

Program Monitoring, Evaluation, Learning and Impact Assessment (MELIA) Plan

June 2025

Sustainable Farming Science Program



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Citation:

Alene, A., Ampadu-Boakye, T., Arouna, A., Chiagoziem, J., Kotu, B., Liu, Y., Manda, J., Webber, H. 2025. Program Monitoring, Evaluation, Learning and Impact Assessment (MELIA) Plan.

Acknowledgements

This MELIA Plan was developed as part of the CGIAR Sustainable Farming Program through the collective efforts of CGIAR MELIA scientists across participating Centers (IITA, AfricaRice, IFPRI, IRRI) and in close collaboration with program leadership (Area of Work leads and Program Management Unit) and partners. We acknowledge the valuable contributions of colleagues involved in shaping the Theory of Change, results framework, and MELIA studies. We also gratefully recognize the support of CGIAR funders through their contributions to the CGIAR Trust Fund, which made this work possible.

We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund: <https://www.cgiar.org/funders/>

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1. Reviewing guidance for developing the MELIA Plan

Developing the Sustainable Farming program (SFP) MELIA plan, started with the review of the ISDC feedback on the overall program Theory of Change (ToC) and the Area of Work (AoW) ToCs. This feedback has been used in updating the ToC, (example, creating indicators for AoW 8- Program Efficiency and Delivery. In addition, the core assessment criteria from the IAES evaluability assessment guide were used as reference checks in developing the MELIA plan.

2. Program overview and results framework

This section provides an overview of the Sustainable Farming Program (SFP), outlining its intervention logic and the results framework. It also details the alignment of the Program's results framework with the CGIAR Performance and Results Management Framework (PRMF) and Portfolio outcomes, ensuring system thinking.

Program overview

SFP is designed to respond to a range of interconnected demographic, climatic, environmental, and social challenges that are reshaping global agri-food systems. Its overarching purpose is to deliver integrated agronomic, plant health, and farming system solutions that are contextspecific, scalable, and aligned with CGIAR's 2030 Research and Innovation Strategy. By translating research into whole-farm solutions and innovations, the Program contributes to optimizing food, land, and water systems while supporting rural prosperity and resilience.

The Program's primary objectives are to increase the availability and adoption of sustainable agronomic practices, strengthen capacities of national partners, promote co-creation and scaling of farm innovations and advisory services, and foster inclusive approaches that ensure social equity, especially for women and youth. The Program will operate in over 30 countries across the Global South, applying a tiered engagement approach. Countries with significant investment potential will act as R&D hubs, from which validated innovations and operational models can be expanded to other regions. A special focus will be given to high-impact countries with under-developed CGIAR presence, enhancing inclusion and reach. Geographies will be prioritized further through a prioritization process. The Program targets small- and medium-scale farmers, particularly women, youth, and marginalized communities. These groups will benefit from adoption of farm innovation bundles and improved access to services and knowledge. Public and private development partners, national agricultural research and extension systems (NARES), and other stakeholders will play key roles in co-developing, adapting, and scaling solutions.

Strategically, SFP is important because it builds on and integrates the strengths of three prior CGIAR Initiatives: Excellence in Agronomy (EiA), Plant Health (PH), and Mixed Farming Systems (MFS). It harnesses the comparative advantages of 12 CGIAR Centers and their partners to deliver global public goods while supporting local adaptation. By leveraging pooled and bilateral resources, strengthening partnerships, and engaging in collaborative research-for-development, the Program aims to transform farming systems into more productive, resilient, and sustainable systems that generate widespread and lasting impact.

Description of Areas of Work (AoW)

AOW01: Climate Adaptation and Mitigation on Farms	This Area of Work aims to ensure that farmers adopt and benefit from inclusive adaptation and mitigation solutions by 2030. To achieve this, the program delivers validated, integrated, inclusive climate adaptation and mitigation solutions that improve resilience and mitigation outcomes. It also generates tools and models for measuring resilience and climate change mitigation potential at the farm, system, and landscape scales, and develops guidelines and partnership frameworks for scaling climate adaptation and mitigation solutions. The pathway to this outcome includes several intermediate outcomes: farmer-facing organizations adopt evidencebased tools and information (1.1); targeted institutions influence policies and investments (1.2); the public and private sector invest in programs and services (1.3); inclusive stakeholder participation in policy and investment processes is strengthened (1.4); coordinated investments in climate change adaptation and mitigation solutions are made (1.5); and farmer organizations adopt inclusive climate change adaptation and mitigation solutions (1.6). Key activities focus on the development, validation, and bundling of climate-smart agriculture solutions that are adapted to diverse systems. The program will support the integrated use of landscape and farming systems models for climate-smart agriculture investment planning. Efforts will also go toward strengthening decision support systems using climate data to increase farmers' adaptive capacity and mitigate risk. To ensure broad uptake and sustainability, the program will establish and support multi-stakeholder platforms for the co-creation and scaling of climate-smart innovations, while also strengthening extension and advisory systems for inclusive climate services.
AOW02: Precision Nutrient Management	This Area of Work seeks to achieve the 2030 outcome where farmers adopt and benefit from precision nutrient management solutions. To support this, the initiative delivers site-specific fertilizer recommendations and decision support tools for major crops and farming systems, as well as strategies to reach women, youth, and marginalized groups with these recommendations. Additionally, bundled advisories on good agronomic practices and fertilizer access for smallholder farmers are developed and scaled. Intermediate outcomes include farmer-facing organizations adopt evidence-based tools and information (1.1); farmers access bundled advisories to overcome constraints (2.2); and farmers apply integrated soil and resource management practices (3.3). The cluster of activities encompasses the development of site-specific fertilizer recommendations and bundles for target geographies, validation of recommendations and bundled solutions, integration of digital tools with advisories for smallholder farmers, and engagement with private and public partners for delivery. These activities ensure more equitable access to nutrient management technologies and enhance profitability and nutrient use efficiency at the farm level
AOW03: Resilient Soils	AoW 3 supports the 2030 outcome where farmers, farmer organizations, and stakeholders scale soil health management solutions. Outputs include validated integrated soil health management practices adapted to different 5 Area of Work (Aow) Brief Description systems, monitoring frameworks for tracking soil health and degradation, and evidence-based policy recommendations to support soil restoration and fertility enhancement. The workstream contributes to intermediate outcomes such as farmer-facing organizations adopt tools and information (1.1); scaling partners support adoption and scaling of management packages (4.2); farmers implement practices that restore and enhance soil health (3.3); and member states integrate soil health targets into their strategies (3.4). The activities revolve around testing and validating soil health practices in diverse systems, developing digital tools for soil health monitoring, and strengthening partnerships to support policy and investment in soil restoration. By supporting farmers and institutions to adopt sustainable practices, the initiative enhances soil resilience and productivity.
AOW04: Plant Health and Mycotoxin Safe Crops	The objective of this AoW is to achieve the 2030 outcome where losses to biotic threats are reduced on farms, and safe food and feed are more widely available to consumers and livestock. Outputs include validated and scaled integrated pest and disease management packages, expanded use of biocontrol solutions such as Aflasafe, and awareness campaigns and decision support tools for managing plant health threats. Intermediate outcomes addressed are farmer-facing organizations adopt evidence-based tools (1.1); farmers apply integrated management practices (3.3); scaling

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	partners adopt and promote plant health packages (4.2); and stakeholders are equipped with improved capacity (4.1). Key activities include development and validation of IPM packages, promotion of biocontrol and safe use practices, capacity building for plant health stakeholders, and integration of plant health services into extension systems. This AoW safeguards productivity, food safety, and environmental health by addressing plant pests and mycotoxins.
AOW05: Integrated Water Management	This AoW targets the 2030 outcomes where farmers adopt water innovations to reduce water-related risks to agronomic gain, and improved water management practices are widely used. Outputs include validated and scalable water innovations, decision support tools for water-use efficiency, and institutional frameworks for sustainable water management in agriculture. Intermediate outcomes include farmer-facing organizations adopt water technologies (5.1); use of improved water practices by farmers increases (5.2); and scaling partners adopt integrated water packages (4.2). Activities are focused on validating irrigation, drainage, and soil moisture practices, developing digital tools to support water decision-making, and capacity building and partnerships for scaling. AoW 5 ensures resilient, efficient water use that supports food production in increasingly water-scarce environments.
AOW06: Scale-appropriate Mechanization	AoW 6 supports the 2030 outcome where farmers benefit from the use of appropriate mechanization options, leading to labor productivity gains and reduced drudgery. Outputs include validated mechanization technologies and business models, scalable service provision models, and increased private sector engagement in mechanization delivery. Intermediate outcomes include farmers and service providers use mechanization to improve productivity (6.1); stakeholders use mechanization advisory services (6.2); and gender- and youth-responsive mechanization solutions are scaled (6.3). Key activities include testing and refining mechanization tools suited to different farming systems, building service provider networks and entrepreneurial platforms, and partnering with private actors for scale-up. The AoW enhances inclusive access to mechanization, supporting system-level transformation.
AOW07: System Integration through Co-creation	This AoW leads toward the 2030 outcome where farmers adopt and benefit from bundles of farm system innovations. Outputs include co-created whole-farm innovation bundles, operational multi-stakeholder platforms, and mainstreamed system integration tools. Intermediate outcomes involve co-creation and system science methods usage (7.1); scaling of whole-farm innovation bundles (7.2); and investment in mainstreaming system science and co-creation (7.4). Activities span landscape assessments, co-design of integrated solutions with farmers and partners, and support to multi-stakeholder platforms for innovation use cases. AoW 7 ensures that innovations are relevant, scalable, and tailored to diverse farming realities through a systems lens.
AOW08: Program Efficiency and Delivery	The final AoW ensures the effective delivery and governance of the entire Sustainable Farming Program, contributing to the 2030 outcome where CGIAR and partners use standardized tools and approaches across the program. Outputs include functional MEL systems, FAIR data and advanced analytics platforms, and effective partnerships and resource allocation mechanisms. Intermediate outcomes include resource allocation based on prioritization tools (8.1); adoption of FAIR data systems (8.2); partnership platforms address agronomic challenges (8.3); and cross-AoW engagement in scaling activities (8.4). Activities comprise monitoring and evaluation system integration, data governance and analytics capacity building, coordination of cross-program learning, and institutional support for program-wide efficiency. AoW 8 ensures that the Sustainable Farming Program remains adaptive, data-driven, and impact-oriented.

Theory of change

The SFP addresses pressing demographic, climatic, environmental, and social challenges, focusing on feeding a growing population, resource conservation, and equitable farming opportunities, particularly for women and youth. The Program aims to contribute to the five CGIAR Impact Areas by co-developing and scaling whole-farm solutions that enhance productivity, soil health, resource efficiency, and climate resilience, while reducing crop losses and environmental harm. These contributions are realized through targeted innovations and delivery pathways across the eight AoWs, each aligned with specific CGIAR Impact Area or more. Sustainability, spanning profitability, environmental benefits at farm level, GHG emissions' mitigation and climate resilience, and social equity, is central to its approach. Through collaboration with CGIAR Programs, Accelerators, and partners, SFP expects to support at least five million farmers across two million hectares (only considering pooled funding), and increasing this figure by three when adding W3 and bilateral projects, by scaling innovations to increase farm productivity by 30%, reduce production costs by 25% and GHG emissions by 15%. Additionally, it will strengthen national research systems by building capacity among 25+ national science partners and improving the sharing of tools, data, and methods across CGIAR Centers to inform future pooled and bilateral projects.

The HLOs will be achieved through three interconnected pathways: innovation, capacity sharing, and policy change. The innovation pathway prioritizes contextualized solutions, integrating climate adaptation, nutrient management, soil health, pest, disease and weed (PDW) control, water management, mechanization, and system integration, supported by participatory design and advanced data analytics. Gender- and youth-inclusive innovation bundles will be linked to big data and prioritization tools, while PAASS platforms will be strengthened alongside strategic partnerships, for example with GIZ/BMZ, AGRA, the Sustainable Agriculture Initiative, the Sustainable Intensification Innovation Lab, and key funders like the UAE government and Gates Foundation. The capacity sharing pathway focuses on delivering tailored training materials for farmers and extension workers, supporting partner use of data tools, and enhancing NARES capacities. The policy change pathway leverages evidence, policy briefs, multi-stakeholder platforms, and international dialogues to drive investment and adoption of farm innovations at scale.

In 2025, HLOs are anchored in the eight AoWs, which serve as the foundation for Program delivery. Most AoWs emphasize co-developing solutions within specific farming systems and geographies, guided by the three interconnected pathways, while others focus on system integration and program-wide delivery. AoW8 plays a cross-cutting role, supporting other AoWs and aligning Programs and Accelerators through essential functions such as prioritization, analytics, policy engagement, and MELIA, ensuring a cohesive and impactful approach to agricultural innovation.

The realization of the SFP Theory of Change (ToC) relies on key assumptions across three spheres. Within the sphere of control, it assumes sustained financial, human, and technological resources, the effective functioning of data systems and digital tools, and stakeholder capacity and willingness to engage. In the sphere of influence, it presumes that scaling partners and farmers will adopt and expand innovations, feedback mechanisms will enhance delivery, and institutional actors will align with evidence to shape policy environments. Finally, within the 8 sphere of interest, it is expected that innovations can be scaled towards impact, that behavior change will persist beyond direct program support, and that favorable market, policy, and climatic conditions will enable long-term and sustainable improvements in productivity, resilience, and equity. Figure 1 is the Program level TOC, which depicts the linkages between the sphere of control, sphere of influence and sphere of interest as described above. [SFP digitized ToC tables at the Program and Area of Work levels](#). This link gives the ToC tables-overall and AoW ToCs) and [Open Access link for both the ToC and the Results Framework](#). (Zoom out to see the linkages of the various AoW ToCs and download the ToC tables using the 4th icon on the top left corner of the page).

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Figure 1. Sustainable Farming Program level Theory of Change

Results framework

The SFP Results Framework reflects the logical sequence from high-level outputs to intermediate outcomes, aligned with the program's Theory of Change. It captures the intended contributions of each AoW, defining specific results—categorized as either high-level outputs or intermediate outcomes—with corresponding indicators to track progress and performance. For example, AoW1 (Climate Adaptation and Mitigation on Farms) includes high-level outputs such as the development of quantified climate hazard assessments, inclusive climate-smart farming innovations, and policy-ready evidence. These feed into intermediate outcomes like the adoption of evidence-based innovations by farmer-facing organizations and the alignment of government policies to support climate-resilient agriculture.

Each result is tracked through measurable indicators—aligning to the CGIAR Performance and Results Management Framework (PRMF), including Portfolio outcomes and the SFP agronomic gain key performance indicators. The indicators range from the number of innovations, number of people trained, and knowledge products developed, to the number of partners, individuals and policies influenced. Data is planned to be collected annually through a mix of program monitoring, document review, and stakeholder engagement. The 2030 Outcomes serve as 9 program-level targets that bridge intermediate results with longer-term changes. These include the widespread adoption of bundled, evidence-based innovations by farmers; policy and institutional engagement for scaling; and strengthened national research systems capable of driving innovation independently. The results framework ensures that each outcome drives toward these 2030 goals. Targets have been set mainly for 2025, aligning to the Plan of Results and Budget (PORB). Targets for subsequent years will be set when the Program finalizes its restructuring in 3rd quarter of 2025.

Collectively, these efforts contribute to the five CGIAR Impact Areas: Climate Adaptation and Mitigation, Nutrition, Poverty Reduction and Livelihoods, Gender Equality and Social Inclusion, and Environmental Health and Biodiversity. The SFP results framework operationalizes this contribution by aligning program indicators and learning activities with CGIAR's Performance and Results Management Framework (PRMF) and systematically collect evidence across the eight AoWs. Each AoW is designed to deliver results that directly or indirectly support one or more CGIAR Impact Areas. The framework provides a coherent roadmap for measuring the SFP contributions. [Open Access link for both the ToC and the Results Framework](#). (Download the Results Framework as part of several other worksheets—e.g., assumptions, research questions, etc using the 3rd icon on the top left corner of the page).

3. Monitoring plan for HLOs and outcomes

This section outlines how the Program will monitor delivery of HLOs and progress towards outcomes. For HLO and outcome indicators, the Program will define its evidence collection methods for routine tracking, ensuring achievement is measurable. By systematically monitoring indicators, Programs/Accelerators ensure up-to-date progress documentation and accountability for planned deliverables. Data collection methods may include a combination of quantitative and qualitative approaches, such as surveys, qualitative interviews, expert panels, and observations.

Data collection strategy

1. Introduction and Purpose

The Monitoring, Evaluation, and Learning (MEL) Plan is designed to ensure accountability, foster continuous learning, and facilitate strategic decision-making both across the program and within each of the eight Areas of Work (AoWs) under the Sustainable Farming Program. It provides the foundation for stage-gating and course-correction decisions and informs adaptive program management. The plan offers a systematic approach to tracking output progress and outcomes of innovations, from research through to adoption and impact, aimed at achieving the program's objectives by 2030. Moreover, it fosters alignment with sustainable development goals (SDGs), CGIAR Impact Areas, and the national agricultural priorities of target countries.

The plan builds on the MELIA legacy of the three prior CGIAR Initiatives: Excellence in Agronomy, Plant Health, and Mixed Farming Systems. In addition, it explores new and innovative ways of evidencing the Program's results.

2. Data Collection Strategy

SFP implements a coordinated data collection strategy across all AoWs, underpinned by a unified MEL system. While each AoW is responsible for data relevant to its outputs and outcomes, partners play an active role in generating, validating, and sharing data to support learning and decision-making. Each AoW is guided by a clearly defined results framework—from outputs and intermediate outcomes to 2030-level outcomes and CGIAR Action Area Impacts—captured in a consolidated Results Framework that ultimately contributes to the Sustainable Development Goals (SDGs). This framework is underpinned by a shared Theory of Change (ToC) that outlines the causal linkages between innovation development, stakeholder capacity, enabling environments, and sustained system-level change. The ToC also identifies key assumptions regarding partner engagement, infrastructure, and policy support that influence success.

Based on the results framework and the ToC (including its assumptions), data collection will be organized around three main tiers: (i) Output-level, (ii) Intermediate outcome-level, and (iii) 2030 outcomes to provide evidence of progress.

A digitally enabled MEL system with a set of data collection tools will be used to collect, analyze and provide near-real time data to assess the program progress. The MEL system is a five-stage framework, involving the use of standardized (and adaptable) digital data collection tools to collect standardized data tailored to indicator needs and assemble near-real time minimum data to assess progress. Figure 2 shows the MEL framework to be adapted. The adaptation will include integrating minimum data required across all AoWs, including the different innovations to be co-developed and scaled, capacity sharing, etc.

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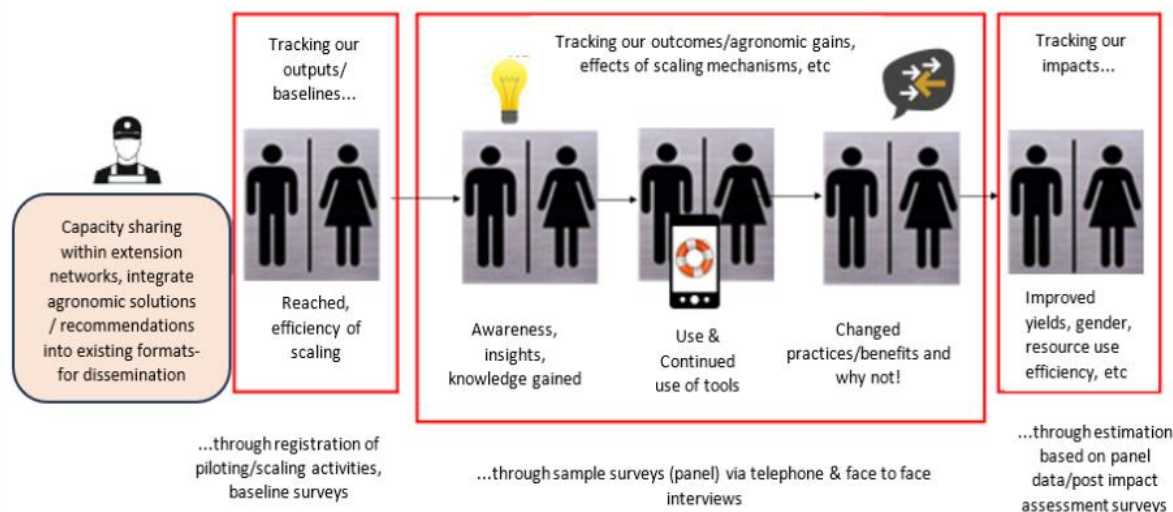


Figure 2: Framework to operationalize MELIA

Output-level data, such as the number of people trained through capacity sharing activities and scaling of innovations to end users (e.g., partner field staff, farmers) will be tracked using this system with tools developed in ODK and used by implementing partners participating in the various Partnerships for Accelerating Agricultural Solutions at Scale (PAASS) platforms (that are envisioned to engage across all AoWs) and by program staff (e.g., AoW leads). The MEL team will work closely with the Capacity Sharing Accelerator to ensure all required variables are collected.

Partners with existing data systems will be supported to share data directly via an Application Programming Interface (API). For partners without MEL systems, capacity-building will be provided to ensure consistent tool use. Other output-level indicators, such as the number of knowledge products, will be tracked regularly in a shared repository for annual reporting. Output level data will be collected routinely in line with activity implementation timelines. The MEL team will provide training and technical backstopping as needed. The MEL system fosters synergy among partners by promoting the use of standardized digital tools such as ODK and APIs to ensure consistent and comparable data capture. Partners will be engaged through joint training sessions that harmonize data collection protocols and build shared understanding of indicators, timelines, and responsibilities. Real-time data sharing and monitoring are enabled through centralized digital platforms and dashboard, while collaborative learning processes such as reflection workshops and mid-year reviews allow partners to jointly interpret findings, identify trends, and inform course corrections. AoW focal persons act as liaisons, coordinating inputs and ensuring data flows are timely and of high quality. This integrated and collaborative approach ensures that partner contributions are aligned and mutually reinforcing, creating a robust evidence base for adaptive management across the Program.

For outcome-level data, methods such as household and partner surveys, key informant interviews, and focus group discussions (FGDs) will be employed. Data will be collected annually using digital tools (ODK). To provide timely feedback and monitor innovation uptake, a short biannual survey will be conducted with a sample of innovation users (farmers). These surveys will be conducted mainly through phone calls by trained enumerators. The MEL team will also explore the use of Artificial Intelligence (AI) to gather real-time feedback from users, e.g., on digital tool usage to inform strategic decisions and learning.

The MEL team will contribute to baseline studies outlined in the impact assessment strategy to establish benchmarks for innovation progress. In addition, partner surveys will be conducted to capture feedback on the engagement process, service relevance, and the use of research outputs in decision-making and policy.

3. Data Quality Assurance (DQA)

To ensure high-quality, reliable, and actionable data, the MEL Plan incorporates a robust Data Quality Assurance Framework that addresses five key dimensions: validity, reliability, timeliness, integrity, precision, and completeness.

Validity will be ensured through regular review and revision of indicators and data collection tools to incorporate feedback and address gaps or errors. Reliability will be maintained by using standardized tools and protocols, along with well-trained enumerators, to facilitate data consistency and aggregation. The MEL system will enable year-round data collection aligned with the implementation calendar to guarantee timeliness and reduce data gaps.

Integrity will be protected through the use of digital tools that minimize manual errors and allow for audit trails. Monthly audits will be conducted for output-level data and bi-annual audits for outcome-level data. Precision will be achieved in collaboration with the Impact Assessment team to ensure rigorous sampling design, including necessary disaggregation, to support highquality, actionable insights on innovation uptake and outcomes. Finally, regarding completeness,

all required data fields must be meticulously completed with the appropriate information to ensure that no values are omitted, as such omissions could adversely affect operational efficiency.

4. Quality Assurance along the Data Flow and Pathway for Change

The MEL system embeds above DQA process throughout the entire data flow, beginning at the farmer level and extending to internal program monitoring and decision-making. This approach ensures that credible, high-quality evidence supports each transition in the program's Theory of Change.

At the field level, data are collected directly from farmers through partners and enumerators using standardized digital tools with built-in validation features such as required fields, range checks, GPS coordinates, and timestamps. These tools minimize errors at the point of data entry and ensure data completeness, accuracy, and traceability.

Partner organizations (especially partners with own systems) and AoW field teams are responsible for real-time review of submissions, with occasional spot checks, resolving flagged errors, and ensuring adherence to data collection protocols. Partner field staff such as Extension Agents and survey Enumerators will be trained and refreshed regularly to maintain consistency and reliability across operational areas and partners. Once submitted, data is uploaded to secure digital platform (ona) where MELIA team conduct routine quality control, reviewing submissions for duplication, completeness, and internal consistency.

At the program level, monthly audits will be conducted for HLOs, while outcome-level data undergoes bi-annual audits. Triangulation with secondary sources and disaggregated data reviews further enhance data integrity and usefulness. Findings will be fed into learning cycles such as "Pause and Reflect" sessions, where data are interpreted collaboratively to support evidence-based decisions and adaptive program implementation.

This layered and iterative quality assurance process ensures that data quality is systematically protected along the full pathway for change—from the field to program dashboards—strengthening the credibility and utility of MELIA evidence for tracking, learning, and strategic decision-making.

In Summary, the primary purpose of the data quality audit will be to assess whether the data reported by researchers from the sites and development partners is accurate and valid. The audit and assessment are also intended to assess concordance of data reports from routine data collection systems. The secondary purpose will be to assess SFP overall data management system with emphasis on assessing the quality of data on the primary data sources as well the reports generated and submitted to data storage platform using standard data audit tools. The audit findings will facilitate improvement of SFP monitoring systems at various levels. The DQA is expected to highlight strengths and weaknesses of data producers/creators and SFP data management systems. In summary, the DQA focus will be to:

1. To assess the quality of data (reports), in terms of its concordance with the source data forms registers submitted by SFP researchers through standard data quality parameters such as its validity, reliability, timeliness, precision and integrity
2. To assess completeness of beneficiary's data in registries at site level 13
3. To estimate the margin of error of reported data vis-à-vis source data
4. To assess the flow of data from the initial collection point(researchers) to subsequent higher level (CGIAR)
5. To identify areas of potential vulnerability that affect general credibility and usefulness of the Datasets
6. To recommend measures to address any identified weaknesses in the data submitted by researcher

4. Evaluation plan

Evaluation study

MELIA operates across all AoWs and involves Monitoring, Evaluation, and Learning (MEL) for documenting and reporting on program outputs and outcomes against baseline. MEL provides the basis for stage-gating and course correction decisions and informs adaptive project management. MEL collects standardized data measuring progress through digital data collection, interviews, surveys, and workshops. Key learning objectives will be addressed through participatory reflection workshops and observations, and key informant interviews among staff and key partners. These data form the basis for annual reporting, validation, and adaptation of ToC, provide evidence for project adjustments, and assist in planning activities and their related budgets. MEL will also provide information used in a regularly updated dashboard. The evaluation work of the Sustainable Farming Program (SFP) will be carried out in close collaboration with a range of other programs, projects, and partners to ensure a comprehensive and integrated evaluation of program outcomes. More specifically, there will be strong collaboration with the Scaling for Impact program, which is focused on expanding the reach and effectiveness of agricultural innovations as well as with the Digital Transformation Accelerator to develop/adapt digital tools, databases, and AI use in support of real-time monitoring and evaluation of the reach and effectiveness of SFP innovations.

The MELIA team will also collaborate with the bilateral/W3 projects such as AICCRA that will contribute to the standardized evaluation activities through common KPIs and reporting against the program ToC. Program delivery will be evaluated against the TOC, with annual reporting of outputs and outcomes. An annual internal evaluation of management implementation and working culture will be conducted using surveys and interviews and reported to the Program Steering Committee. Monitoring data will also track the performance of innovations against the SFP KPIs. These KPIs include crop yields, economic profitability and feasibility, equity implications, and accessibility for less advantaged groups. Monitoring tools will interface with those developed by other Programs and during the Initiatives to collect data on bundled innovations in relation to the numbers and roles of partner and scaling organizations, policy engagements, investment potential, and equitability considerations. This monitoring will primarily be performed by partners following standardized data collection procedures and tools.

5. Impact assessment

Impact Assessment (IA) is a key approach for evaluating the effectiveness and impact of innovations, technologies, or practices on target populations and geographies. By systematically measuring outcomes and impacts, IA will help to ensure that Programs/Accelerators contribute meaningfully to [CGIAR's Results Framework](#) and the 2025–30 Portfolio objectives.

IA goes beyond monitoring indicators, requiring a rigorous approach to attributing observed changes to CGIAR interventions (e.g., innovations, policies). It employs both quantitative and qualitative methods, often combined for deeper insights

Program/Accelerator impact overview

The AoWs of the Sustainable Framing Program will collectively contribute to the program's outcomes and expected impacts by co-developing and delivering whole-farm innovation bundles to at least five million farmers, with positive impacts on socially equitable and sustainable agronomic gain across two million ha of land. At least 50 public and private development partners are expected to facilitate the scaling of solutions to farming communities and integrating innovations in their investments. The AoWs will generate solutions to address locally appropriate combinations of issues, including climate adaptation, precision nutrient management, soil health restoration, reduction of crops losses due to PDWs, integrated water management, scale-appropriate mechanization, and farm system integration.

First, the climate adaptation and mitigation AoW will deliver climate-resilient farming system innovations to at least five million farmers to enhance resilience to floods, droughts, cold stress, rising temperatures, variable rainfall patterns, and realize a 15% reduction in GHG emissions. Second, the precision nutrient management AoW will deliver decision support tools to extension specialists and over three million farmers to achieve at least 25% increase in crop productivity and profitability for participating farmers through improved input and recycle use efficiency. Third, the resilient soils AoW will deploy science-based tools and methods to monitor soil health status across a network of long-term monitoring sites to support decision-making investments in sustainable farming, with over 500,000 farmers expected to adopt targeted practices that restore and enhance soil health, also meeting net carbon emission and water conservation targets. Fourth, the plant health and mycotoxin-safe crops AoW will deliver

effective plant health management options to over one million farmers to reduce the crop losses caused by biotic threats, improve environmental and human health due to reduced pesticide and mycotoxin exposure, and increase the availability of safe and nutritious food and feed to consumers and livestock, respectively. Fifth, the integrated water management AoW will deliver water innovations and integrated management practices to at least three million producers to mitigate water-related risks and realize water-resilient farming systems. Sixth, the scale-appropriate mechanization AoW will deliver mechanization services to over one million additional smallholders to improve labor productivity by at least 25%. Finally, the system integration AoW will support about five million small and medium-scale farmers to adopt and benefit from bundles of farming system innovations.

The impacts of the Sustainable Farming Program are well aligned with the five CGIAR Impact Areas to be achieved through the co-developing and scaling of whole-farm solutions that deliver agronomic gain at scale. The expected gains are: (a) increased productivity and production of 15 nutritious food, (b) improved soil health, (c) enhanced efficiencies of water, nutrient, and labor use, (iv) reduced crop losses to expanding and emerging PDWs, and (d) more stable yields through adaptation to climate change. Sustainability considerations must be met, which include profitability for farmers, environmental benefits at farm and landscape levels, GHG mitigation and climate resilience, and improved social equity.

The theory of change (ToC) of the Sustainable Farming Program is formulated around the premise that sound whole-farm innovation bundles provide the foundation for productive, profitable, inclusive, and sustainable agriculture in a changing climate. In particular, the delivery of wholefarm solutions by scaling partners and farm-level adoption of these innovations by farmers is expected to improve the livelihoods of millions of smallholder farmers by improving crop productivity and incomes while enhancing resource use efficiencies, increasing climate resilience, and rehabilitating soil health. The program aims to accelerate the delivery of proven, climate-smart, and gender-and youth-responsive whole-farm innovation bundles to smallholder farmers through scaling/demand partners in target areas and farming systems. The co-creation and delivery of integrated solutions to smallholder farmers is expected to be achieved through effective delivery mechanisms.

Adoption and impacts will be driven by strong relationships and dynamic interactions among diverse partners, programs, and stakeholders. Multi-component whole-farm innovation bundles—integrating crops, livestock, trees, fish, and enabling services—are co-designed, tested, and adapted through collaborative research with other programs such as Breeding for Tomorrow, Multifunctional Landscapes, Policy Innovations, Scaling for Impact, and the Accelerators. Co-investment and co-location of activities will foster joint learning, maximize efficiencies, and ensure that solutions are tailored to specific contexts. Participatory co-creation methods ensure that farmer perspectives—especially those of women and youth—are central to the design, integration, and monitoring of innovation bundles. These insights are then combined with system science approaches, which use biophysical and socio-economic modeling to inform decision-making and sustainability appraisals at multiple levels. This integration is achieved in close collaboration with Policy, Landscapes, and Scaling Programs, allowing for a nuanced understanding of the political, institutional, and cultural factors that influence adoption.

IA activities and collaboration plans

There are multiple barriers to adoption of innovation bundles, and innovation development efforts are not adequately informed by rigorous evidence on appropriate promotion/scaling strategies coupled with evidence to guide priority setting and targeting of innovations. Beyond measuring the uptake and impacts of whole-farm innovation bundles, the impact assessment work will thus identify effective innovations and delivery mechanisms for greater adoption and impacts. The impact assessment research plans thus include: (i) Randomized Controlled Trials (RCT) aimed at addressing key learning questions related to the adoption bottlenecks focusing on delivery mechanisms and incentives as well as the effectiveness of pipeline innovations as part of the validation process prior to scaling; (ii) qualitative process evaluation and outcomes studies aiming at documenting changes in knowledge, attitudes, skills, and habits (KASH) of scientists and their partners; and (iii) tracing activities and panel surveys (baseline and follow-up surveys) for potential long-term, large-scale ex-post impact assessment of agronomic KPIs. For integrated innovations, the Sustainable Farming Program uses a programmatic approach to impact assessment, going beyond evaluation of individual technologies or farming practices. This necessitates a mixed methods approach, making use of monitoring data on the use of innovations by the Program and its partners, as well as targeted impact evaluations, benchmarking studies, projections, and validations. Impact assessment studies will be questioning whether the Program is delivering integrated on-farm solutions that generate agronomic gain, and whether these result in anticipated impacts across the Impact Areas, and how readily these benefits are assimilated into others' agendas, enabling diffusion. In this way, the Program establishes and assesses its delivery pipeline approach toward sustainable agriculture.

Impact assessment studies will focus on two impact pathways: on-farm component and bundles of innovations and institutional capacities and behavior change. On-farm innovations will be assessed for agronomic gain, for sustainability, and for Impact Area contribution. At different stages of the R&D pipeline, different studies will be

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appropriate, including proof-of-concept efficacy and learning studies for component and integrated innovations, behavioral studies to design enabling components of bundles, adoption and efficacy studies during scaleup phase, and ex-post impact evaluations towards the end of the program for big-win innovation bundles. Various approaches will be used to assess the impacts of program interventions. These include experimental approaches (such as randomized control trials) and quasi-experimental approaches, system-based multi-criteria approaches such as the Sustainable Intensification Assessment Framework (SIAF). Experimental approaches are considered the gold standard in impact assessment of development interventions as they ensure strong causal inference, high internal validity, transparency and replicability, and the ability to test impact variation and mechanisms of impacts. Therefore, we will apply experimental approaches, particularly the Randomized Controlled Trial. However, experimental approaches may not be suitable in all contexts of program interventions. Therefore, quasi-experimental approaches and system-based multi-criteria approaches will be applied in some contexts. These approaches are well-suited to the context of the Sustainable Farming program and are more cost effective and timely than experimental approaches, as they often rely on existing datasets while providing high external validity. The following studies are planned.

1. Causal Impact Assessment learning studies

The Sustainable Farming Program will carry out learning-oriented impact assessment using RCTs and/or quasi-experimental methods to evaluate the effectiveness of both innovations as well as innovation delivery mechanisms such as bundled services and incentives to overcome adoption barriers and enhance uptake by farmers. The studies will assess the effectiveness of innovations and bundled services and incentives in terms of promoting adoption of tailored whole-farm innovations. Examples of innovations and innovation delivery mechanisms being evaluated include: (1) Bundled agronomic advisory services for maize production in Ghana involving bundling of insurance with agro-advisory services (fertilizer recommendations, cropping calendars, and good agronomic practices); (2) Site-specific agronomy solutions for cassava and rice production in Nigeria using gender transformative approaches; (3) Harmonized site-specific agronomy solutions for wheat, teff, and sorghum production in Ethiopia (i.e. harmonizing the land-scape-based fertilizer advisory tool and the NextGen agro-advisory tool); (4) Improved fertilizer timing involving application of fertilizer at planting time and doubled-up legume systems involving intercropping soybean and groundnut and notating them with maize in Malawi and Ghana using demonstrations and bundled insurance, credit, and market access as delivery mechanisms; (5) Aflasafe promotion using subsidies and awareness campaigns in Nigeria; (6) Push-pull technology promotion in Uganda; (7) Solar drying technology in Uganda; (8) FAWtolerant maize varieties in Zambia; and (9) The impact of rising temperatures on agricultural mechanization in Africa and Asia.

The impact evaluation of the innovations and innovation delivery mechanisms will focus on primary outcomes such as uptake/adoption involving a comparison of adoption between different treatment arms and the control group; evaluating short-term impacts of adoption on KPIs focusing on yield gain, nutrient use efficiency, and net returns/profitability. Evidence from these causal IA studies will inform the scaling strategies of the Program and other scaling partners. Rigorous evidence on the effectiveness of innovations and innovation delivery mechanisms will inform the design of cost-effective and inclusive scaling strategies for proven whole-farm innovations for increased uptake and impacts of proven solutions. Rigorous evidence on the adoption and impacts of innovations on primary outcomes such as yield and profitability of the innovations will also allow testing of key assumptions underlying the Theory of Change.

2. Tracing of Scaling Activities & Policy Advice as a Base for Long-term, Large Scale Impact Studies

To establish the basis for potential future accountability-oriented long-term impact assessment, the Program will undertake panel household surveys and tracing activities tracking roll-out mechanisms of innovations over space and time. These tracing activities and accountability-oriented impact studies will provide evidence on the achievement of outcomes and impacts of the Program across the Impact Areas. Tracing studies will also help to monitor and learn about the new developments among implementing partners concerning Program activities through digital data-sharing platforms. The data will be summarized and documented as interim reports on scaling and scaling approaches. Building upon the baseline and adoption studies and information from MEL activities, a follow-up study will be designed and conducted to assess the long-term impacts of innovations developed and promoted by the Program. Data collected from stakeholders on scaling approaches and administrative costs will be used to assess the cost-effectiveness of scaling approaches implemented by scaling partners. Innovation scaling information showing the temporal and spatial variation in the spread of innovations is also critical for constructing identification strategies for rigorous ex-post impact assessment. The staggered nature of dissemination of innovations generates exogenous variation in the timing and intensity of innovation dissemination.

The panel surveys and tracing activities for potential long-term, large-scale ex-post impact assessment will be operationalized in two ways: (i) Tracking diffusion of innovations and roll-out mechanisms by scaling partners over space and time; and (ii) Panel surveys to monitor changes in the adoption, outcome, and impacts of innovations. The diffusion tracking activity will be achieved through systematic tracking and monitoring of current (ongoing) and future dissemination plans of the Program and other scaling partners in study areas. All beneficiaries and their geographic location will be documented using an e-registration system. An activity-based approach will be used to document direct beneficiaries, whereas remote sensing data and satellite imagery will be used to document historical events (flood, drought, etc.) and climatic data in the intervention areas. Leveraging on the availability of panel data (baseline and follow-up surveys), potential long-term impact assessment in these areas will be conducted by exploiting experimental variation in the initial treatment assignment and in some cases by exploiting the staggered nature of dissemination of innovations and innovation bundles (i.e., progressive and heterogeneous scaling patterns generating exogenous variation in the timing and intensity of roll-out mechanisms over space and time). Panel survey data will build on the baseline survey initiated in 2022 and 2023. Panel data collection started with a baseline and will be followed by mid-line follow-up surveys. The panel surveys will be complemented with administrative data from scaling partners to track diffusion of innovations and innovation bundles over space and time as well as with geospatial tools, particularly for measuring adoption and impacts at scale. Examples of ongoing panel studies include mechanized direct seeded rice in Cambodia and Vietnam, landscape-based fertilizer advisory in Ethiopia, and planting dates advisory for rice-wheat cropping system in India.

3. Qualitative Outcome Study

Co-development of targeted and relevant innovations requires readiness and full participation of stakeholders, behavioral change and interactions. The Sustainable Farming Program will require behavior changes and engagement of stakeholders including CGIAR scientists, innovation and scaling partners on several fronts, including sharing data and experiences and generation and use of standardized datasets. To assess the effectiveness and efficiency of the Program's innovation delivery approach, key informant interviews will be conducted with science and scaling/delivery partners. In addition, data will be collected using a participatory approach through reflection/review workshops. This will facilitate assessment of how different stakeholders feel the approach has enabled the effective and efficient delivery of innovations and innovation bundles for scaling. Qualitative studies will also be conducted to assess the behavior changes among smallholder farmers. These studies will be conducted at both farm household level and stakeholder level. The outcome studies will collect sex-disaggregated data and use gender-differentiated focus groups to better understand farmer perspectives, motivations, and constraints concerning the adoption of SFP innovations.

4. Adoption or diffusion studies addressing learning questions on the TOC

The baseline surveys conducted in Ghana, Malawi, and Ethiopia focusing on sustainable intensification technologies will form the basis for the adoption and impacts studies. These studies will seek to answer the following causal impact learning questions: (1) What factors are constraining/enabling the scaling and adoption as well as the intensity of use of the SFP innovations? and (2) How does adoption of the SFP innovations impact yield, farm income and household income? (3) What are the most promising integrated farm-level innovation bundles to improve sustainability, equity, and agronomic gain at scale within the selected geographies of the program? To answer these questions, adoption and impact studies build up on the baseline studies (panel survey) to assess the extent, pathways, and determinants of technology adoption and the farm-level or primary impacts of SFP innovation bundles among adopters in the target areas with significant adoption by 2026. The impact studies will focus on intermediate outcomes in technology adoption in terms of the number of farmers applying, and land area under SFP innovations; crop production and yields; and changes in production costs and profitability (i.e. gross margin) and household income in line with the SFP ToC. The results obtained from these studies will be vital in designing long-term studies to assess the overall impact of the SFP.

IA studies

A set of MELIA studies have been compiled to support the evidence of results to be generated. See **Annex 2** for the completed MELIA studies template.

6. Learning and Adaptive Management

One of the key sources to document and share lessons learned for continuous project improvement will be MELIA studies. Adaptive management will be based on using such lessons for continuous operational learning and for periodic reflections that focuses on revisiting and adjusting the Program To

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Learning

The MELIA Plan integrates a structured learning and adaptive management agenda to generate actionable insights, inform management decisions and contribute to internal learning. This learning agenda is guided by a diverse collection of MELIA studies and activities, including assessing adoption, effectiveness, gender equity, climate resilience, and scaling mechanisms across multiple geographies and innovations.

Each MELIA study is well positioned to contribute to learning by testing assumptions, addressing research questions related to enablers and barriers to adoption, and assessing short- and long-term outcomes. From randomized control trials on sustainable intensification of innovations, gender transformative approaches, quasi-experimental design studies, real-time tracking of scaling progress, and qualitative study on partnership engagement, the studies collectively serve as learning labs. Table 1 consolidates and outlines how each MELIA study contributes to program learning and informs management decisions—whether through adjusting theory of change pathways, refining targets and implementation structures, scaling innovations, or improving delivery models. These insights are captured, reviewed, and translated into recommendations, used for program steering through various means (program management meetings and annual program review sessions).

Table 1: Key MELIA Studies and contributions to internal learning and Management decision

MELIA Study or Activity	Contribution to Internal Learning	How the MELIA study or activity will inform management decisions and contribute to internal learning
Adoption and Impacts of Mechanized Direct Seeded Rice (Cambodia & Vietnam)	Informs scalability and contextual performance of mechanization technologies across different agroecologies.	This study supports decisions on investment in mechanization strategies and contextual adaptation of advisories. Insights from this study will be used during Pause and Reflect sessions with partners
Site-Specific Agronomy for Wheat, Teff, and Sorghum (Ethiopia)	Generates crop- and region specific agronomic insights.	Guides crop prioritization and design of customized agronomy packages.
Planting Date Advisory for Rice-Wheat Systems (India)	Evaluates the utility of ICT-based advisories for time-sensitive planting.	Supports decisions on digital advisory system integration into extension.
Site-Specific Agronomy via Public Private Partnership (PPP) Model (Rwanda)	Assesses effectiveness of PPPbased extension delivery.	Informs strategic choice of extension delivery models and sustainability of partnerships.
Institutional Support for Sustainable Intensification (Ghana & Malawi)	Provides RCT evidence on institutional effectiveness.	Guides engagement with enabling policies and institutional partners.
Adoption and Early Impact Studies (Ethiopia, Ghana, Malawi)	Offers early performance feedback on innovations under scaling.	Enables adaptive resource allocation and intervention redesign.
Tracing of Scaling Activities	Maps innovation reach, actors, and pathways using BTT.	Informs strategic scaling oversight, targeting, and course correction.
Qualitative Outcome Study (Ethiopia, Ghana, Malawi)	Captures gendered outcomes of interventions and partner satisfaction.	Supports gender-responsive strategy refinement, and partner engagement process and MEL updates.
Promoting Aflasafe Adoption (Nigeria)	Examines uptake of Aflasafe.	Informs scale-up planning and policy/incentive design for biocontrol.

Push-Pull Technology in Maize (Uganda)	Assesses effectiveness and adoption of pest management technology.	Supports pest management package design and prioritization
Solar Drying Technology (Nigeria)	Analyzes effects on nutrition, value addition, and losses.	Informs post-harvest and climate-smart nutrition investments.
Impacts of Rising Temperature on Mechanization (Africa and Asia)	Explores how climate affects machinery demand and use.	Supports long-term mechanization planning under climate scenarios.
FAW-Tolerant Seed Variety (Zambia)	Tests varietal effectiveness against fall armyworm.	Informs seed development, promotion, and IPM strategy.

Knowledge Management and Communication for Learning and Uptake

Building on the learning mechanisms outlined above, the MELIA team will work with the Communications teams to integrate knowledge management and communication strategies to enhance visibility, and usability of lessons beyond adaptive management, support scaling decisions, and document results in ways that are accessible to diverse stakeholders. The MELIA team will integrate knowledge management and communication strategies (aligned with the Program's communication strategies) that ensure findings from MELIA activities are systematically captured, curated, and shared in accessible formats. This will include the development of evidence briefs, learning notes, and targeted dissemination through stakeholder engagement platforms (such as PAASS) and communication channels suited to different audiences, including policymakers, practitioners, and local partners.

Annual review and adaptive planning

Sustainable Farming Program will follow an annual cycle of evidence synthesis, an annual "Pause and Reflect" sessions, and adaptive planning. Each year will end with implementation process and result review through a Pause and Reflect session with key stakeholders to reflect on progress and refine Theory of Change, targets and assumptions. These changes will reflect in the final annual report of the year. Revised strategies and updated work plans will be developed in the first quarter of the following year, informed by stakeholder feedback. A mid-year progress check (July/Aug) by the program leadership ensures course correction, while an annual MELIA report (December) documents how learning drives adaptive decisions and improved program performance.

7. Reporting

The SFP MELIA plan includes a reporting structure that adheres to the CGIAR Technical Reporting Arrangement and ensures accountability, learning, and adaptive management across the Program. Reporting will be structured around the results framework (which has been aligned with the CGIAR Results Framework and Theory of Change (ToC) which also aligns with the PRMS ToC Board structure, encompassing High-Level Outputs (HLOs), intermediate outcomes, and 2030 outcomes and contributions to Impact Areas and SDGs. The reporting process will be aligned with the CGIAR Technical Reporting Arrangement, adhering to the annual reporting timelines, templates and Performance Results Management System (PRMS) requirements, including results of W3/bilateral projects mapped to SFP. Evidence for reporting will be generated from MELIA system, a near real-time tracking and standardized data capture across all Areas of Work (AoWs).

Routine reporting will be carried out by implementing partners and program teams for most of High-Level Outputs as outlined under MEL, with support from the MELIA team. Intermediate Outcomes and 2030 Outcomes will be supported by MELIA studies and other reports (focus group discussions, PAASS bi-annual feedback mechanisms, phone surveys and AI-assisted tools to generate evidence on innovation uptake, behavioral change, and early outcomes. These findings will be synthesized as part of the annual reports. Evaluation reports from impact assessments and learning studies will be used to triangulate findings and enhance interpretation of routine monitoring data.

The MELIA team and Program Management Unit will synthesize results of the "Pause and Reflect" and include in the annual report for course correction. These continuous feedback loops will be part of the reporting process and integral to achieving the program's intended impacts. The reporting structure will be reviewed and aligned to the final TRA.

8. MELIA resources

MELIA staff

The MELIA plan and related studies and activities span multiple countries, thematic areas, and methodological approaches—ranging from randomized control trials and quasi-experimental 22 designs to qualitative assessments and real-time beneficiary tracking. To manage this portfolio effectively, a robust and well-structured MELIA team is required at both strategic and operational levels. The current MELIA staff comprise both internationally recruited staff (a Program MELIA Focal Person, six Impact Assessment experts, two ex-ante experts) and two nationally recruited staff. This team will implement MELIA activities across the eight AoWs and at Program level. In addition, current critical need for the team is operational budget to implement such studies and conduct routine monitoring of HLOs and outcome. In this regard, most centers have already budgeted for the MELIA related HLO (A digitally enabled MELIA system with a specific focus on the assessment of agronomic gain in real time and at scale across the other AoWs). The operational model is to have this budget used for MELIA studies and routine monitoring that captures results across AoWs since center plans also cuts across AoWs. However, this approach possess a challenge as centers need to ringfence such budgets specifically for MELIA activities. Discussions are ongoing to ensure agreements with the centers for the specific MELIA activities and budgets.

The team also anticipates engaging three nationally recruited staff and occasional national consultancies (on need basis) to support and engage bilateral projects integration, partner trainings across the PAASS, and household surveys. In addition, we anticipate Program level MELIA operational funds to enable evidence generation across all AoWs and not made as center contributions only.

2025 MELIA budget

Activity title	Activity description	2025 total cost
Monitoring activities (Activities related to the routine monitoring of HLOs and outcomes)	Regular MEL will track program progress based on the results framework. This activity will include trainings, output level data collection from partners, CGIAR staff, etc. Data collected will be used for annual internal performance reviews, reporting and planning, and contribute to stage-gate.	\$ 184,699
MELIA studies	These activities include tracing of scaling activities to provide data for long term impact assessment - how, when, where and why CGIAR innovations are scaled. This will include output and outcome data such as use and uptake of the innovations, household surveys (e.g., as follow up to previous initiative studies such as the impacts of rising temperature on agricultural mechanization in Africa and Asia, partner satisfaction survey, the push-pull technology adoption survey, etc.	\$ 225,744
Total 2025 MELIA activities costs		\$ 410,443

9. Data management

General approach

The program data will comprise of output data, collected routinely as interventions are implemented. Such data include capacity sharing across different Area of Works for different participants (researchers, demand and scaling partner staff, farmers, etc), innovation development, knowledge products, etc. Outcome datasets will include household survey data, selected crop cuts to benchmark farmer yield records to triangulate farmer records, partnership surveys data to check the health of partner engagement in both research and scaling activities, etc. The Program data collection and management will comply CGIAR Open and FAIR Data Assets Policy. All program data will be consolidated on a designated digital platform, such as ONA (<https://ona.io/home/>), which will feature tiered access levels but also offers application programming interfaces (APIs) to enable users and search engines to locate metadata with easy

Most data will be generated through partnership platforms and may require Use Agreement. In situations where such Use Agreements are restricted or limited to retain confidentiality, datasets may only be published without Open Access. However, associated metadata shall be published in a CGIAR repository without identifiers. The data will be subjected to quality assurance processes and utilized for program learning as well as the refinement of the Theory of Change during the annual “Pause and Reflect” sessions. These sessions will also contribute to the overall annual reporting procedures. To facilitate results reporting within the PRMS framework, each Area of Work (AoW) will appoint designated focal persons who will collaborate with the Monitoring, Evaluation, and Learning (MEL) team to upload pertinent results and supporting evidence. A comprehensive checklist, in alignment with PRMS metadata requirements, will be employed to guide and standardize the reporting process.

Annex 2. MELIA studies template

Below table has been shortened due to the length. See the complete MELIA studies [Open Access link for both the ToC and the Results Framework](#) (Download the MELIA studies as part of an excel version of the results framework using the 3rd icon on the top left corner of the page)

MELIA Study title	MELIA type	Lead Center	Contact	Result(s) Type and Title evidenced by this study	Indicator(s) evidenced by this study	Assumption(s) assessed by this study	Location	Country	Methods and design approaches	Other Program(s)/ Accelerator(s)	Start date for the study	End date for the study
Adoption and early impact studies of sustainable farming innovations	Adoption or diffusion studies addressing learning questions on the TOC	International Institute of Tropical Agriculture	• Arega Alene (a.alene@cgiar.org) • Julius Manda (j.manda@cgiar.org) • Bekele Kotu (b.kotu@cgiar.org)	• 2030 Outcome - 7. Farmers adopt and benefit from bundles of farm system innovations	• This indicator measures the number of farmers using innovation bundles across the sustainable farming priority geographies	• It is assumed that the innovation bundles being scaled are validated, demand-driven, and responsive to diverse farmer needs.	country	• Ethiopia • Ghana • Malawi	Mixed-method adoption study using structured surveys and interviews across Ethiopia, Ghana, and Malawi to assess early adoption and usage patterns of innovation bundles		2027	2027
Adoption and impact assessment of digital extension in Nigeria and Senegal	Causal Impact Assessment learning studies	Africa Rice Center	• Aminou Arouna (a.arouna@cgiar.org)	• Intermediate Outcome - 2.2 Farmers access bundled advisories to overcome constraints • 2030 Outcome - 7. Farmers adopt and benefit from bundles of farm system innovations	• This indicator measures the number of farmers using innovation bundles across the sustainable farming priority geographies	• Farmers are willing and able to act on the bundled advisories to overcome soil nutrient constraints	Country	• Senegal • Nigeria	Causal impact assessment using quasiexperimental design comparing users and non-users of bundled digital advisory services.		2026	2029
Adoption and impact of good agricultural practice in rice-based production system	Causal Impact Assessment learning studies	Africa Rice Center	• Aminou arouna (a.arouna@cgiar.org)	• Intermediate Outcome - 3.3. Farmers implement practices that restore and enhance soil health	• This indicator measures the number of farmers applying integrated soil and resource management practices that have led to documented improvements in at least two of the following: soil health, carbon footprint, water	• Farmers and partners are willing to test and adopt innovation bundles including soil health practices	country	• Côte d'Ivoire • Nigeria • Mali			2026	2029
Adoption and impacts of mechanized direct seeded rice in	Causal Impact Assessment	International Institute of Tropical Agriculture	• Arega Alene (a.alene@cgiar.org)	• 2030 Outcome - 1. Adoption of inclusive adaptation and mitigation	• This indicator measures number of farmers using appropriate	• Innovations lead to tangible impacts in productivity, equity, and	country	• The Socialist Republic of Viet			2028	2030

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MELIA Study title	MELIA type	Lead Center	Contact	Result(s) Type and Title evidenced by this study	Indicator(s) evidenced by this study	Assumption(s) assessed by this study	Location	Country	Methods and design approaches	Other Program(s)/ Accelerator(s)	Start date for the study	End date for the study
Cambodia and Vietnam	learning studies			solutions by farmers • 2030 Outcome - 6. Farmers benefit from use of appropriate mechanization options	mechanization options • This indicator measures percentage of labor productivity improvement through the use of appropriate mechanization options	sustainability. • Farmers find practices accessible and appropriate; delivery channels are functional.		Nam • Cambodia				
Adoption and impacts of sitespecific agronomy Advisory through a public-private partnership extension model in Rwanda	Adoption or diffusion studies addressing learning questions on the TOC	International Institute of Tropical Agriculture	• Arega Alene (a.alene@cgiar.org)	• Intermediate Outcome - 2.2 Farmers access bundled advisories to overcome constraints • Intermediate Outcome - 2.1 Scaling partners delivering bundled solutions	• This indicator measures the number of Scaling partners delivering bundled solutions	• Advisories are context-relevant and integrated into local extension systems. • Farmers and partners are willing to adopt and test innovation bundles.	country	• Rwanda	Adoption study using farmer surveys and partner interviews to assess uptake and relevance of site-specific advisories.		2025	2028
Adoption and impacts of sitespecific agronomy solutions for wheat, teff, and sorghum production in Ethiopia	Adoption or diffusion studies addressing learning questions on the TOC	Africa Rice Center	• Aminou Arouna (a.arouna@cgiar.org)	• 2030 Outcome - 2. Tailored nutrient recommendations for perennials are validated and in use	• This indicator tracks the number of tailored nutrient recommendations used by next users (partners) across countries	• Tailored nutrient recommendations achieve increase in at least 2 dimensions of agronomic gain (yield, profitability, resource use efficiency) at farm level	country	• Ethiopia			2026	2028
Assessing Efficiency and Effectiveness of the Use Case model in developing agronomic solutions	Qualitative outcome study	International Institute of Tropical Agriculture	• Theresa AmpaduBoakye (t.ampaduboaakye@cgiar.org)	• Intermediate Outcome - 7.1. Cocreation and system science methods usage • High Level Output - 8.1.4 MultiStakeholder Platforms for Scaling Solutions	• This indicator will track the number of operational multistakeholder platforms supporting bundled solution delivery	• Program activities remain inclusive and equitable (gender, youth, marginalized groups). • Farmers and partners are willing to adopt and test	global				2025	2030

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						innovation bundles.						
Enhancing adoption of sustainable intensification technologies through appropriate institutional support	Causal Impact Assessment learning studies	International Institute of Tropical Agriculture	• Bekele Kotu (b.kotu@cgiar.org) • Julius Manda (j.manda@cgiar.org)	• 2030 Outcome - 1. Adoption of inclusive adaptation and mitigation solutions by farmers • 2030 Outcome - 5a. Farmers adopt water innovations to reduce water-related risks to agronomic gain 2030 Outcome - 7. Farmers adopt and benefit from bundles of farm system innovations	• This indicator measures the number of farmers using inclusive adaptation and mitigation solutions in their farming systems • This indicator measures the number of farmers using innovation bundles across the sustainable farming priority geographies	• Delivery mechanisms (e.g., extension services, digital platforms) are in place to reach farmers effectively.	country	• Ghana • Malawi			2026	2028
Evaluating the effectiveness and efficiency of Sustainable Farming Program	Program/project evaluation or review	International Institute of Tropical Agriculture	• Theresa AmpaduBoakye (t.ampaduboa@cgiar.org)	• Intermediate Outcome - 8.4 Partnership platforms engage across all AoWs and other Programs and Accelerators • Intermediate Outcome - 8.3 Partnership platforms are addressing key agronomic challenges	• This indicator tracks the number of functional partnership platforms actively addressing agronomic, plant health, and farming system challenges	• Institutional capacity with partnership platforms exists to integrate and scale bundle of innovations	global				2027	2027
Ex-ante impacts of scaling mechanized directseeded rice technology: evidence from Cambodia and Vietnam	Ex-ante, baseline and/or foresight study	International Maize and Wheat Improvement Center / Centro Internacional de Mejoramiento de Maíz y Trigo	• Jordan Chamberlin (j.chamberlin@cgiar.org)	• 2030 Outcome - 1. Adoption of inclusive adaptation and mitigation solutions by farmers • 2030 Outcome - 6. Farmers benefit from use of appropriate mechanization options	• This indicator measures the number of farmers using inclusive adaptation and mitigation solutions in their farming systems • This indicator measures number of farmers using appropriate	• Innovations lead to tangible impacts in productivity, equity, and sustainability. • Farmers find practices accessible and appropriate; delivery channels are functional.	global				2028	2030

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MELIA Study title	MELIA type	Lead Center	Contact	Result(s) Type and Title evidenced by this study	Indicator(s) evidenced by this study	Assumption(s) assessed by this study	Location	Country	Methods and design approaches	Other Program(s)/ Accelerator(s)	Start date for the study	End date for the study
					mechanization options							
Genderempowerment, digital extension and adoption of best management practices in rice-based farming	Causal Impact Assessment learning studies	Africa Rice Center	• Arouna Aminou (a.arouna@cgiar.org)	• Intermediate Outcome - 3.3. Farmers implement practices that restore and enhance soil health • 2030 Outcome - 7. Farmers adopt and benefit from bundles of farm system innovations	• This indicator measures the land area applied with improved water management practices • This indicator measures the number of farmers using innovation bundles across the sustainable farming priority geographies	• it is assumed that delivery systems (extension, private sector, farmer groups) are capable of effectively disseminating complex, integrated solutions	country	• Nigeria	RCT-based impact study, combining role of gender transformative approaches, digital extension and adoption of best management practices in ricebased farming		2028	2028
Impact of Fall Army Wormtolerant seed variety on maize productivity in Zambia	Causal Impact Assessment learning studies	International Maize and Wheat Improvement Center / Centro Internacional de Mejoramiento de Maíz y Trigo	• Yanyan Liu (l.yanyan@cgiar.org)	• 2030 Outcome - 1. Adoption of inclusive adaptation and mitigation solutions by farmers • 2030 Outcome - 4c. Increased availability of safe food and feed to consumers and livestock	• This indicator measures the number of farmers using inclusive adaptation and mitigation solutions in their farming systems	• Farmers find practices accessible and appropriate; delivery channels are functional. • Innovations lead to tangible impacts in productivity, equity, and sustainability.	country	• Zambia			2026	2026
Impacts of rising temperature on agricultural mechanization in Africa and Asia	Causal Impact Assessment learning studies	International Food Policy Research Institute	• Yanyan Liu (l.yanyan@cgiar.org)	• 2030 Outcome - 1. Adoption of inclusive adaptation and mitigation solutions by farmers	• This indicator measures the number of farmers using inclusive adaptation and mitigation solutions in their farming systems	• Farmers find practices accessible and appropriate; delivery channels are functional.	country	• Ghana • Nepal • Kenya • Ethiopia • India			2025	2026
Impacts of rising temperature on agricultural mechanization in Africa and Asia	Causal Impact Assessment learning studies	International Food Policy Research Institute	• Yanyan Liu (y.liu@cgiar.org)	• 2030 Outcome - 1. Adoption of inclusive adaptation and mitigation	• This indicator measures the number of farmers using inclusive adaptation and	• Farmers find practices accessible and appropriate;	country	• India • Nepal • Ethiopia • Kenya • Ghana	This study will employ RCT to evaluate the effectiveness of rising temperatures on		2025	2026

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MELIA Study title	MELIA type	Lead Center	Contact	Result(s) Type and Title evidenced by this study	Indicator(s) evidenced by this study	Assumption(s) assessed by this study	Location	Country	Methods and design approaches	Other Program(s)/ Accelerator(s)	Start date for the study	End date for the study
				solutions by farmers	mitigation solutions in their farming systems	delivery channels are functional.			agricultural mechanization			
Partners satisfaction survey in developing and scaling mixed farming solutions	Qualitative outcome study	International Institute of Tropical Agriculture	• Theresa AmpaduBoakye (t.ampaduboa@cgiar.org)	• Intermediate Outcome - 8.4 Partnership platforms engage across all AoWs and other Programs and Accelerators • Intermediate Outcome - 2.1 Scaling partners delivering bundled solutions • Intermediate Outcome - 1.3 Public and private sector invest in programs and services	• % of trained plant health stakeholders demonstrating improved knowledge and skills in detecting, monitoring, and managing biotic threats	• Partners have the technical capacity and incentives to adopt and integrate these tools into their advisory services • Institutional capacity of partnership platforms exists to engage all AoW and across other CGIAR programs/accelerators to integrate and scale bundles of innovations.	global		Qualitative study involving stakeholder interviews and platform observations to assess system science methods and multi-stakeholder collaboration.		2026	2030
Promoting adoption of push-pull technology among maize producers in Uganda	Causal Impact Assessment learning studies	International Food Policy Research Institute	• Yanyan Liu (l.yanyan@cgiar.org)	• 2030 Outcome - 6. Farmers benefit from use of appropriate mechanization options	• This indicator measures the number of farmers using innovation bundles across the sustainable farming priority geographies	• Farmers and partners are willing to adopt and test innovation bundles.	country	• Uganda			2026	2026
Promoting Aflasafe adoption in Nigeria	Causal Impact Assessment learning studies	International Food Policy Research Institute	• Yanyan Liu (y.liu@cgiar.org)	• 2030 Outcome - 4a. Losses to biotic threats reduced on farms	• This indicator measures the efficient resource use through reduced pesticides use	• Successful practices and innovations can be scaled up without losing effectiveness.	country	Nigeria			2026	2026
Promoting solar drying technology in Nigeria	Causal Impact Assessment learning studies	International Food Policy Research Institute	• Yanyan Liu (y.liu@cgiar.org)	• 2030 Outcome - 4c. Increased availability of safe food and feed to consumers and livestock	• This indicator measures the number of farmers using inclusive adaptation and mitigation solutions in their farming systems	• Innovations lead to tangible impacts in productivity, equity, and sustainability. • Behavioral change among farmers and partners is	country	Nigeria			2026	2026

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MELIA Study title	MELIA type	Lead Center	Contact	Result(s) Type and Title evidenced by this study	Indicator(s) evidenced by this study	Assumption(s) assessed by this study	Location	Country	Methods and design approaches	Other Program(s)/ Accelerator(s)	Start date for the study	End date for the study
						sustained postintervention.						
Tracking of beneficiaries , and related use and uptake of innovations	Tracing of scaling activities and policy advice, as a base for long-term, large scale impact assessments	International Institute of Tropical Agriculture	• Theresa AmpaduBoakye (t.ampaduboakye@cgiar.org)	• Intermediate Outcome - 2.2 Farmers access bundled advisories to overcome constraints • Intermediate Outcome - 8.3 Partnership platforms are addressing key agronomic challenges • Intermediate Outcome - 2.1 Scaling partners delivering bundled solutions	• This indicator measures the number of Scaling partners delivering bundled solutions	• Stakeholders trained with the materials are motivated to use them in practice. • Delivery mechanisms (e.g., extension services, digital platforms) are in place to reach farmers effectively. • Partners have the technical capacity and incentives to adopt and integrate these tools into their advisory services	global				2025	2030

About CGIAR Sustainable Science Program Report

This document was developed as part of the CGIAR Sustainable Farming Program to guide its implementation of Monitoring, Evaluation, Learning and Impact Assessment across all countries. The implementation will be done by participating in CGIAR centers in close collaboration with implementing partners. CGIAR is a global research partnership for a food-secure future. Its science is carried out by 15 Research Centers in close collaboration with hundreds of global partners. www.cgiar.org

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Key Words:

Monitoring, Evaluation, Learning, Impact Assessment, Innovations, Theory of Change, Area of Work

Partners

All Sustainable Farming program Partners

About CGIAR Sustainable Farming Science Program

The CGIAR Sustainable Farming Science Program will address key challenges in agrifood systems by fostering efficient production of nutritious foods and safeguarding the environment to create fair employment opportunities, as we simultaneously tackle climate change, soil degradation, pests, diseases, and desertification.



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