CGIAR Initiative on AgriLAC Resiliente

ANNUAL TECHNICAL REPORT 2022

CGIAR Technical Reporting 2022

CGIAR Technical Reporting has been developed in alignment with the CGIAR Technical Reporting Arrangement.

This Initiative report is a Type 1 report and constitutes part of the broader CGIAR Technical Report. Each CGIAR Initiative submits an annual Type 1 report, which provides assurance on Initiative-level progress towards end-of-Initiative outcomes.

The CGIAR Technical Report comprises:

• Type 1 Initiative and Impact Area Platform reports, with quality assured results reported by Initiatives and Platforms available on the CGIAR Results Dashboard.

• The Type 3 Portfolio Performance and Project Coordination Practice Change report, which focuses on internal practice change.

• The Portfolio Narrative, which draws on the Type 1 and Type 3 reports, and the CGIAR Results Dashboard, to provide a broader view on portfolio coherence, including results, partnerships, country and regional engagement, and synergies among the portfolio's constituent parts.

The CGIAR Technical Report constitutes a key component of the CGIAR Annual Performance Report (APR).

- 🟡 Results Dashboard
- 🔵 Initiative & Impact Area Platform Type 1 reports
- 🟢 Portfolio Performance and Project Coordination Practice Change Type 3 report
- ⬛ Portfolio Narrative
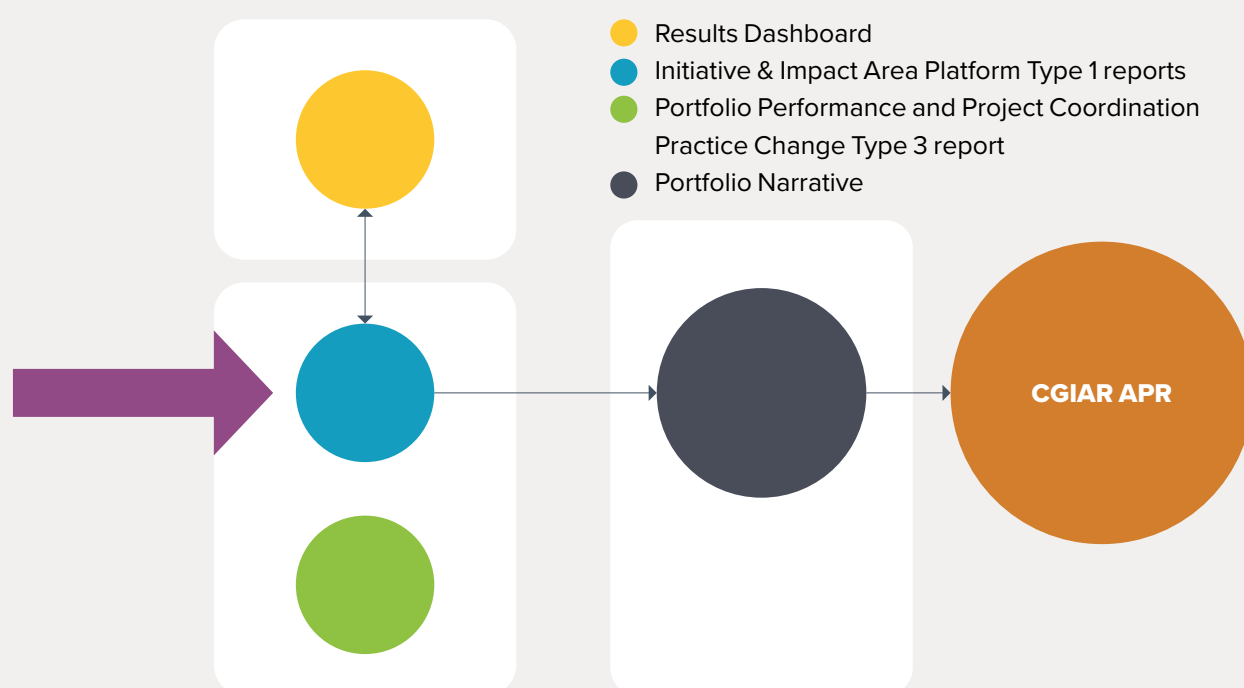
US$	2022	2023	2024
Proposal Budget from initial submission	US$9,309,000	US$10,078,000	US$10,630,000
Approved 2022 Budget	US$4,001,154		

2022 Disbursement Target based on Approved FinPlan

Section 1 Fact sheet

Initiative name	AgriLAC Resiliente: Resilient Agrifood Innovation Systems in Latin America and the Caribbean
Initiative short name	AgriLAC Resiliente
Action Area	Resilient Agrifood Systems
Geographic scope	**Regions targeted in the proposal:** Latin America and the Caribbean (LAC) **Countries targeted in the proposal:** Colombia; El Salvador; Guatemala; Honduras; Mexico; Nicaragua; Peru **Regions with results reported in 2022:** Latin America and the Caribbean **Countries with results reported in 2022:** Colombia; Guatemala; Honduras; Mexico; Peru
Start date	April 1, 2022
End date	March 31, 2025
Initiative Lead	Deissy Martínez Barón – d.m.baron@cgiar.org
Initiative Deputy	Bram Govaerts – b.govaerts@cgiar.org
Measurable three-year End of Initiative outcomes (EOI-Os)	**EOI-O 1: Five LAC countries effectively align the technical aspects of transition processes with socioecological needs** Nutrition-sensitive Socio-Ecological-Technological (SET) innovations adapted and co-designed with Agrifood System (AFS) actors (farmers, processors, SMEs, NARES) enable local AFS in five LAC countries to effectively align the technical aspects of transition processes with the socioecological needs of at least 250,000 farmers (2022–2024). A scalable model for SET adoption along national and regional AFS transformation pathways (2025–2030).
	EOI-O 2: Organizations in three LAC countries offer digitally enabled agro-advisory services Producer associations, agri-tech companies, government agencies, NGOs, and public extension services are empowered by a digital ecosystem spanning three LAC countries to offer digitally enabled agro-advisory services to at least 200,000 farmers who more effectively manage climate risk and sustainable intensification across their value chains.
	EOI-O 3: National and local governments in three LAC countries integrate low-emission strategies with development goals National and local governments in three LAC countries integrate low-emission strategies with development goals across agroecosystems, landscapes, and value chains reaching at least 300,000 ha (2022–2024). Government, private and public investors, and extensionists realign financing streams, support functions, and monitoring, reporting and verification (MRV) efforts with interventions that blend mitigation objectives with human, social, ecological, and equitable development priorities of communities (2025–2030).

	EOI-O 4: **Four LAC countries accelerate on-farm uptake of SET innovations** Public–private sector, NARES, and civil society actors across subnational agricultural innovation systems in four LAC countries use InnovaHub learning, knowledge management, and evidence to better accelerate on-farm uptake of SET innovations, by making them more gender-responsive, production-friendly, and context-specific, reaching at least 200,000 farmers (2022–2024). Private and public sector actors (including CGIAR) scaling validated SET 'best-bet' innovations via carbon-friendly transition pathways in the LAC region (2025–2030).
	EOI-O 5: **LAC countries inform and shape transformative, sustainable, mitigation-comprehensive, and climate-adaptation-friendly AFS-related policies, incentives, and initiatives** Public and private institutions in three LAC countries use CGIAR science, evidence, and tools to inform and shape more transformative, sustainable, mitigation-comprehensive, and climate adaptation-friendly AFS-related policies, incentives, and initiatives. These will be mainstreamed and scaled throughout six LAC countries helping actors/stakeholders realign and transition their AFS to more sustainable pathways that meet climate and broader development objectives (2025–2030).
OECD DAC Climate marker adaptation score*	**Score 2:** Principal: The activity is principally about meeting any of the three CGIAR climate-related strategy objectives — namely, climate mitigation, climate adaptation, and climate policy, and would not have been undertaken without this objective.
OECD DAC Climate marker mitigation score*	**Score 2:** Principal: The activity is principally about meeting any of the three CGIAR climate-related strategy objectives — namely, climate mitigation, climate adaptation, and climate policy, and would not have been undertaken without this objective.
OECD DAC Gender equity marker score*	**Score 1A:** Gender accommodative/aware: Gender equality is an objective, but not the main one. The Initiative/project includes at least two explicit gender-specific outputs and (adequate) funding and resources are available. Data and indicators are disaggregated by gender and analyzed to explain potential gender variations and inequalities.
Website link	https://www.cgiar.org/initiative/agrilac-resiliente-espanol/

*The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) markers refer to the OECD DAC Rio Markers for Climate and the gender equality policy marker. For climate adaptation and mitigation, scores are: 0 = Not targeted; 1 = Significant; and 2 = Principal.
The CGIAR GENDER Impact Platform has adapted the OECD gender marker, splitting the 1 score into 1A and 1B. For gender equality, scores are: 0 = Not targeted; 1A = Gender accommodative/aware; 1B = Gender responsive; and 2 = Principal.
These scores are derived from Initiative proposals, and refer to the score given to the Initiative overall based on their proposal.

Section 2 Initiative progress on science and towards End of Initiative outcomes

Coffee and maize Honduras.
Photo credit: O. Bonilla (CCAFS)

Overall summary of progress against the theory of change

Since April 2022, the CGIAR Research Initiative on AgriLAC Resiliente has been actively focused on laying the groundwork for achieving its End of Initiative outcomes (**EOI-Os**) in five targeted countries: Colombia, Guatemala, Honduras, Mexico, and Peru. Due to budget reduction, the initiative ruled out El Salvador and Nicaragua for this phase.

In 2022, AgriLAC Resiliente produced 27 knowledge products, 13 led by the Initiative, and 14 in synergy with 6 Global Thematic Initiatives (**Digital Innovation**, **Climate Resilience**, **Excellence**

in **Agronomy**, **Nature-Positive Solutions**, **National Policies and Strategies**, and **Low-Emission Food Systems**). The Initiative has provided support for the advancement of new scientific research in the field of sustainable agriculture in the region. This support has specifically contributed to the final analysis and publication of the research, which will serve as an essential guide for future work. These contributions are reflected in one book and the following four peer-reviewed articles: (i) the effect of storage technologies on post-harvest insect pest control and seed germination (linked to **EOI-O 1**),

which is part of the socioecological-technological (SET) innovations that aim to enhance farmers' livelihoods, in this case via increases in productivity and reductions in post-harvest losses; (ii) the use of agroclimatic seasonal forecasts to improve rainfed maize agronomic management (linked to **EOI-O 2**), as part of the evidence-based recommendations provided through tailored local agroclimatic bulletins; (iii) linkages between the COVID-19 pandemic and the acceleration of deforestation (linked to **EOI-O 3**); and (iv) the co-benefits through coordinating climate action and peacebuilding (linked to **EOI-O 5**), these last two connecting development and climate change challenges.

As part of achieving **EOI-O 1**, we have deployed climate-smart and nutrition-sensitive technologies in Guatemala, Honduras, Colombia, and Mexico. These technologies are now being utilized by rural men and women in these countries. Our team of scientists and partners have worked to contextualize and design pathways for scaling genetic innovations, including improved varieties of maize, beans, and rice. In Honduras, for example, 480 farmers (33% women) are utilizing drought-tolerant beans and maize, while in Colombia, 100 farmers (44% women) are using biofortified rice and maize. Furthermore, as planned for 2022, we have trained 143 individuals in the dry corridor of Guatemala and Honduras, as well as in Colombia, to improve post-harvest and food preparation practices to preserve the nutritional value of the food prepared by local communities.

Moreover, three innovations were developed that contribute to **EOI-O 1**. Two menus of climate-resilient and nutrition-sensitive technologies were tested in Mexico (2022, Sinaloa and Chiapas) and are now ready to tailor and scale in Guatemala and Honduras (2023–2024). As part of the continuous learning approach, scientific results of the scaling process in Central America will feed back into the implementation process being done in Mexico. Also, a protocol for exploring production, market conditions, and demand for rice was developed in Colombia, for co-designing scaling strategies for

biofortified rice with the potential to help reduce nutrient deficiency in northern Colombia. Finally, we undertook a gender analysis looking at post-harvest activities for biofortified rice.

Data hub tech and tools for agroclimatic information services were developed and improved in Guatemala, which contribute to **EOI-O 2.** Those technologies and tools are leveraged from previous CGIAR work that have been enhanced to the next level and scaled through AgriLAC Resiliente. One of the major innovations related to this **EOI-O 2** is the AClimate Guatemala platform, which is open and available to access seasonal forecasts in different localities. This was inspired by previous work in Colombia through the CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS). Also, building from CCAFS, the Local Technical Agroclimatic Committees are improving as an efficient delivery mechanism of climate services. By understanding the demand, AgriLAC Resiliente enhanced the dissemination mechanisms for local agroclimatic bulletins' recommendations through radio spots. This has facilitated access to local seasonal forecasts and recommendations for their crops to 10,000 farmers (50% women and 50% men).

Through our collaboration with the Digital Inclusion Initiative, AgriLAC Resiliente has tailored an agronomic data collection and monitoring system tailored specifically for Central America (**EOI-O 2**), known as e-Agrology. This innovative system allows for the capture of detailed agronomic data from farmers' plots and research trials, building on previous work done by CGIAR. It collects approximately 500 variables per plot, per season, including data on agronomic practices, costs, yield, field visits, geolocation through polygons, post-harvest, and commercialization. This system is accessible through both web and mobile applications, with offline capabilities. This innovation is now ready for implementation throughout the region, with specific catalogues of crops, seeds, products, political divisions, ethnic groups, and agronomic cycles. Additionally,

Mixed systems Honduras.
Photo credit: O. Bonilla (CCAFS).

we have developed a Project Management module specifically for AgriLAC Resiliente, which allows us to register results from innovations, training, and knowledge products directly in alignment with the Initiative's theory of change. E-Agrology also contributes to **EOI-O 4**, as it serves as a tool for collecting key learnings from InnovaHubs and disseminating this information to public and private sector actors, National Agricultural Research and Extension Systems (NARES), and civil society across subnational agricultural innovation systems in LAC countries.

AgriLAC Resiliente and its partners have established four InnovaHubs in Guatemala and Honduras, with two hubs in each country. The InnovaHubs are based on Mexico's experience with innovation hubs and AgriLAC Resiliente is potentializing the approach to co-create and integrate multi-thematic innovations through subnational innovation platforms. This fosters knowledge exchange through a participatory framework for value addition, co-creation, and context-specific testing and validation of climate-resilient, low-emission, and nutrition-sensitive agricultural practices and technologies that are gender-responsive. The InnovaHubs offer suitable options for diverse farming households, agroecologies, climate action, and production systems. They also provide novel ways to empower local change agents who facilitate innovation

adoption and diffusion. This contributes to the achievement of **EOI-O 4**.

To address the increasing challenges related to food and nutrition security in Guatemala, particularly in the post-COVID era, there is an urgent need to align interventions and make them more resource-efficient. To this end, the Initiative has supported an analysis at the municipal level that informs current and future food security and nutrition interventions in Guatemala. These analyses provide insights on the climate-gender-migration nexus, which will be used to develop tools and strategies to enhance policy and decision-making processes (**EOI-O 5**). The results of this analysis have been requested by a group of 13 donors in Guatemala who are seeking a platform to better coordinate and complement national efforts.

Initiative-level theory of change diagram

This is a simple, linear, and static representation of a complex, non-linear, and dynamic reality. Feedback loops and connections between this Initiative and other Initiatives' theories of change are excluded for clarity.

Work Package 1: Shaping nutrition-sensitive SET 'best bets' to operationalize local AFS transition to climate-resilient nutrition pathways

EOI

Nutrition-sensitive SET innovations adapted and co-designed with AFS actors (farmers, processors, SMEs, NARES) enable local AFS in five LAC countries to effectively align the technical aspects of transition processes with the socioecological needs of at least 250,000 farmers (2022–2024). A scalable model for SET adoption along national and regional AFS transformation pathways (2025–2030)

Work Package 2: Inclusive digitally enabled agro-advisories for risk management

EOI

Producer associations, agri-tech companies, government agencies, NGOs, and public extension services are empowered by a digital ecosystem spanning three LAC countries to offer digitally enabled agro-advisory services to at least 200,000 farmers who more effectively manage climate risk and sustainable intensification across their value chains

Work Package 3: AFS development that meets both mitigation and sustainable development objectives

EOI

National and local governments in three LAC countries integrate low-emission strategies with development goals across agroecosystems, landscapes, and value chains, reaching at least 300,000 ha (2022–2024). Government, private and public investors, and extensionists realign financing streams, support functions, and MRV efforts with interventions that blend mitigation objectives with human, social, ecological, and equitable development priorities of communities (2025–2030)

Work Package 4: InnovaHub networks for agrifood innovation and scaling

EOI

Public–private sector, NARES, and civil society actors across subnational agricultural innovation systems in four LAC countries use InnovaHub learning, knowledge management, and evidence to better accelerate on-farm uptake of SET innovations, by making them more gender-responsive, production-friendly, and context-specific, reaching at least 200,000 farmers (2022–2024). Private and public sector actors (including CGIAR) scaling validated SET 'best bet' innovations via carbon-friendly transition pathways in the LAC region (2025–2030)

Work Package 5: Science-informed policies, investments, and institutions

EOI

Public and private institutions in three LAC countries use CGIAR science, evidence, and tools to inform and shape more transformative, sustainable, mitigation-comprehensive, and climate adaptation-friendly AFS-related policies, incentives, and initiatives. These will be mainstreamed and scaled throughout six LAC countries helping actors/stakeholders realign and transition their AFS to more sustainable pathways that meet climate and broader development objectives (2025–2030)

EOI — End of Initiative outcome

AA — Action Area

IA — Impact Area

SDG — Sustainable Development Goal

Nutrition, Health, and Food Security

Poverty Reduction, Livelihoods, and Jobs

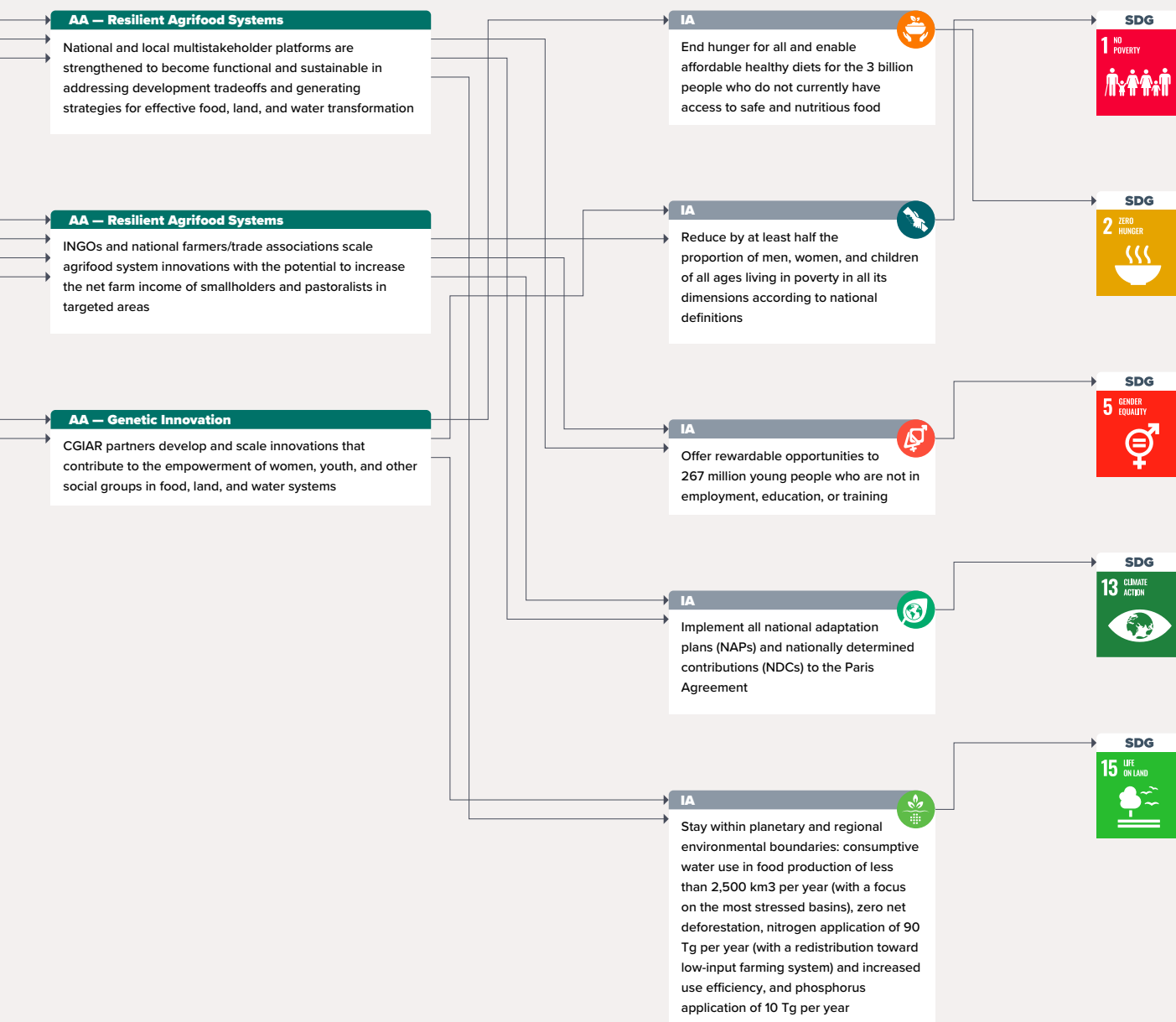Gender Equality, Youth, and Social Inclusion

Climate Adaptation and Mitigation

Environmental Health and Biodiversity

Teams from CGIAR's three Action Areas — System Transformation, Resilient Agrifood Systems and Genetic Innovation — worked to develop an improved set of Action Area outcomes in October 2022. Since this was near the end of the reporting cycle for 2022, it was decided not to update the theories of change based on these new Action Area outcomes.

The exception to this is Genetic Innovation — for this Action Area, as the new outcomes had already been widely discussed among the relevant Initiatives, and with its advisory group of funders and other stakeholders, the decision was made to update their outcomes in time for the 2022 reporting cycle.

AA — Resilient Agrifood Systems

National and local multistakeholder platforms are strengthened to become functional and sustainable in addressing development tradeoffs and generating strategies for effective food, land, and water transformation

AA — Resilient Agrifood Systems

INGOs and national farmers/trade associations scale agrifood system innovations with the potential to increase the net farm income of smallholders and pastoralists in targeted areas

AA — Genetic Innovation

CGIAR partners develop and scale innovations that contribute to the empowerment of women, youth, and other social groups in food, land, and water systems

IA

End hunger for all and enable affordable healthy diets for the 3 billion people who do not currently have access to safe and nutritious food

IA

Reduce by at least half the proportion of men, women, and children of all ages living in poverty in all its dimensions according to national definitions

IA

Offer rewardable opportunities to 267 million young people who are not in employment, education, or training

IA

Implement all national adaptation plans (NAPs) and nationally determined contributions (NDCs) to the Paris Agreement

IA

Stay within planetary and regional environmental boundaries: consumptive water use in food production of less than 2,500 km3 per year (with a focus on the most stressed basins), zero net deforestation, nitrogen application of 90 Tg per year (with a redistribution toward low-input farming system) and increased use efficiency, and phosphorus application of 10 Tg per year

SDG
1 NO POVERTY

SDG
2 ZERO HUNGER

SDG
5 GENDER EQUALITY

SDG
13 CLIMATE ACTION

SDG
15 LIFE ON LAND

Progress by End of Initiative outcome

EOI-O 1: Nutrition-sensitive SET innovations adapted and co-designed with AFS actors (farmers, processors, SMEs, NARES) enable local AFS in five LAC countries to effectively align the technical aspects of transition processes with the socioecological needs of at least 250,000 farmers (2022–2024). A scalable model for SET adoption along national and regional AFS transformation pathways (2025–2030).

AgriLAC Resiliente is working toward promoting the adoption of nutrition-sensitive and climate-resilient technologies by local actors in the agrifood system (AFS) across four countries: Guatemala, Honduras, Colombia, and Mexico. The Initiative, in collaboration with NARES and other partners, disseminated improved varieties of maize, beans, and rice in Honduras and Colombia. To scale up the adoption of SET innovations, we tested two menus of climate-resilient and nutrition-sensitive technologies in southern Mexico, which will be validated in InnovaHubs located in Guatemala and Honduras with local partners. These menus will assist maize farmers in making informed decisions on agronomic and post-harvest practices, considering both climate and nutrition factors. AgriLAC's focus is on building local capacity and strengthening the knowledge of our partners on the ground to enable them to become trainers of trainers and drive sustained impact in the long term. For this reason, we provided training on relevant topics to local farmers, such as post-harvest and food preparation practices, to teach communities in Guatemala, Honduras, and Colombia how to retain the nutritional value of their food.

EOI-O 2: Producer associations, agri-tech companies, government agencies, NGOs, and public extension services are empowered by a digital ecosystem spanning three LAC countries to offer digitally enabled agro-advisory services to at least 200,000 farmers who more effectively manage climate risk and sustainable intensification across their value chains.

To progress toward the empowerment of AFS stakeholders to offer digitally enabled agro-advisory services for farmers, AgriLAC Resiliente tailored and adapted two innovations (AClimate Guatemala and e-Agrology Central America). These innovations have the potential to enable a digital ecosystem for increasing capability to manage climate risk more effectively and sustainably intensify production and value chains.

The improvement of climate information services (CIS) dissemination mechanisms is highly relevant to address local farmers' information needs in Guatemala. AgriLAC Resiliente made such improvements including: (i) improved and easy-to-understand seasonal (quarterly) agroclimatic bulletins to local stakeholders and farmers; (ii) new weather agroclimatic bulletins (bi-weekly) disseminated by LTAC social network groups; (iii) participatory CIS approaches; and (iv) radio spots derived from the mentioned bulletins. As a result of these enhanced dissemination mechanisms of the local agroclimatic bulletins, about 5,100 women and 4,900 men are receiving tailored climate information in Guatemala.

EOI-O 3: National and local governments in three LAC countries integrate low-emission strategies with development goals across agroecosystems, landscapes, and value chains reaching at least 300,000 ha (2022–2024). Government, private and public investors, and extensionists realign financing streams, support functions, and MRV efforts with interventions that blend mitigation objectives with human, social, ecological, and equitable development priorities of communities (2025–2030).

The integration of sustainable development goals with low emission strategies requires national and local information for providing evidence-based tools and recommendations to policy and decision-makers. AgriLAC's dataset of social, economic, and environmental data on main deforestation drivers was gathered in Peru to provide such evidence. Moreover, AgriLAC Resiliente, its partners and key stakeholders in Colombia discussed the interactions between development goals and climate change mitigation actions to then inform policy recommendations at subnational and national scales. Another big challenge in reconciling climate change mitigation targets and development actions, such as peacebuilding, lies in measuring any intervention's contribution. To this end, AgriLAC Resiliente developed a conceptual framework to provide guidelines to measure the interventions' contributions in agriculture to mitigate climate change and build peace.

EOI-O 4: Public–private sector, NARES, and civil society actors across subnational agricultural innovation systems in four LAC countries use InnovaHub learning, knowledge management, and evidence to better accelerate on-farm uptake of SET innovations, by making them more gender-responsive, production-friendly, and context-specific, reaching at least 200,000 farmers (2022–2024). Private and public sector actors (including CGIAR) scaling validated SET 'best bet' innovations via carbon-friendly transition pathways in the LAC region (2025–2030).

To foster co-creation across agricultural innovation systems, it is essential to invest intensive and continuous effort in building relationships, developing social capital, and identifying common interests. In pursuit of this goal, AgriLAC Resiliente established four InnovaHubs in Guatemala and Honduras, which serve as the foundation for the initiative's collaboration with local partners ranging from farmers to agribusinesses and buyers.

The operation of the InnovaHubs requires mutual agreements with local stakeholders to determine which innovations are needed for specific purposes and how they can be rapidly and sustainably adopted at scale, as was done in 2022. These hubs are strategically located to encourage local partners, national and regional stakeholders to embrace our integrated, multi-thematic, and science-based approach to the most pressing challenges in the region. We conducted extensive work to characterize local territories and identify stakeholders' interests. Furthermore, we established networks of partners in the InnovaHubs, enabling all work packages and thematic initiatives to join co-creation processes and validation efforts to tailor our SET innovations to meet the demand in a gender-responsive and climate-resilient manner.
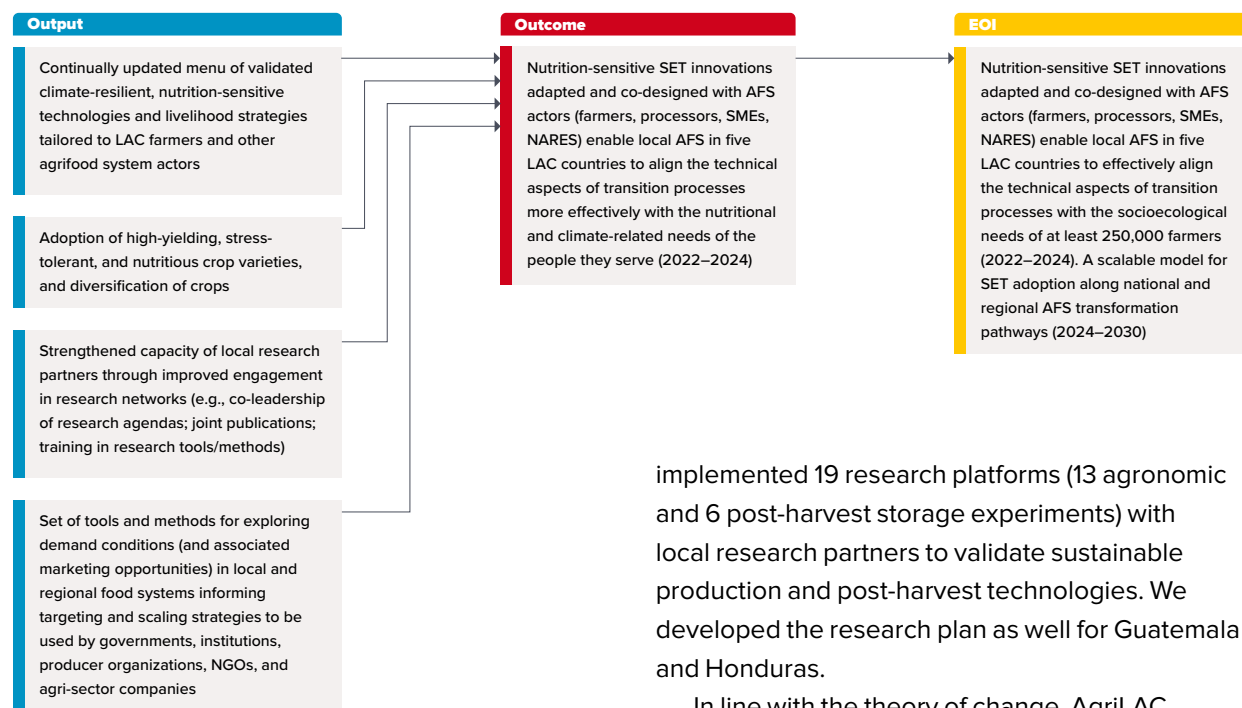
EOI-O 5: Public and private institutions in three LAC countries use CGIAR science, evidence, and tools to inform and shape more transformative, sustainable, mitigation-comprehensive, and climate adaptation-friendly AFS-related policies, incentives, and initiatives. These will be mainstreamed and scaled throughout six LAC countries helping actors/stakeholders realign and transition their AFS to more sustainable pathways that meet climate and broader development objectives (2025 -2030).

To address the increasing challenges of food and nutrition security in Guatemala, AgriLAC responded to the demand from national stakeholders by developing a technical note. The note maps key municipal-level food security and nutrition interventions in Guatemala, aiming to identify municipalities with a saturation of interventions and a lack of interventions. This output will inform work by the group of 13 donors in Guatemala, which seeks to explore synergies among their interventions in the country, which have had limited success to date. Additionally, recognizing the importance of the coffee sector in Guatemala and Peru, AgriLAC initiated multi-sectoral discussions to create a consensus among stakeholders and decision-makers about the need for public–private national strategic planning in their respective sectors. These discussions will inform the revision and adjustment, as well as further implementation of Integrated Agrifood Systems Initiatives that connect at the subnational scale with the InnovaHubs.

Section 3 Work Package-specific progress

Work Package 1:
Shaping nutrition-sensitive SET 'best bets' to operationalize local AFS transition to climate-resilient nutrition pathways

Output	Outcome	EOI
Continually updated menu of validated climate-resilient, nutrition-sensitive technologies and livelihood strategies tailored to LAC farmers and other agrifood system actors	Nutrition-sensitive SET innovations adapted and co-designed with AFS actors (farmers, processors, SMEs, NARES) enable local AFS in five LAC countries to align the technical aspects of transition processes more effectively with the nutritional and climate-related needs of the people they serve (2022–2024)	Nutrition-sensitive SET innovations adapted and co-designed with AFS actors (farmers, processors, SMEs, NARES) enable local AFS in five LAC countries to effectively align the technical aspects of transition processes with the socioecological needs of at least 250,000 farmers (2022–2024). A scalable model for SET adoption along national and regional AFS transformation pathways (2024–2030)
Adoption of high-yielding, stress-tolerant, and nutritious crop varieties, and diversification of crops		
Strengthened capacity of local research partners through improved engagement in research networks (e.g., co-leadership of research agendas; joint publications; training in research tools/methods)		
Set of tools and methods for exploring demand conditions (and associated marketing opportunities) in local and regional food systems informing targeting and scaling strategies to be used by governments, institutions, producer organizations, NGOs, and agri-sector companies		

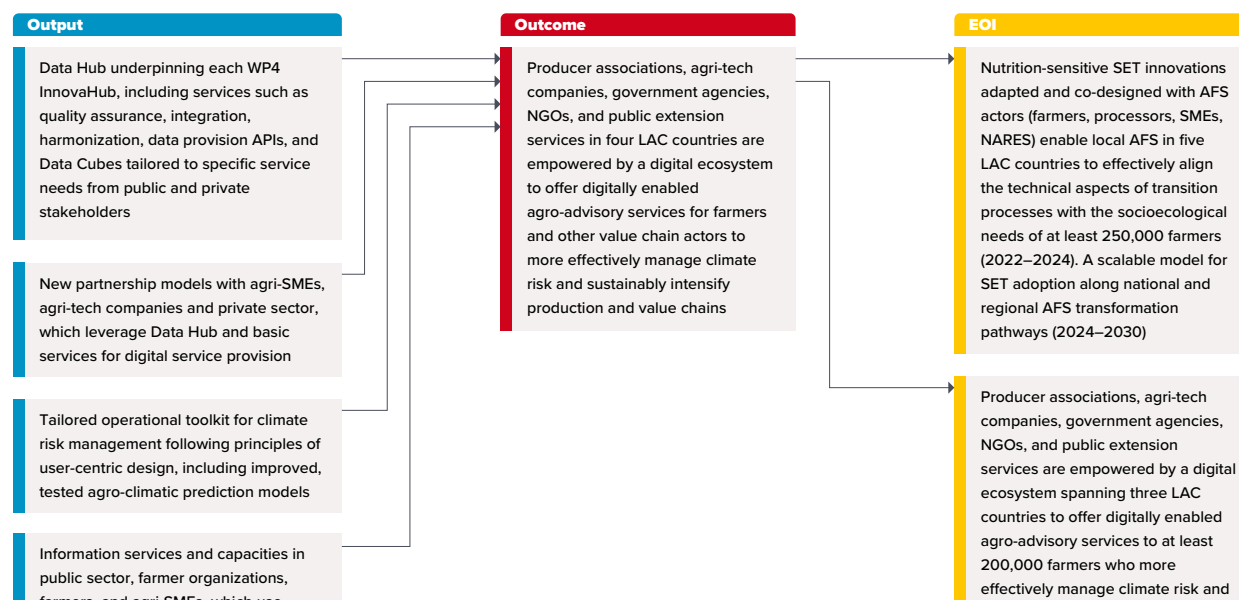## Work Package 1 progress against the theory of change

To ensure farmers' access to climate-resilient and nutrition-sensitive technologies, AgriLAC Resiliente validated more nutritious crops (maize, rice, and beans) adapted to conditions in Guatemala, Honduras, and Colombia with 32 rural communities and more than 600 households. We also built capacity on topics related to seed systems, agricultural practices, post-harvest and markets. In Colombia, two demo-plots evaluated ancestral versus agroecological practices, and a methodology was developed to explore the productive capacity and demand conditions. We also documented the process to validate and update the menu of technologies for two states (Sinaloa and Chiapas), which will serve as pilot experiences for similar work in Guatemala and Honduras (**output 1**). Moreover, the Initiative

implemented 19 research platforms (13 agronomic and 6 post-harvest storage experiments) with local research partners to validate sustainable production and post-harvest technologies. We developed the research plan as well for Guatemala and Honduras.

In line with the theory of change, AgriLAC Resiliente and partners developed joint outputs that reflect the emphasis on building capacity efforts (**output 2**): a book on agronomic research results in north-western Mexico; a review on agronomic research in milpa systems (a production system where maize and other crops, usually beans, are grown together) (submitted); a conference abstract about adaptation of tillage practices; and a paper on how maize seed quality is affected by storage. Moreover, 4 farmer associations (1 from Colombia and 3 from Guatemala), represented by 40 beneficiaries (16 women and 24 men), joined a training on post-harvest practices (for rice in Colombia and maize and beans for Guatemala) to meet market requirements (**output 4**). The gender team assisted in understanding the gender dynamics around rice post-harvest practices that were generating conflict in one community in Colombia, drawing lessons and recommendations for the farmers' association, local partner organization, and the Initiative's team that are relevant for other similar interventions.

Work Package 2:
Inclusive digitally enabled agro-advisories for risk management

Output	Outcome	EOI
Data Hub underpinning each WP4 InnovaHub, including services such as quality assurance, integration, harmonization, data provision APIs, and Data Cubes tailored to specific service needs from public and private stakeholders	Producer associations, agri-tech companies, government agencies, NGOs, and public extension services in four LAC countries are empowered by a digital ecosystem to offer digitally enabled agro-advisory services for farmers and other value chain actors to more effectively manage climate risk and sustainably intensify production and value chains	Nutrition-sensitive SET innovations adapted and co-designed with AFS actors (farmers, processors, SMEs, NARES) enable local AFS in five LAC countries to effectively align the technical aspects of transition processes with the socioecological needs of at least 250,000 farmers (2022–2024). A scalable model for SET adoption along national and regional AFS transformation pathways (2024–2030)
New partnership models with agri-SMEs, agri-tech companies and private sector, which leverage Data Hub and basic services for digital service provision		
Tailored operational toolkit for climate risk management following principles of user-centric design, including improved, tested agro-climatic prediction models		Producer associations, agri-tech companies, government agencies, NGOs, and public extension services are empowered by a digital ecosystem spanning three LAC countries to offer digitally enabled agro-advisory services to at least 200,000 farmers who more effectively manage climate risk and
Information services and capacities in public sector, farmer organizations, farmers, and agri-SMEs, which use		

Work Package 2
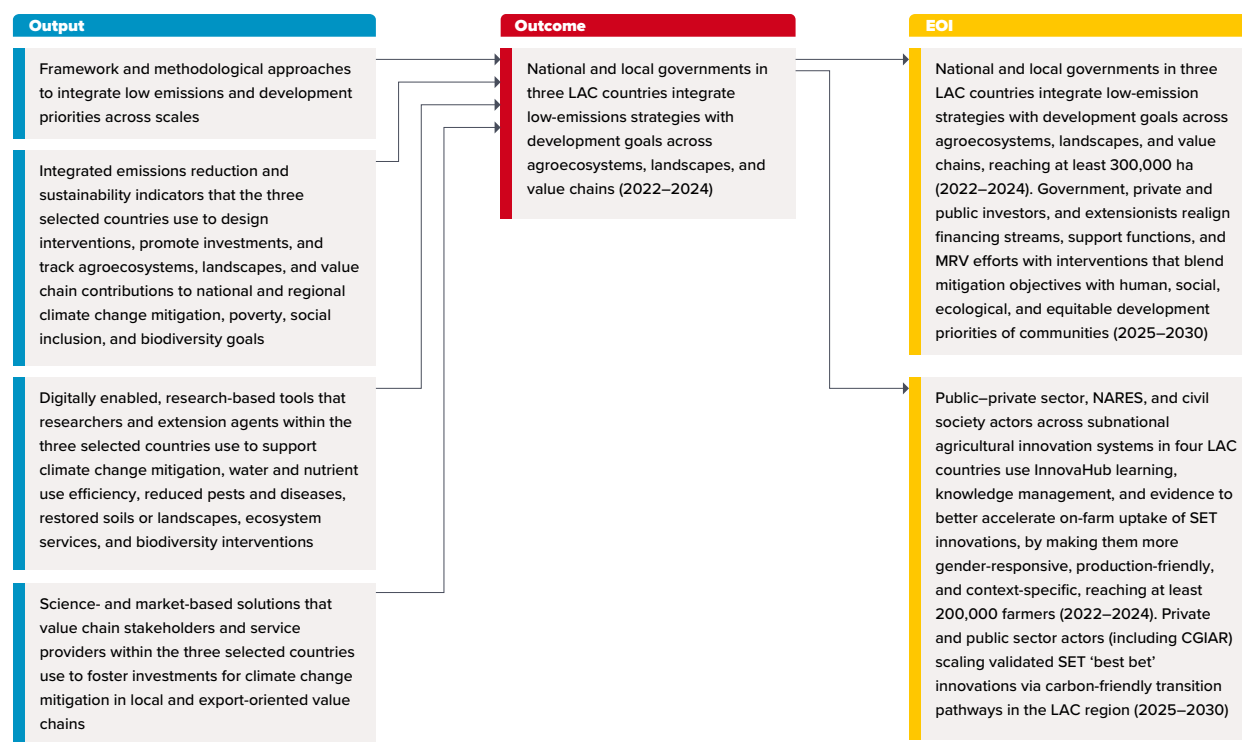## progress against the theory of change

Work Package 2 (WP2) made substantial progress towards its four major outputs and intermediate outcomes and answering the research questions. First, we made significant progress in modernizing data collection, quality control, transformation, and use, with five partners in both Honduras and Guatemala (output 1). This required establishing long-term partnerships with two public and three private stakeholders (**output 2**). These partners are now leveraging data hub technologies and tools for improving process efficiency and better agroclimatic information service provision (research question 1). Notably, these partners include the National Meteorological Services, which are critical in the digital climate services ecosystem, as well as farmer organizations who contribute with data and are service users. Second, based on findings related to research question 2, we deployed local versions of e-Agrology to support data collection for the InnovaHub, and a Guatemalan version of the AClimate Climate Services Platform, as part

of the operational climate risk management toolkit (output 3). Currently, a user-centric design (UCD) approach is being deployed with a gender focus for AClimate to be most impactful in both countries (**outputs 3 and 4**), based on user consultation (surveys), as well as specific UCD workshops with stakeholders. Finally, we continued strengthening the Local Technical Agroclimatic Committees (LTACs, or MTAs in Spanish) as a key delivery mechanism for climate action services in both countries (output 4), partly enriched by findings around gender and climate services in the region. These currently engage over 100 public and private organizations (e.g., including the ministries of agriculture and environment, national meteorological services, academia, national and local associations, non-governmental organizations (NGOs), international cooperation agencies, civil society groups, among other actors) throughout the two countries. With the LTACs, we enhanced dissemination of the agroclimatic bulletin via radio spots, therefore reaching a much wider farming community than previously. So far, all WP2 theory of change assumptions hold.

Work Package 3:
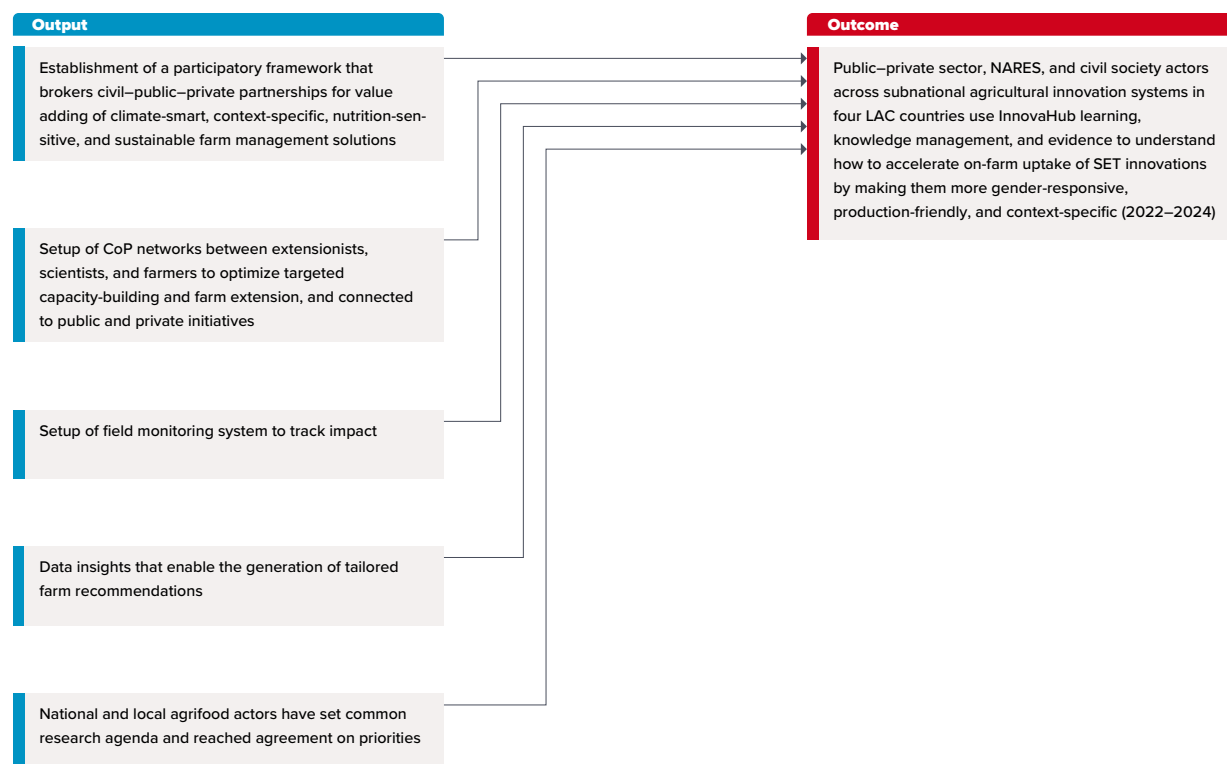## AFS development that meets both mitigation and sustainable development objectives

Output	Outcome	EOI
Framework and methodological approaches to integrate low emissions and development priorities across scales	National and local governments in three LAC countries integrate low-emissions strategies with development goals across agroecosystems, landscapes, and value chains (2022–2024)	National and local governments in three LAC countries integrate low-emission strategies with development goals across agroecosystems, landscapes, and value chains, reaching at least 300,000 ha (2022–2024). Government, private and public investors, and extensionists realign financing streams, support functions, and MRV efforts with interventions that blend mitigation objectives with human, social, ecological, and equitable development priorities of communities (2025–2030)
Integrated emissions reduction and sustainability indicators that the three selected countries use to design interventions, promote investments, and track agroecosystems, landscapes, and value chain contributions to national and regional climate change mitigation, poverty, social inclusion, and biodiversity goals		
Digitally enabled, research-based tools that researchers and extension agents within the three selected countries use to support climate change mitigation, water and nutrient use efficiency, reduced pests and diseases, restored soils or landscapes, ecosystem services, and biodiversity interventions		Public–private sector, NARES, and civil society actors across subnational agricultural innovation systems in four LAC countries use InnovaHub learning, knowledge management, and evidence to better accelerate on-farm uptake of SET innovations, by making them more gender-responsive, production-friendly, and context-specific, reaching at least 200,000 farmers (2022–2024). Private and public sector actors (including CGIAR) scaling validated SET 'best bet' innovations via carbon-friendly transition pathways in the LAC region (2025–2030)
Science- and market-based solutions that value chain stakeholders and service providers within the three selected countries use to foster investments for climate change mitigation in local and export-oriented value chains		

Work Package 3
progress against the theory of change

In 2022, we focused on the understanding of the underlying drivers of land-use change, analyzing and collecting data at global (COVID-19 and deforestation) and national level. Migration in Peru and land-acquisition processes in Colombia are among the drivers of deforestation dynamics and are linked to contexts where climate change and conflict exacerbate socioeconomic vulnerability. Understanding these dynamics at the local level, as well as the priorities with respect to the Sustainable Development Goals (SDGs), is important because climate change mitigation is integrated into the development agendas, but the co-benefits it brings to development are not always visible. Thus, in addition to training on basic concepts of climate change and SDGs, data on development priorities and limitations associated with climate change was collected in both countries during six workshops with local stakeholders for the selected value chains. We contributed to the design of a framework to evaluate how sustainable land-use systems contributed to peacebuilding in Colombia. We will use this framework to evaluate SDG 1 on no poverty and SDG 2 on zero hunger, at the local and national level. Finally, we strengthened our relationship with local actors. Through interacting with and listening to the needs of our partners, we were able to engage more closely with decision-makers and their organizations. We expect this will enhance our prospects of influencing public policy.

Work Package 4:
InnovaHub networks for agrifood innovation and scaling

Output

Establishment of a participatory framework that brokers civil–public–private partnerships for value adding of climate-smart, context-specific, nutrition-sensitive, and sustainable farm management solutions

Setup of CoP networks between extensionists, scientists, and farmers to optimize targeted capacity-building and farm extension, and connected to public and private initiatives

Setup of field monitoring system to track impact

Data insights that enable the generation of tailored farm recommendations

National and local agrifood actors have set common research agenda and reached agreement on priorities

Outcome

Public–private sector, NARES, and civil society actors across subnational agricultural innovation systems in four LAC countries use InnovaHub learning, knowledge management, and evidence to understand how to accelerate on-farm uptake of SET innovations by making them more gender-responsive, production-friendly, and context-specific (2022–2024)

Producer associations, agri-tech companies, government agencies, NGOs, and public extension services are empowered by a digital ecosystem spanning three LAC countries to offer digitally enabled agro-advisory services to at least 200,000 farmers who more effectively manage climate risk and sustainable intensification across their value chains

Public–private sector, NARES, and civil society actors across subnational agricultural innovation systems in four LAC countries use InnovaHub learning, knowledge management, and evidence to better accelerate on-farm uptake of SET innovations, by making them more gender-responsive, production-friendly, and context-specific, reaching at least 200,000 farmers (2022–2024). Private and public sector actors (including CGIAR) scaling validated SET 'best bet' innovations via carbon-friendly transition pathways in the LAC region (2025–2030)

Public and private institutions in three LAC countries use CGIAR science, evidence, and tools to inform and shape more transformative, sustainable, mitigation-comprehensive, and climate adaptation-friendly AFS-related policies, incentives, and initiatives. These will be mainstreamed and scaled throughout six LAC countries helping actors/stakehold-ers realign and transition their AFS to more sustainable pathways that meet climate and broader development objectives (2025–2030)

Work Package 4
progress against the theory of change

InnovaHubs are the mechanism to co-innovate with partners on the ground. By building on previous work and established partnerships, the InnovaHubs integrate multi-thematic interventions to address complex challenges. In 2022, WP4 made significant progress toward two of four major outputs and initiated essential processes of intermediate outcomes.

In Guatemala and Honduras, the participatory framework at subnational level was rolled out with interaction between local civil, private, and public stakeholders, resulting in the establishment of four InnovaHubs (two in each country) (**output 1**). Community-level diagnostics and a characterization exercise per intervention area, including a localized mapping of value-chain actors, were performed. In the process, consultative workshops were held, where leader men and women farmers, technical farm professionals, and public and private representatives exchanged experiences and discussed a common research agenda and drivers for change based on local context (**output 2**).
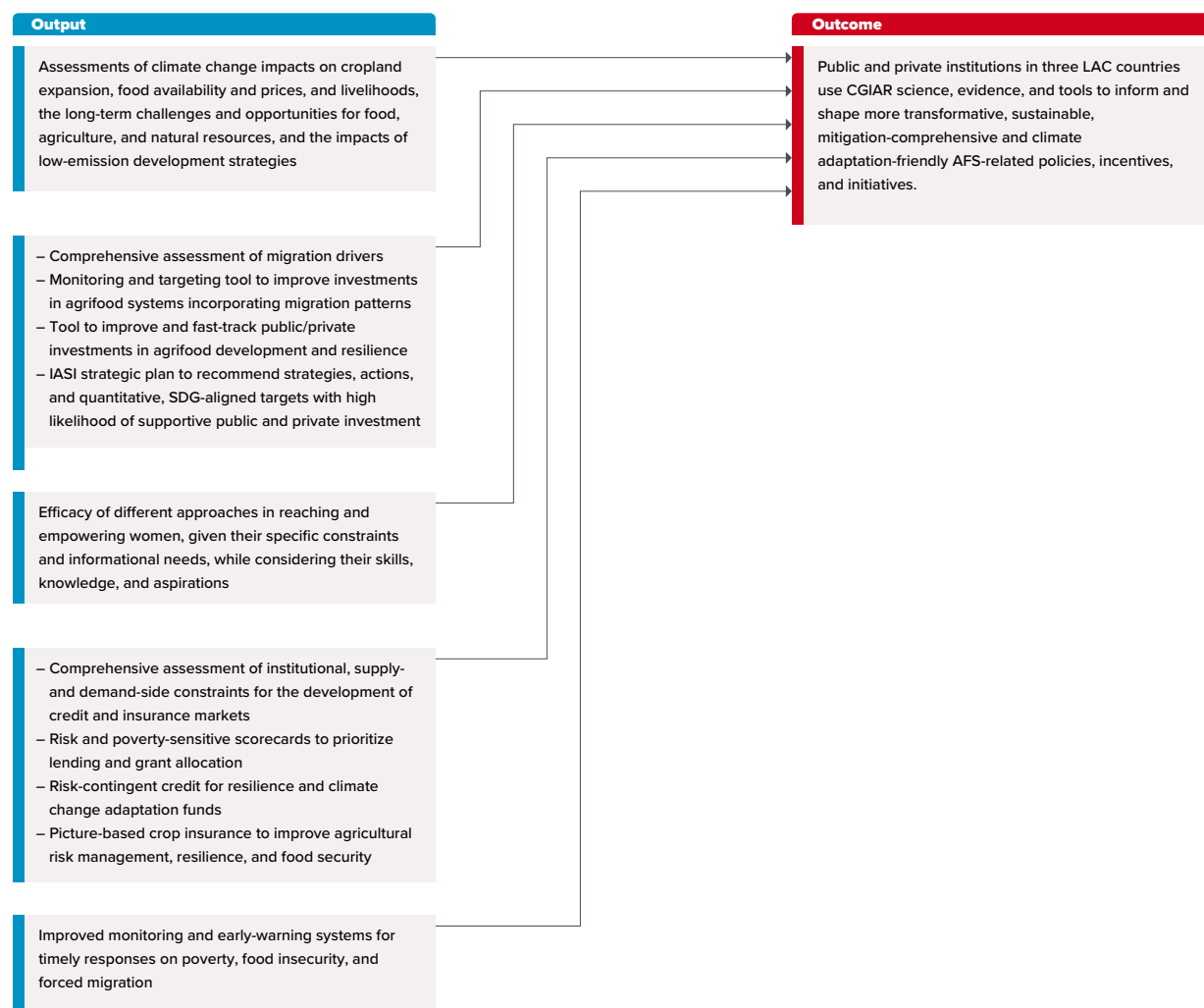
Training and capacity-building activities were done in Guatemala, in which AgriLAC collaborated with stakeholders to develop digital agriculture professionals in critical locations along the Central American Dry Corridor. A total of 26 professionals completed a digital agriculture diploma course, designed and implemented to enhance the stakeholders' capacity in digital agriculture to enable better informed, data-driven decisions **(output 3)**.

As InnovaHubs are part of the AgriLAC's scaling pathway, the Scaling Scan tool, developed in Nigeria, was applied to the LTACs, an innovation from which the Initiative is building on, enabling an understanding of how to increase farmers' outreach through the InnovaHubs (**output 4**).

WP4 focused on extracting lessons from Mexico's innovation hubs so that the methodology is revisited and adapted to more holistic and contextualized settings to fit other realities. In Colombia and Peru, the InnovaHubs concept was introduced to national stakeholders.

Work Package 5:
Science-informed policies, investments, and institutions

Output

Assessments of climate change impacts on cropland expansion, food availability and prices, and livelihoods, the long-term challenges and opportunities for food, agriculture, and natural resources, and the impacts of low-emission development strategies

– Comprehensive assessment of migration drivers
– Monitoring and targeting tool to improve investments in agrifood systems incorporating migration patterns
– Tool to improve and fast-track public/private investments in agrifood development and resilience
– IASI strategic plan to recommend strategies, actions, and quantitative, SDG-aligned targets with high likelihood of supportive public and private investment

Efficacy of different approaches in reaching and empowering women, given their specific constraints and informational needs, while considering their skills, knowledge, and aspirations

– Comprehensive assessment of institutional, supply- and demand-side constraints for the development of credit and insurance markets
– Risk and poverty-sensitive scorecards to prioritize lending and grant allocation
– Risk-contingent credit for resilience and climate change adaptation funds
– Picture-based crop insurance to improve agricultural risk management, resilience, and food security

Improved monitoring and early-warning systems for timely responses on poverty, food insecurity, and forced migration

Outcome

Public and private institutions in three LAC countries use CGIAR science, evidence, and tools to inform and shape more transformative, sustainable, mitigation-comprehensive and climate adaptation-friendly AFS-related policies, incentives, and initiatives.

Public and private institutions in three LAC countries use CGIAR science, evidence, and tools to inform and shape more transformative, sustainable, mitigation-comprehensive, and climate adaptation-friendly AFS-related policies, incentives, and initiatives. These will be mainstreamed and scaled throughout six LAC countries helping actors/stakeholders realign and transition their AFS to more sustainable pathways that meet climate and broader development objectives (2025–2030)

Work Package 5
progress against the theory of change

WP5 focused its work on Guatemala and made important progress with an initial mapping of public policies on food security and nutrition, climate change, and migration, which will help identify key gaps and areas of opportunity (**output 1**) where it would be more feasible to apply the Integrated Agrifood System Initiative (IASI) methodology and derive tailored policy recommendations for specific value chains (**output 2**). We performed a comprehensive assessment of the coffee value chain (**output 1**), identifying major strengths and challenges, which was used as the basis for an initial stakeholder consultation workshop (**output 1**). In parallel, we carried out a subnational mapping of programs and interventions in food security and nutrition to identify specific areas with possible investment gaps and areas with saturation of interventions. This exercise (**output 1**) caught the attention of the group of 13 donors in Guatemala, and next we will generate a tool (platform) to help local institutions better coordinate and complement efforts in the country.

We started two quantitative studies linked to climate change, migration, and gender: (i) Cultural and economic barriers and opportunities for the participation of women in agricultural and livestock activities (recently submitted to the special issue of Frontiers, 'Leveraging Gender, Youth and Social Networks for Inclusive and Transformative Livestock Production in the Tropics and Subtropics'); and (ii) Climate stresses and emigration (will also result in a scientific article). Lastly, we are strengthening our relationships with key actors in Guatemala, Honduras, and Peru to expand and/or scale up part of the activities or interventions being performed across the Initiative.

Work Package progress rating

WORK PACKAGE	TRAFFIC LIGHT / RATIONALE
1	The team executed the proposal in nine months according to plan, defining a nutrition-sensitive (SET) approach, which meets the requirements of communities in the four countries, focusing on research about markets, improved nutrition and productivity, access to new technologies and strengthened local research capacity.
2	All major theory of change assumptions hold. Moreover, we were able to make progress on all four major WP2 outputs, namely, data hubs and data architecture modernization, new partnerships and partnership models, climate risk management toolkit, and improved information services for farmers and agricultural small and medium-sized enterprises (SMEs). Adjustments to the theory of change are suggested based on actual funding allocations.
3	The WP3 executed the 2022 scheduled activities according to the Budget adjustment and without significant impacts of contracting issues. The WP3 is on track since it originally contemplated the identification of value chains, partners, and stakeholders, knowledge-building on their priorities, land-use change dynamics, and conceptualization of integrated frameworks.
4	The framework to establish InnovaHub in the intervention countries was successfully implemented in Guatemala and Honduras, resulting in the establishment of four new InnovaHubs. Operational innovation hubs in Mexico continue to consolidate innovation insights for sustainable replication and scaling. These concepts and lessons were introduced in Colombia and Peru, creating awareness and interest among civil society and public and private sector stakeholders. Key actors in all countries have been identified, and partnerships established that form the backbone of these new InnovaHubs. Priorities that identify needs for best bet recommendations were formulated, and initial steps to set up the subnational CoP between farmers, and technical farm professionals were made. The progress made so far was possible because all major assumptions were upheld as true.
4	WP5 is overall on track and all major theory of change assumptions are held. Given that the goal of the WP is to contribute with science-informed policies and investments, 2022 served to perform an initial mapping of public policies in Guatemala at the national level (which is in its final phase) and at the subnational level, which has also caught the attention of important stakeholders in the country. The WP made progress on an in-depth analysis of the coffee value chain (given its importance for Guatemala), in addition to the first stakeholder workshop and the installation of the group of experts. Quantitative and qualitative studies on climate change, migration, and gender are in their final phase and planned to be published as journal articles, which will be finalized by 2023-I.

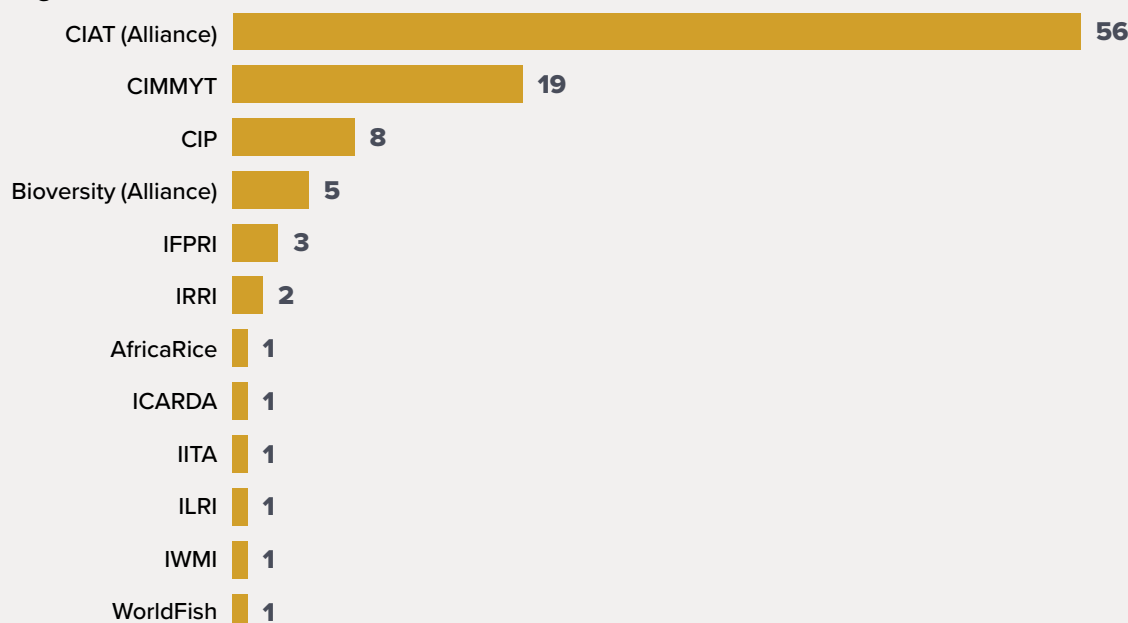| **On track** | 🟢 | • Annual progress largely aligns with Plan of Results and Budget and Work Package theory of change |
		• Can include small deviations/issues/ delays/risks that do not jeopardise success of Work Package
Delayed	🟡	• Annual progress slightly falls behind Plan of Results and Budget and Work Package theory of change in key areas
		• Deviations/issues/delays/risks could jeopardise success of Work Package if not managed appropriately
Off track	🔴	• Annual progress clearly falls behind Plan of Results and Budget and Work Package theory of change in most/all areas
		• Deviations/issues/delays/risks do jeopardise success of Work Package

Section 4 Initiative key results

This section provides an overview of 2022 results reported by AgriLAC Resiliente. These results align with the CGIAR Results Framework and AgriLAC Resiliente's theory of change. Further information on these results is available through the CGIAR Results Dashboard.

Overview

Results	Outputs					Outcomes		
73	**5** SDGs	**15** Capacity sharing for development	**10** Innovation development	**27** Knowledge products	**10** Other outputs	**9** Innovation use	**1** Policy change	**1** Capacity change

Contributing CGIAR Centers

CIAT (Alliance)	56
CIMMYT	19
CIP	8
Bioversity (Alliance)	5
IFPRI	3
IRRI	2
AfricaRice	1
ICARDA	1
IITA	1
ILRI	1
IWMI	1
WorldFish	1

Results by Work Package

Work Package						
Work Package 1	8	3	6	4	2	
Work Package 2	1	1	5	7	3	
Work Package 3	2	1	11	1	1	
Work Package 4	2	1	1	4	2	
Work Package 5	2	1	1	2		

● Impact ● Policy change ● Innovation use ● Capacity change
● Other outcomes ● Knowledge product ● Capacity sharing for development
● Innovation development ● Other output

Contributing partners

Partner	Value
Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología	8
Ministerio de Agricultura, Ganadería y Alimentación (Guatemala)	8
Asociación Regional de Servicios Agropecuarios de Oriente	7
Corporación Colombiana de Investigación Agropecuaria	7
Dirección de Ciencia y Tecnología Agropecuaria	5
Servicio Nacional de Aprendizaje	5
Wageningen University and Research Centre	5
Asociación de Cooperación para el desarrollo Rural de Occidente	4
Asociación de Organizaciones de los Cuchumatanes	4
Fundación Promotora del Canal del Dique	4
Leibniz Centre for Agricultural Landscape Research	4
Ministerio de Agricultura y Desarrollo Rural (Colombia)	4
ASOCIACIÓN REGIONAL CAMPESINA CHORTÍ	3
Centro Universitario de Oriente	3
Food and Agriculture Organization of the United Nations	3
Instituto de Ciencia y Tecnología Agrícolas (Guatemala)	3
Instituto Interamericano de Cooperacion para la Agricultura (Guatemala)	3
International Research Institute for Climate and Society	3
Ministerio de Ambiente y Desarrollo Sostenible (Colombia)	3
Asociación Regional Campesina Chorti	2

Results by climate change tag

22 (30.14%)

28 (38.36%)

23 (31.51%)

○ 0 — Not targeted ● 1 — Significant ● 2 — Principal

0 = **Not targeted:** The activity does not target climate mitigation, adaptation, and climate policy goals of the CGIAR as put forward in its strategy.

1 = **Significant:** The activity contributes in significant ways to either one of the three CGIAR climate-related strategy objectives — namely, climate mitigation, climate adaptation, and climate policy, even though it is not the principal focus of the activity.

2 = **Principal:** The activity is principally about meeting either one of the three CGIAR climate-related strategy objectives — namely, climate mitigation, climate adaptation, and climate policy, and would not have been undertaken without these objectives.

Results by gender tag

17 (23.29%)

53 (72.60%)

○ 0 — Not targeted ● 1 — Significant ● 2 — Principal
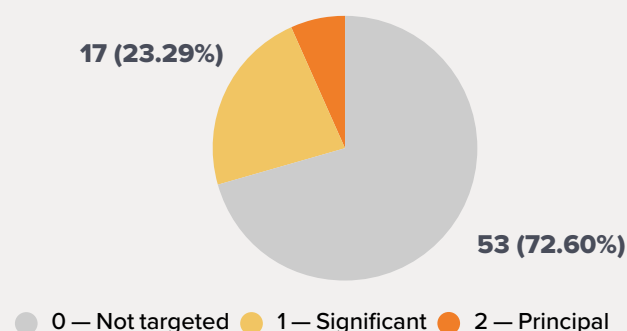
0 = **Not targeted:** The activity/result does not target gender equality.

1 = **Significant:** The activity/result contributes in significant ways to gender equality, even though it is not the principal focus of the activity.

2 = **Principal:** Gender equality is the main objective of the activity/result and is fundamental in its design and expected results.

Capacity development trainees by gender

	Female	Male
Trainees by gender	116	256
Innovation users by gender	5,760	6,226

● Female ● Male
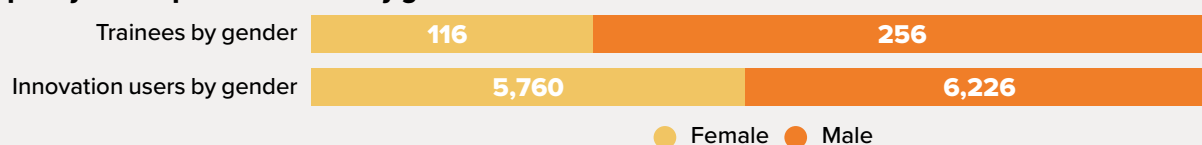
Innovations by readiness level

9	PROVEN INNOVATION – The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions	**3**
8	UNCONTROLLED TESTING – The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions	**0**
7	PROTOTYPE – The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions	**2**
6	SEMI-CONTROLLED TESTING – The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions	**1**
5	MODEL/EARLY PROTOTYPE – The innovation is validated for its ability to achieve a specific impact under fully-controlled conditions	**1**
4	CONTROLLED TESTING – The innovation is being tested for its ability to achieve a specific impact under fully-controlled conditions	**1**
3	PROOF OF CONCEPT – The innovation's key concepts have been validated for their ability to achieve a specific impact	**0**
2	FORMULATION – The innovation's key concepts are being formulated or designed	**1**
1	BASIC RESEARCH – The innovation's basic principles are being researched for their ability to achieve a specific impact	**1**
0	IDEA – The innovation is at idea stage	**0**

Results by country
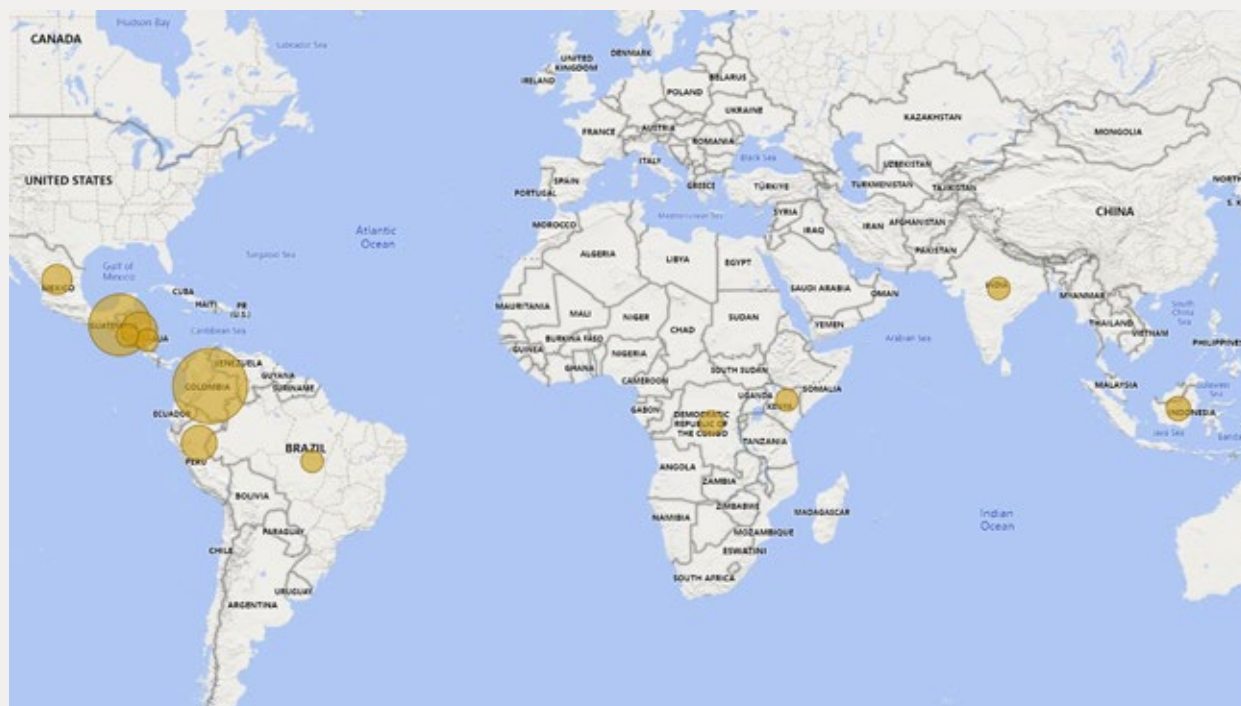
Section 5 Impact pathway integration – External partners

Top five institution types
- 🟢 All other categories
- 🔵 Government (National)
- 🟣 NGO Local (Farmers)
- 🟡 NGO (National) (Farmers)
- ⚫ Not applicable
- 🌸 Private company (other than financial)
- 🔴 Research O&U (National) (Universities)

Labels shown in diagram:
- Corporación Colombiana de Investigación Agropecuaria
- Servicio Nacional de Aprendizaje
- AgriLAC Resiliente
- Wageningen University and Research Centre
- Asociación Regional de Servicios Agropecuarios de Oriente
- Fundación Promotora del Canal del Dique
- Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología
- Ministerio de Agricultura, Ganadería y Alimentación (Guatemala)
- Dirección de Ciencia y Tecnología Agropecuaria

Partners typology	# of partners	% of partners
NGO Local (Farmers)	12	21.8%
Research organizations and universities (National) (Universities)	9	16.4%
Private company (other than financial)	8	14.5%
Government (National)	7	12.7%
NGO (National) (Farmers)	3	5.5%
All other categories	16	29.1%

Note: CGIAR Centres are excluded from the analysis. Partners and edges are sized by the number of results. Labels are shown for the partners involved in the most results.

Partnerships and AgriLAC Resiliente's impact pathways

Considering the systemic and on-demand approach of AgriLAC, we have identified a strong network of partners, with expertise and capabilities at different levels across the agrifood system. AgriLAC's external partners have been selected based on their previous and current successful collaborations and partnerships with CGIAR, as well as their expertise and skills, farmer outreach and delivery capabilities, and capacity to influence public policy.

AgriLAC's partnerships with NARES and development institutions are key to validating and adapting innovations (e.g., biofortified crops, CIS), as well as interventions' sustainability. We have established collaborations with the national partners AGROSAVIA in Colombia, DICTA in Honduras and Instituto de Ciencia y Technología Agrícolas (ICTA) in Guatemala, and with the Ministry of Agriculture and the National Institute of Seismology, Volcanology, Meteorology, and Hydrology (INSIVUMEH) in Guatemala, to test innovations with great potential to achieve impact, and to identify needs to make their work (e.g., agroclimatic forecasts) more efficient and effective.

To scale AgriLAC's innovations, we are partnering with local and national NGOs Asociación Regional de Servicios Agropecuarios de Oriente (ARSAGRO) in Honduras, Fundación Promotora del Canal del Dique (FPCD) in Colombia, and Asociación de Cooperación para el desarrollo Rural de Occidente (CDRO), Asociación de Organizaciones de los Cuchumatanes (ASOCUCH), and Asociación Regional Campesina Chortí (ASORECH) in Guatemala) and international organizations (World Food Programme).

The partnerships with research institutes and universities are key to accessing the necessary support and expertise for generating knowledge products and advancing AgriLAC's agenda. For example, with Wageningen University and Research Centre, we are doing research to better understand and transform climate and agriculture data to generate better agroclimatic seasonal forecasts for scaling to more farmers in Honduras and Guatemala. The partnership with the Servicio Nacional de Aprendizaje (SENA) and AGROSAVIA in Colombia supports strategic workshops and trainings on biofortified beans, maize, and rice, among other topics.

Section 6 Adaptive management

RECOMMENDATION	SUPPORTING RATIONALE
Reduce the number of target countries from seven to five, removing El Salvador and Nicaragua, and leaving Colombia, Guatemala, Honduras, Mexico, and Peru as implementing countries. As a consequence, the number of target countries in WP1, WP2 and WP3 would reduce accordingly. Similarly, the target values in WP4 would reduce, from 200,000 ha to 160,000 ha of cumulative directly impacted areas, and from 48,000 to 40,000 farmers adopting the strategies.	From an initial aspirational budget of US$10 million, based on which the proposal for AgriLAC Resiliente was developed, the final allocation for the initiative was US$3.9 million for 2022 (a total reduction of 60%). Thus, significant adjustments had to be made regarding geographic scope, envisioned targets for End of Initiative outcomes, and at the Work Package output level, as well as in the development of innovations. The rationale behind the decision to remove El Salvador is that our on-ground capacity still needs to be strengthened with locally based staff, and due to budget reductions it was not possible to hire staff to cover this gap. Therefore, interventions in El Salvador would be more resource-intensive, which we lack in the current situation. In the case of Nicaragua, despite CGIAR presence there through Alliance-based staff, the current political context demands an additional effort and higher level of engagement and time to be able to deliver. Considering current resources available, we decided not to pursue such a resource-intensive and time-intensive effort with limited likelihood of success. The remaining countries in Central America (Guatemala and Honduras) have locally based staff, strong current partnerships, a previous CGIAR portfolio, especially through CCAFS and other CGIAR Research Programs, making them strategic locations to co-design our integrated and systemic approach and then be able to deploy it across the region. In the case of Colombia, Mexico, and Peru, these countries remain essential for AgriLAC's accelerated pathway to impact, South–South cross-learning and collaboration, and demand-driven high quality of integrated science. In that sense, the WP had to adjust its contribution to the End of Initiative outcomes by decreasing the targets.

RECOMMENDATION	SUPPORTING RATIONALE
Reduce and adjust the AgriLAC Innovation offer as follows: **WP1 updated offer:** Menu of validated technologies and livelihood strategies: methods and tools to develop and gather information on climate-resilient and nutrition-sensitive technologies and livelihood strategies per InnovaHub or target regions, and make it available to households to make informed decisions about technologies and strategies to implement on their farms, harvest, and markets. A protocol (methodology) to develop new product profiles based on available nutritional materials (staple crops) adapted to local conditions to generate additional value and increase the market opportunities in the InnovaHubs or target regions. **WP4 updated offer (in bold):** InnovaHubs represent the **setup of context-specific participatory frameworks for impactful connection with and mediation of local stakeholders within subnational** Agrifood Innovations System (AIS) for value creation within and between cropping systems value chains and its key actors, and are a novel way to facilitate innovation, adoption, and diffusion fomenting an enabling civil–public–private environment. **WP5 updated offer:** Monitoring and targeting tool to improve investments in AFS incorporating migration patterns. Tool to improve and fast-track public/private investments in agrifood development and resilience.	From the innovation offer angle, WP1 and WP5 needed to make some adjustments. The rationale behind such adjustments includes the following. After the first year of the Initiative implementation, WP1 — based on countries' local demand and necessities plus the budget restrictions — redefined and rephrased its innovation offers. Now, this innovation offer is more tailored and aligned with the innovation offer of other AgriLAC WPs, such as WP4 and WP2. WP5 removed an innovation that required high and specialized capacity within the team, which we were not able to hire due to budget cuts. However, as part of the engagement strategy, we will enable other partners with such expertise to connect with local partners on the ground to satisfy such demand. WP4 updated the narrative of one innovation to make it more precise. WP2 and WP3 had no adjustments to make.

RECOMMENDATION	SUPPORTING RATIONALE
Propose enhancing the Initiative's gender score from 1A to 1B.	Although gender equality outcomes were not included in the initial proposal, these have been developed during the first year of implementation as part of the process of integrating gender across work packages. Gender-related priorities for action and goals have now been included across the Work Packages. Furthermore, the gender team has been expanded, including two senior gender and social inclusion specialists, three gender and social inclusion researchers (with both qualitative and quantitative research expertise), and two consultants.
Much more emphasis on in-country coordination between the Initiative's Work Packages and CGIAR scientists in Colombia, Guatemala, Honduras, Mexico, and Peru.	The country focal points role is becoming more central in the design and implementation of interventions on the ground, as per their daily interaction with AgriLAC's partners and stakeholders. This was even more evident during AgriLAC's Pause and Reflect retreat. The country focal points are now part of the leadership team of the Initiative and provide feedback and guidance to WP leads on actions on the ground.
Include an additional output to WP5 led by the Initiative's lead, as follows: "Engagement strategy with strategic national and regional partners and stakeholders to support AgriLAC's outcomes achievement, including scaling and impact-oriented efforts".	This responds to the need for a mechanism to report Initiative-level engagement activities, which are essential to achieve AgriLAC's outcomes and impact. This output will allow us to evidence the process of engagement, social capital building, and creation of institutional relationships that will enable the achievement of AgriLAC's goals.

Section 7 Key result story

Empowering 20,000 Guatemalan farmers to thrive despite climate change

The LTACs' approach was developed in 2015 to provide tailored climate information to farmers and since 2017 it has been scaled in Guatemala. In 2022, the LTACs have helped over 20,000 rural Guatemalan people to become more resilient in the face of climate change. Systematic co-design and improvement of CIS dissemination mechanisms with stakeholders has enabled the co-production and dissemination of easy-to-understand local agroclimatic bulletins, which are now effectively used by farmers to inform their decisions.

Climate change has made it difficult for farmers in eastern Guatemala to make a living due to droughts, heavy rainfall, and unpredictable weather patterns. Many farmers have limited access to climate information and lack the skills to understand and use the information to become more resilient, leaving them vulnerable to the whims of the weather.

The LTACs concept is a CGIAR innovation that uses a participatory approach to deliver climate information throughout Guatemala. In the LTACs, a group of experts — including the Ministry of

Agriculture, Livestock and Food (MAGA), INSIVUMEH, UN agencies, CDRO, Association of Services and Socioeconomic Development of Chiquimula (ASEDECHI), ASORECH, ASOCUCH, academia, and other organizations — have been working since 2017 to provide tailored agroclimatic information to farmers in the country. The LTACs (or MTAs in Spanish) are co-producing, translating, and transferring this information to facilitate effective decision-making in agricultural activities.

Building from CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS), the CGIAR Research Initiative on AgriLAC Resiliente that aims to increase the resilience, sustainability, and competitiveness of Latin American and Caribbean agrifood systems and actors, has enhanced the dissemination mechanism for the LTACs to ensure that more segments of the rural population can benefit from local and tailored agroclimatic information.

Members of the LTACs develop and disseminate easy-to-understand seasonal (quarterly) agroclimatic

bulletins to local stakeholders and farmers via a variety of digital and non-digital means. Additionally, the LTACs created new weather (i.e., 5- to 10-day) agrometeorological bulletins, which were disseminated through the LTAC social media groups.

The improvements in the LTACs at the local level promote a wider relationship with producers in the field through approaches such as the Participatory Integrated Climate Services for Agriculture (PICSA) methodology, directly reaching, for example, 2,000 people in 60 communities in eastern Guatemala, where CGIAR scientists are collaborating in a joint project with the World Food Programme liaising with AgriLAC. Finally, the LTACs are producing systematized radio spots with information bulletins broadcast throughout the eastern region, reaching more than 20,000 rural people in the region.

> **" It is important to emphasize that in the LTACs, we work from the needs of the farmers and technicians. It is a process that is built step by step and jointly with partners. We refined the communications products and how we plan to strengthen the transfer of knowledge in the InnovaHubs that we are implementing in Guatemala. "**
>
> **Carlos Navarro, Focal Point for Guatemala in AgriLAC Resiliente**

A monitoring and evaluation (M&E) strategy designed by CGIAR scientists, MAGA, and INSIVUMEH, among other stakeholders, has been put in place to assess success in the dissemination of climate services in eastern Guatemala by ensuring that the information provided is effective and reaches those who need it most, including vulnerable groups of women, youth, and indigenous populations. A M&E study carried out at the end of 2022 reported that more than 50% of participants from eastern Guatemala have implemented or suggested some of the recommendations from the agroclimatic bulletin, mainly for crop planning (e.g., planting date and varietal selection of maize and beans), as well as crop management (e.g., fertilization in cereals, shade in coffee, irrigation, and pest control in different crops) in relation to expected climate conditions. Results demonstrate that farmers have improved their resilience with better access to information that allows them to make informed decisions about their agricultural practices. The cyclical learning of the LTACs' approach has enabled a constant improvement in the climate services dissemination strategy, which has ultimately benefited the farming community.

The LTACs' action is an excellent example of how collaboration and a focus on community needs can lead to positive change. By co-producing and disseminating tailored information and engaging with stakeholders, the LTACs have made a real difference in the lives of farmers in eastern Guatemala. With continued support and investment, they can continue to help the region's farmers to build more resilient agrifood systems and thrive in the face of climate change.

References

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COVER PHOTO: Bean crops, Nicaragua. Photo credit: N. Palmer (CIAT)

LINKS TO IMPACT AREAS

Primary Impact Area:

Other relevant Impact Area(s):

Which collective global targets for the relevant Impact Area(s) from the CGIAR 2030 Research and Innovation Strategy does the key result contribute to?

- Equip 500 million small-scale producers to be more resilient to climate shocks, with climate adaptation solutions available through national innovation systems.
- Implement all national adaptation plans (NAPs) and nationally determined contributions (NDCs) to the Paris Agreement.

GEOGRAPHIC SCOPE

Region: Latin American and the Caribbean
Country: Guatemala

KEY CONTRIBUTORS

Contributing Initiative(s): Climate Resilience; Livestock and Climate; Digital Innovation; AgriLAC Resiliente
Contributing Center(s): Alliance of Bioversity International and CIAT
Contributing external partner(s): MAGA; INSIVUMEH; WFP; FAO; IRI; CDRO; Rafael Landivar University; ASEDECHI; ASORECH; ASOCUCH

LINK TO CGIAR RESEARCH PROGRAMS

It builds on previous work by CGIAR Research Program on Climate Change, Agriculture and Food Security'.