



*Expanding the borders
to Europe and the world.*



2023
ANNUAL REPORT



FONTAGRO



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). This publication is a summary of the XXVII Annual Meeting of the Board of Directors of FONTAGRO, where the results and achievements of the 2022-2023 period are presented.

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FONTAGRO

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Technical Administrative Secretariat (TAS)



ANNUAL REPORT

2023

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Acknowledgments

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To the sponsors, for their constant support in strengthening FONTAGRO and especially in this period of transition of the operational management model. To the Inter-American Development Bank (IDB), the Vice Presidency of Sectors, especially the Climate Change and Sustainable Development Sector, the Environment, Rural Development and Disaster Risk Management Division, the Climate Change and Sustainability Division, the Knowledge, Innovation and Communication Sector, the Strategic Partnerships Office, the Grants and Co-financing Management Unit, the Finance Department, the Legal Department and the Human Resources Department. To the Inter-American Institute for Cooperation on Agriculture (IICA), especially its General Director, Dr. Manuel Otero, and the staff of the General Directorate, the Directorate of Technical Cooperation, the Directorate of Corporate Services, External Relations, and Administration and Finance.

To the project leaders, researchers and assistants of the different work teams for their constant dedication to scientific activity, capacity building and the great contribution to knowledge they make daily.

To the Government of New Zealand, through the Global Research Alliance on Agricultural Greenhouse Gases (GRA) and its work team, who are constantly committed to strengthening science, technology and innovation

for adaptation and mitigation of greenhouse gases in the agri-food sector, favoring participatory and collaborative research, and the training of new cohorts of scientists and technicians.

To the rest of the international, regional and local organizations, and especially to the universities, both in the region and internationally, for their constant interest in participating in activities together with FONTAGRO, promoting the transformation of the agrifood systems of the region and the world, the generation of new knowledge and global public goods, thus supporting a more sustainable, resilient, inclusive and equitable agriculture. These include the Food and Agriculture Organization of the United Nations (FAO), OneCGIAR together with its institutes in Latin America and the Caribbean, Alliance Bioversity International-CIAT and many other organizations. We highlight the joint work with Ohio State University, the World Bank, the United States Department of State and Department of Agriculture.

Finally, we would like to thank the Technical Administrative Secretariat team and external support staff for their great dedication to meeting the proposed goals while always supporting the needs of the region.

About FONTAGRO

FONTAGRO is a unique global mechanism for the strategic and sustainable co-financing of agricultural R&D&I in Latin America and the Caribbean. It is also a forum for the discussion of priority science and innovation issues for LAC and the rest of the world. FONTAGRO was created to increase the competitiveness of the agrifood 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 authority of the institutes of agricultural research and innovation (INIAs). Each lead national policies in this area and are members of FONTAGRO's Board of Directors. The Inter-American Development Bank (IDB) and the Inter-American Institute for Cooperation on Agriculture (IICA) are the 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. Members have contributed US\$83.05 million in capital, with an investment portfolio of US\$95.9 million as of December 31st, 2022. [The governance structure](#) includes the Board of Directors, the Executive Committee, the Finance Committee and the Technical-Administrative Secretariat under the responsibility of an Executive Secretariat. The institutional documents are the [Constitutive Agreement](#), the [Operations Manual](#) and the [Medium-Term Plan \(MTP\) 2020-2025](#). In addition, annual external audit reports and publications on the analysis of FONTAGRO's [results and impact](#) are presented.

Co-financed projects are regional and international platforms made up of at least two FONTAGRO member countries, although other non-member countries also participate, each contributing their own funds. To date, 195

regional research and innovation projects have been co-financed for a total of US\$139.7 million, with FONTAGRO contributing US\$28 million (20%), other agencies US\$21.9 million (16%) and the participating institutions (counterpart) US\$90.8 million (65%). This means for every dollar invested by FONTAGRO, between 1998 and 2022, it has leveraged up to three dollars from other organizations, supporting operations in 35 countries, in which 1,809 public and private institutions have participated. These include national research institutes, universities, companies, non-governmental organizations, along with regional and international organizations.

FONTAGRO has [strategic alliances](#) with the Food and Agriculture Organization of the United Nations (FAO), Alliance Bioversity International-CIAT, and the Ministry for Primary Industries of New Zealand through the Global Research Alliance on Agricultural Greenhouse Gases (GRA), among other new regional and international partners. Thus, a unique organizational and institutional model of convergence and stakeholder inclusion for research, innovation and development in agriculture and food has been consolidated. Over the years, studies of results and impact revealed outstanding achievements, not only in technical aspects, but also creating networks, spillovers, spinoffs, and especially in the strengthening of the capabilities of all stakeholders in the value chains. Seventy-seven percent of the results achieved by FONTAGRO projects form part of the scientific heritage of the national agricultural research systems and 69% are being used by the final beneficiaries. Seventy-four percent of the results are regional public goods.

FONTAGRO has consolidated its position in recent years, becoming a key co-financing mechanism for science and innovation in Latin America, the Caribbean and Spain, generating public goods of international scope, thus highlighting its strategic role in the global arena.

Letter of the President

We are pleased to present the report of results for the 2022-2023 period, which highlights the importance of FONTAGRO as a sustainable financing mechanism for strengthening science, technology, and innovation in the agri-food sector of Latin America and the Caribbean. This year marked the 25th anniversary of FONTAGRO in Madrid, Spain, with numerous national authorities, government representatives, and international organizations in attendance, along with the members of the Board of Directors, leading researchers, and members of the TAS.

Despite all the investments made, the Fund maintains its initial capital, even increasing its value to \$96 million. This financial stability has been achieved through diligent financial management efforts. Thanks to our financial strategy, we have the opportunity to renew bonds each year and take advantage of favorable market conditions.

Furthermore, thanks to the above, today we can say that FONTAGRO has co-financed a total of 195 regional projects since 1998, amounting to \$139.7 million, of which \$28.0 million (20%) were contributed by FONTAGRO, \$21.9 million by other agencies (16%), and \$90.8 million through counterpart contributions from the institutions themselves (65%).

Our current project portfolio consists of 48 registered operations totaling \$12.2 million, representing a total investment of \$39.63 million. The annual disbursement was \$1.3 million (43%), with \$6.9 million available for execution by 2027. Throughout the year, support was provided for coordinating seed fund and consensus project meetings, together with other partners, and the delivery of technical products and results was monitored. Starting this year, FONTAGRO even has a team of reviewers evaluating the technical content of publications produced by the projects.

Program activities were implemented according to the annual schedule. These include the ordinary call “Science, technology, and innovation for more sustainable and climate-resilient agriculture and food security in Latin America and the Caribbean” and the Bioeconomy Innovation Successful Cases Contest.

FONTAGRO’s global visibility is growing steadily. In this regard, knowledge management, communication, and results dissemination continued the upward trend, reaching 763 knowledge products, over 50 workshops, and many other activities related to the implementation of funded projects in the region. Social media impact increased by 29%.

Throughout the year, and at the request of country representatives, institutional strengthening activities continued. In the case of the “Knowledge Management and Communications Committee” and the “Scientific Strategic Intelligence Committee”, created in 2021, two workshops were held, and this year a new “International Relations Committee” was formed to strengthen cooperation and synergies between countries and other international agencies.

During the year, FONTAGRO was highlighted by the Agriculture Innovation Mission for Climate program and participated in numerous events addressing key strategic issues for the development of agriculture and food in the region and the world.

In an effort to continue working successfully, the Board of Directors has initiated an internal operational model update process to increase synergies with sponsors, improve efficiency, and fulfill FONTAGRO’s mission and vision for the future. Finally, I express my gratitude for the collaboration during my tenure as President of the Board of Directors. I am confident that FONTAGRO will continue to drive significant initiatives and strengthen collaboration in the field of science and innovation for the agri-food sector. I thank you for allowing me to lead this mission. I have no doubt that the Fund will emerge from this process stronger than ever.

Arnulfo Gutiérrez
President of FONTAGRO,
Director General of the Agricultural Innovation
Institute of Panama (IDIAP)

Message from the Executive Committee

It is with great enthusiasm that we share this annual report 2023, which presents the activities carried out and the most outstanding results of the period. FONTAGRO is increasingly consolidating its position as a key player in Latin America, the Caribbean and Spain. FONTAGRO was created in 1998 as a sustainable financing mechanism for the development of agricultural technology in Latin America and the Caribbean, and to institute a forum for the discussion of priority issues for technological innovation. Today, after 25 years, we have more than confirmed the purpose for which it was created, while highlighting the growth achieved by the Board of Directors, the IDB and IICA sponsors, other partner agencies, the research teams and the members of the Technical Administrative Secretariat, to name a few.

In these last decades we have demonstrated that working collaboratively is possible and also generates greater value, measured not only by the potential for generating new knowledge and therefore the opportunity to create new technologies and innovations for the sector, but also by the strengthening of the capacities of students, professionals and producers, the creation of networks and the mobilization of resources, as just a few of the advantages. Furthermore, FONTAGRO, in recent years and in pursuit of the goal of establishing a forum, has created three ad hoc working committees with broad public-private participation, focusing on knowledge management and communication, science, and international relations.

Over the years, we have migrated from basic science projects to a more diversified current portfolio that also encompasses applied, adaptive and strategic science in some cases. Our total portfolio today reaches 195 operations for an amount of \$139.7 million, and we are currently executing 48 operations representing a total investment of \$39.6 million. Our projects address cross-cutting issues of climate change, innovation, sustainable intensification and value chain; they are also related to issues of enormous importance in the region, food and markets, crops, forestry, livestock and natural resources. With the results of the 2023 Call, we added four new initiatives focused on strategy III of the MTP 2020-2025, to which the seed funds and projects by consensus on topics related to livestock and climate change, biologicals, local seed banks, among many others, are added. This has been achieved through a great shared effort of strategic alliances with key partners, who understand the importance of science, technology and innovation to maintain healthy agri-food systems in the global arena.

The last few years brought great challenges which were overcome by keeping our work focused on the development of the region and its people. This has been possible thanks to the outstanding support of the Board of Directors, our sponsors, and the Technical Administrative Secretariat team. We are currently in a period of updating our operating model, which we are sure will make us more efficient and effective. We look forward to returning to you in 2024 with more shared achievements for our agriculture of today and tomorrow.



Arnulfo Gutiérrez
President of FONTAGRO
General Director of IDIAP
Panama



Carlos Parera
Vicepresident of FONTAGRO
National Director of INTA
Argentina



Eugenia Saini
Executive Secretary
FONTAGRO

Board of Directors

Country Name	First Name	Last Name	Representative
Argentina	Mariano	Garmendia	Representative
	Carlos	Parera	Alternate Representative
Bolivia	Félix Terceros	Martínez	Representative
Chile	Iris	Lobos Ortega	Representative
	María Teresa	Pino	Alternate Representative
Colombia	Jorge Mario	Díaz Luengas	Representative
	Rodrigo	Martínez Sarmiento	Alternate Representative
Costa Rica	Roberto	Camacho	Representative
Ecuador	Raúl	Jaramillo Velastegui	Representative
Spain	Esther	Esteban Rodrigo	Representative
Honduras	Arturo	Galo	Representative
	Mario	López	Alternate Representative
Nicaragua	Miguel	Obando Espinoza	Representative
Panama	Arnulfo	Gutiérrez	Representative
	Próspero	Aguirre	Alternate Representative
Paraguay	Edgar	Esteche	Representative
	Orlando	Noldin	Alternate Representative
Peru	Jorge Juan	Ganoza Roncal	Representative
	Juan Carlos	Guerrero	Alternate Representative
Dominican Republic	Eladio	Arnaud Santana	Representative
Uruguay	José	Bonica Henderson	Representative
	Verónica	Musselli	Alternate Representative
Venezuela	Giomar	Blanco	Representative
	Barrero	Carlos	Alternate Representative

Our Philosophy

In the context of the major global and regional shifts that impact investment in R&D&I in agriculture and food, FONTAGRO has renewed its philosophy, defining a new mission, vision and values that consolidates its role as a mechanism for sustainable co-financing of the sector and deepen its actions as a forum for the discussion of agri-food innovation issues. This philosophy brings together a set of principles that correlate what we are and what we want to achieve while constituting a core of consistent work aligning all the actors that participate in the organization along with the initiatives to be promoted in the coming years.

VISION

FONTAGRO's **Vision** is "Transforming agri-food systems through the use of knowledge so that they are more inclusive and sustainable for the environment and society".

MISSION

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

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

FONTAGRO, thanks to its Board of Directors, sponsors and other partner agencies, has achieved a great strength of collaborative work for the promotion of science, technology and innovation in the agro-bio-industrial sector. We have become a key mechanism for scientific-technical collaboration in Latin America and the Caribbean. During the pandemic we transformed ourselves. On the one hand, we digitized our tasks, and on the other, we decided to review our management model in order to achieve greater effectiveness and efficiency, and thus facilitate the achievement of results and impacts. Since 2021, FONTAGRO's TAS has been relocated to IICA's offices, and has been working collaboratively on the implementation of activities together with numerous offices and representations in the different countries. We have expanded our team and our desire to support the region more closely.

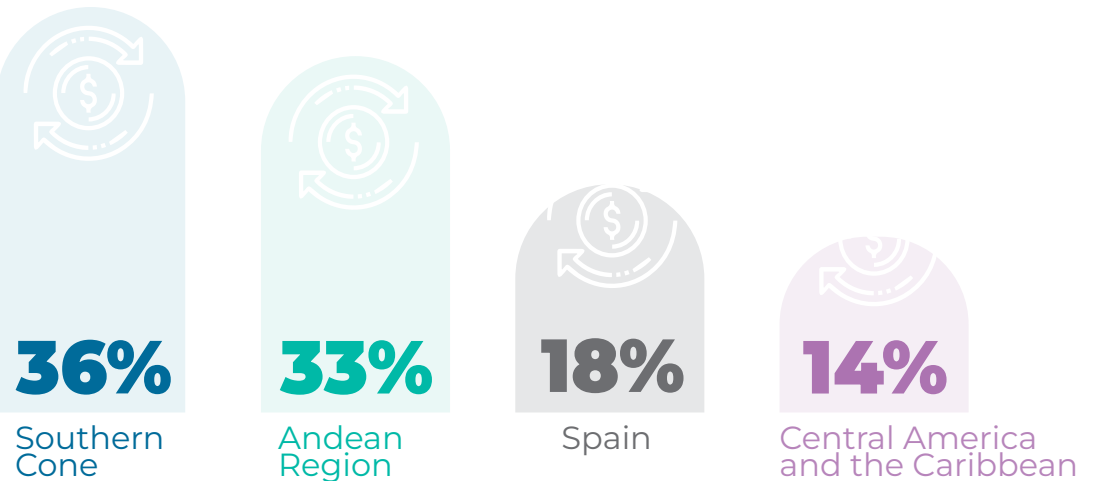
 **USD 83.05**
million
Initial common equity

 **USD 95.9**
million
Total fund

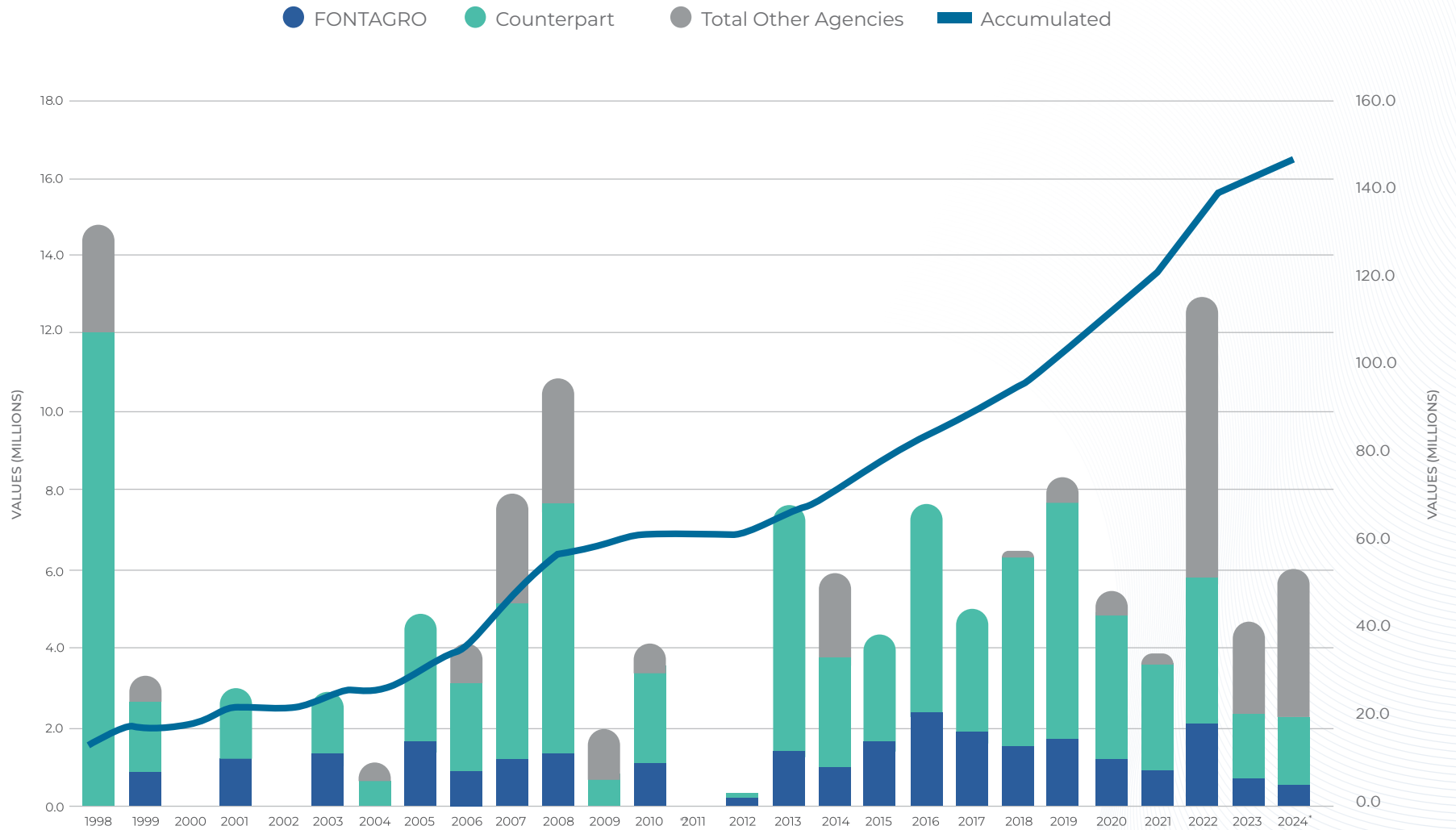
 **USD 139.7**
million
Mobilized in operations

Administration and Finances

With an initial common equity of \$83.05 million, made up of contributions from the Southern Cone (36%), the Andean Region (33%), Spain (18%), and Central America and the Caribbean (14%), the Fund now stands at \$95.9 million, while mobilizing \$139.7 million in operations. View [financial statements](#).



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



HIGHLIGHTS

195 projects



139,690,198

USD FUNDS

- 48 active projects at year-end 2023, \$47.1 million total.
- 48,824 direct beneficiaries and 81,771 people attended workshops.
- 1,081 pilot experimental sites.
- 739 networks and 171 work teams.
- 685 knowledge products, 47 scientific papers, 256 videos.
- 50 workshops.
- [Knowledge Week](#).



OUR PROJECTS IN LATIN AMERICA, THE CARIBBEAN AND SPAIN



- 1 **AMORA. Application for musaceae family farmers**
AGROSAVIA, Colombia
- 2 **Platform for water management in agriculture 2030 - 2050**
INIA, Chile
- 3 **Scaling continuous improvement in organic bananas for family export (BOFA)**
IDIAF, Rep. Dominicana
- 4 **Sustainable control of the Huanglongbing (HLB) vector**
Fundación Argentina/INTA, Argentina
- 5 **Cacao Platform 2030**
ESPOL, Ecuador
- 6 **FONTAGRO AOP 2010-2020**
STA
- 7 **Sustainable intensification with legumes (NZ)**
Fundación Argentina/INTA, Argentina
- 8 **Sustainable intensification with legumes (FTG)**
Fundación Argentina/INTA, Argentina
- 9 **Irrigation advisory system**
Fundación Argentina/INTA, Argentina
- 10 **Early warning for potato late blight management**
INIA, Chile
- 11 **Sustainable irrigation and fertilization management in quinoa**
Fundación Argentina/INTA, Argentina
- 12 **Geographical indications for Mesoamerican Cacao**
UNA, Costa Rica
- 13 **Innovation and intensification in livestock farming to adapt and grow**
Fundación Argentina/INTA, Argentina
- 14 **Climate-smart livestock farming in Mapucho communities**
Fundación Argentina/INTA, Argentina
- 15 **Climate Change Resilient Potatoes for the Andean Region**
AGROSAVIA, Colombia
- 16 **Digitalization of small-scale agriculture**
ZAMORANO, Honduras
- 17 **MUS SmartFRUIT ALC: smart solutions for family fruit systems LAC**
UTRO, Chile
- 18 **Nanotechnology for moisture management in agricultural soils**
PROINPA, Bolivia
- 19 **Satellite monitoring of quantity and quality of available biomass in pastoral livestock systems in LAC (NZ)**
Fundación Argentina/INTA, Argentina
- 20 **Feasibility of vertical farming technologies in LAC**
IICA - IDIAP, Panama
- 21 **Yield improvement for potatoes and other Andean tubers (ROOT TO FOOD)**
DUJ, Colombia
- 22 **Agroecological model for poultry coccidiosis**
Fundación Argentina/INTA, Argentina
- 23 **Multipurpose silvopastoral systems and family livestock farming**
AGROSAVIA, Colombia
- 24 **Bovine productivity in the South American Chaco region**
Fundación Argentina/INTA, Argentina
- 25 **Towards more productive and sustainable rice**
INIA, Chile
- 26 **Agtech for climate-smart dairy**
Fundación Argentina/INTA, Argentina
- 27 **Innovation for grazing and forage residue management**
INIA, Uruguay
- 28 **Fusarium**
AGROSAVIA, Colombia
- 29 **Genetic Editing**
Fundación Argentina/INTA, Argentina
- 30 **Rinfertilized Beans**
IICA - IDIAP, Panama
- 31 **Nanofertilizers in soils and nitrous oxide emissions**
IICA - UIS, Colombia
- 32 **Bioprocess to reduce the solubility of rhizospheric Cadmium**
IICA - UTM, Ecuador
- 33 **Increased agricultural production with lower nitrous oxide emissions**
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 **Crop management online support platform**
UAG, 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 **Wellness for livestock farm resilience**
Fundación Argentina/INTA, Argentina
- 41 **Innovations to reduce methane emissions in ruminants**
AGROSAVIA, Colombia
- 42 **Platform for transfer and use of bioinputs**
CEAZA, Chile
- 43 **Resilience to climate change with the use of bioproducts**
AGROSAVIA, Colombia
- 44 **Sustainable Livestock in the Peruvian and Ecuadorian Amazonia**
UNAM, Perú
- 45 **Satellite Monitoring of Methane in Rice Crops**
INIA, Uruguay
- 46 **Nitrogen Optimization FTG**
INIA, Chile
- 47 **Nitrogen Optimization NZ**
INIA, Chile
- 48 **Knowledge Management and Communications**
STA
- 49 **Seed fund FONTAGRO**
STA
- 50 **Digital transformation in the agri-food sector of the South Cone**
PROCISUR - IICA, Uruguay
- 51 **Technological alternatives for bioinputs**
INTA, Costa Rica
- 52 **Enabling Indigenous Climate Smart Agriculture Resilience**
Fundación Argentina/INTA, Argentina

OUR PROJECTS AND THEIR CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS



SECTOR

- POTATO
- LIVESTOCK
- RICE
- CITRUS
- SOIL
- BANANA
- BIRDS
- KNOWLEDGE
- CACAO
- WATER
- CROPS
- QUINOA
- DAIRY

TOPIC

- CLIMATE CHANGE
- MARKET
- SUSTAINABLE INTENSIFICATION
- PEST AND DISEASE MANAGEMENT
- AGTECH
- PRODUCTIVITY
- GENETICS
- KC&C

SUSTAINABLE DEVELOPMENT GOALS



NEW ZEALAND, LATIN AMERICA AND THE CARIBBEAN

Technical cooperation for resilient agriculture.

The meat and dairy agri-food systems of New Zealand, Latin America and the Caribbean are key to providing protein to the world.

FONTAGRO together with the Ministry for Primary Industries (MPI) of New Zealand and the Global Research Alliance on Agricultural Greenhouse Gases (GRA) supported 16 initiatives for a total of \$14.3 million.

[LINK](#)



Ministry for Primary Industries
Manatū Ahu Matua



GLOBAL
RESEARCH
ALLIANCE
ON AGRICULTURAL GREENHOUSE GASES



Latin America and the Caribbean need policies based on science and data. To this end, FONTAGRO together with the Inter-American Institute for Cooperation on Agriculture (IICA) supports the implementation of 15 regional and international projects, for a total of \$9.0 million, which promote science, technology and innovation for the transformation of agri-food systems. Here are some of the projects:

Bioprocess for reducing the solubility of rhizospheric cadmium

Climate change, Strategy 1, Farm, Technological, Applied, Agronomic Practices, 2020

Code:	ATH-RR-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

Code:	RG-14376	FONTAGRO Amount:	USD 300,000	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

Code:	RG-14373	FONTAGRO Amount:	USD 300,000	Other agencies:	USD 0
Initiative:	Call for Proposals	Counterpart Amount:	USD 469,329	Total Amount:	USD 699,329

Climate change-resilient potatoes

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

Code:	RG1-4379	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

Code:	RG1-4375	FONTAGRO Amount:	USD 200,000	Other agencies:	USD 0
Initiative:	Call for Proposals	Counterpart Amount:	USD 588,736	Total Amount:	USD 788,736

FLAGSHIP PROGRAMS

New discoveries, technologies and innovations

- 1 Potato, the main food crop of family agriculture in LAC, is affected by a late blight disease (*Phytophthora infestans*) that seriously damages productivity and quality. Chile, Argentina, Ecuador and Panama joined forces to create an early warning system aimed at reducing chemical control and making production systems more sustainable and resilient. [ATN/RF-16678-RG](#).
- 2 Every year, heavy losses are reported in citrus due to HLB (Huanglongbing), a disease caused by a bacterium. Argentina, Bolivia, Paraguay and Uruguay joined forces to validate and disseminate an Integrated Pest Management (IPM) to control and reduce the population of the insect vector by 35%. [ATN/RF-17232-RG](#).
- 3 Organic bananas are an important source of income for family farming in some countries in the region. The Dominican Republic, Ecuador and Peru are scaling up technologies for red rust thrips management, using apps for data capture and transmission, improving productivity and profitability. [ATN/RF-17233-RG](#).
- 4 Cacao, one of the most traded products worldwide, has been affected by the increased presence of cadmium. Ecuador, Colombia, Costa Rica, Germany, Belgium, the United States, Italy, Panama, Peru and the Dominican Republic joined forces to homologate and standardize cadmium quantification methods and generate amendments to reduce its concentration in the cacao kernel. [ATN/RF-17235-RG](#).
- 5 Chile, Costa Rica and Argentina create a public-private partnership to develop an open-access technological tool called OpenFruit, which integrates geospatial, meteorological, edaphic and productive data to generate alerts and facilitate decision making for fruit producers, increasing productivity and quality. [ATN/RF-17245-RG-Agtech19056](#).
- 6 Colombia and Bolivia join forces to improve Andean tuber (potato, oca and mashua) family production systems through the use of seeds of good genetic and phytosanitary quality alongside agronomic management. [ATN/RF-18120-RG](#).
- 7 Argentina and Chile are looking for a technological alternative to the poultry health problems of coccidiosis. The implementation of an agroecological and sustainable model is expected to increase productivity by 15%. [ATN/RF-18136-RG](#).
- 8 Ecuador, Argentina, Spain and Venezuela will work on a bioprocess consisting of a consortium of native fungi that are efficient in reducing cadmium in cocoa beans. [ATN/RF-18951-RG](#).
- 9 In response to the first report of *Fusarium oxysporum* (FocR4T), Colombia, Costa Rica, Ecuador, Nicaragua, Panama, the Dominican Republic, Bolivia, Paraguay and Peru joined forces to strengthen capacities and develop an effective methodology for the diagnosis of the pathogen. [ATN/RF-18761-RG](#).
- 10 Argentina, Chile, Colombia, Ecuador, Paraguay, Uruguay and Brazil innovate in the use of biotechnological tools and gene editing to obtain plant and animal varieties with characteristics of productive, economic and social interest. [ATN/RF-18757-RG](#).
- 11 Panama, Colombia, Honduras, Nicaragua, and the Dominican Republic increase the dissemination of iron-rich bean varieties by validating and scaling up bean varieties with the highest market demand which strengthens food and nutritional security for the population. [ATN/RF-19314-RG](#).

12 Colombia, Ecuador and Bolivia are reducing climate change vulnerability by incorporating early-maturing and drought-resistant potato clones for the Andean Region, which will increase yield by 1.5-3% and improve tuber quality.

[RG-T4379](#).

13 Costa Rica, Nicaragua, Panama, Honduras and Spain seek to establish the territorial determinants of the differentiated quality profile of cacao of origin for the development of Geographical Indications in Mesoamerica.

[RG-T4375](#).

14 Argentina, Chile, Ecuador and Peru are seeking to optimize water and nitrogen management in quinoa by generating and transferring a Latin American online tool for agronomic management of the crop. This will allow optimizing strategies related to the choice of cultivars, sowing dates, irrigation and fertilization in the Andean region (inter-Andean valleys and coastal environments in Peru) and central-southern Chile based on knowledge of its eco-physiology.

[RGT-4373](#).

15 Argentina, Uruguay, Colombia and Costa Rica are working to lower the cost of estimating in real-time, and with precision, the quantity and quality of biomass available in pastoral livestock systems using a satellite tool. This information will make it possible to improve grazing management decisions and, therefore, forage harvesting, as well as to quantify more accurately and reduce the intensity of greenhouse gas emissions from these systems.

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

Together for greater resilience to climate change

16 Argentina, Chile, Ecuador, Nicaragua, Paraguay, the Dominican Republic, Uruguay and Brazil improve livestock production systems through the use of leguminous plants in pastures, increasing the capacity to fix nitrogen, carbon sequestration in soils and reducing the use of fertilizers.

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

17 Honduras and Colombia develop a low-cost soil moisture sensor to maximize production and optimize water use.

[ATN/RF-17245-RG-Agtech19043](#).

18 Argentina, Spain, Nicaragua, Uruguay and the Netherlands create a public-private partnership that develops a mobile application called Irrigation Advisory Service (IAS) to strengthen the decision-making capacity of producers on water management.

[ATN/RF-17245-RG-Agtech19037](#).

19 Increasing the efficiency of water use in agricultural fields is one of the great challenges. Chile, Argentina, Colombia, Spain and Uruguay have joined forces to implement a consultation platform that provides accurate temporal and spatial information on production systems, enabling farmers and decision makers to operationalize the quantitative management of irrigation in crops.

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

20 Colombia, Peru and the Dominican Republic, banana producing countries, develop a software platform that converts local climate data into projections of banana growth, flowering and harvest, in order to support decision-making in the management of small banana plantations.

[ATN/RF-17245-RG-Agtech 19055](#).

- 21** Argentina, Bolivia and Paraguay, together with funding from the Government of New Zealand, are implementing an extension network in the South American Chaco for sustainable livestock production. [ATN/RF-18079-RG](#).
- 22** The technology of the System of Rice intensification (SRI) is being validated in Chile, Argentina, Panama, Colombia and Venezuela, in order to transfer it to small farmers and thus optimize the use of natural resources and reduce production costs. [ATN/RF-18105-RG](#).
- 23** Argentina, Costa Rica, Honduras, the Dominican Republic and Uruguay, with funding from the Government of New Zealand, are developing digital tools for real-time monitoring of productive, climatic and management aspects of dairy herds. [ATN/RF-18078-RG](#).
- 24** Uruguay, Argentina, and Costa Rica, with funding from the Government of New Zealand, develop a tool for remote measurement of available biomass of pasture, optimizing real-time grazing decisions, increasing pasture harvest by 30%. [ATN/RF-18077-RG](#).
- 25** Colombia and Ecuador seek alternatives to halt soil degradation by synthesizing nanofertilizer formulations that reduce the use of fertilizers and nitrous oxide emissions. [ATN/RF-18959-RG](#).
- 26** Argentina, Chile, Colombia, Spain and Uruguay reduce nitrous oxide emissions by improving the productivity and quality of 20 crops through the use of 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](#).
- 27** Uruguay, Argentina, Colombia, Costa Rica, and Chile contribute to the design of land use and management with high COS sequestration potential in agricultural and livestock production systems in LAC. [ATN/RF-18769-RG](#) and [ATN/RF-18770-RG](#).
- 28** Colombia and Argentina join forces to reduce emission intensity by 10% (g of CO₂Eq/kg Meat) in bovine production systems through the implementation of technological innovations developed in Latin America for the quantification and mitigation of greenhouse gas emissions. [RG-T4383](#).
- 29** Colombia, Argentina and New Zealand collaborate to generate a strategy to improve corn crop production (+5%) and resilience to climate change through the use and integration of beneficial fungi. [RG-38T44](#).
- 30** Argentina, Bolivia and Paraguay will form a network of resilient farms with sustainable forest management; the beneficiaries will be 2,100 producers in the regions of Salta - Argentina, Villa Montes - Bolivia and Presidente Hayes in Paraguay. [RG-T4381](#).
- 31** Uruguay, Peru and Panama are working to develop a web platform to facilitate access to validated satellite information on atmospheric methane content in different rice-growing regions of LAC. [Link](#).
- 32** Bolivia and Ecuador seek to promote the sustainability and resilience of fragile Andean agroecosystems through efficient soil moisture management to increase productivity and crop diversification. This will serve as an alternative for food security and adaptation to climate change. [RG-T4376](#).

33 Chile, Peru, Panama, and the Dominican Republic join forces to optimize the management of nitrogen fertilizer in pastures and crops, promoting the development of more sustainable productive systems. [RG-T4386](#).

34 Argentina and Chile aim to promote sustainability and food security in Mapuche indigenous communities through the incorporation of climate-smart livestock practices, using active and participatory strategies. [RG-T4385](#).

35 Panama, Argentina, Colombia, and Costa Rica are comprehensively assessing vertical farming systems as a sustainable alternative for intensive crop production. This initiative aims to enhance competitiveness, food security, and their implementation in LAC. [RG-T4378](#).

Sustainable intensification and natural resources

36 Arid and semi-arid zones in LAC are environmentally fragile and have high levels of rural poverty. Improvements in forage evaluation, adjustment of stocking rates, strategic supplementation and health management were some of the strategies implemented by 120 producers in Argentina and Peru to adapt to climate challenges and strengthen local food security. [ATN/RF-16680-RG](#).

37 Rice producers in Colombia, Chile and Peru are facing climate variability and reduced water availability. FEDEARROZ, together with other organizations, validated the system of sustainable intensification of rice cultivation, reducing water use and GHG emissions, and increasing crop yields. [ATN/RF-16681-RG](#).

38 Peru, Colombia, and Germany will work to generate a technological solution using multipurpose silvopastoral systems to improve milk production and producer profitability. [ATN/RF-19277-RG](#).

39 Chile, Argentina, Uruguay and Honduras seek to increase the productivity and sustainability of production systems through a free online platform to support decision-making in agronomic crop management in the context of climate change. [RG-T4377](#).

40 Developing a platform for linking producers, technicians and scientists to contribute to the development, transfer and efficient use of biologicals on farms in Latin America is the objective of the project which will be developed through a joint effort by Argentina, Chile, Colombia and Uruguay. [RG-T4388](#).

41 Peru, Ecuador, Costa Rica and New Zealand seek to sustainably intensify dual-purpose livestock farming in the Peruvian and Ecuadorian Amazon through supplementation with feed obtained from agro-industrial waste. [RG-T4389](#).

42 Argentina, Chile, and Colombia are working to implement good animal husbandry practices for cattle and sheep based on animal welfare principles. [RG-T4382](#).

43 Colombia, Ecuador and Honduras are working on the project "Tropical Agriculture 4.0: efficient management of water resources" with the aim of increasing the efficient use of water by applying Agriculture 4.0 technologies to tropical crops of commercial and social importance. [RG-T4380](#).

PROGRAMATIC ACTIVITIES



Extraordinary Call “Innovations to improve the sustainability and resilience of farms to the impact of climate change in Latin America and the Caribbean”.



FONTAGRO’s BD authorized a total of 25 seed funds for technical cooperation development assistance for \$635,000, which mobilized \$1.89 million in counterpart funds.



From 2014 to-date, 23 projects by consensus were implemented for a total amount of \$4.35 million, meaning 3.95 dollars mobilized for every FONTAGRO dollar.



The celebration of FONTAGRO’s 25th anniversary in Madrid, Spain (June 5th), brought together prominent representatives from international organizations, European universities, and ambassadorial representatives, among others.



The XVIII Annual Technical Project Follow-up Workshop in Madrid, Spain, featured the participation of representatives from FONTAGRO projects, with AGROSAVIA from Colombia standing out and receiving the 2023 Scientific Excellence Award.

OUR COMMITTEES

Knowledge Management and Communication

Objective: increase dissemination of results and visibility of FONTAGRO.

Scientific Committee

Objective: strengthen the scientific-technical agenda of FONTAGRO.



International Relations Committee

Objective: facilitate dialogue and the mobilization of resources for science, technology and innovation in LAC.

ALLIANCES AND MEMBERSHIPS

We continue to strengthen alliances to promote the development and transformation of the agro-bio-industrial sector in Latin America and the Caribbean, hand-in-hand with the following institutions and companies:



Sprout AI
Beyond Farming



BCIE
Banco
Centroamericano
de Integración
Económica



**GAP
REPORT
INITIATIVE**



Palladium
MAKE IT POSSIBLE



IFAMA



WESTERN GROWERS



ucrop.it



auravant
AGRICULTURA DIGITAL



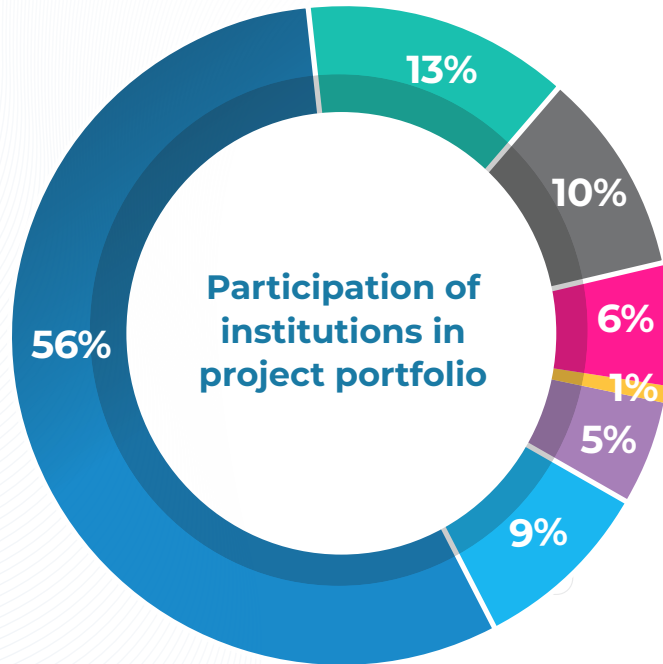
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- National Institutions
- International Universities
- International Institutions
- Regional Institutions
- Extra-regional Institutions and Universities
- Non-Governmental Organizations
- Private Sector

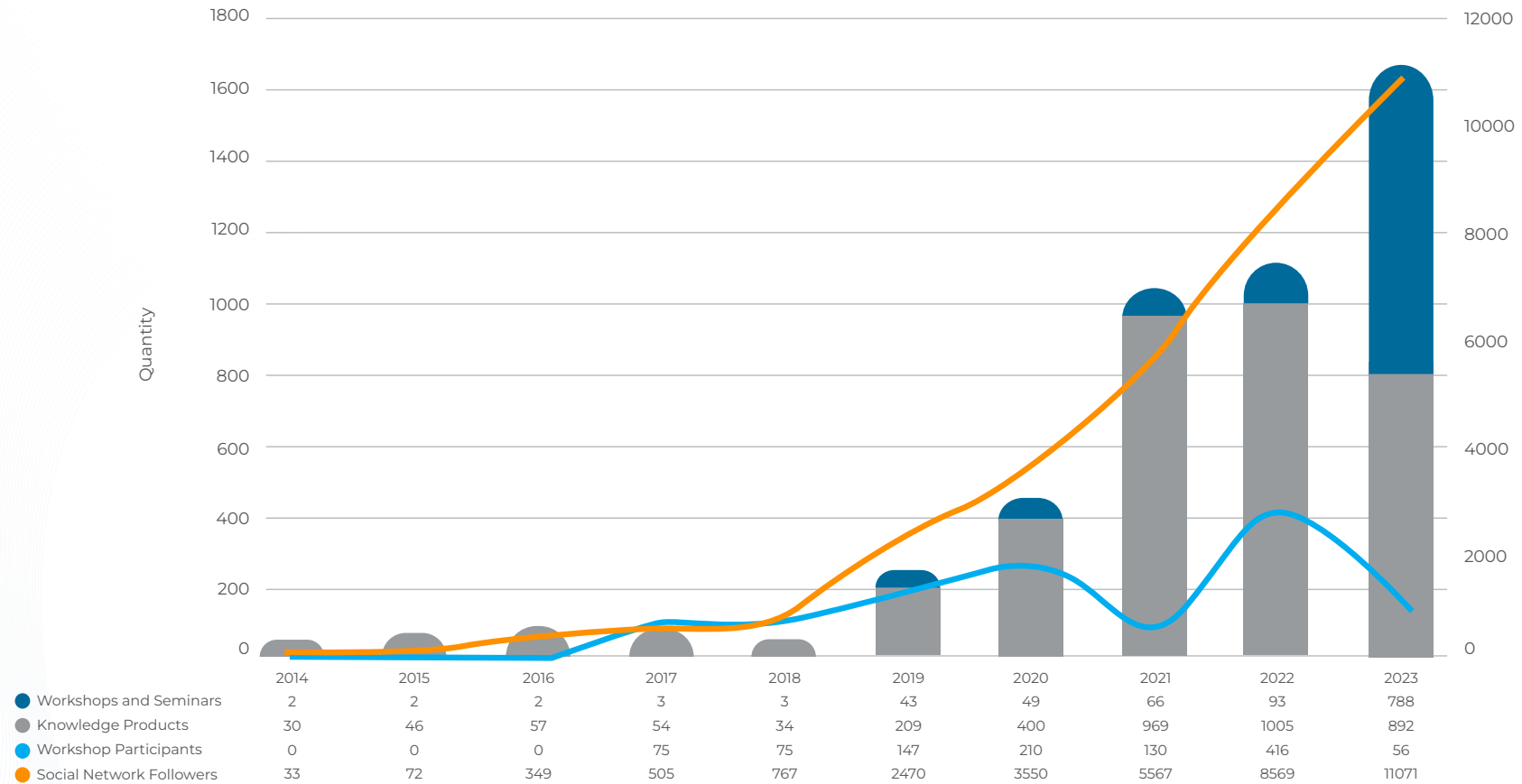
KNOWLEDGE MANAGEMENT AND COMMUNICATION

Our Knowledge Management and Communication (KM&C) 2020-2025 strategy allowed us to continue growing in the dissemination of results and visibility, promoting strategic alliances and initiatives with new agencies. During the year we were able to consolidate a methodology for the presentation of project knowledge products.

During 2023, 988 new knowledge products have been developed:



Evolution of the number of knowledge products and dissemination of results



Source: Prepared based on TAS data, 2023

XVIII FONTAGRO Annual Technical Project Follow-up Workshop
5th to 7th of June 2023





XXVII FONTAGRO Board of Directors Annual Meeting

Our Partners

International Institutions



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Non-Governmental Organizations



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Universidad de Nariño



CONSTRUIMOS FUTURO





2023

ANNUAL REPORT



FONTAGRO

