628,211

Sustainable management of irrigation and fertilization in quinoa

Technological Adaptive Agronomic Practices 2021 ACTIVE

Code:	ANT-RF-20628-RG	FONTAGRO Amount:	USD 200,000	Other agencies:	USD 0
Initiative:	Call for Proposals	Counterpart Amount:	USD 459,329	Total Amount:	USD 659,329

Climate change-resilient potatoes

Climate change Technological-Organizational-Institutional Adaptive Value chain 2021 ACTIVE

Code:	ATN-RF-20633-RG	FONTAGRO Amount:	USD 200,000	Execution time:	36 Months
Initiative:	Call for Proposals	Counterpart Amount:	USD 718,638	Total Amount:	USD 918,638


Geographical indications for Mesoamerican cacao


Technological-Organizational-Institutional Strategic Capacity Building 2021 ACTIVE


Code:	ATN/RF-20629-RG	FONTAGRO Amount:	USD 200,000	Other agencies:	USD 0
Initiative:	Call for Proposals	Counterpart Amount:	USD 598,736	Total Amount:	USD 798,736


Flagship Programs


New discoveries, technologies, and innovation


 Ecuador, Colombia, and Chile are driving an innovative solution to mitigate post-harvest losses in tropical and Mediterranean fruits. The use of multifunctional bioprotectors ensures safe, high-quality food, strengthening food security and reducing health risks. [ATN/RG-21044-RG](#).


 Each year, significant citrus losses are reported due to HLB (Huanglongbing), a disease caused by bacteria. Argentina, Bolivia, Paraguay, and Uruguay have joined forces to validate and disseminate Integrated Pest Management (IPM) practices to control and reduce the vector insect population by 35%. [ATN/RG-17232-RG](#).


 Organic bananas are an important source of income for family agriculture in some countries of the region. The Dominican Republic, Ecuador, and Peru are scaling up technologies for managing red-spot thrips, using apps for data capture and transmission to improve productivity and profitability. [ATN/RG-17233-RG](#).


 Cacao, one of the most globally traded products, has been affected by increased cadmium levels. Ecuador, Colombia, Costa Rica, Germany, Belgium, the United States, Italy, Panama, Peru, and the Dominican Republic have collaborated to standardize cadmium quantification methods and generate amendments to reduce its concentration in cacao beans. [ATN/RG-17235-RG](#).

 Colombia and Peru are developing an innovative biorefinery model to maximize the value of mango by utilizing its residues for high-value-added industries, strengthening sustainability and the circular economy. [ATN/RG-21037-RG](#).


 Colombia and Bolivia are working to improve family production systems of Andean tubers (potato, oca, and mashua) through the use of seeds with high genetic and phytosanitary quality and agronomic management. [ATN/RG-18120-RG](#).

 Argentina and Chile are seeking a technological alternative to poultry health problems caused by coccidiosis. The implementation of an agroecological and sustainable model aims to increase productivity by 15%. [ATN/RG-18136-RG](#).

 Ecuador, Argentina, Spain, and Venezuela are developing a bioprocess involving a consortium of native fungi efficient in reducing cadmium in cacao beans. [ATN/RG-18951-RG](#).

 In response to the first report of *Fusarium oxysporum* (Foc TR4), Colombia, Costa Rica, Ecuador, Nicaragua, Panama, the Dominican Republic, Bolivia, Paraguay, and Peru have united to strengthen capacities and develop an effective methodology for diagnosing the pathogen. [ATN/RG-18761-RG](#).

 Argentina, Chile, Colombia, Ecuador, Paraguay, Uruguay, and Brazil are innovating with biotechnological tools and gene editing to develop plant and animal varieties with productive, economic, and social benefits. [ATN/RG-18757-RG](#).

 Panama, Colombia, Honduras, Nicaragua, and the Dominican Republic are scaling up the dissemination of iron-rich bean varieties, validating and promoting the most in-demand varieties to strengthen food and nutritional security. [ATN/RG-19314-RG](#).



Colombia, Ecuador, and Bolivia are reducing climate change vulnerability by incorporating early-maturing and drought-resilient potato clones in the Andean Region, increasing yield by 1.5–3% and improving tuber quality.

[ATN/RF-20633-RG](#).



Costa Rica, Nicaragua, Panama, Honduras, and Spain are identifying territorial factors that determine the differentiated quality profile of origin-specific cacao to develop Geographical Indications in Mesoamerica. [ATN/RF-20629-RG](#).



Argentina, Chile, Ecuador, and Peru are optimizing water and nitrogen management in quinoa by generating and transferring an online agronomic management tool for the crop.

[ATN/RF-20628-RG](#).



Argentina, Uruguay, Colombia, and Costa Rica are working to reduce the cost of accurately estimating in real time the quantity and quality of available biomass in pastoral livestock systems using a satellite tool. This information will improve grazing management decisions, optimize forage harvest, and more accurately quantify and reduce greenhouse gas emission intensity in these systems.

[ATN/RF-19787-RG](#) and [ATN/RF-19788-RG](#).



Costa Rica, Uruguay, and Argentina are optimizing grazing management with the digital tool “3RWeb,” integrating modules on nutrition and GHG emissions to maximize forage harvest, reduce costs, and improve the sustainability of pastoral systems.

[RG-T4648](#).

Together for greater resilience to climate change



Argentina, Chile, Ecuador, Nicaragua, Paraguay, the Dominican Republic, Uruguay, and Brazil improve livestock production systems by using legumes in pastures to increase nitrogen fixation and soil carbon sequestration, while reducing fertilizer use.

[ATN/RF-16926-RG](#) and [ATN/RF-16927-RG](#).



Colombia and Ecuador adopt climate-smart dairy strategies to increase productivity and strengthen food security with a sustainable focus and technology transfer. [ATN/RF-21038-RG](#).



Argentina and Uruguay promote sustainable multifunctional landscapes by integrating biodiversity and technology to optimize agricultural production and reduce environmental impacts. This approach combines precision agriculture, landscape modeling, and participatory strategies to strengthen food security and the resilience of the Pampas biome. [ATN/RF-21247-RG](#).



Chile, Argentina, Colombia, Spain, and Uruguay collaborate to improve the efficiency of water use, implementing a consultation platform to provide precise temporal and spatial information on production systems, enabling farmers and decision-makers to operationalize quantitative irrigation management.

[ATN/RF-17950-RG](#).



Spain, Argentina, Uruguay, and the United States strengthen wheat resilience to drought and heat stress by combining varietal analysis, efficient resource management, and knowledge transfer to foster sustainable and adaptable agriculture in Latin America. [RG-T4650](#).



Argentina, Bolivia, and Paraguay, with funding from the New Zealand Government, implement an extension network in the South American Chaco to support sustainable livestock farming. [ATN/RF-18079-RG](#).



The Intensive Rice Cultivation System (SICA) is validated in Chile, Argentina, Panama, Colombia, and Venezuela for transfer to small farmers, optimizing natural resource use and reducing production costs. [ATN/RF-18105-RG](#).



Argentina, Costa Rica, Honduras, the Dominican Republic, and Uruguay, with funding from the New Zealand Government, develop digital tools to monitor real-time productivity, climate, and dairy herd management data. [ATN/RF-18078-RG](#).



Uruguay, Argentina, and Costa Rica, with funding from the New Zealand Government, develop a tool for remote measurement of available pasture biomass, optimizing real-time grazing decisions and increasing forage harvest by 30%. [ATN/RF-18077-RG](#).



Colombia and Ecuador explore alternatives to halt soil degradation by synthesizing nanofertilizer formulations to reduce fertilizer use and nitrous oxide emissions. [ATN/RF-18959-RG](#).



Argentina, Chile, Colombia, Spain, and Uruguay reduce nitrous oxide emissions and improve productivity in 20 crops through genetically improved strains with greater efficiency in plant growth-promoting activity, increasing production by 3% and reducing nitrous oxide emissions by 35%. [ATN/RF-18786-RG](#).



Uruguay, Argentina, Colombia, Costa Rica, and Chile are working to design land-use and management practices that maximize soil organic carbon sequestration potential in LAC's agricultural systems. [ATN/RF-18769-RG](#) and [ATN/RF-18770-RG](#).



Colombia and Argentina aim to reduce emission intensity (g CO₂ Eq/kg meat) in cattle production systems by 10% through implementing technological innovations developed in Latin America for greenhouse gas quantification and mitigation. [ATN/RF-20637-RG](#).




Colombia, Argentina, and New Zealand collaborate to develop a strategy for climate resilience in maize cultivation by integrating beneficial fungi. [ATN/RF-20638-RG](#).




Argentina, Bolivia, and Paraguay form a network of resilient farms with sustainable forest management, benefiting 2,100 producers in Salta (Argentina), Villa Montes (Bolivia), and Presidente Hayes (Paraguay). [ATN/RF-20635-RG](#).





Colombia, Costa Rica, Uruguay, Peru, Panama, and the United States are developing a web platform to provide validated satellite information on atmospheric methane content in different rice-growing regions of LAC. [GMH-1732](#).


 Bolivia and Ecuador promote sustainability and resilience in fragile Andean agroecosystems by efficiently managing soil moisture to increase productivity and diversify crops as an alternative for food security and climate change adaptation. [ATN/RF-20630-RG](#).

 Chile, Peru, Panama, and the Dominican Republic optimize nitrogen fertilizer management in pastures and crops to promote more sustainable production systems. [ATN/RF-20641-RG](#) and [ATN/RF-20642-RG](#).


 Argentina and Chile foster sustainability and food security in Mapuche indigenous communities through the incorporation of climate-smart livestock practices via active, participatory strategies. [ATN/RF-20639-RG](#) and [ATN/RF-20640-RG](#).


 Panama, Argentina, Colombia, and Costa Rica comprehensively evaluate vertical farming systems as a sustainable alternative for intensive crop production, enhancing competitiveness, food security, and regional implementation. [ATN/RF-20632-RG](#).


 Ecuador and Peru implement conservation agriculture practices in potato-pasture systems to reduce GHG emissions, improve productivity, and strengthen technical capacities through regional cooperation and applied research. [RG-T4649](#).


 Argentina, Brazil, Chile, the Dominican Republic, and Uruguay evaluate silvopastoral systems to mitigate climate change, measuring carbon capture, GHG emissions, and ecosystem services while promoting policies for adoption and environmental sustainability. [RG-T4646](#).

Sustainable intensification and natural resources

 The arid and semi-arid zones of LAC face high environmental fragility and rural poverty levels. In Argentina and Peru, 120 producers implemented strategies such as forage evaluation, animal stocking adjustments, strategic supplementation, and sanitary management to adapt to climate challenges and strengthen local food security. [ATN/RF-16680-RG](#).

 Ecuador, Peru, Colombia, and Chile address potato purple top complex in the Andean Region by optimizing molecular diagnostics, improving field management, and disseminating knowledge to increase yields and reduce the environmental impact of agricultural production. [RG-T4651](#).

 Peru, Colombia, and Germany are collaborating to develop a technological solution using multipurpose silvopastoral systems to improve milk production and profitability for producers. [ATN/RF-19277-RG](#).

 Chile, Argentina, Uruguay, and Honduras aim to increase productivity and sustainability in production systems by creating a free online platform to support agronomic crop management decisions in the context of climate change. [ATN/RF-20631-RG](#).

 A project involving Argentina, Chile, Colombia, and Uruguay seeks to develop a platform connecting producers, technicians, and scientists to promote the development, transfer, and efficient use of biologicals on farms across Latin America. [ATN/RF-20643-RG](#).



Peru, Ecuador, Costa Rica, and New Zealand aim to sustainably intensify dual-purpose livestock farming in the Amazon regions of Peru and Ecuador through the supplementation of feed derived from agro-industrial residues. [ATN/RF-20627-RG](#).



Argentina, Chile, and Colombia are working to implement good livestock practices for cattle and sheep, grounded in animal welfare principles. [ATN/RF-20636-RG](#).



Colombia, Ecuador, and Honduras are engaged in the project “Tropical Agriculture 4.0: efficient water management” to improve water use efficiency by applying Agriculture 4.0 technologies to commercially and socially significant tropical crops. [ATN/RF-20634-RG](#).



Costa Rica, Honduras, Panama, and Venezuela promote the use of sustainable biologicals for smallholders, enhancing agricultural productivity, reducing environmental impacts, and strengthening climate resilience in Latin America. [RG-T4652](#).



Bolivia and Peru advance the genetic improvement of native potatoes through marker-assisted selection, accelerating the development of frost-resistant varieties adapted to local conditions. [RG-T4653](#).



Venezuela and Ecuador promote the sustainable intensification of native cattle breeds by combining genetic improvement, silvopastoral systems, and environmental management to increase productivity, reduce GHG emissions, and enhance climate resilience in the region. [RG-T4656](#).



Costa Rica, Honduras, Panama, Peru, and the United States create a regional horticultural crop breeding network to strengthen climate resilience, foster technological collaboration, improve public health, and reduce healthcare costs. [RG-T4654](#).

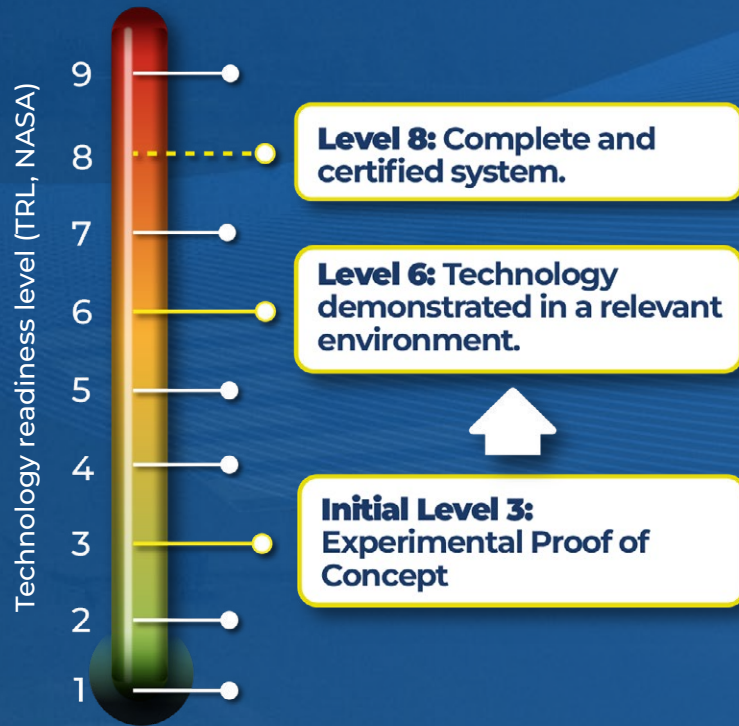


Costa Rica, Argentina, Honduras, Panama, Peru, and the United States promote sustainable intensification through sorghum and forage cereal genotypes adapted to improve productivity, water resilience, and agricultural system sustainability in the region. [RG-T4647](#).

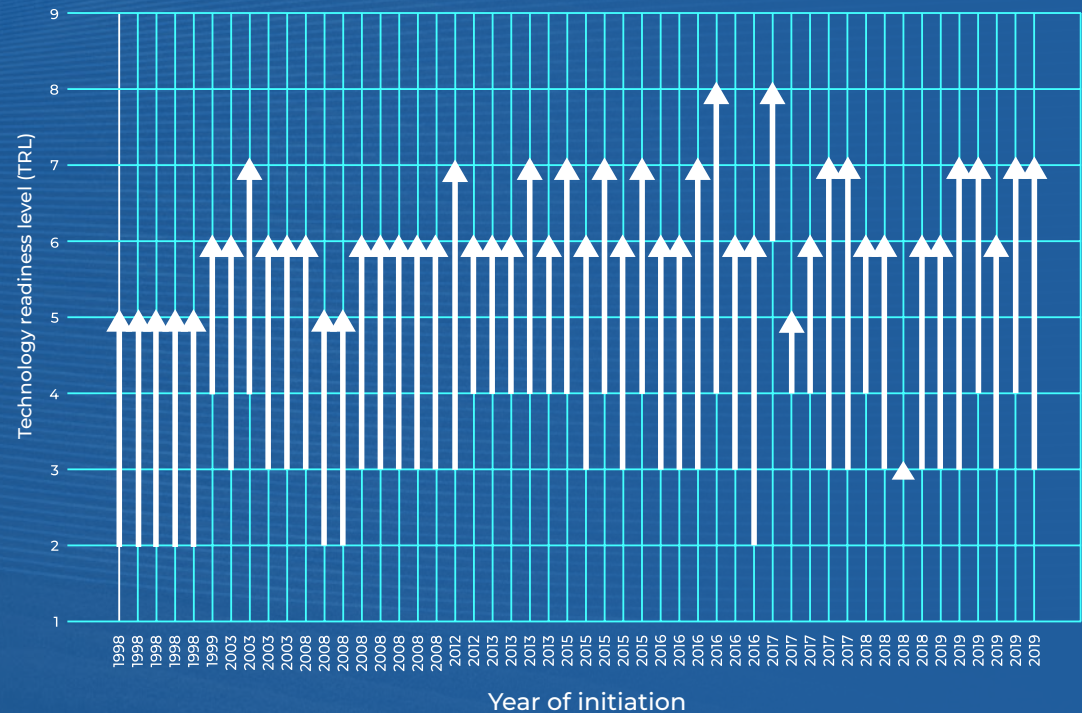


Argentina, Colombia, Panama, and Peru promote the use and production of certified seed potatoes to improve yields, strengthen food security, and foster regional trade through training, regulatory harmonization, and technological sustainability. [RG-T4657](#).

FONTAGRO Technological Advancement



Progress of Technology Readiness (TRL)



FONTAGRO plays a pivotal role in advancing technological development in the region by facilitating the transition of projects from early stages of technology readiness (TRL 3) to more advanced levels such as TRL 6, where technologies are validated in relevant environments. In some cases, FONTAGRO successfully propels initiatives to TRL 8, achieving complete and certified systems. This

progression highlights the transformative impact of FONTAGRO in promoting applied research, scaling innovative technologies, and implementing them in real-world conditions. By doing so, FONTAGRO drives the sustainability and competitiveness of the agri-food sector in Latin America and the Caribbean.

Programmatic Activities



Call for proposals 2024



IV Successful Cases Contest
"Innovations with Impact in Bioeconomy"



XIX FONTAGRO Annual
Technical Follow-up Workshop
"Climate Change + AI"



Strategic Forum of the
FONTAGRO Board of Directors
and Sponsors



FONTAGRO Knowledge
Management and
Communication Workshop

FONTAGRO on social media

Driving agri-food innovation in Latin America and the Caribbean.



6,936

Followers



4,831

Followers



1,232

Followers



429

Followers

Social Media



Alliances y Memberships

We continue strengthening alliances to support the development and transformation of the agri-bio-industrial sector in Latin America and the Caribbean, working hand in hand with the following institutions and companies:



Cornell University



NC STATE
UNIVERSITY



UF UNIVERSITY of FLORIDA



GAP
REPORT
INITIATIVE



THE **YIELD** LAE



CROP
TRUST



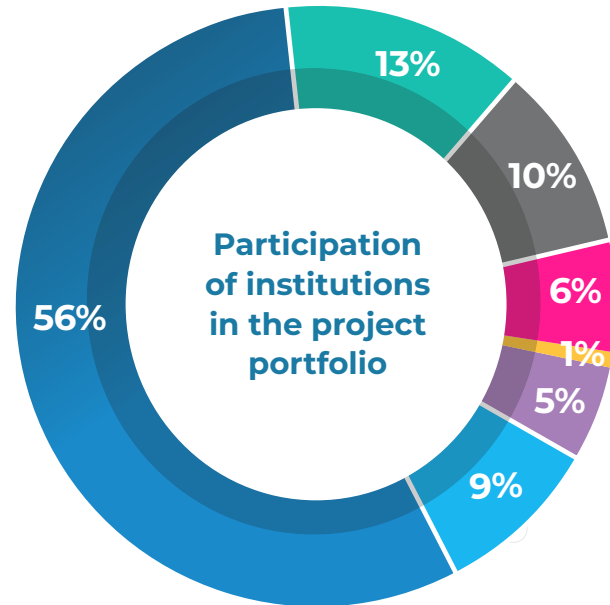
VT VIRGINIA
TECH.



CARDI



AFRICAN DEVELOPMENT BANK
AFRICAN DEVELOPMENT FUND




- National Institutions
- International Universities
- International Institutions
- Regional Institutions
- Extra-regional Institutions and Universities
- Non-Governmental Organizations
- Private Sector

Knowledge Management and Communication

Our 2020-2025 Knowledge Management and Communication (KMC) Strategy has allowed us to continue improving the dissemination of results and increase our visibility, while fostering strategic partnerships and initiatives with new agencies. Over the past year, a streamlined methodology for presenting project knowledge products was successfully established.

During 2024, 1,310 new knowledge products were developed:

 **96** Institutional publications

 **118** Webstories (success stories)

 **23** Blogs

 **17** Newsletters

 **361** Content curations

 **102** Videos

 **27** Webinars

 **7** Landing pages

 **29** Scientific articles

 **128** News items

 **8** Digital Platforms

 **206** Technical notes

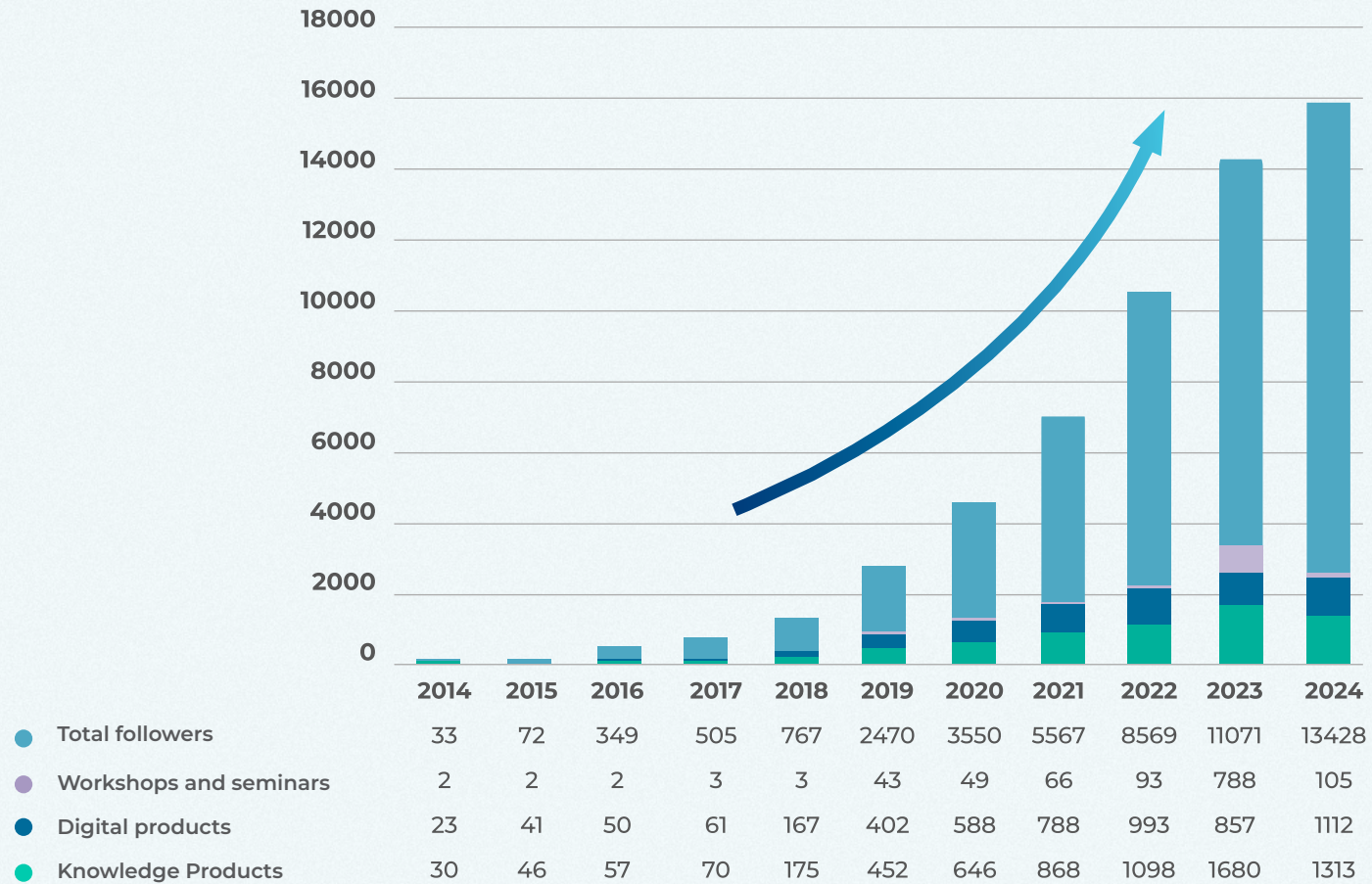
 **62** FONTAGRO in Brief

 **92** FONTAGRO Techs

 **6** Databases and other digital products

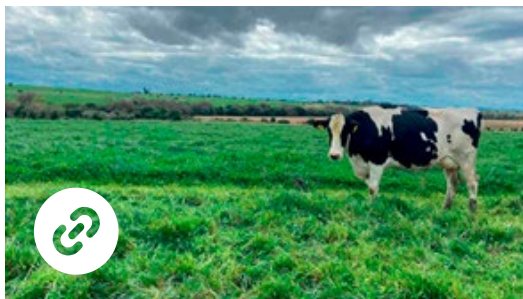
 **105** Workshops, seminars and Webinars

Evolution of knowledge products and dissemination of results



Source: Prepared with data from the TAS, 2024

XIX Annual Technical Follow-up Workshop of FONTAGRO Projects June 17th, 18th y 19th, 2024





XXVIII Annual Meeting of the FONTAGRO Board of Directors

Our Partners

International Institutions



National Institutions







Regional Institutions



Extra-regional Institutions and Universities





Non-Governmental Organizations





Private Sector







COMITÉ DE GANADEROS JUAN GUERRA



COOPEAGROPAL R.L.







Regional Universities







Annual Report 2024

*Building alliances, creating impact
for a sustainable and resilient
future.*

