



Feed the Future Climate Resilient Cereals Innovation Lab (CRCIL) Monitoring, Evaluation, Research, Learning, & Adapting Plan

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Acronyms

AWARD	<i>African Women in Agricultural Research and Development</i>
AMELP	<i>Activity Monitoring, Evaluation, and Learning Plan</i>
AoI	<i>Area of Inquiry</i>
AOR	<i>Agreement Officer Representative</i>
BRRl	<i>Bangladesh Rice Research Institute</i>
CERAAS	<i>Centre d'Etudes Régional pour l'Amélioration de l'Adaptation à la Sécheresse</i>
CGIAR	<i>Consultative Group on International Agricultural Research</i>
CLA	<i>Collaborate, Learning and Adapting</i>
CRC	<i>Climate-Resilient Cereals</i>
CRCIL	<i>Climate-Resilient Cereals Innovation Lab</i>
DDL	<i>Development Data Library</i>
DEC	<i>Development Experience Clearinghouse</i>
DIS	<i>Development Information Solution</i>
DQA	<i>Data Quality Assessment</i>
DSU	<i>Delaware State University</i>
EAC	<i>External Advisory Council</i>
EDA	<i>Experimental Design and Analysis</i>
EIAR	<i>Ethiopian Institute of Agricultural Research</i>
FTF	<i>Feed the Future</i>
GFSS	<i>Global Food Security Strategy</i>
HH	<i>Household</i>
IL	<i>Innovation Lab</i>
IR	<i>Intermediate Results</i>
KSU	<i>Kansas State University</i>
LSU	<i>Louisiana State University</i>
ME	<i>Management Entity</i>
MEL	<i>Monitoring, Evaluation, and Learning</i>
MERLA	<i>Monitoring, Evaluation, Research, Learning, and Adapting</i>
NARI	<i>National Agriculture Research Institutions</i>
OR	<i>Operational Research</i>
PaP	<i>Phenotyping and Phenomics</i>
PI	<i>Principal Investigator</i>
PIRS	<i>Performance Indicator Reference Sheet</i>
PLC	<i>Product Life Cycle</i>
POI	<i>Point of Contact</i>
QW	<i>Quick Win</i>
RFA	<i>Request For Application</i>

- RTI** *Research Triangle Institute*
- TLT** *Technical Leadership Team*
- TOC** *Theory of Change*
- TPP** *Target Product Profile*
- TPPD** *Target Product Profile Synthesis and Deployment*
- TTMI** *Tools, Technologies, Methods, and Insights*
- USAID** *United States Agency for International Development*

I. Overview of the Monitoring Evaluation and Learning Plan

The Feed the Future (FTF) Climate Resilient Cereals Innovation Lab (CRCIL) Monitoring, Evaluation, and Learning (MEL) Plan¹ is designed to quantify the progress and impact of the Lab's activities and to optimize learning. The MEL Plan will help measure contributions to the overall project goal of equipping three productive and strategically positioned National Agricultural Research Institutions (NARI) with advanced science capacities to discover, validate, and transfer – CRCIL's three Areas of Inquiry (AoI) – climate resilient genetics into locally appropriate elite breeding materials that advance food, nutritional, and economic security.

CRCIL will require an interdisciplinary endeavor. To drive innovative germplasm enhancement in sorghum, millet, rice and wheat, Kansas State University (KSU) has assembled an experienced, diverse, and integrated scientific consortium comprised of U.S. research leaders, and centralized a holistic set of crop-agnostic, cutting-edge, breeding-related Tools, Technologies, Methods, and Insights (TTMIs). The CRCIL advanced science Engine will furnish NARI breeding hubs, positioning CRCIL to cost-effectively support a broad range of ambitious germplasm enhancement projects in all four crops, across the established AoI, and the selected countries, and, ultimately, in a wide range of Feed the Future countries. A four-member Management Entity at KSU, External Advisory Council (EAC), and technical advisory function of the Consortium members will be used to cultivate and manage an effective, competitive, and adaptive research program.

CRCIL's NARI breeding and genetics' hubs in West Africa (Senegal), East Southern Africa (Ethiopia), and South Asia (Bangladesh), have developed stakeholder-informed Target Product Profiles (TPP) and track records of reaching farmers with improved varieties through established networks of public and private partnerships along the Product Life Cycle (PLC). CRCIL's strategic partnerships position the program to integrate within the broader Feed the Future and global climate resilient cereal community, including private sector and other Product Life Cycle partners. These also include a direct partnership with the Innovation Lab for Crop Improvement (ILCI), including sharing a breeding hub between the programs and designing complementary projects to hand off climate resilient products (alleles/haplotypes) in elite breeding materials for ILCI to move into varieties and reach farmers.

CRCIL will review the MEL Plan annually for updates, or more frequently around key milestones, such as onboarding new competitive program sub-awardees. Any proposed revisions based on the internal reviews will be provided in draft form to the USAID AOR for approval, including updates to performance indicators and targets or revisions to the Theory of Change or Results Framework.

CRCIL's MEL Plan describes and visually depicts the Theory of Change, Impact Pathways, and Results Framework, including the overall program Goal, Strategic Objectives, and Intermediate Results (IR) of the program. It includes core performance indicators and definitions and outlines the process of identifying indicators for sub-awardees. Additionally, the MEL Plan describes the information and reporting system to measure progress toward attaining results, data management strategy, and intentional learning processes that will be conducted to assess progress and facilitate adaptive management.

The Collaborating, Learning, and Adapting (CLA) agenda will be drafted in a separate document, but the MEL Plan outlines potential learning questions that the program seeks to address by key priority area: 1) Capacity building, 2) Innovation/Technology adoption and scaling, 3) Resilience, and 4) Gender equity and social inclusion.

¹ MEL Plan, MERLA Plan, AMELP, and AMEL Plan are used interchangeably throughout the document.

I.1 Monitoring, Evaluation, Research, Learning, and Adapting (MERLA) Approach

The MEL Plan is designed based on the CRCIL’s goals, and expected outputs, outcomes, and impacts, taking into consideration the corresponding MEL activities required to assess progress in its achievements. It establishes a sustainable system for ensuring the quality and validity of data by employing rigorous procedures towards the adaptive management necessary to quantify the progress and impact of proposed activities and measure program contributions to the overall program goal. The MEL Plan Collaborating, Learning, and Adapting (CLA) approach, based on the United States Agency for International Development’s (USAID) CLA approach², and CRCIL’s Theory of Change (TOC) will guide the refinement of activity design as needed, based on new evidence, continual learning, and complexity-aware monitoring and innovative evaluation activities.

RTI International (RTI) has a proven track record in implementing international development and research projects. As subrecipient, RTI brings their dynamic MERLA approach (see Exhibit 1) to guide and improve performance management through collaborative engagement with program staff members, donors, government personnel, and other stakeholders. MERLA is the intentional application of results focused monitoring, evaluation, and research tools and methodologies to inform continuous evidence-based learning that is purposefully used to adapt program and policy decision making. This approach does not limit monitoring and evaluation (M&E) to an exercise of data reporting requirements or deliverables but institutionalizes data collection as a dynamic and adaptive project management approach to increase data-driven decision making. As such, monitoring and evaluation is a broad, iterative, and adaptive process that harnesses and applies data to support learning and improvement across diverse stakeholders—well beyond merely meeting data requirements and deliverables.

RTI’s ongoing and results-focused monitoring processes will allow CRCIL to determine the extent to which an intervention is affecting the intended target beneficiaries, whether it is occurring according to plan, what activities are working, and what new opportunities or limitations are emerging within the operating environment. The MERLA approach’s strength lies in its ability to provide timely performance information that facilitates program improvement and performance outcomes. Evaluation is the periodic assessment of programmatic relevance, performance, efficiency, and impact—both expected and unexpected— against the intended goal and objectives. Evaluation identifies overarching programmatic effectiveness and worth.

RTI designed this MERLA approach by prioritizing USAID’ CLA to provide a framework for collaboration by ensuring that progress toward an activity’s objectives is guided by continuous learning and iterative adaptation of program implementation. The collaboration element is critical to ensure stakeholders understand the evidence behind project performance and support project planning decisions. The MERLA approach will continue to be refined in collaboration with all partners, USAID, and other relevant stakeholders to help inform strategic allocation of programmatic resources, improve progress toward outcomes, and allow systematic testing of the key programmatic hypotheses and Theory of Change.

² USAID Learning Lab Tools and Approaches to Learning for Better Development Programming can be accessed here: <https://usaidlearninglab.org/>

Exhibit 1. RTI International MERLA cycle



2. Theory of Change (TOC)

The CRCIL's Theory of Change (Exhibit 2) reflects the contributions of the CRCIL's approach and interventions to the GFSS goal of reduced global hunger, malnutrition, and poverty through science, technology, and innovation. The expected outcomes of CRCIL align with the goals of the overall FTF Initiative: 1) Increased availability and downstream adoption of improved cereal varieties, incorporating CRCIL enhanced germplasm, with improved nutrition, safety, and yield stability under abiotic and biotic climate-related stresses; 2) Increased adoption of varieties incorporating CRCIL outputs, that generates inclusive economic growth, including increased household income, sustainable economic growth opportunities for women that increases their roles in the household and youth; 3) Increased ability of FTF countries to anticipate and respond to emerging threats and climate change with the localization of advanced climate resilient cereals through the improved capacity of NARI Hubs, and linkages with farmer groups and government to ensure coherent, relevant, and timely responses and adaptation; and 4) Increased capacity of NARI breeding and genetics hubs as capable and connected resources synthesizing Target Product Profile (TPP) input from diverse stakeholders, towards building capacity and sharing knowledge with one another as well as with producers, processors, and consumers in their regions.

To successfully contribute to the FTF development outcomes, CRCIL's TOC states that:

IF CRCIL interventions realize the following objectives:

1. **Capacity Development:** Strengthen the capacity of developing country partners, by equipping breeders with cutting-edge Tools, Technologies, Methods, and Insights (TTMIs), to effectively discover, validate and transfer new alleles/haplotypes into elite backgrounds, and to intentionally incorporate cross-cutting themes in breeding programs, for accelerating breeding for improved, locally appropriate cereal crop varieties targeted to smallholder farmers within their countries and regions.
2. **Research and Development:** Discover novel alleles/haplotypes for traits critical in climate adaptation, validate, and transfer to elite breeding lines that improve the efficiency and accuracy of developing country partners' TPP-aligned trait discovery and breeding efforts.

CRCIL MONITORING, EVALUATION, RESEARCH, LEARNING, AND ADAPTING PLAN

3. **Resource Leverage:** Access and leverage resources and align efforts that support CRCIL activities and objectives through coordination amongst essential stakeholders across the broader global research community.
4. **Learning and Adapting:** Coordinate CRCIL research activities and outputs with other activities across the broader FTF cereal crops improvement portfolio with both upstream market demand and downstream seed system and scaling efforts.

THEN the availability and adoption of new climate-resilient cereal (CRC) varieties used by partner breeding programs will be increased.

CRCIL's Theory of Change in a nutshell shows how the program aims to empower NARI breeding hubs with advanced TTMLs to innovate in discovering, validating, and transferring new genes into elite backgrounds, thereby enhancing crop resilience and productivity. By focusing on capacity development, research and development, resource leverage, and continual learning and adaptation, CRCIL endeavors to foster a dynamic environment for genetic improvement in agriculture. Through these strategic interventions, the program seeks to create a sustainable pathway for addressing food insecurity and promoting agricultural resilience in alignment with the goals of the FTF strategy.

Beyond CRCIL's scope of influence, the development outcomes are positioned such that they should contribute to higher level impacts under the Feed the Future initiative. This includes: 1) The increased availability of safe staple grains with nutritional value under accelerating abiotic and biotic climate-related challenges; 2) Increased household income and national/regional economic stability; 3) Household and regional resilience due to reliable, high quality yields providing household income with inclusive benefits; and 4) A well-nourished population especially among women, children, and marginalized groups.

The CRCIL Theory of Change is cognizant of our sphere of influence and of threats, challenges, and constraints to equipping NARI climate resilient breeding hubs as drivers of food and nutritional security and resilience. **Assumptions** that underpin the program include the willingness of local NARI breeding hubs and global partners to collaborate, the efficacy and accessibility of the TTMLs employed, the adaptability of the CRCIL Program to threats and challenges, the successful integration of new cereal varieties in local farming systems, and inclusive benefits from effective gender and youth integration. The comprehensive set of assumptions is shown below:

1. A strong foundational capacity in specific areas stimulates a more efficient potential breeding pipeline.
2. The TTMLs employed in the breeding process are accessible and effective.
3. Strong, advanced, adapted TTMLs transform NARI breeding hubs' capacity.
4. NARIs are empowered through available, equal, or well-designed partnerships with advanced US universities and other international partners.
5. Gender and youth considerations are effectively integrated and lead to inclusive benefits.
6. The global community's cereal breeding efforts integrate cohesively.
7. Local and global partners are willing and able to collaborate effectively.
8. The CRCIL program is adaptable and flexible to address potential threats and challenges.
9. The identified alleles/haplotypes significantly improve crop resilience to climate change.
10. Local conditions and farming practices allow for the successful implementation of new cereal varieties.
11. The political climate in target countries is conducive to the Program's operations and collaborative research activities.
12. Sporadic COVID-19 outbreaks and other diseases are effectively managed.

CRCIL MONITORING, EVALUATION, RESEARCH, LEARNING, AND ADAPTING PLAN

The CRCIL program will be used to test, scrutinize, and adapt this Theory of Change as a living adaptive management tool. It will be systematically tested through the Quick Win activities and refined throughout the duration of program implementation.

In collaboration with our local partners, we will keep abreast of larger market systems changes across CRCIL’s target countries. Using USAID’s CLA approach, we will reflect on and adapt to these larger system changes as needed, in consultation with USAID and other key stakeholders.

Exhibit 2. CRCIL Theory of Change

Goal	Reduced global hunger, malnutrition, and poverty through science, technology, and innovation			
Impact	Increased ability to respond to emerging threats	Increased availability and adoption of CRC varieties	Increased capacity to connect resources and share knowledge	
Outcomes	Strengthened institutional, technical, and cross-cutting capacity to adopt and use cutting-edge TTMI and to incorporate cross-cutting themes in the design of breeding programs	Improved efficiency & accuracy of FTF developing partner countries’ traits discovery and breeding efforts for chosen TPPs	CRCIL research activities and outputs supported by leveraged resources and aligned efforts and coordinated across the broader CRC and FTF community	
Output	NARI breeding hubs’ participants and country partners trained and mentored to adopt and use cutting-edge TTMI	TPP based alleles/haplotypes discovered, validated and transferred to elite breeding materials of target cereals, applying TTMI	Strategic partnerships identified, formalized and strengthened	Increased collaboration and improved knowledge sharing among essential stakeholders
Activities	Capacity Development	Research & Development	Resource Leverage	Learning & Adapting
Inputs	Financial and human resources + Science Engine centralized resources			
Need	Expand access and understanding of genetic resources in breeding programs to ensure a collaborative development of Climate-Resilient Cereals among the breeding system.			

3. Impact Pathways

The Theory of Change is the roadmap outlining how (resources, activities, stakeholders, and overall sequence) and why (rationale behind the activities) CRCIL’s specific actions are expected to lead to the desired social change. Impact pathways are a critical component of the TOC. They represent a specific sequence of inputs, outputs, outcomes and, ultimately, impact. An impact pathway can be viewed as a route taken to achieve the change envisioned in the TOC. They dive deeper into the how aspect of the TOC, providing an illustration of the processes involved. CRCIL impact pathways are outlined according to its four objectives and incorporate the CRCIL Consortium Principal Investigators (PIs) to equip NARI breeders with capacity and scientific tools. We refer to “enabling environment factors” as those critical assumptions that lie outside CRCIL’s sphere of control and influence.

CRCIL’s approach will serve as a catalyst of innovation along three impact pathways by identifying creative and practical research projects that address important factors for a successful enabling environment.

The CRCIL Consortium model of equipping strong NARI breeding hubs with an advanced science Engine lends the program several advantages, affording it significant untapped bandwidth for the competitive and commissioned research portfolio to expand over time. Centralizing the advanced science capacities into the Engine allows the NARI breeding hubs to select the combination of capacity building and science TTMI necessary to achieve their stakeholder-informed germplasm enhancement objectives, ultimately leading to overall improved performance. The

consolidated resources and the positioning of the NARI regional breeding hubs, equipped with the advanced science Engine capacities, allow a broader range of NARI breeders across many FTF countries to tap into the capacity and outputs of CRCIL to drive their own CRC improvement forward, informed by their similar set of local smallholder farmers and cereal value chain actors.

CRCIL will achieve its objectives mainly through capacity building and research for development efforts and will engage closely with the broader CRC and FTF broader community to increase collaboration and improve knowledge sharing. In consequence, critical approaches of CRCIL are technology transfer and partnership building together with NARI empowerment and global coordination efforts.

Research will be composed of Quick Win activities mainly in Years 1 and 2, followed by four years (Y2 through Y5) of work with Competitive Projects, Commissioned Activities, Buy-Ins, and Associate Award projects. During the 5 years, CRCIL activities will be accompanied by ongoing support and leadership from the Management Entity, covering the major responsibilities, a Technical Leadership Team, drawn from the consortium's core program area PIs, an External Advisory Committee, and strong AOR linkage for coordination with USAID RFS and Missions. CRCIL's research and development portfolio will be designed to result in measurable changes in the selected core indicators, aligned with the Impact Pathways and the Results Framework. The impact pathways illustrate inputs, outputs, outcomes, enabling factors, and users that will eventually lead towards CRCIL's impacts. Even though impact pathways are depicted separately, all three of them are inextricably linked, occur simultaneously, and feed into each other.

Impact Pathway 1: Capacity development (Exhibit 3)

Broadly speaking, the first impact pathway traces the road objective 1 follows from utilizing inputs like personnel, funding, and science capacities, and transforming them through capacity building activities into more able NARI breeding hubs to adopt and use TTMI, and to better incorporate cross-cutting themes in the design of breeding programs, particularly locally appropriate TPPs.

Project inputs are human, financial, and scientific resources necessary to foster capacity building activities. Direct capacity development interventions include, among others, trainings, mentoring, workshops, reciprocal/academic exchanges, cross-cutting themes' trainings, and partnerships with Engine scientists. Training will occur on a needs-basis during the life of the program. Year 1 will be focused on gathering fundamental inputs to advance with project implementation. Supplementary inputs (personnel, funding, or interventions) may be incorporated during the lifespan of the program.

NARI breeding and genetic hubs will partner with Engine scientists for capacity building and collaboration to conceptualize, design, execute and publish CRCIL research in 8 main capacity areas and teams:

1. Experimental Design and Analysis (EDA team)
2. Crop modeling & Simulation
3. Genomics and bioinformatics
4. Genome editing
5. Phenotyping and Phenomics (PaP)
6. Target Product Profile Synthesis & Deployment (TPPD)
7. Cross-cutting (Gender & inclusion, youth, nutrition, food safety, resilience). Cross-cutting activities synergize with TPPD team's efforts to enhance TPP development and variety deployment.
8. South-South breeding innovation

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Through the science Engine, CRCIL will harness the power of in-country leadership, equipping partners to lead innovative research projects. CRCIL will equip NARI breeding hubs with access and capacity to apply the most advanced science to climate resilience germplasm enhancement, informed by local context. Targeted outputs are:

- 1. Institutional/Organizational capacity: NARIs organizational capacity to adopt and use needed TTMI.*
- 2. Technical/Human capacity: Participants' technical capacity to adopt and use needed TTMI.*
- 3. Cross-cutting themes' capacity: NARIs capacity to enhance TPP development and variety deployment, supporting women and youth involved in CRCIL.*

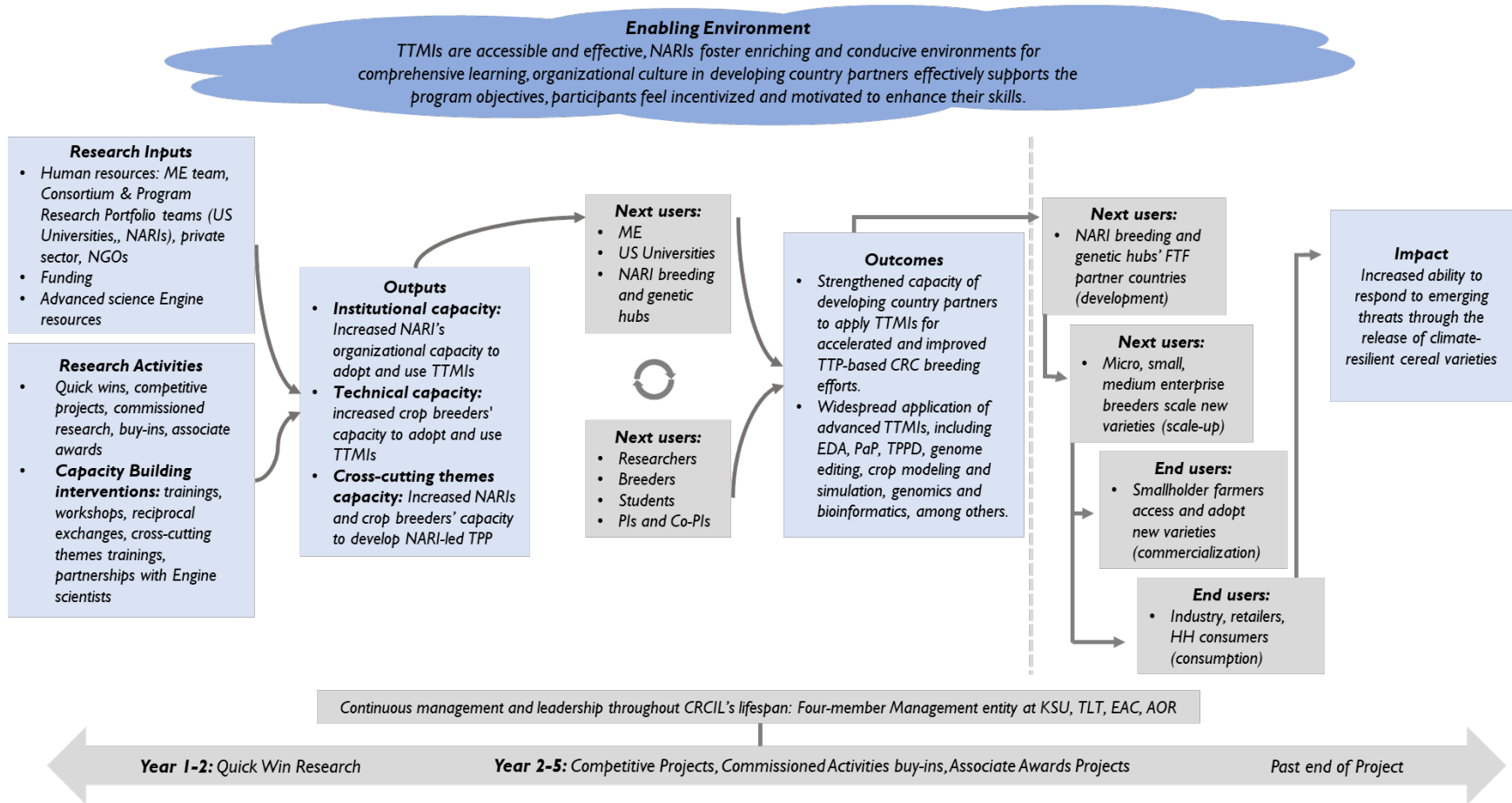
Expected capacity development outcomes include a strengthened capacity of NARIs to independently and sustainably apply TTMI for accelerated and improved TTP-based CRC breeding efforts, with a skilled workforce aware of the inclusion of cross-cutting themes to better target end users when developing new cereal varieties.

Beyond the immediate scope of the project –past the dotted line in exhibit 3–, and jointly with impact pathways 2 and 3, the NARIs' strengthened capacity will permit them to scale the TTMI with local and regional entities developing cereal varieties responsive to local needs and improve NARIs response to emerging threats and climate change through localization, improved capacity & linkages with smallholder farmers and government. The measurement of this higher-level impact of a reduced risk and an increased resilience of smallholder farmers and consumers is outside CRCIL's scope.

The impact pathway necessarily relies on an enabling environment, with factors falling outside the project's control. For CRCIL to successfully progress along this impact pathway, identified enablers are:

- 1. TTMI are accessible and effective;*
- 2. NARIs foster enriching and conducive environments for comprehensive learning;*
- 3. Organizational culture in developing country partners effectively supports the program objectives;*
- 4. Participants feel incentivized and motivated to enhance their skills.*

Exhibit 3. Capacity Development Impact Pathway



Impact Pathway 2: Research and Development (Exhibit 4)

In general terms, the second impact pathway maps objective 2 path, starting from employing inputs like personnel, funding and scientific strengthened capacity, and converting them into research outputs and outcomes through the application/use of accessible and cutting-edge TTMI -phenotyping methods, genetic tools, abiotic and biotic stress tolerance, quality traits, etc.

With NARIs strengthened capacity to apply TTMI in selected advanced science capacities, the ensuing research and development output is discovering, validating, and transferring novel genes to elite materials, essential to enhance germplasm for climate-resilient cereals. The precondition of equipping NARIS with TTMI plays a crucial role in both the capacity development and research and development cycle.

Human and financial resources are fundamental. Research teams from Quick Wins and Competitive Project will partner with US Universities teams. Initial funding will be transferred from USAID to the KSU-led ME and will be distributed through sub-awards to Quick Wins and NARIs. Subsequent funding may come from USAID Mission buy-ins and/or from external leverage (non-US governments, donors, or the private sector).

Human, financial, and scientific inputs are necessary to produce research outputs. Further inputs identified can be leveraged throughout the lifespan of the program.

In CRCIL, the NARI breeding hubs and their supported FTF country partners (e.g. from the competitive subaward portfolio) will engage with the crop-agnostic science Engine to enhance their capacity and drive their CRC germplasm enhancement priorities forward across the three Areas of Inquiry:

AoI 1: *Discover novel alleles/haplotypes and/or identify already existing alleles/haplotypes for prioritized traits critical in climate adaptation using genomics and systems biology approaches.*

AoI 2: *Validate novel alleles/haplotypes controlling climate-resilience traits of cereal crops through functional genomics, phenomics, computational methods, and other relevant approaches in the respective target production environments.*

AoI 3: *Transfer validated alleles/haplotypes for climate adaptation traits into elite breeding materials to develop improved varieties for the market segments identified from the outset.*

In this way, the CRCIL will invest in the discovery, validation and transfer of alleles/haplotypes controlling traits critical in climate adaptation using new breeding TTMI that enable faster, cheaper, and more effective generation of improved cereal varieties in support of breeding efforts led by NARIs and CGIAR Centers. Research and associated capacity strengthening must ensure that a continuing pipeline of improved technologies, practices, approaches, and knowledge becomes available to help achieve the development objectives of the Global Food Security Strategy (GFSS).

Discovery, validation, and transfer of new genes into elite breeding materials may include phenotyping methods, genetic tools, or other approaches to develop new varieties with improved traits such as productivity; abiotic (drought, heat, salt tolerance, etc.) and biotic (disease, pests) stress tolerance; quality traits, such as nutritional content, consumer preference, or processing characteristics; or other properties as identified in the product profiles.

Each Engine capacity area has lead scientists and contributing scientists; these Engine core capacity teams will enable CRCIL to strongly support the NARI hubs and the expanding portfolio of research partners and countries. Cross-cutting themes will be considered largely in the design of TPP development. CRCIL research outputs mostly lie on Phases I (under research) and II (under field testing). In the long-run, NARIs are expected to begin to

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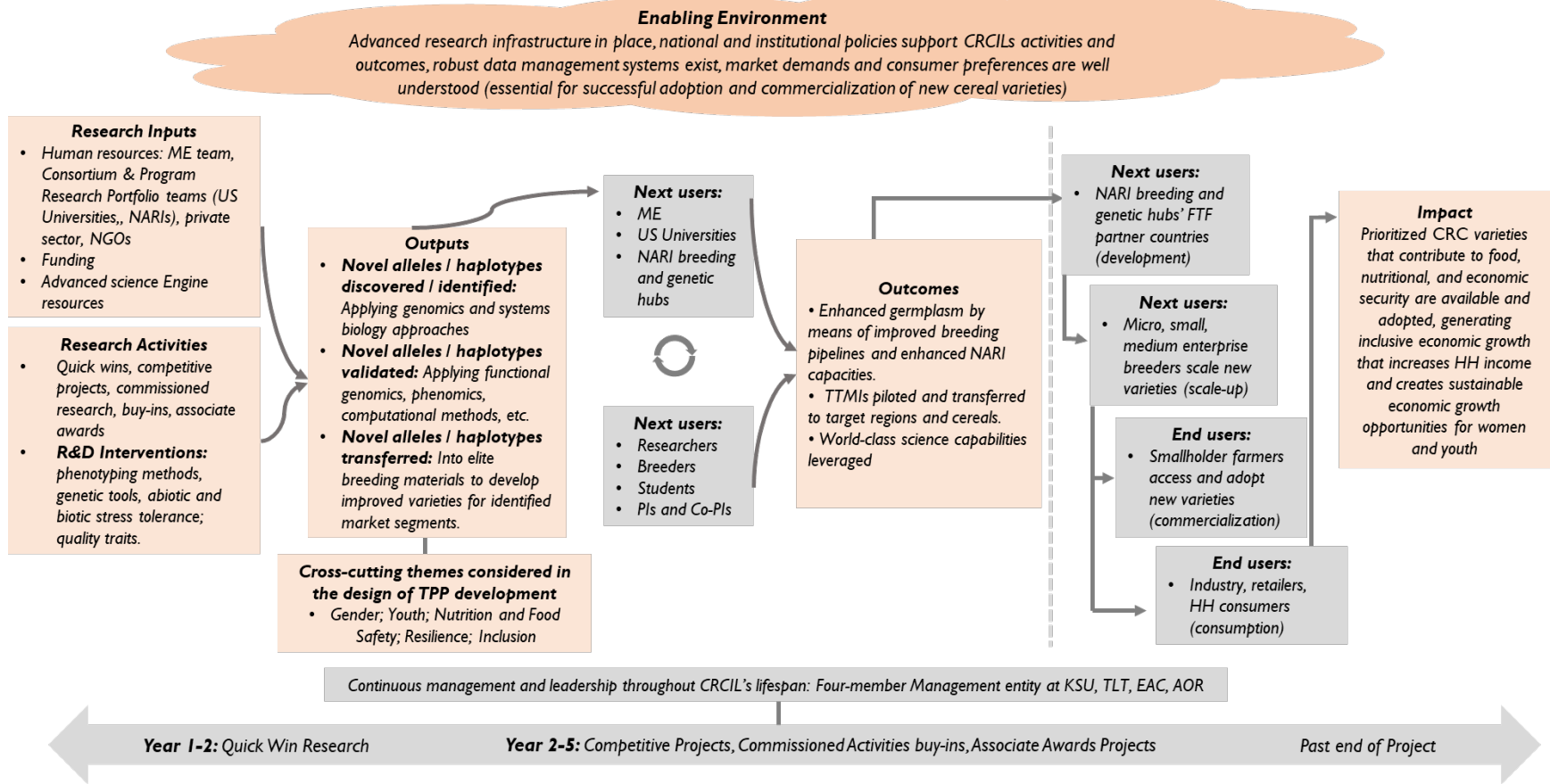
independently pilot and transfer TTMs to the broader CRC and FTF community, scaling world class science capabilities.

Beyond the immediate attribution of the program –past the dotted line in exhibit 4–, the research produced will scale to other entities, potentially benefitting next and end users with the availability and adoption of improved cereal varieties. In the long-term, CRCIL seeks to contribute to the release of prioritized CRC varieties that contribute to food, nutritional, and economic security, generating inclusive economic growth that increases Household income and creates sustainable economic growth opportunities for women and youth. However, this higher-level impact of targeting research outputs to local development contexts is beyond the scope of the program.

The impact pathway necessarily relies on an enabling environment, with factors falling outside the project’s control. For CRCIL to successfully progress along this impact pathway, identified enablers are:

- 1. Advanced research infrastructure in place;*
- 2. National and institutional policies support CRCILs activities and outcomes;*
- 3. Robust data management systems exist;*
- 4. Market demands and consumer preferences are well understood (essential for successful adoption and commercialization of new cereal varieties)*

Exhibit 4. Research and Development Impact Pathway



Impact Pathway 3: Resource Leverage and Learning and Adapting (Exhibit 5)

The last impact pathway follows the path of inputs leading to more connected NARIs that increase collaboration and knowledge and resource sharing across a comprehensive network of interconnected and allied entities, including the private sector, U.S. universities, international research institutions, NARIs, public and civil society organizations, and others.

Human and financial resources are vital resources, and they are defined as in the impact pathways 1 and 2. Participating teams in the US and within the NARIs and other relevant institutions will engage on learning and adapting through different interventions: global, regional, and local workshops, conferences, information creation and dissemination, communities of practice, among others.

These inputs need to be in place so that NARIs can build, learn, and share from/with the network. Inputs in this pathway are meant to contribute to the identification, formalization, strengthening, and leverage of strategic connections, including with the private sector (PLC) and certainly other Innovation Labs. CRCIL will engage with stakeholders across the USAID CRC Strategic Framework and the broader community. For CRCIL climate resilient elite breeding materials to be developed into varieties and reach farmers, the program is partnering with ILCI, as well as relying on core NARI breeding hubs' activities. To formalize the linkage across Innovation Labs, CRCIL and ILCI will ensure synergies across the programs and galvanize a united pipeline within the CRC Innovation Lab community, as well as help forge a united pipeline across the CRC Strategic Framework community. CRCIL will also coordinate with other initiatives to ensure synergies rather than duplicate efforts. These engagements are expected to lead to learning and adapting outputs:

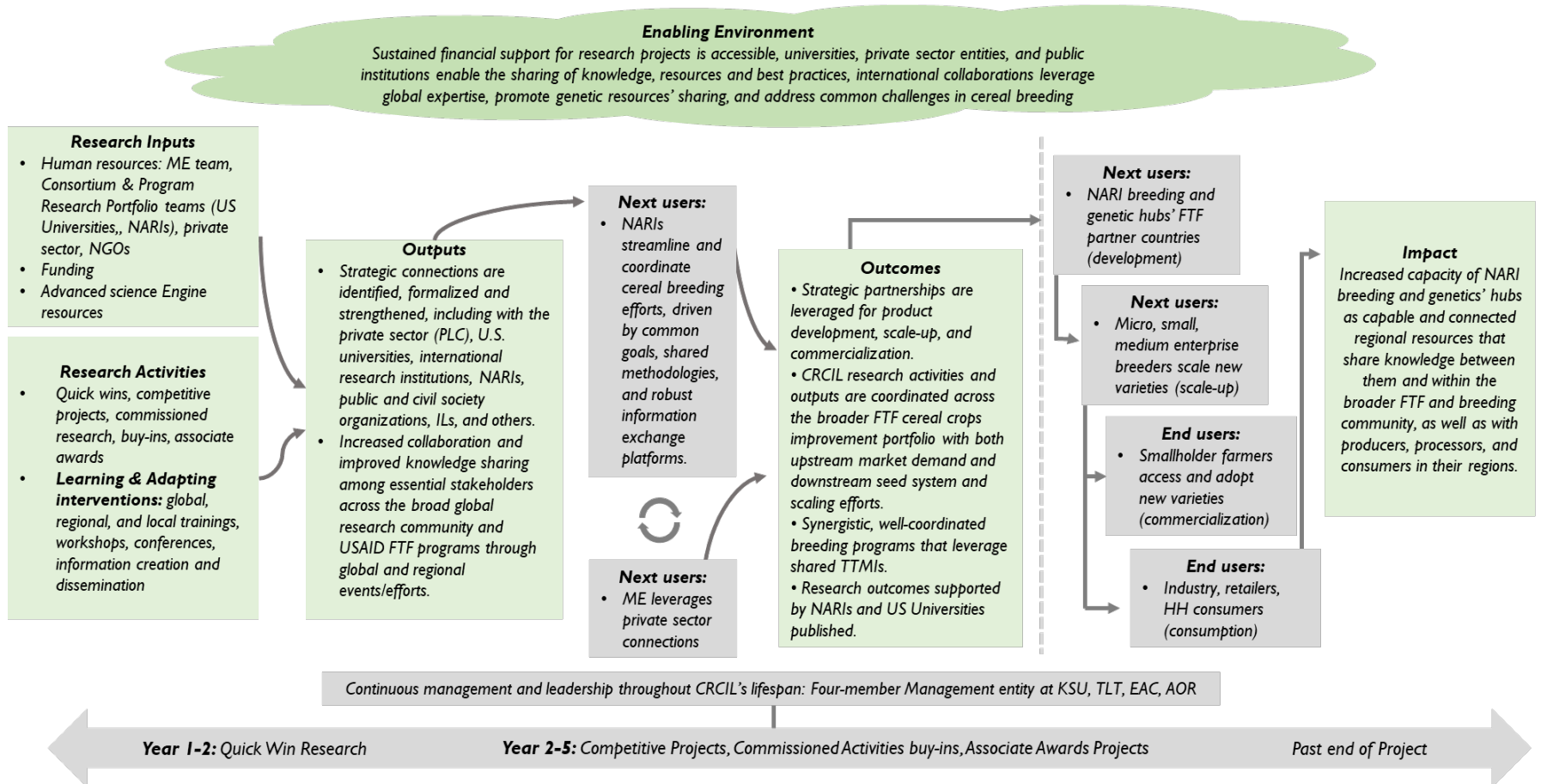
1. *Broad external community: Knowledge sharing among essential stakeholders (NARIs, CGIAR, Wheat CAP, Wheat Yield Partnership, for example).*
2. *FTF community: Knowledge sharing and alignment among other FTF Innovation Labs that work further downstream in relevant food systems.*

From years 2-5 NARIs will continue connecting with local stakeholders and complementary in-country research programs, while the ME will leverage the private sector and USAID Missions to expand the knowledge and resource sharing platform. By the end of the program, CRCIL expects that activities receive leveraged support and NARIs will be operating within the broader FTF and cereal breeding community, aligning with other research partners, upstream and downstream stakeholders, and related local development priorities. Beyond CRCIL's life –past the dotted line in exhibit 5–, leveraged resources will increase NARI's capacity to bridge regional resources to increase knowledge sharing with other NARIs, the FTF and breeding community, as well as with producers, processors, and consumers in their regions.

This impact pathway depends on:

1. *Sustained financial support for research projects accessible;*
2. *Universities, private sector entities, and public institutions enable the sharing of knowledge, resources and best practices;*
3. *International collaborations leverage global expertise, promote genetic resources' sharing, and address common challenges in cereal breeding.*

Exhibit 5. Resource Leverage and Learning and Adapting Impact Pathway



4. Results Framework

In the initial portfolio (Consortium, capacity building and Quick Win activities), and in the ensuing competitive and commissioned portfolio growth, the capacity strengthening, research, and networking activities are designed to fulfil the four CRCIL objectives.

Inclusive engagement will be an important aspect shaping activity's implementation. Vulnerable groups voices will be actively integrated during implementation. Cross-cutting issues are described further in the Monitoring and Evaluation Operational Plan section.

The CRCIL Results Framework targets outcomes that align with the project's overarching goals. These outcomes are centered around the identification, development, piloting, and transfer of suitable TTMLs to target regions. The aim is to equip these regions with the capacity to effectively deliver improved climate-resilient crop varieties. The Results Framework (Exhibit 6) methodically outlines CRCIL's journey towards achieving its core objectives. By articulating goals, intermediate results, and indicators, the framework provides a structured approach to measure progress and effectiveness. This results-oriented approach ensures accountability and facilitates evidence-based decision-making to drive meaningful impact in the endeavor to reduce global hunger, malnutrition, and poverty through science, technology, and innovation.

Exhibit 6. CRCIL Results Framework

CRCIL's goal: Reduced global hunger, malnutrition, and poverty, through science, technology, and innovation

Expected impacts of CRCIL along its Impact Pathways

Increased ability of FTF countries to anticipate and respond to emerging threats and climate change with the localization of advanced CRC through the improved capacity of NARI Hubs, and linkages with farmer groups and government to ensure coherent, relevant, and timely responses and adaptation

Increased availability and downstream adoption of improved cereal varieties incorporating enhanced germplasm, with improved nutrition, safety, and yield stability.
Increased adoption of improved varieties that generate inclusive economic growth

Increased capacity of NARI breeding and genetics hubs as capable and connected resources synthesizing TPP input from diverse stakeholders, towards building capacity and sharing knowledge with one another as well as with producers, processors, and consumers in their regions.

Objective 1 (Capacity Development): Strengthened capacity of country partners, by equipping breeders with cutting-edge capacity and TTMI, to effectively discover, validate and transfer new alleles / haplotypes / germplasm into elite breeding materials for accelerating breeding, for improved, locally-appropriate cereal crop varieties targeted to smallholder farmers within their countries and regions.

IR 1.1 Cutting-edge Tools, Technologies, Methods, and Insights (TTMIs) applied

IR 1.2 Improved NARIs climate resilient breeding hub institutional capacity for germplasm enhancement

IR 1.3 Improved NARIs climate resilient breeding hub technical / human capacity for germplasm enhancement

IR 1.4 Increased NARIs cross-cutting capacity to develop NARI-led TPP



Objective 2 (Research and Development): Improved efficiency and accuracy of partner countries' traits discovery and breeding efforts for the chosen TPPs

AoI Continuum

IR 2.1 Novel genes for traits critical in climate change adaptation are **discovered** and/or identified

IR 2.2 Novel genes for traits critical in climate change adaptation are **validated**

IR 2.3 Novel genes for traits critical in climate change adaptation are **transferred** to elite breeding lines

IR 2.4 Improved refinement of TPPs by better incorporating cross-cutting evidence

Objective 3 (Resource Leverage): Leveraged resources and aligned efforts support CRCIL's activities.

IR 3.1 Increased collaboration amongst essential stakeholders across the broader global research community

IR 3.2 Improved knowledge sharing amongst essential stakeholders across the broader global research community

Objective 4 (Learning & Adapting): CRCIL's research activities and outputs coordinated across FTF crop improvement portfolio with both upstream market demand and downstream seed system and scaling efforts.

IR 4.1 Increased collaboration amongst essential stakeholders across USAID FTF programs

IR 4.2 Improved knowledge sharing amongst essential stakeholders across USAID FTF programs

5. Performance Indicators

Indicators are largely drawn from the [Feed the Future Indicator Handbook](#), revised in November 2023, to be responsive to CRCIL’s RF and TOC. These indicators will enable tracking of activity implementation against targets, capturing outcomes for learning and communication purposes, and contributing to USAID’s performance management and reporting requirements. Indicators measuring individual-level data will be disaggregated by sex, age, and type of individual, as well as any other categories required by FTF.

Performance indicators will be reported into USAID’s Development Information System (DIS) by the MEL Advisor, following a data collection process using the data management system Piestar. The Performance Indicator Summary Table is available in Annex A, the Performance Indicator Reference Sheets (PIRS) containing the full indicator information are listed in Annex B, and the indicator targets disaggregated by country are included in Annex C. The CRCIL MEL Advisor will submit results for the following indicators into DIS annually.

Exhibit 7. CRCIL indicators

Goal/Objective	Indicator
Program Goal	EG.3-2: Number of individuals participating in USG food security programs
Objective 1: Capacity Development	CBLD-9: Percent of USG-assisted organizations with improved performance
	EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance.
	EG.3.2-1: Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training
Objective 2: Research and Development	EG.3.2-7: Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance
Objective 3: Resource leverage	EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition
	Custom: Number of formal agreements formed as a result of USG assistance
Objective 4: Learning and Adapting	STIR 12: Number of peer-reviewed scientific publications resulting from USG support to research and implementation programs
Cross-cutting	Custom: Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts

Quick Win and Subaward teams will monitor these core FTF indicators, as applicable, and in addition may propose relevant project-specific indicators (either standard FTF indicators or custom indicators) based on their activities. We will engage in participatory work planning sessions to clarify the MEL Plan and ensure that it serves as a

comprehensive gauge for measuring project performance. We will then finalize the list of core indicators and the most appropriate methodology for monitoring and evaluating project results, with particular attention to consultations with USAID and country partners to ensure that our draft includes all relevant indicators. This entails establishing a baseline where necessary, using primary data collection measures or stakeholder consultations before interventions are implemented and setting targets that are ambitious but can reasonably be achieved within the stated timeframe.

While we hope the assumptions noted under the TOC will hold true, our strategy of collaborating with our stakeholders who have intimate knowledge of the operating climate will enable the ME to adapt to challenges and facilitate early identification of disruptions to the operating context or risks that may interfere with implementation. We will also hold frequent semi-structured discussions with the AOR to understand if there have been any shifts in context in Feed the Future/USAID Washington (policy changes that affect the Program Cycle or strategic direction) that may affect CRCIL work.

The CRCIL MEL Plan includes a PIRS (see Annex B) for each of the 8 objective-level indicators and the goal-level indicator. Baseline values for the core indicators will start at zero across the project. The CRCIL MEL Advisor will track indicators by target country and across the lab.

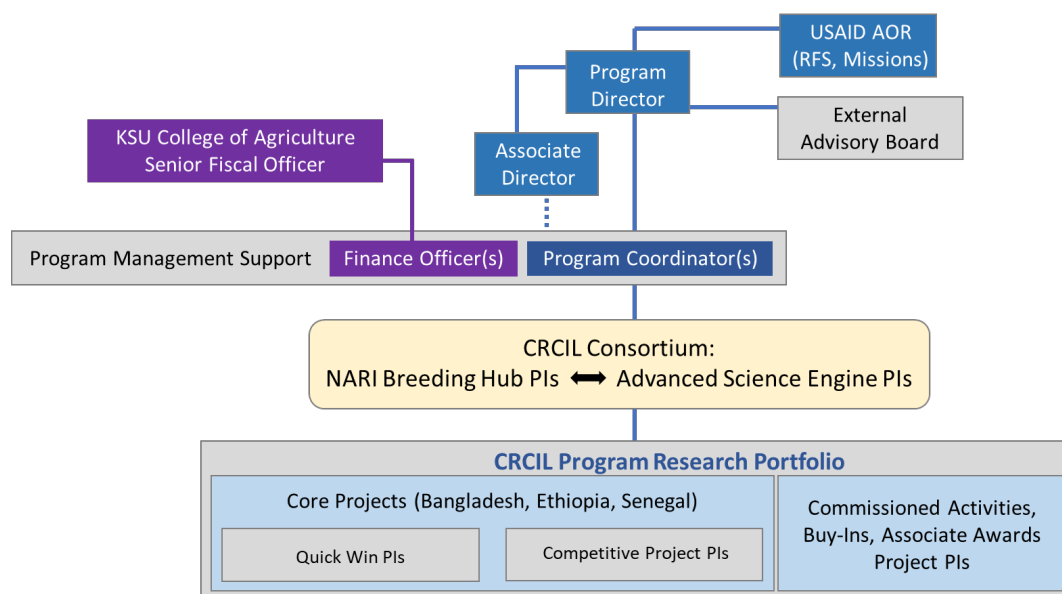
6. Monitoring and Evaluation Operational Plan

6.1 Roles and Responsibilities

A four-member Management Entity at KSU, External Advisory Council, and technical advisory function of the Consortium members will be used to cultivate and manage an effective, competitive, and adaptive research program. See Exhibit 8.

The management and leadership structure are adapted from other successful ILs led by KSU to suit the needs of a CRCIL Consortium. The Post-Harvest Loss Innovation Lab (PHLIL) and Sorghum and Millet Innovation Lab (SMIL) have been managed efficiently and successfully using: a four-person ME, a Technical Leadership Team, an External Advisory Committee and strong AOR linkage.

Exhibit 8. CRCIL Management Organogram



CRCIL MONITORING, EVALUATION, RESEARCH, LEARNING, AND ADAPTING PLAN

The CRCIL MEL Advisor, in partnership with other team members from RTI International, will provide oversight, training and capacity building, and data quality control for each of the Quick Win activities in Year 1 and competitive project activities in Years 2-5. The CRCIL MEL Advisor will perform basic data analysis and tabulation to identify potential erroneous data, design a spot-check system to verify data at their sources, and make appropriate corrections. Additionally, the CRCIL MEL Advisor will perform a periodic internal project-level data quality assessment after MEL contacts have been actively collecting data for one year. Activity MEL contacts will report data as applicable through Piestar and the CRCIL’s knowledge management system, which will be secured and password protected.

Beginning in Year 2, the CRCIL’s MEL Advisor will organize semi-annual internal reflection sessions and annual external reflection sessions to discuss performance and learning questions to develop the learning plan. The CRCIL MEL Advisor will create communication materials, disseminate the information, and support the implementation of MEL-related adaptations stemming from the meetings. Exhibit 9 summarizes broad MEL activities and the roles and responsibilities of CRCIL members.

MEL contacts are team members on the CRCIL Consortium, Core Project teams (Quick Win and Competitive Project), and Associate Awards Projects who lead MEL activities for a specific team and work with the MEL Advisor. PIs can help assign the MEL Point of Contact (POC or contact) from their teams.

Exhibit 9. Summary of MEL Roles and Responsibilities

MEL Activity	Timing	Role	Responsibility
NARI breeding hubs' MEL Plans	Year 1 (Quick Wins)	CRCIL MEL Advisor	Provide guidance and support as needed to QW Leads (or MEL POC) Collect, validate, and analyze relevant performance data
		Quick Win Leads (or MEL POCs)	Develop appropriate MEL plans (select indicators, define targets and data collection methods, and provide data)
NARI breeding hubs' MEL Plans	Year 2 (Subawards)	CRCIL MEL Advisor	Provide guidance and support as needed to Subaward Leads (or MEL POC) Collect, validate, and analyze relevant performance data
		Subaward Leads (or MEL POCs)	After award, develop award-appropriate MEL plans (select indicators, define targets and data collection methods, and provide data)
Internal Pause and Reflect Sessions; set learning questions	Semi-annual, starting in Y2	CRCIL MEL Advisor	Prepares and facilitates sessions
		NARI Breeding Hubs MEL POCs	Provides input to session preparation; actively participates in sessions
		Advanced Science Engine MEL POCs	Provides input to session preparation; actively participates in sessions
		Management Entity	Actively participates in sessions

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MEL Activity	Timing	Role	Responsibility
<i>External Pause and Reflect Sessions</i>	<i>Semi-annual, starting in Y2</i>	<i>CRCIL MEL Advisor</i>	<i>Prepares and facilitates sessions</i>
		<i>NARI Breeding Hubs MEL POCs</i>	<i>Provides input to session preparation; actively participates in sessions</i>
		<i>Advanced Science Engine MEL POCs</i>	<i>Provides input to session preparation; actively participates in sessions</i>
		<i>Management Entity</i>	<i>Actively participates in sessions</i>
		<i>CRCIL External Advisory Committee (EAC)</i>	<i>Actively participates in sessions</i>
		<i>USAID AOR</i>	<i>Actively participates in sessions</i>
<i>Data Calls through Piestar</i>	<i>Annual</i>	<i>CRCIL MEL Advisor</i>	<i>Manage process, provide guidance and training as needed</i>
		<i>NARI Breeding Hubs MEL POCs</i>	<i>Submit applicable data and information</i>
		<i>Advanced Science Engine MEL POCs</i>	<i>Submit applicable data and information</i>
<i>External Evaluation</i>	<i>Year 4</i>	<i>USAID</i>	<i>Evaluate CRCIL implementation performance</i>
<i>Reports</i>	<i>Semi-annual; October-November</i>	<i>CRCIL MEL Advisor and MEL POCs</i>	<i>Collect, validate, and analyze performance indicator data for reporting</i>
<i>Development Information System (DIS)</i>	<i>Annual; October-December</i>	<i>CRCIL MEL Advisor</i>	<i>Collect, validate, and aggregate performance indicator data; submit to the DIS system</i>
		<i>CRCIL ME</i>	<i>Review and approve indicator values for submission</i>
		<i>USAID AOR</i>	<i>Open DIS forms, review and comment on submissions, approve submission</i>
<i>Research Rack-Up Reporting</i>	<i>Annual; October-December</i>	<i>Quick Win and Subaward MEL POCs</i>	<i>Upload datasets to Harvard Dataverse, link to DDL, and submit relevant information to Piestar</i>
		<i>CRCIL MEL Advisor</i>	<i>Manage Piestar submissions (MEL section), provide guidance as needed. Lead submitting Research Rack-up data into USAID's systems.</i>
<i>Public learning sharing (Agrilinks, blog posts, etc.)</i>	<i>Ongoing</i>	<i>CRCIL Communications Team or ME</i>	<i>Update and maintain public blog posts and press</i>
		<i>CRCIL MEL Advisor</i>	<i>Provide data and learnings to support publications as needed</i>

6.2 Data Collection Tools and Monitoring

CRCIL's approach to M&E data collection, monitoring, and analysis will begin through a participatory assessment of the availability and quality of existing data sources, data collection tools, and developing project targets to establish baseline data, when applicable, for our core indicators and for each project. In addition, the MEL advisor may draw from other secondary data sources including the World Bank, FAO food and agriculture statistics, and others as needed. After reviewing existing data sources, CRCIL will build other data collection exercises into research studies as needed, including needs assessments, and, if required, separate survey for activities lacking relevant indicator baseline or follow-up data. The MEL Advisor will standardize data quality through system validation rules and checks in Piestar; provide expert technical assistance to partners and sub-awardees; continuously engage and provide supportive supervision through sub-awardees embedded MEL contacts; and periodic data quality assessments.

6.2.1 Gender and Youth

The MEL Advisor will collaborate closely with the Cross-cutting Lead Coordinator to develop a comprehensive strategy for addressing cross-cutting issues within CRCIL, with a specific focus on gender and youth inclusivity. The following actions will be encouraged to promote gender and youth inclusion:

- **Collecting Disaggregated Data:** Efforts will be made to collect data that is disaggregated by sex and age, wherever applicable, to ensure a comprehensive understanding of the project's effect on different groups.
- **Developing a Gender Strategy:** A gender strategy will be developed for CRCIL to guide and strengthen gender-responsive approaches throughout the project.
- **Reviewing and Strengthening Sub-awardees' Policies:** The gender and youth policies of sub-awardees will be reviewed and strengthened to ensure alignment with best practices and standards.
- **Enhancing Institutional Capacity:** Culturally and technically appropriate activities and interventions will be developed to strengthen the institutional capacity of sub-awardees in relation to gender and youth inclusion.
- **Relevant and Applicable Research:** Research topics will be selected to address the needs of all stakeholders, ensuring that they are relevant, applicable, and inclusive.

Activities and interventions, such as gender-transformative and youth-inclusive trainings, technologies, and inputs, will be designed to foster community buy-in, sustainability, and scalability. Sub-awardees might also conduct evaluations, either internal or external, to measure the performance of their activities and interventions. Participant input will be gathered to identify sustainable approaches for enhancing the engagement of youth, women, and men across the crops value chain. AWARD will support sub-awardees in incorporating gender-sensitive approaches into their research and MEL activities. By prioritizing gender and youth inclusivity, CRCIL aims to create a project environment that is equitable, empowering, and responsive to the diverse needs of all stakeholders.

6.2.2 Resilience

The impacts of climate change, such as rising temperatures, erratic rainfall patterns, and increased pests and diseases, pose significant risks to smallholder farmers and agricultural productivity. Improved crop varieties play a crucial role in enhancing the resilience of farmers by providing resistance to pests, diseases, drought, heat, and other climate-related challenges. This resilience capacity enables smallholder farmers to sustain their livelihoods and recover from shocks, safeguarding their development gains in the face of a changing climate. CRCIL aims to support NARI breeding hubs in developing expertise in breeding for climate resilience. This includes focusing on traits such as drought, flood, and disease resistance to build long-term local capacity and enhance responsiveness to emerging threats and climate change impacts.

The CRCIL MEL Advisor will collaborate on exploring indicators and methods to potentially measure the effects of CRCIL research on adaptive capacity and risk reduction in crop varieties and practices. Activity-specific indicators, if developed, will provide ongoing monitoring and evaluation data to assess resilience. Additionally, there could be opportunities for tailored resilience measurement research in targeted regions. Pause and reflect sessions, as previously described, may engage the CRCIL team in discussions on research related to resilience capacities. The results of these discussions could inform the development of implementation strategies aimed at improving resilience. Furthermore, there is potential for considering resilience measurement research specifically adapted to households and communities in crop systems. Through these efforts, CRCIL aims to potentially enhance the adaptive capacity and risk reduction of smallholder farmers by exploring climate-resilient crop varieties and promoting sustainable agricultural practices.

6.2.3 Evaluation Plan

If deemed feasible, plans for evaluation activities will be developed during performance management task development in cooperation with USAID. An illustrative list of potential evaluations is provided below.

1. **Institutional Capacity Assessments:** Assess the existing capacity of (NARIs) to breed climate-resilient cereal crops and identify areas for improvement, such as infrastructure, expertise, and resources. Review the current research and development processes in place for breeding climate-resilient cereal varieties. Identify opportunities to strengthen research methodologies, data management systems, and collaboration with scientific experts. Performance scorecards will be developed jointly with NARIs.
2. **Cost-effectiveness Assessment:** Compare the costs and outcomes of different strategies to identify the most cost-effective methods. The analysis will help the project team and stakeholders understand whether the resources allocated to the project have resulted in adequate returns in terms of the outcomes achieved. For CRCIL, this might involve comparing the costs and outcomes of different breeding or capacity-building strategies.
3. **Outcome harvesting:** conduct outcome harvesting to understand “why” and “how” systemic changes may be occurring as the CRCIL’s interventions scale up. The main purpose of this evaluation is to identify, validate and understand the results produced by the CRCIL project, regardless of whether these results were initially expected or not. It will be particularly useful for understanding changes in behaviors, relationships, actions, policies, and practices amongst the beneficiaries and other stakeholders.

By potentially conducting these evaluations, provided CRCIL’s timeframe and resources allow for it, CRCIL could gain valuable insights to inform strategic decision-making, prioritize interventions, and optimize the CRCIL’s impact on building climate-resilient cereal crop systems. RTI would engage in close coordination with key stakeholders throughout these activities. This would include seeking input from stakeholders on study and analysis plans, maintaining regular communication to ensure smooth implementation, and addressing any challenges that may arise. Additionally, RTI could conduct debriefing workshops of the results. These workshops could serve as a platform to review annual data, discuss results, share lessons learned, identify necessary changes or next steps, and gather diverse perspectives. The aim would be to foster a deeper understanding of the data, facilitate discussions on best practices, and promote adaptive approaches within the project.

6.2.4 Collaborating, Learning, and Adapting (CLA)

CLA serves a critical role within our MERLA approach: developing capacities for coordination, reflection, research, analysis, dialogue, and adaptation is required to ensure that we are continually learning from what programmatically works and what does not and modifying our activities accordingly. To emphasize learning and adaptation throughout the life of CRCIL and align with USAID’s CLA best practices, it is crucial to prioritize continuous feedback and knowledge generation. This approach will enable the identification and addressing of knowledge gaps, leading to insights that can shape current and future programming.

Collaborating. CRCIL will collaborate with a broad range of stakeholders in the agriculture sector within target countries, including USAID, NARI Hubs, government officials, private sector actors and producers. The team will prioritize inclusive engagement to ensure that women, youth, and other vulnerable groups are active collaborators with a voice in shaping and contributing to the Activity's implementation. CRCIL will collaborate with key stakeholders to interpret evidence, translate learning into action, and adapt to changing circumstances, which will contribute to improved performance and impact. Through ongoing collaboration with key stakeholders, CRCIL will identify synergies that allow the Activity to maximize resources, promote best practices, and learn from what others have already tried. For example, we will leverage opportunities for NARI breeding hubs to share information generated through innovative solutions, ensuring that all stakeholders have access to information about climate resilient cereal breeding. Throughout the life of the activity, the MEL advisor will facilitate constructive and collaborative activities among participants during Pause and Reflection sessions described below. Such dialogue will help identify common programmatic themes and issues; identify critical gaps; explore ways to fill the gaps and meet needs; identify opportunities to improve CRCIL design, management, and MEL in future programming; and support efforts to incorporate and adapt recommendations.

Learning. We propose illustrative learning agenda questions, which aim to test assumptions and hypotheses, fill knowledge gaps, and inform decision-making to enhance the effectiveness and efficiency of CRCIL's work. These questions can be explored through a series of learning events that facilitate collaboration and knowledge sharing among the CRCIL's activities and gather valuable lessons learned related to the identified learning themes and conducting operational research to contribute to answering these questions. The following learning questions are proposed along CRCIL's cross-cutting themes in alignment with USAID's key priority learning areas:

1. Capacity Building

- Question 1: How effective are the training and capacity-building efforts in improving NARIs' ability to breed climate-resilient crop varieties meeting inclusive end user preferences and needs?
- Question 2: What are the successful models and strategies for effective collaboration and partnerships among NARIs, local communities, government agencies, research institutions, and other stakeholders to achieve sustainable impacts in cereal breeding and adoption?
- Question 3: How valuable is south-south collaboration, what has been learned that can benefit other programs?
- Question 4: How have US partners learned from collaboration beside NARI partners?

2. Innovation/Technology Adoption and Scaling

- Question 1: What are the key market barriers and opportunities for scaling up the adoption and commercialization of climate-resilient cereal crops, and how can market-based approaches be leveraged to enhance food security and income generation? Are we following target product profiles (TPP) or do TPPs have sufficient information to guide upstream breeding research?
- Question 2: What are the potential barriers or challenges in integrating modern germplasm enhancement tools and methods, and how can these be addressed? What techniques (technologically) can or have been adopted or show promise of speeding or increasing crop breeding efficiency? What tools of are most interest and appropriate for NARI partners?
- Question 3: How does the CRCIL Germplasm Enhancement Alliance structure influence the development of crop-specific breeding capacity within NARIs? Does the incorporation of multiple crops enhance capacity knowledge? How does multi-crop collaboration increase CRCIL effectiveness?
- Question 4: How effective are collaborations between US university partners, NARS, and breeding hubs in driving germplasm enhancement forward? What factors contribute to the success or failure of these collaborations?

3. Resilience

- Question 1: How are CRCIL's interventions aligning downstream to contribute to the resilience of the broader agricultural and market systems in the regions where we work?
- Question 2: What are the most effective approaches and practices for enhancing the resilience of cereal crops to climate change impacts, and how can these be integrated into breeding and agricultural systems?
- Question 3: How are the capacity-building efforts of CRCIL influencing the resilience of partner institutions (NARS breeding hubs) in the face of shocks and stresses?
- Question 4: How do climate-resilient cereal varieties impact the resilience of women and youth specifically? Are there unique challenges or benefits for these groups that need to be addressed based on the multidimensional aspects of resilience (such as adaptive, absorptive, and transformative capacities)?
- Question 5: How are CRCIL's interventions aligning downstream to influence household-level resilience, particularly in terms of income stability, food security, and nutrition?
- Question 6: How is information on climate shocks and trends currently shared and utilized among farmer groups, local Disaster Risk Reduction (DRR) committees, government institutions, and research institutes, and how can these processes be optimized for improved preparedness and response to shocks and stresses? How can the CRCIL best support these linkages, information flows, and responsive measures?

4. Gender equity and social inclusion

- Question 1: How can gender and social inclusion considerations be effectively integrated into breeding and dissemination strategies to enhance the impact and adoption of climate-resilient cereal varieties?
- Question 2: How can the development and promotion of climate-resilient cereals be adapted across varying regional contexts to respect and reinforce the unique crop profiles, roles of women in agriculture/trade, and local social customs, while also aiming to avoid reinforcing social divides or marginalization and/or interethnic conflicts?

Learning questions will be refined in Year 1, with the potential for additional questions based on research study implementation and results.

CRCIL's ME will foster cross-portfolio sub-awardees' learning on key topics. During the Year 2 platform meeting, we will collectively generate 1-3 crucial research-related learning questions that impact multiple subawards. These questions may pertain to specific countries or have a broader scope. We encourage the formulation of higher-level learning questions that go beyond individual research agendas. These questions will be regularly revisited, at least annually, to assess progress. The findings will be disseminated through peer-reviewed journal articles and/or technical briefs, focusing on addressing overarching questions that transcend individual research projects.

To effectively incorporate learning into program implementation, we propose a Pause and Reflect approach, employing proactive and purposeful engagement to establish feedback loops and assess the impact of learning from CRCIL's M&E and research guided by the learning questions. These sessions will involve reviewing performance monitoring findings, discussing activity results, exploring factors contributing to success and failure, and formulating action plans for improvement. By creating intentional spaces for reflection and adaptive management, CRCIL can foster a culture of learning among the implementation team and beyond.

Internal Pause and Reflect Sessions External Pause and Reflect Sessions

Purpose:

1. Conduct a thorough examination of M&E data and evidence from research activities.
2. Synthesis learning through collaborative discussions.
3. Discuss the implications of the learning for programmatic implementation.
4. Outline steps for modifications to implementation.
5. Review progress of past learnings and next steps to ensure that there is an established feedback loop to track progress.

Frequency: Conducted quarterly

Collaboration: Sessions led by CRCIL MEL Advisor with as-needed support from RTI’s MEL specialists and CRCIL ME partners and staff.

Purpose:

1. Provide a platform for consultative and collaborative engagement and discussions with all stakeholders so that reasons for successes and shortcomings can be discussed with the aim of learning and adapting from them.
2. Present ideas for programmatic and policy adaptation, elicit feedback from stakeholders, and encourage consensus on the best path forward for making programmatic and policy changes.

Frequency: Conducted every six months

Collaboration: CRCIL ME will lead sessions with USAID, sub-awardees, local implementing partners, advisory committee.

This Pause and Reflect approach aligns with M&E and Collaborating, Learning, and Adapting (CLA) best practices outlined by USAID’s Learning Lab, USAID Automated Directives System, and USAID’s CLA framework and toolkit. The Pause and Reflect sessions, conducted internally and externally, will be strategically timed to include feedback in semi-annual performance reports to USAID, ensuring active learning integration and continuous program improvement.

Adaptive management and feedback loops. Learning activities within CRCIL serve as a basis for data-driven decision-making in program activities. The outcomes derived from pause and reflect sessions will guide annual work planning sessions in collaboration with partner projects. These outcomes will also contribute to specific recommendations for adjustments and adaptations to the TOC, RF, program activities, MEL Plan, and monitoring indicators. Led by the MEL Advisor, CRCIL’s ME team will review these recommendations and lessons learned during team planning activities to ensure that workplans directly integrate evidence for decisions on continuing, scaling, or modifying activities. While pause and reflect sessions provide a structured approach to CLA, we acknowledge that learning and adaptation are ongoing processes, and we remain open to ad-hoc CLA as needed throughout project implementation.

7. Data Management Plan

The CRCIL’s MERLA approach will ensure timely, accurate and complete programmatic monitoring for effective decision making, problem solving and accountability. The MEL Advisor will be responsible for maintaining the CRCIL’s M&E database and ensuring that information is stored, analyzed, reported on, and disseminated over the life of the project according to ADS 579’s guidelines. Performance monitoring data will be included in each semi-annual progress report as needed and submitted for USAID’s annual reports. Annual project progress reports will present up-to-date indicator values and will include analysis of progress against targets and qualitative information and success stories. Updated MEL Plan indicator values will be presented in table formats along with succinct narratives on other performance information. Data collection efforts will be synchronized with project semi-annual and annual reporting as needed and will include regular updates to the USAID Development Experience

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Clearinghouse (DEC) and the Development Data Library (DDL). The MEL Advisor will upload data annually to the FTF module of the DIS and submit data to the DDL within 30 days of AOR approval. Performance monitoring data, including geospatial data, will be included in each semi-annual progress report as needed, and submitted for USAID's annual reports, DIS, and Research Rack-Up.

CRCIL will use Piestar as the primary M&E data management platform for information management, monitoring, data visualization, and routine reporting. Piestar will be accessible to authorized CRCIL users who have usernames and passwords associated with the system to ensure data security. Use of electronic data collection methods will allow for point-of-collection validation (logical checks, skip patterns), minimize the lag of data flow to the national level, and allow for the automation of routine analysis to turn raw data into actionable, dashboard-based information accessible from any authorized internet-enabled computer. Other data generated through CRCIL will include results from gender and youth inclusion assessments, market studies, and evaluations of capacity building activities. Datasets associated with these kinds of intellectual works will be packaged and uploaded to open-source data sharing platforms such as the Harvard Dataverse and then linked to the Development Data Library (DDL). CRCIL will adhere to data quality best practices and USAID standards for data validity, integrity, precision, reliability, and timeliness. All data will be stored in a secure online system, with personally identifiable information and any sensitive data removed prior to sharing outside the Activity. The MEL Advisor will assess data quality for the performance monitoring data by (1) system validation rules and checks in the Piestar database; (2) expert technical assistance to partners and sub-awardees; (3) continuous engagement and supportive supervision, including through site visits and trainings; and (4) periodic data quality assessments (DQAs). To ensure that data meet USAID's quality standards, CRCIL will build the capacity of and supervise local partners in target countries to adhere to the USAID best practice for five dimensions of data quality:

1. **Validity.** Validity is a function of the conceptual linkages and hence CRCIL will look for clear and adequate representation of the intended result.
2. **Integrity.** Data that is collected, analyzed, and reported should have established mechanisms in place to reduce the possibility that they are intentionally manipulated for political or personal reasons. CRCIL will institute checks and safeguards to minimize errors at collection, transcription, entry, and analysis.
3. **Reliability.** Data shall reflect stable and consistent data collection processes and analysis methods over time. When data collection and analysis methods change, the MEL Plan will be updated.
4. **Timeliness.** Data should be timely enough to influence management decision making at the appropriate levels.
5. **Precision.** Data should be precise enough to present a fair picture of performance and enable management decision-making.

Data Security: CRCIL uses the online platform Piestar to securely manage performance data. Piestar is only accessible to authorized CRCIL users who have usernames and passwords associated with the system. Users can access Piestar from their home or office computers, but user access controls ensure that projects can only view data from their own projects. User access controls and passwords ensure that data are protected in the system and only accessible to the people authorized based on their work. Personally identifiable information, which includes user's names and work email addresses, are stored on the password protected system, but are not included on Excel downloads of data or email transmissions sent through the system.

8. Resources

The disaggregated MEL budget is shown in the table below.

Cost Category	Year 1	Year 2	Year 3	Year 4	TOTAL
Personnel	\$ 52,215	\$ 56,800	\$ 58,504	\$ 30,475	\$ 197,995
Fringe Benefits	\$ 22,957	\$ 24,984	\$ 25,733	\$ 13,403	\$ 87,076
Travel	\$ 3,040	\$ -	\$ -	\$ -	\$ 3,040
Equipment	\$ 2,273	\$ -	\$ -	\$ -	\$ 2,273
Supplies	\$ -	\$ -	\$ -	\$ -	\$ -
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -
Other Direct Costs	\$ 449	\$ 614	\$ 629	\$ 645	\$ 2,337

9. Schedule of Activity MEL Plan Deliverables to USAID

The activity MEL Plan deliverables to USAID table is shown below:

Deliverable:	Frequency	Transmission to USAID via	Description of Content
MEL Plan	Annually	KSU submits the information to USAID	The MEL Plan provides detail of the program’s monitoring and evaluation activities throughout a year. It outlines specific indicators, data collection methodologies, and tools to track progress and measure the effect of the interventions. The document also elucidates the learning mechanisms and proposes learning questions useful for a knowledge increase and adaptive management.
DIS reporting	Annually	RTI International submits the information to USAID through DIS	The deliverable includes data on key indicators and progress towards objectives.
Research Rack-up	Annually	RTI International submits the information to USAID through its Research Rack-Up tool	The deliverable contains information that complements data captured for indicator EG.3.2-7 and provides detailed data on Feed the Future research outputs. The data compiled will inform progress and impact of innovations, facilitation of uptake, and the development of the evidence required to manage and implement research-focused programs.

10. Change Log

The MEL team will review the AMELP annually and make necessary revisions in collaboration with USAID. All changes will be documented in the Example Change Log table.

Example Change Log:

Date:	Change By:	Change to:	Description of Change:
Effective date of change.	Person or team who made the change.	Section of the Activity MEL Plan changed. If indicator is changed, include the Indicator No.	Summarize the change that was made to the Activity MEL Plan and the reason the change was made.

Annex A: Performance Indicator Summary Table

Result Measured	Indicator	Disaggregation	Data Collection Method	Data Source	Data Collection Frequency	Baseline	Target
Program Goal: Reduced global hunger, malnutrition, and poverty through science, technology, and innovation	FTF Indicator: EG.3-2 Output Number of individuals participating in USG food security programs	Location, sex, age, type of individual	Project monitoring	Project activity records	Annually	0	Y1: 64 Y2: 29 Y3: Y4: Y5:
Objective I: Capacity Development	FTF Indicator: CBLD-9 Outcome Percent of USG-assisted organizations with improved performance	Location, numerator, denominator, type of organization	Project monitoring	Project activity records	Annually	0	Y1: 0 Y2: 100 Y3: Y4: Y5:
Objective I: Capacity Development	FTF Indicator: EG.3.2-7 Outcome Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	Location, type of value chain actor, sex, age, type of management practice or technology	Project monitoring	Project activity records	Annually	0	Y1: 0 Y2: 15 Y3: Y4: Y5:

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Result Measured	Indicator	Disaggregation	Data Collection Method	Data Source	Data Collection Frequency	Baseline	Target
Objective 1: Capacity Development	FTF Indicator: EG.3.2-1 Output Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	Location, sex, age, type of individual, duration	Project monitoring	Project activity records	Annually	0	Y1: 0 Y2: 29 Y3: Y4: Y5:
Objective 2: Research and Development	FTF Indicator: EG.3.2-7 Output (phases 1,2,3); Outcome (phase 4) Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance	Location, category of research, phase of development	Project monitoring	Project activity records	Annually	0	Y1: 9 Y2: 9 Y3: Y4: Y5:
Objective 3: Resource leverage	FTF Indicator: EG.3.1-15 Output Value of new private sector investment leveraged by the USG to support food security and nutrition	Location	Project monitoring	Project activity records	Annually	0	Y1: 0 Y2: TBD Y3: Y4: Y5:

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Result Measured	Indicator	Disaggregation	Data Collection Method	Data Source	Data Collection Frequency	Baseline	Target
Objective 3: Resource leverage	Custom indicator Output Number of formal agreements formed as a result of USG assistance	Location, type of agreement, type of partner	Project monitoring	Project activity records	Annually	0	Y1: 3 Y2: 5 Y3: Y4: Y5:
Objective 4. Learning and adapting	Standard indicator: STIR-12 Output Number of peer-reviewed scientific publications resulting from USG support to research and implementation programs	Location, research area, type of funding	Project monitoring	Project activity records	Annually	0	Y1: 0 Y2: 2 Y3: Y4: Y5:
Cross-cutting	Custom indicator: Output Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts	Location, type of activity	Project monitoring	Project activity records	Annually	0	Y1: 0 Y2: 2 Y3: Y4: Y5:

Annex B: Performance Indicator Reference Sheets

INDICATOR I

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]	
Result Measured	Program Goal: Reduced global hunger, malnutrition, and poverty through science, technology, and innovation
Indicator Type	Output
Performance Plan and Report (PPR) indicator	Yes Program Element 3.2: Agricultural Sector Capacity Initiative affiliation: Global Food Security Strategy – Output: could be applicable to many parts of results framework.
DESCRIPTION	
Definition	<p>Standard definition(s): This indicator is designed to capture the breadth of our food security work. This indicator counts participants of Feed the Future-funded programs, including those we reach directly, those reached as part of a deliberate service strategy, and those participating in the markets we strengthen. We expect implementing partners (Ips) to track or estimate the number of individual participants across different interventions within their own project and to report numbers of participants reached, not number of contacts with the project or project-supported actors.</p> <p>This indicator counts, with some exceptions listed below, all the individuals participating in our nutrition, resilience, and agriculture and food system activities, including:</p> <ul style="list-style-type: none"> • Adults that projects or project-supported actors reach directly through nutrition-specific and community-level nutrition interventions (e.g., parents and other caregivers participating in community care groups and healthcare workers provided with in-service training on how to manage acute malnutrition), but not children reached with nutrition-specific or community-based interventions, who are counted under indicators HL 9-1 and HL 9-2 instead. • People reached by productive safety nets, community-based micro-finance, and diversified livelihood activities through our assistance. • Members of households reached with household-level interventions (households with new access to basic sanitation through our work; and/or households receiving family-sized rations).

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]

- *Smallholder and non-smallholder producers that projects or project-supported actors reach directly (e.g., through an irrigation training, through a loan provided, or through distribution of drought-tolerant seeds to specific farmers).*
- *Proprietors of firms in the private sector that we help strengthen (e.g., agrodealers, aggregators, and processors). Employees of these firms are also counted if they are reached directly with a U.S. government-assisted service, such as training.*
- *Producers who directly interact with those U.S. government-assisted firms (e.g., the producers who are customers of an assisted agrodealer and the producers from whom an assisted trader or aggregator buys), but not customers or suppliers who are not producers.*
- *Participants whose main source of income is labor (e.g., laborers/non-producer diversified livelihood participants).*
- *People in civil society organizations and government whose skills and capacity have been strengthened by projects or project-supported actors.*
- *School-aged children who are recipients of U.S. government school feeding programs.*

In cases where activities work with multiple individuals in a household, this indicator counts all activity participants in the household, not all members of the household. However, in the case of sanitation services and family-sized rations, all members of the household receiving the sanitation facility or ration can be counted here.

An individual is a participant if he or she comes into direct contact with the set of interventions (goods or services) provided or facilitated by the activity. The intervention needs to be significant, meaning that if the individual is merely contacted or touched by an activity through brief attendance at a meeting or gathering, he or she should not be counted as a participant. An intervention is significant if one can reasonably expect, and hold operating units (Ous) and activities/lms responsible for achieving progress toward changes in behaviors or other outcomes for these individuals based on the level of services and/or goods provided or accessed. Producers with increased access to goods, services, and markets for their products, including producers who purchase from or sell to market actors that have been strengthened as a result of our activities are considered to have received a significant intervention.

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]

Individuals who are trained by an activity/IM as part of a deliberate service delivery strategy (e.g., cascade training) that then go on to deliver services directly to individuals or to train others to deliver services should be counted as participants of the activity—the capacity strengthening is key for sustainability and an important outcome in its own right. The individuals who then receive the services or training delivered by those individuals are also considered participants. However, spontaneous spillover of improved practices to neighbors does not count as a deliberate service delivery strategy; neighbors who apply new practices based on observation and/or interactions with participants who have not been trained to spread knowledge to others as part of a deliberate service delivery strategy should not be counted under this indicator.

Value chain facilitative and/or market system activities may use a two-step process to identify and count participants:

1. The first step involves identifying which private sector firms have been assisted by the activity during the reporting year, and counting the number of proprietors of those firms.
2. The second step, which is only applicable to firms that buy from or sell to producers, is to count the number of producer customers or suppliers of each assisted firm.

The total number of participants for that activity is then the sum of the proprietors of the assisted firms and their producer customers/suppliers. For example, an IP working to strengthen the certified soy seed market within a defined market shed in the Zone of Influence (ZOI) could use data on the number of certified soy seed sales by assisted firms during the reporting year to estimate the number of farmers purchasing certified soy seed (by using a conservative assumption that one sale equals one farmer applying), and then report that number as the number of producer participants. All assumptions underlying the indicator estimates should be documented annually in the indicator comment in Feed the Future reporting in DIS.

Data provision by assisted firms can be facilitated by entering into written agreements that include reporting and nondisclosure requirements, and by showing assisted firms how the information provided is useful and used. Counting producer participants may be more straightforward if the value chain activity is also facilitating extension strategies, e.g., agrodealer agents that require knowing where the customers live and farm.

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]	
Unit of Measure	<p>While other Feed the Future indicators, such as “financing accessed,” “value of sales,” and “individuals applying improved practices” also capture the number of enterprises that contributed results to the indicator, this indicator only counts individual people, i.e., the farmer (not the farm) and the proprietor (not the firm).</p> <p>This indicator does not count the indirect beneficiaries of our activities. An indirect beneficiary is someone who does not have direct contact with the activity but still benefits, such as the population that uses a new road constructed by the activity, neighbors who see the results of the improved technologies applied by direct participants and decide to apply the technology themselves (spillover), or the individuals who hear an activity-supported radio message but do not receive any training or counseling from the activity. In part, this is because accurate tracking of indirect beneficiaries is challenging by its nature, despite the fact that spillover is a core component of the Feed the Future theory of change. In general, spillover is captured in Feed the Future through measuring changes in population-level indicators (e.g., percent applying improved technologies and management practices) and linking those to the work activities are doing directly.</p> <p>Note that this indicator cannot be summed across years for a project total, since “new” and “continuing” participants are not disaggregated and, thus, this will only show a total of individuals reached in any one reporting year.</p> <p>USAID: Each IP should report on the number of individuals participating in their specific activity/IM. Then, the OU should report on the Mission-wide total number of unique participants reached across all activities/IMs. This will require estimating and removing double counting and overlap among activities/IMs. Please see reporting notes below.</p> <p>Interagency: Each activity/grant/project should report on the number of individuals participating in that activity/grant/project that year. In the case where more than one activity/grant/project exists per country/post, then the overall number of individuals participating in the country should also be reported, after any double counting is removed. Please see reporting notes below.</p>
Disaggregation(s)	Location, sex, age, type of individual

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]

Sex: The unique number of individuals should be entered here (i.e. no double-counting of individuals across disaggregate choices here)

- Male;
- Female;
- Neither;
- Not applicable (e.g. for household members counted from household-level interventions);
- Disaggregates Not Available

Age: the unique number of individuals should be entered here (i.e. no double-counting of individuals across disaggregate choices here)

- School-aged children (only to be used for counting those reached by USG school feeding programs; report the total reached with school feeding regardless of actual age);
- 15-29;
- 30+;
- Not applicable (e.g. for household members counted from household-level interventions);
- Disaggregates Not Available

Note: Children under five reached with nutrition interventions are counted under HL 9-1 and/or children under two reached with community-level interventions under HL 9-2 do not get counted in this indicator.

Type of Individual: double-counting individuals across types is permitted:

- Parents/caregivers
- Household members (household-level interventions only), such as new access to basic sanitation and/or receipt of family rations
- School-aged children (i.e., those participating in school feeding programs)
- People in government (e.g., policymakers, extension workers, and healthcare workers)
- People in U.S. government-assisted private sector firms (e.g., agrodealers, traders, aggregators, processors, service providers, and manufacturers)
- People in civil society (e.g., nongovernmental organizations (NGOs), community-based organizations (CBOs), civil society organizations (CSOs), research and academic organizations, and community volunteers)

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]	
	<p>o While private sector firms are considered part of civil society more broadly, only count their proprietors under the “Private Sector Firms” disaggregate and not the “Civil Society” disaggregate</p> <ul style="list-style-type: none"> • Laborers (nonproducer diversified livelihoods participants) • Producer: smallholder (see definition below) • Producer: non-smallholder • Producer: aquaculture • Producer: size disaggregates not available <ul style="list-style-type: none"> o Producers (e.g., farmers, fishers, pastoralists, and ranchers) should be counted under one of the “Producers” disaggregate, not the “Private Sector Firms” disaggregate. o Smallholder definition: While country-specific definitions may vary, use the Feed the Future definition of a smallholder producer, which is one who holds 5 hectares or less of arable land or equivalent units of livestock, i.e., cattle: 10 beef cows; dairy: two milking cows; sheep and goats: five adult ewes/does; camel meat and milk: five camel cows; pigs: two adult sows; chickens: 20 layers and 50 broilers. The farmer does not have to own the land or livestock. <ul style="list-style-type: none"> • Type of individual not applicable (for household-level interventions) • Type of individual disaggregates not available
Rationale for Indicator	<p>Understanding the reach of our work and the breakdown of the individuals participating by type, sex, and age will better inform our programming and the impacts we are having in various sectors or in various demographic groups. This understanding can then make us more effective or efficient in reaching our targeted groups. Understanding the extent of spillover and scale is also very important, but this will be assessed as a part of the ZOI population-based survey and performance and impact evaluations rather than through annually reported activity/IM-level indicators. This indicator is an output indicator and is linked to many parts of the GFSS Results Framework.</p>
MEASUREMENT NOTES	
Data Source(s)	<p>Project activity records.</p> <p>Implementing partners will collect this information through Firm records; activity records; training participant lists; census or sampling of participating firms/farms/families/individuals, etc.</p>
Method of Data Collection and Construction	<p>Project monitoring.</p>

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]	
	<p>Level of collection: Activity-level, activity participants</p> <p>Data is collected by relevant technical staff, and stored in an M&E database. All the data will be reviewed, verified, analyzed, and summarized by the MEL POC, and reviewed and approved by Pis before submission to USAID.</p>
Collection Frequency	Ongoing
Reporting Frequency	Annually
Baseline Information	Baseline is zero
Reporting Notes	<p>FTF reporting in the DIS data entry notes:</p> <p>Enter the unique number of individuals participating under the “Sex” and “Age” disaggregates, and Feed the Future reporting in DIS will sum up the overall total. Then, enter the number of individuals under the “Type of individual,” where double counting is permitted.</p> <ul style="list-style-type: none"> ○ The total under the “Sex” disaggregate should match the total under the “Age” disaggregate, but may not match the total under the “Type of Individual” disaggregate if double counting was included there. <p>Under each disaggregate category, the “Not applicable” option can be used when breaking down the number of individuals by that disaggregate category is not necessary, such as in household-level interventions (see example below).</p> <p>Under each disaggregate category, the “Disaggregates not available” option can be used if that piece of information is applicable and not known about the individual. However, it is required, where possible, to disaggregate by sex and age, so please use this option sparingly and only when necessary.</p> <p>Important note:</p> <p>USAID: Each activity/IM should count the individuals with whom it works and report that number under their activity/IM in Feed the Future reporting in DIS, being careful to enter the unique number (no double counting) under the “Sex” and “Age” disaggregates. Then, the USAID Mission should aggregate across activities/IMs to report an overall Mission-wide total, after removing any double counting of individuals being reported by more than one activity/IM, and report that total under the Mission’s placeholder activity/IM titled “_HLI_[OU NAME]_OU-level Reporting for-</p>

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]

[OU name]” using the EG.3-2_OU level version of the indicator and using the same disaggregate categories.

Interagency Partners: Enter the “number of individuals participating” under EG.3-2 for each of your activities/grants/projects in Feed the Future reporting in DIS, and the Bureau for Resilience, Environment, and Food Security (REFS) will calculate an overall agency-level number of “individuals participating” in each country where you work.

Reporting examples:

Example 1: In Malawi there is a group of 30 caregivers/mothers who are part of a care group that provides training and support on breastfeeding, childcare, nutrition, etc. This care group is also used as an entry point to reach those same caregivers/mothers to do agricultural training on improved practices for their groundnut crop. In this case, the same people are receiving two intervention types.

- The IP should list the unique number of caregivers/mothers (which is 30) disaggregated into their “Sex” and “Age.” The total under the “Sex” disaggregate would be 30, and the total under the “Age” would be 30, i.e., they should match.
- Then, under the “Type of Individual” category, they would enter the number 30 under both the “Mothers/Caregivers” type and the “Producers” type, since this group of 30 people is both. Even though adding up these types would look like 60 people, we allow double counting here, and will be able to take the unique number of individuals (the 30 people) from the “Sex” and “Age” disaggregates.

Example 2: A Bureau for Humanitarian Assistance (BHA) activity provides family-sized rations and the mother of one family is the person who picks up the rations, which she takes back to feed her whole household, which has five members, including her. In this case, all members of the household should be counted, since they will all be receiving the ration, but breaking down that number by sex or age is likely not feasible, so we have provided a “Not applicable” option to use under this disaggregate category.

- To enter the data from this example where the woman’s household had five members, including her, enter the number “5” in the “Not applicable” option under the “Sex” and under the “Age” disaggregates. It is not necessary to break down the household members by their sex or age, even if the sex of the person who picks up the rations is known, because it is a household intervention.

EG.3-2: Number of individuals participating in USG food security programs [activity/implementing mechanism (IM) level]	
	<ul style="list-style-type: none"> Then under the “Type of Individual” disaggregate, enter “5” under the “Household members” option. <p>Note: This indicator cannot be summed across years for a project total, since “new” and “continuing” participants are not disaggregated and, thus, this will only show a total of individuals reached in any one reporting year.</p>
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	It may be challenging for Implementing Partners to correctly identify and track unique individuals. Actions that might mitigate this challenge include designing a tracking template that can allow for unique and multiple categories and holding one-one-one meetings with individual teams to provide comprehensive support.
CHANGES TO INDICATOR	
Description of changes	N/A
Other Notes (optional)	N/A
Last Updated	May 2024

INDICATOR 2

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IM level]	
Result Measured	Objective 1. Capacity Development: Strengthen the capacity of developing country partners, by equipping breeders with cutting-edge Tools, Technologies, Methods, and Insights (TTMIs), to effectively discover, validate and transfer new alleles/haplotypes into elite backgrounds, and to intentionally incorporate cross-cutting themes in breeding programs, for accelerating breeding for improved, locally-appropriate cereal crop varieties targeted to smallholder farmers within their countries and regions.
Indicator Type	Outcome
Performance Plan and Report (PPR) indicator	Yes Program Element EG.3.2: Agricultural Sector Capacity Initiative Affiliation: Global Food Security Strategy – Crosscutting Intermediate Result (CCIR) 8: Improved human, organizational and system performance
DESCRIPTION	

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IIM level]	
Definition	<p>Standard definition(s): This indicator measures whether U.S. government-funded capacity strengthening efforts have led to improved organizational performance in organizations receiving organizational capacity strengthening support.</p> <p>Key Concepts:</p> <ul style="list-style-type: none"> • Capacity encompasses the knowledge, skills, and motivations, as well as the relationships that enable an actor—an individual, an organization, or a network—to take action to design and implement solutions to local development challenges, to learn and adapt from that action, and to innovate and transform over time. • Organizational capacity strengthening is a strategic and intentional investment in organizations to jointly improve their performance toward achieving locally valued and sustainable development outcomes. • Capacity is a form of potential; it is not visible until it is used. Therefore, performance is the key consideration in determining whether capacity has changed. • An organization is a group of people who work together in an organized way for a shared purpose. For additional information on what entities count as “organizations,” reference the CBLD-9 frequently asked questions (FAQs). <p>Indicator Formula: This indicator is a percentage, defined as:</p> <ul style="list-style-type: none"> • Numerator: Number of organizations with improved performance. • Denominator: Number of organizations pursuing performance improvement with USAID support. <p>The unit of measure is an organization, and a single organization should only be counted once in a fiscal year. Organizations can be counted in subsequent years, as long as their performance improved relative to the previous year.</p> <p>Denominator Calculations: Organizations should only be counted in the denominator if they have fulfilled all conditions in points (a) and (b) below:</p> <p style="padding-left: 20px;">U. The activity theory of change, award documents, work plan, or other relevant documentation reflects that resources (human, financial, and/or other) were intentionally allocated for organizational capacity strengthening.</p>

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IM level]	
	<p>b. An organization demonstrates that it has undergone and documented a process of performance improvement, including the following four steps:</p> <ol style="list-style-type: none"> I. Collaborating with the supporting organization and/or any other relevant stakeholders to jointly define desired input to define desired performance improvement priorities, II. Identifying the difference between current and desired performance, III. Selecting and implementing performance improvement solutions (the capacity strengthening interventions), and IV. Identifying and using a performance improvement metric (or metrics) by which the organization will monitor and measure changes in performance. Refer to “Selecting Metrics and Measurement Approaches” below for additional guidance. <p>Numerator Calculations for Organizational Performance Improvement: Organizations should only be counted in the numerator (number of organizations with improved performance) if they are eligible to be counted in the denominator (number of organizations pursuing performance improvement with USAID support) and have additionally demonstrated measurable improved performance, as captured by one or more performance metrics. In other words, in addition to meeting conditions (a) and (b) above, organizations must also meet the following condition (c) to be counted in the numerator:</p> <p>c. An organization demonstrates that its performance on at least one key performance metric has improved.</p> <p>The following are examples of organizations and programming that should not be counted under CBLD-9:</p> <ul style="list-style-type: none"> • Organizations receiving support that is not specifically tailored to their priorities. For example, a training or workshop offered to any interested local organizations does not, by itself, meet the criteria for CBLD-9, as it is not intentionally offered in response to specific organizations’ performance improvement priorities. • Organizations that have received capacity strengthening support, but have not yet conducted measurement of performance change. Organizations should only be counted when CBLD-9 criterion b.iv (measuring change in performance) has been met. An organization whose performance change has not yet been measured should not be counted under CBLD-9 for the given fiscal year.

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IIM level]	
	<ul style="list-style-type: none"> • Programming targeting individual professional development. Programming that primarily targets individual capacity strengthening (without intention to strengthen organizations) should not be counted. <p>Selecting Metrics and Measurement Approaches: Supported organizations (in collaboration with operating units (Ous) and capacity strengthening providers) have substantial flexibility in selecting a measurement approach to fulfill CBLD-9 criterion b.iv. In doing so, Ous, providers, and supporting organizations should keep the following considerations in mind:</p> <ul style="list-style-type: none"> • The measurement approach must capture measurable performance results, not latent capacity. This approach should measure organizational performance results, not activity implementation. • Performance improvement takes time, so simply implementing planned capacity strengthening support (interventions) does not imply improved performance. • It is not necessary to create or adopt a new tool or survey (such as the Organizational Capacity Assessment (OCA) or Organizational Performance Index (OPI)) to measure performance. However, if using a tool, it is rarely appropriate to use the same tool to prioritize areas for capacity strengthening (criterion b.i) versus using it to measure improvement (criterion b.iv). Additional explanation of this point is included in the Guide to Distinguishing Tools Used for Local Capacity Strengthening, available on USAID’s Local Capacity Strengthening Policy resource page. • Whenever possible, performance metrics and approaches already being used by the local organization should be used in place of those created for the sole purpose of reporting to USAID. • Metrics may be quantitative or qualitative. • Measurement may occur through a variety of methods, including (but not limited to) routine business data collection, observation, surveys, or interviews. <p>Additional explanations and measurement examples are provided in the CBLD-9 Measurement Resource and CBLD-9 FAQs.</p> <p>Precise definition(s): Consistent with the standard definition, this definition will include and be used to report on the percentage of CRCIL’s partner institutions (e.g., NARI and us higher education institutions) with improved performance, following Objectives 1 (Capacity Development) and 2 (R&D) activities.</p>
Unit of Measure	Percent of USG-assisted organizations

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IIM level]	
Disaggregation(s)	<p>Location, numerator (number of organizations with improved performance), denominator (Number of USG-assisted organizations pursuing performance improvement with USAID support.), type of organization.</p> <p>Both the numerator and denominator should be disaggregated by type of organization.</p> <p>Type of organization:</p> <ul style="list-style-type: none"> • Education (higher education, secondary, primary, pre-primary). • Research institutions (non-degree-granting). • Cooperative (formal and registered private sector firm) • Producer group (informal, unregistered) • Faith-based organizations. • Governmental agencies (national or subnational levels). • Health organizations (service delivery, health advocacy, and professional associations) • Private sector firms (excluding cooperatives). • Non-governmental and not-for-profit organizations. • Other. <p>Only one organization type should be selected for each organization pursuing performance improvement with USAID support. When a supported organization fits within more than one disaggregate category, the Contracting Officer's Representative/Agreement Officer's Representative should be consulted to inform selection of the disaggregate that best represents the organization type. Selection of disaggregates is required.</p> <p>Targets for both the numerator and denominator should be set for the overall indicator; they do not need to be set for the disaggregates. Results should be reported for both numerator and denominator for the overall indicator and disaggregate types.</p>
Rationale for Indicator	<p>Capacity development is essential to achieving and sustaining the GFSS objectives of inclusive and sustainable agriculture-led economic growth, resilience among people and systems, and a well-nourished population. This indicator data and supplementing documentation will provide the Feed the Future initiative with a better understanding about the scope and scale of organizational capacity strengthening efforts within the Feed the Future Zones of Influence (ZOIs), as well as outside the Feed the Future ZOIs, among organizations that play a significant role in contributing to agriculture-led economic growth (e.g., organizational capacity strengthening of a ministry of</p>

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CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IIM level]	
	agriculture or an agricultural university outside of the ZOI). This indicator data also provides information about which types of organizational performance support its partners need. This indicator is linked to CCIR 8: Improved human, organizational and system performance of the GFSS Results Framework.
MEASUREMENT NOTES	
Data Source(s)	<p>Project activity and partner records, reports, or surveys (implementing partners that have been allocated USG funding to work with local organizations to strengthen their organizational capacity for increased performance)</p> <p>Data should be collected using appropriate methods (including relevant questionnaires or other data documentation methods). Tools and data collection methods should be documented in the activity's MEL Plan.</p>
Method of Data Collection and Construction	<p>Project monitoring.</p> <p>Depending on the selected measurement approach that captures performance results, data is collected by implementing partners according to specific data collection methods.</p> <p>Whenever possible, performance metrics and approaches already being used by the local organization should be used in place of those created for the sole purpose of reporting to USAID.</p> <p>Measurement may occur through a variety of methods, including (but not limited to) routine business data collection, observation, surveys, or interviews.</p> <p>Data is collected by relevant technical staff, and stored in an M&E database. All the data will be reviewed, verified, analyzed, and summarized by the MEL POC, and reviewed and approved by Pis before submission to USAID.</p> <p>Level of data collection: Organization. This includes organizations within the Feed the Future ZOIs, as well as organizations outside the Feed the Future ZOIs that play a significant role in contributing to agriculture-led economic growth, e.g., organizational capacity strengthening of a ministry of agriculture or an agricultural university outside of the ZOI.</p>
Collection Frequency	Annually, as of Y2
Reporting Frequency	Annually, as of Y2
Baseline Information	The baseline value at the start of activity implementation should be zero because the indicator measures the percent of organizations with improved performance.

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IIM level]	
	<p><i>(However, performance improvement metrics will be identified and monitored for each supported organization in order to meet the conditions outlined in the PIRS definition.) Organizations can be counted in subsequent years, as long as their performance improved relative to the previous year.</i></p>
Reporting Notes	<p><i>At the Activity/IIM Level:</i></p> <p><i>Note: Feed the Future implementing partners (Ips) are required to use the Feed the Future CBLD-9 worksheet located on the Agency’s Local Capacity Strengthening Policy webpage and to upload their worksheet on the “Documents” tab of the CBLD-9 indicator data entry screen in Feed the Future reporting in the DIS. Partners outside Feed the Future are strongly encouraged, but not required, to use the same CBLD-9 worksheet and follow the same procedure to upload it in the DIS with their annual data. This worksheet helps ensure CBLD-9 criteria are met for each organization counted and supports analysis for learning.</i></p> <p>FEED THE FUTURE REPORTING IN THE DIS DATA ENTRY NOTES:</p> <p><i>Contractors and recipients who implement activities fully or partially funded by Feed the Future should upload documentation demonstrating that the conditions identified above have been met for each organization being reported. The CBLD-9 supplementary worksheet available at the CBLD-9 Capacity Building Indicator Resource Page may be used as documentation, and users should upload the completed worksheet on the “Documents” tab on the indicator data entry screen in Feed the Future reporting in DIS.</i></p> <p><i>Targets should be set and results should be reported using this formula for the overall indicator and each of the disaggregates:</i></p> <ul style="list-style-type: none"> • <i>Numerator: Number of organizations with improved performance.</i> • <i>Denominator: Number of organizations pursuing performance improvement with USAID.</i> <p><i>For reporting, both the numerator and denominator should be disaggregated by type of organization.</i></p> <p><i>Only one organization type should be selected for each organization receiving U.S. government-funded capacity development assistance. Organization type should reflect the primary type of organization with which an organization identifies. Additional description of the mission and function of each assisted organization (such as type of services provided, role of organization in a relevant sector, etc.) should be included in the activity/IIM performance narrative.</i></p>

CRCIL MONITORING, EVALUATION, RESEARCH, LEARNING, AND ADAPTING PLAN

CBLD-9: Percent of USG-assisted organizations with improved performance [activity/IM level]	
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	First year reporting may be delayed as implementing partners select a measurement approach or metric that fulfills CBLD-9 criterion b.iv. and performance baseline is assessed through the breeding program assessment tool or through CRCIL's proposed measurement approach.
CHANGES TO INDICATOR	
Description of changes	N/A
Other Notes (optional)	A scorecard to be used as the measurement tool for CBLD-9, containing an option of suggested metrics, aligned with CRCIL's science engine 8 core themes' objectives, will be formulated for NARI to assess the suitability of these metrics for achieving their performance improvement goals related to the aforementioned 8 core themes. In a collaborative effort, workshops were conducted in February and April 2023 involving key organizations associated with CRCIL, including NARI partners to design this scorecard. The strategic framework of CRCIL was developed based on NARI-defined priorities and the advanced science engine core capacities, demonstrating CRCIL's alignment with NARI's needs and proposing capacity-strengthening activities to address them. However, flexibility will remain a key feature, allowing NARIs to propose their own metrics important to their improved performance goals beyond those suggested, including those they currently track, if applicable.
Last Updated	May 2024

INDICATOR 3

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	
Result Measured	Objective 2. Capacity Development: Strengthen the capacity of developing country partners, by equipping breeders with cutting-edge Tools, Technologies, Methods, and Insights (TTMIs), to effectively discover, validate and transfer new alleles/haplotypes into elite backgrounds, and to intentionally incorporate cross-cutting themes in breeding programs, for accelerating breeding for improved, locally-appropriate cereal crop varieties targeted to smallholder farmers within their countries and regions.
Indicator Type	Outcome

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	
Performance Plan and Report (PPR) indicator	Yes Program Element EG.3.2 Agricultural Sector Capacity Initiative Affiliation: Global Food Security Strategy —Intermediate Result (IR) I: Strengthened inclusive agriculture systems that are productive and profitable
DESCRIPTION	
Definition	<p>Standard definition(s): This indicator measures the total number of agriculture and food system actors participating in the U.S. government-funded activity who have applied improved management practices and/or technologies promoted by the U.S. government anywhere within the agriculture and food system during the reporting year. These individuals can include:</p> <ul style="list-style-type: none"> • Farmers, ranchers, and other primary sector producers of food and nonfood crops, livestock and livestock products, fish and other fisheries/aquaculture products, agro-forestry products, and natural resource-based products, including non-timber forest products such as fruits, seeds, and resins. • Individuals in the private sector, such as entrepreneurs, input suppliers, traders, processors, manufacturers, distributors, service providers, and wholesalers and retailers. • Individuals in government, such as policymakers, extension workers, and natural resource managers. • Individuals in civil society, such as researchers or academics and non-governmental and community organization staff. <p>The indicator tracks those individuals who are changing their behavior while participating in U.S. government-funded activities. Individuals who attended training or were exposed to a new technology do not count under this indicator unless the individual actually applies what he or she learned. For example, if an agriculture extension agent attends a gender-sensitive agriculture extension training, he can be counted under this indicator once he applies what he learned by changing the way he reaches out to and interacts with the female farmers to whom he provides extension services.</p> <p>Improved management practices or technologies are those promoted by the implementing partner (IP) as a way to increase agriculture productivity or support stronger and better functioning systems. The improved management practices and technologies are agriculture related, including those that address climate change adaptation or climate change mitigation. Ips promoting one or a package of specific</p>

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

management practices and technologies report practices under categories of types of improved management practices or technologies. The indicator should count those specific practices promoted by the activities, not just any improved practice. Even then, baseline values could be quite high, especially if a wide range of practices is included in the list of promoted practices. If that happens, Ips should look at the disaggregated prevalence of individual practices to identify ones that are already widely applied and remove those from the list (and from plans to promote) and recalculate the indicator without the already common practices.

This indicator captures results where they were achieved, regardless of whether interventions were carried out, and results achieved, in the Zone of Influence (ZOI).

Management practice and technology type categories, with some illustrative (not exhaustive) examples, include:

- *Crop genetics: Improved/certified seed that could be higher-yielding, higher in nutritional content (e.g., through biofortification, such as vitamin A-rich sweet potatoes or rice and high-protein maize), and/or more resilient to climate impacts (e.g., drought-tolerant maize or stress -tolerant rice); and improved germplasm.*
- *Cultural practices: Context-specific agronomic practices that do not fit in other categories, e.g., seedling production and transplantation; and cultivation practices such as planting density, crop rotation, and mounding.*
- *Livestock management: Improved livestock breeds; livestock health services and products such as vaccines; improved livestock handling practices and housing; improved feeding practices; improved grazing practices; improved waste management practices; improved fodder crop; and cultivation of dual-purpose crops.*
- *Wild-caught fisheries management: Sustainable fishing practices; improved nets, hooks, lines, traps, dredges, and trawls; and improved hand gathering, netting, angling, spearfishing, and trapping practices.*
- *Aquaculture management: Improved fingerlings; improved feed and feeding practices; fish health and disease control; improved cage culture; improved pond culture; pond preparation; sampling and harvesting; and management of carrying capacity.*
- *Natural resource or ecosystem management: Management practices/technologies are promoted with the intention of supporting the*

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

sustainable functioning, protection, and management of the natural system and its resources, including soil, water, and biodiversity. These practices or technologies can be land-or water-based and may support producers' productivity directly or indirectly. Some examples include: biodiversity conservation; maintaining or strengthening of ecosystem services, including stream bank management or restoration, reforestation, or afforestation; participatory land use planning; strengthening sustainable use of natural resources (e.g., sustainable fisheries management); woodlot management; and conservation agriculture principles like no till. Community-based, or Indigenous, customary, and traditional management including governance, practices, and user arrangements over land and water areas.

- *Pest and disease management: Integrated pest management; improved fungicides; appropriate application of fungicides; improved and environmentally sustainable use of cultural, physical, biological, and chemical insecticides and pesticides; crop rotation; and aflatoxin prevention and control.*
- *Soil-related fertility and conservation: Integrated soil fertility management; soil management practices that increase biotic activity and soil organic matter levels, such as soil amendments that increase fertilizer-use efficiency (e.g., soil organic matter and mulching); improved fertilizer; improved fertilizer use practices; inoculant; and erosion control.*
- *Irrigation: Drip, surface, and sprinkler irrigation; and irrigation schemes.*
- *Agriculture water management—non-irrigation-based: Water harvesting; sustainable water use practices; and practices that improve water quality.*
- *Water resources management (WRM): Practices and technologies are those that improve on-farm water management and efficiency and expanded use of sustainable irrigation approaches, including multiple-use dimensions, as part of broader water resources planning, governance, and finance. This includes incentivizing and expanding access to profitable and efficient irrigation practices and technologies; promoting on-farm soil, land, and water conservation practices; and supporting improved and equitable WRM within sustainable food production systems. Additionally, practices and technologies that improve water quality, quantity, and flow to enhance agricultural productivity, sustainability, and resilience, while reducing vulnerability to flooding, drought, and chronic water insecurity should be counted. These may include restoration of degraded watershed lands, advancing sustainable land-use practices coupled with efforts to secure tenure, and the use of both green and gray infrastructure. Green infrastructure, such as vegetative buffer strips or wetland construction, utilizes*

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

nature-based solutions to protect, sustainably manage, and restore natural or modified ecosystems, often providing multiple cost-effective benefits. Gray infrastructure refers to conventionally engineered systems, such as dams, seawalls, roads, pipes, or water treatment plants.

- *Climate mitigation: Technologies selected because they minimize emission intensities relative to other alternatives (while preventing leakage of emissions elsewhere). Examples include low-or no-till practices; restoration of organic soils and degraded lands; efficient nitrogen fertilizer use; practices that promote methane reduction; agroforestry; introduction/expansion of perennials; and practices that promote greater resource use efficiency (e.g., drip irrigation, upgrades of agriculture infrastructure and supply chains).*
- *Climate adaptation/climate risk management: Technologies promoted with the explicit objective of reducing risk to climate impacts and/or minimizing the severity of climate impacts. Examples include adoption of drought-and flood-resistant varieties, adoption of shorter-duration varieties, adjustments to agricultural calendar, crop diversification, agroforestry, and integrated fisheries/agriculture systems; improving wild fisheries management to adapt to a changing climate; use of index insurance and other financing tools, use of weather and climate information, and adoption of risk-management practices; supporting sustainable intensification on higher-quality agricultural or pastoral lands, while protecting and restoring nearby natural ecosystems on vulnerable or marginal lands; etc.*
- *Post-harvest handling and storage: Improved transportation; decay and insect control; temperature and humidity control; improved quality control technologies and practices; sorting and grading; and sanitary handling practices.*
- *Food loss and waste (FLW): Reducing food loss (pre-and postharvest) and waste (post farmgate) throughout the food systems from production, processing, and handling to distribution, storage, retail, and consumption is another example of a “climate mitigation” practice, and can include things like: use of natural biocontrol agents (e.g., Aflasafe®) and Good Agricultural Practices (GAP); pasteurization, cold chain, and food preservation techniques (e.g., canning or salt preservation); proper handling practices (e.g., use of personal protective equipment (PPE) such as head/hair cover and raw meat separation); moisture meters and hermetic storage; and applying circular economy methods (e.g., production of Black Soldier Fly Larvae for animal, fish feed or human protein supplements, composting, and using inedible parts of the food (e.g., vegetable*

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

stalks and coconut shell/fibers) as feed, compost, for fabric or other textile applications).

- **Food safety:** Technologies and practices promoted with the explicit objective of preventing and controlling biological, chemical, and physical food safety hazards from production, processing, and handling to distribution, storage, and retail. Examples include use of natural biocontrol agents (e.g., Aflasafe®) and GAP; pasteurization, cold chain, and food preservation techniques (e.g., canning); proper handling practices (e.g., use of PPE such as head/hair cover and raw meat separation); moisture meters and hermetic storage; application of Hazard Analysis and Critical Control Point (HACCP) principles and other risk assessments, including digital traceability; and sanitary and phytosanitary certification.
- **Value-added processing:** Improved packaging practices and materials, including biodegradable packaging; food and chemical safety technologies and practices; and improved preservation technologies and practices.
- **Marketing and distribution:** Contract farming technologies and practices; improved input purchase technologies and practices; improved commodity sale technologies and practices; and improved market information system technologies and practices.
- **Digitally-enabled:** Technologies that incorporate some form of digital technology, including software (such as databases, mobile apps, websites, artificial intelligence, blockchain, and Geographic Information System (GIS) software) and/or hardware (mobile phones, computers, radios, sensors, satellites, autonomous systems, and 3D printers). Examples include individuals using a cloud-based supply chain management system, an Internet-enabled soil sensor, a mobile app that facilitates input purchases, or pest monitoring service that uses artificial intelligence.
- **Other:** Improved mechanical and physical land preparation; non-market-and non-climate-related information technology; improved recordkeeping; improved budgeting and financial management; improved capacity to repair agricultural equipment; and improved quality of agricultural products or technology.

This indicator endeavors to capture the individuals who have made the decision to apply a particular management practice or technology, not those who have had to do so as a condition of employment or an obligation. For example, if a manager in a company that distributes agriculture produce decides to use refrigerator trucks for transport and plans the distribution route using GIS information to maximize

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

efficiency, both practices that are promoted by the U.S. government-funded activity, the manager is counted as one individual; the five drivers of the newly refrigerated trucks who are driving the new routes are not counted. If the manager and co-owner together decided to apply these new practices, they are counted as two individuals. Another example would be if a franchise offers a new fertilizer mix developed with U.S. government assistance and makes it available to franchisees, yet those franchisees make the decision whether or not to offer it. In this case, both the decision-maker(s) at the franchise level and the franchisees who decide to offer it get counted as individuals applying a new management practice.

It is common for U.S. government-funded activities to promote more than one improved technology or management practice to farmers and other individuals. This indicator allows the tracking of the total number of participants that apply any improved management practice or technology during the reporting year and the tracking of the total number of participants that apply practices or technologies in specific management practice and technology type categories.

- Count the participant if they have applied a management practice or technology promoted with U.S. government assistance at least once in the reporting year. Count the producer participant who applied improved management practices or technologies regardless of the size of the plot on which practices were applied.
- Count each participant only once per year in the applicable “Sex” disaggregate category and “Age” disaggregate category to track the number of individuals applying U.S. government-promoted management practice or technology type. If more than one participant in a household is applying improved technologies, count each participant in the household who does so.
- Under the “Commodity” disaggregate, count each participant once under each commodity for which they apply a U.S. government-promoted management practice or technology type. For example, if a participant uses U.S. government-promoted improved seed for the focus commodities of maize and legume, count that participant once under maize and once under legumes.
- Count each individual once per management practice or technology type once per year under the appropriate “Management practice/technology type” disaggregate. Individuals can be counted under a number of different “Management practices/technology types” in a reporting year.

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

For example:

- If a participant applied more than one improved technology type during the reporting year, count the participant under each technology type applied.
- If an activity is promoting a technology for multiple benefits, the participant applying the technology may be reported under each relevant “Management practice/technology type” category. For example, a farmer who is using drought-tolerant seeds could be reported under “Crop genetics” and “Climate adaptation/climate risk management,” depending on what purpose(s) or benefit(s) the activity is being promoted to participant farmers. For example, if a private enterprise invested in newer, more efficient machinery to process or otherwise improve the raw product that is also intended to reduce emissions intensities, this practice would be counted under “Value-added processing” and “Climate mitigation.”
- Count a participant once per reporting year regardless of how many times he or she applied an improved practice/technology type. For example, a farmer has access to irrigation through the U.S. government-funded activity and can now cultivate a second crop during the dry season in addition to the rainy season. Whether the farmer applies U.S. government-promoted improved seed to her plot during one season and not the other, or in both the rainy and dry season, she would only be counted once in the “Crop genetics” category under the “Management practice/technology type” disaggregate (and once under the “Irrigation” category).
- Count a participant once per practice/technology type category regardless of how many specific practices/technologies under that technology type category he or she applied. For example, a project is promoting improved plant spacing and planting on ridges. A participant applies both practices. He or she would only be counted once under the “Cultural practices technology type” category.

IPs may use sales data from assisted firms for some kinds of inputs to estimate the number of producers for indicators EG.3.2-24: Number of individuals in the agriculture and food system who have applied improved management practices or technologies with USG assistance (activity/IM level), and EG.3.2-25: Number of hectares under improved management practices or technologies with USG assistance (activity/IM level) if they use clearly documented assumptions that are regularly validated through spot surveys or similar methods. For example, an IP working to strengthen the certified soy seed market within a defined market shed in the ZOI could use data on the number and volume of certified soy seed sales by assisted firms during the reporting year to estimate the number of farmers applying certified

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

soy seed (by using a conservative assumption that one sales equals one farmer applying) and hectares under certified seed by assuming a periodically validated planting density. All assumptions underlying the indicator estimates should be documented annually in an indicator comment. However, if an agrodealer gives away seed packs with the purchase of other inputs as a promotion, more validation would be necessary for the IP to assume farmers purchasing the other input are also applying that seed.

If a lead farmer cultivates a plot used for training, e.g., a demonstration plot used for Farmer Field Days or Farmer Field School, the lead farmer should be counted as a participant applying improved practices/technologies for this indicator. In addition, the area of the demonstration plot should be counted under indicator EG.3.2-25. However, if the demonstration or training plot is cultivated by a researcher (a demonstration plot in a research institute, for instance), neither the area nor the researcher should be counted under this indicator or indicator EG.3.2-25.

Participants who are part of a group or members of an organization that apply improved technologies on a demonstration or other common plot should not be counted under this indicator, the area of the common plot should not be counted under indicator EG.3.2-25, and the yield should not be counted under indicator EG.3-10, -11, -12: Yield of targeted agricultural commodities among program participants with USG assistance (activity/IM level). For cultivated cropland, these three indicators (EG.3.2-24, EG.3.2-25, and EG.3-10, -11, -12) only capture results for land that is individually managed.

This is a snapshot indicator, which is designed to capture individual applications only for the reporting year. Individuals who applied a U.S. government activity-promoted management practice before the intervention constitute the baseline. Individuals that continue to apply the U.S. government activity-promoted management practice during the project period get counted for applying the technology in any subsequent years they apply that technology, even if they were not directly touched by the intervention in the reporting year (if the IP continues to track information on former participants). However, this also means that yearly totals cannot be summed to count applications by unique individuals over the life of the project.

However, there are some cases where group members can be counted under this indicator. For example, as a result of participating in a U.S. government-funded activity, a producer association purchases a dryer and then provides drying services

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	
	<p>for a fee to its members. In this scenario, any member that uses the dryer service can be counted as applying an improved management practice under this indicator.</p> <p>Note that the list of practice/technology type disaggregates is broader under this indicator than the list of practice/technology type disaggregates under indicator EG.3.2-25 because this indicator tracks applications of improved practices/technologies beyond those that are applied to a defined land or water area.</p>
Unit of Measure	Number of individuals
Disaggregation(s)	<p>Location, type of value chain actor (first level), sex, age, type of management practice or technology (second level).</p> <p>FIRST LEVEL: Value chain actor type</p> <ul style="list-style-type: none"> • Smallholder producers (e.g., farmers, ranchers, and other primary sector producers of food and nonfood crops, livestock products, wild fisheries, aquaculture, agroforestry, and natural resource-based products) • Non-smallholder producers (e.g., farmers, ranchers, and other primary sector producers of food and nonfood crops, livestock products, wild fisheries, aquaculture, agroforestry, and natural resource-based products) • People in government (e.g., policymakers and extension workers) • People in private sector firms (e.g., processors, service providers, and manufacturers) • People in civil society (e.g., staff and volunteers from nongovernmental organizations, community-based organizations, and research and academic organizations) • Others <p>Note: Only count producers under the “Producers” disaggregate and not the “Private sector firms” disaggregate to avoid double counting. While private sector firms are considered part of civil society more broadly, only count them under the “Private sector firms” disaggregate and not the “Civil society” disaggregate to avoid double counting. Smallholder definition: While country-specific definitions may vary, use the Feed the Future definition of a smallholder producer, which is one who holds 5 hectares or less of arable land or equivalent units of livestock, i.e., cattle: 10 beef cows; dairy: two milking cows; sheep and goats: five adult ewes/does; camel meat and milk: five camel cows; pigs: two adult sows; chickens: 20 layers and 50 broilers. The farmer does not have to own the land or livestock.</p>

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	
	<p><i>Smallholder definition: While country-specific definitions may vary, use the Feed the Future definition of a smallholder producer, which is one who holds 5 hectares or less of arable land or equivalent units of livestock, i.e., cattle: 10 beef cows; dairy: two milking cows; sheep and goats: five adult ewes/does; camel meat and milk: five camel cows; pigs: two adult sows; chickens: 20 layers and 50 broilers. The farmer does not have to own the land or livestock.</i></p> <p>SECOND LEVEL</p> <ul style="list-style-type: none"> • Sex: Male; female; neither; disaggregates not available • Age: 15–29; 30+ • Management practice or technology type: Crop genetics, cultural practices, livestock management, wild-caught fisheries management, aquaculture management, natural resource or ecosystem management, pest and disease management, soil-related fertility and conservation, irrigation, agriculture water management non-irrigation based, water resources management; climate mitigation; climate adaptation/climate risk management; marketing and distribution; post-harvest handling and storage; food loss and waste; food safety; value-added processing; digitally-enabled; other • Commodity (see list of commodities on Agrilinks): Activities promoting sustainable intensification or those where multiple commodities are involved (e.g., transportation), where counting participants by commodity is complicated and/or not meaningful are not required to disaggregate participants by commodity, and should use the “Not applicable” category under the “Commodity” disaggregate.
Rationale for Indicator	<p><i>Improved management practices and technological change and adoption by different actors throughout the agricultural system will be critical to increasing agricultural productivity and supporting stronger and better functioning systems. This indicator falls under IR 1: Strengthened inclusive agriculture systems that are productive and profitable in the GFSS Results Framework.</i></p>
MEASUREMENT NOTES	
Data Source(s)	<p><i>Sample survey of activity participants; census of private sector/government participants; activity records; farm records; reports from activity partners; association records; company/organization records</i></p>
Method of Data Collection and Construction	<p><i>Project monitoring</i></p>

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	
	Data is collected by relevant technical staff, and stored in an M&E database. All the data will be reviewed, verified, analyzed, and summarized by the MEL POC, and reviewed and approved by PIs before submission to USAID. Level of collection: Activity-level, activity participants
Collection Frequency	Ongoing, as of year 2
Reporting Frequency:	Annually, as of year 2
Baseline Information	Baseline value is zero
Reporting Notes	N/A
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	Self-reported data to be mitigated by survey design and other data collection methods. Efficacy of these mitigation efforts will be assessed through the DQA process.
CHANGES TO INDICATOR	
Description of changes	N/A
Other Notes (optional)	N/A
Last Updated	May 2024

INDICATOR 4

EG.3.2-1 Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	
Result Measured	Objective 2. Capacity Development: Strengthen the capacity of developing country partners, by equipping breeders with cutting-edge Tools, Technologies, Methods, and Insights (TTMIs), to effectively discover, validate and transfer new alleles/haplotypes into elite backgrounds, and to intentionally incorporate cross-cutting themes in breeding programs, for accelerating breeding for improved, locally-appropriate cereal crop varieties targeted to smallholder farmers within their countries and regions.
Indicator Type	Output

EG.3.2-1 Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	
Performance Plan and Report (PPR) indicator	Yes Program Element EG.3.2: Agricultural Sector Capacity Initiative Affiliation: Global Food Security Strategy – Crosscutting Intermediate Result (CCIR) 8: Improved human, organizational
DESCRIPTION	
Definition	<p>Standard definition(s): This indicator counts the number of individuals to whom significant knowledge or skills have been imparted through interactions that are intentional, structured and purposed for imparting knowledge or skills. The indicator includes farmers, ranchers, fishers and other primary sector producers who receive training in a variety of best practices in productivity, post-harvest management, linking to markets, etc. It also includes rural entrepreneurs, processors, managers and traders receiving training in application of improved technologies, business management, linking to markets, etc. Finally, it includes training to extension specialists, researchers, policymakers and others who are engaged in the food, feed and fiber system and natural resources and water management.</p> <p>There is no predefined minimum or maximum length of time for the training; what is key is that the training reflects a planned, structured curriculum designed to strengthen capacities, and there is a reasonable expectation that the training recipient will acquire new knowledge or skills that s/he could translate into action. However, Operating Units may choose to align their definition of short-term training with the TrainNet training definition of 2 consecutive class days or more in duration, or 16 hours or more scheduled intermittently.</p> <p>Count an individual only once, regardless of the number of trainings received during the reporting year and even if the trainings covered different topics. Do not count sensitization meetings or one-off informational trainings.</p> <p>In-country and off-shore training are included. Training should include food security, water resources management/IWRM, sustainable agriculture, and climate change risk analysis, adaptation, mitigation, and vulnerability assessments as they relate to agriculture resilience, but should not include nutrition-related trainings, which should be reported under indicator HL.9-4 instead.</p> <p>Delivery mechanisms can include a variety of extension methods as well as technical assistance activities. An example is a USDA Cochran Fellow.</p>

EG.3.2-1 Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	
	<p>This indicator counts individuals receiving training, for which the outcome, i.e. individuals applying improved practices, will be reported under EG.3.2-24.</p> <p>In FTFMS, partners should enter the number of individuals trained disaggregated first by Type of Individual then by Sex. For example, partners should enter for the total number of Male producers trained and the total number of Female Producers trained. FTFMS will automatically calculate the total number of Producers trained. Partners should then enter the total number of Males in Private Sector Firms trained and the total number of Females in Private Sector Firms trained. FTFMS will automatically calculate the total number of People in Private Sector Firms trained. And so on for the other Type of Individual disaggregate categories. FTFMS will then automatically calculate the total number of individuals who received short-term training by summing across the Type of Individual disaggregate.</p> <p>Precise definition(s): Consistent with the Standard definition, this definition will include and be used to report on the number of people trained mainly through Objective 1 capacity strengthening activities meant to enhance country partner’s institutional/organizational, technical/human, and cross-cutting capacity to effectively discover, validate, and transfer new alleles / haplotypes / germplasm into elite breeding materials in the Program’s target cereals: wheat, rice, sorghum, and pearl millet. Trainings may relate to the science Engine core theme areas with the goal of accelerating breeding for improved, locally-appropriate cereal crop varieties targeted to smallholder farmers within participants’ countries and regions. Meetings, forums or other type of events that do not contain a distinct training or learning component should not be counted under this indicator. Regardless of the duration/length of a training course, CRCIL will ensure that trainings reflect a planned, structured curriculum designed to strengthen capacities, and there is a reasonable expectation that the training recipient will acquire new knowledge or skills that s/he could translate into action.</p>
Unit of Measure	Number of individuals
Disaggregation(s)	<p>Location, sex, age, type of individual, duration.</p> <p>Sex: the <u>unique</u> number of individuals should be entered here (i.e. no double-counting of individuals across disaggregate choices here)</p> <ul style="list-style-type: none"> • Male; • Female; • Neither

EG.3.2-1 Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training

- Not applicable (e.g. for household members counted from household-level interventions);
- Disaggregates Not Available

Age: the unique number of individuals should be entered here (i.e. no double-counting of individuals across disaggregate choices here)

- School-aged children (only to be used for counting those reached by USG school feeding programs; report the total reached with school feeding regardless of actual age);
 - 15-29;
 - 30+;
- Not applicable (e.g. for household members counted from household-level interventions);
- Disaggregates Not Available

Note: Children under five reached with nutrition interventions are counted under HL 9-1

Type of Individual: double-counting individuals across types is permitted here

- Parents/caregivers;
- Household members (household-level interventions only), such as new access to basic sanitation and/or receipt of family rations;
- School-aged children (i.e. those participating in school feeding programs);
- People in government (e.g. policy makers, extension workers, healthcare workers);
- People in USG-assisted private sector firms (e.g. agrodealers, traders, aggregators, processors, service providers, manufacturers)
- People in civil society (e.g. NGOs, CBOs, CSOs, research and academic organizations, community volunteers)
 - While private sector firms are considered part of civil society more broadly, only count their proprietors under the “Private Sector Firms” disaggregate and not the “Civil Society” disaggregate
- Laborers (Non-producer diversified livelihoods participants);
- Producer: Smallholder (see definition below);
- Producer: Non-smallholder;

EG.3.2-1 Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	
	<ul style="list-style-type: none"> • <i>Producer: Aquaculture;</i> • <i>Producer: size</i> • <i>Disaggregates Not Available</i> <ul style="list-style-type: none"> ○ <i>Producers (e.g. farmers, fishers, pastoralists, ranchers) should be counted under one of the “Producers” disaggregate, not the “Private Sector Firms” disaggregate.</i> ○ <i>Smallholder Definition: While country-specific definitions may vary, use the Feed the Future definition of a smallholder producer, which is one who holds 5 hectares or less of arable land or equivalent units of livestock, i.e. cattle: 10 beef cows; dairy: two milking cows; sheep and goats: five adult ewes/does; camel meat and milk: five camel cows; pigs: two adult sows; chickens: 20 layers and 50 broilers. The farmer does not have to own the land or livestock.</i> • <i>Type of Individual Not Applicable</i> • <i>Type of Individual Disaggregates Not Available</i> <p>Duration: <i>New, Continuing (as of year 2)</i></p> <ul style="list-style-type: none"> • <i>New: Individuals who received USG supported short-term agricultural sector productivity or food security training during the reporting year.</i> • <i>Continuing: Individuals who received USG supported short-term agricultural sector productivity or food security training during a previous reporting year and continues to receive training during the current reporting year.</i>
Rationale for Indicator	<i>The indicator seeks to track the capacity strengthening of stakeholders through targeted training interventions, emphasizing the importance of knowledge dissemination and skills enhancement to drive agricultural productivity and improve food security. The indicator tracks that participants are equipped with knowledge and techniques to adapt to climate challenges, adopt resilient agricultural practices, and mitigate the impacts of climate change on crop production.</i>
MEASUREMENT NOTES	
Data Source(s)	<i>Project activity records (activity reports, training reports, attendance records)</i>
Method of Data Collection and Construction	<i>Project monitoring</i> <i>Implementing partners collect information from participants who directly participate in agriculture, livelihoods, or any other food security training.</i>

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EG.3.2-1 Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	
	<p>Method of collection: Routine monitoring or participant-based sample survey. If a participant-based sample survey is used, indicator overall estimate must be calculated using appropriate sample weights before reporting to FFP.</p> <p>Activities are strongly encouraged to maintain a standardized and consistent, clean training database as part of routine monitoring throughout the activity to record the types of training received by individuals and the dates and duration of training. This will facilitate the LOA count of unique individuals who received any training throughout the award without double counting.</p> <p>Data is collected by relevant technical staff, and stored in an M&E database. All the data will be reviewed, verified, analyzed, and summarized by the MEL POC and reviewed and approved by Pis before submission to USAID.</p>
Collection Frequency	Ongoing
Collection Reporting	Annually
Baseline Information	Baseline value is zero
Reporting Notes	N/A
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	<p>It may be challenging for Implementing Partners to correctly identify and track unique individuals. Actions that might mitigate this challenge include designing a tracking template that can allow for unique and multiple categories and holding one-one-one meetings with individual teams to provide comprehensive support.</p> <p>This indicator does not reflect the depth of skills and knowledge conveyed, or whether persons have developed the capacity to act, or taken direct action as a result of the training. However, one indicator's outcome is individuals applying improved practices, to be reported under EG.3.2-24.</p>
CHANGES TO INDICATOR	
Description of changes	A precise definition specific for CRCIL, aligned with the standard definition, has been added.
Other Notes (optional)	N/A
Last Updated	May 2024

INDICATOR 5

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]	
Result Measured	Objective 2. Research and Development: Discover novel alleles/haplotypes for traits critical in climate adaptation, validate, and transfer to elite breeding lines that improve the efficiency and accuracy of developing country partners' TPP-aligned trait discovery and breeding efforts.
Indicator Type	Output (phases 1,2,3); Outcome (phase 4)
Performance Plan and Report (PPR) indicator	Yes Program Element EG.3.2 Agricultural Sector Capacity INITIATIVE AFFILIATION: Global Food Security Strategy – Output: could be applicable to many parts of results framework.
DESCRIPTION	
Definition	<p>Standard definition(s): This indicator tracks the progression of new or significantly improved technologies, practices, and approaches through research and development (R&D) to the demonstrated uptake by public or private sector stakeholders. The R&D process should be hypothesis driven, testable, and independently replicable. The technologies, practices, and approaches under R&D should have the potential to achieve significant improvements in reducing poverty, hunger, and malnutrition versus existing alternatives. The technology, practice, or approach should be one that can clearly be articulated as having the potential to reach and benefit a smallholder farmer or other market system actor at some point in the future. New or significant improvements to existing, food security-related technologies, practices, and approaches are to be counted. An improvement would be significant if, among other reasons, it served a new purpose or allowed a new class of users to employ it.</p> <p>Examples include a new blend of fertilizer for a particular soil type or proper sequencing of interventions to increase the adoption of a new technology. Diagnostic research or research focused on identifying the root cause of an issue should not be counted under this indicator. Support through U.S. government assistance includes human, financial, and institutional support, in full or in part, for the discovery, research, development, testing, or making available for uptake by the public and private sector.</p> <p>The technology, practice, or approach is disaggregated first into R&D categories, then into the phase of research. Definitions and illustrative examples of technologies, practices, and approaches by R&D category are:</p>

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]

- *Plant and Animal Improvement Research: Includes trait, marker, and gene discovery for agriculturally important characteristics, coupled with application of conventional breeding and/or advanced biotechnological approaches for the genetic improvement of plant and animal species. Products include improved germplasm (varieties, breeds, etc.) that is higher-yielding, more resilient to biotic and abiotic stresses, higher in nutritional content (e.g., biofortified crops such as vitamin A-rich sweet potatoes, high-protein maize, or improved livestock breeds), and/or possesses improved market or processing traits.*

- *Production Systems Research: Includes integrated pest management (including grafting), sustainable intensification (e.g., mechanization, small-scale irrigation, planting schedules, and soil management), livestock management, postharvest and food safety technologies; management practices for feed or food, natural resource management, and vaccines and animal health services. Products include new land preparation, harvesting, processing and product handling, and food safety technologies and practices including packaging and storage methods; sustainable water and land management practices; and sustainable aquaculture and fisheries practices.*
 - 1.

- *Social Science Research: Includes research concerning the effectiveness of agricultural policy options (policy research); research on the sociobehavioral, socioeconomic, or sociopolitical factors that influence decision-making; economic research on products or approaches that overcome barriers to farmer investment in or adoption of improved technology and management practice, etc. (economic research); research or creation of new/improved tools for market access, including financial and insurance products (market access research); and nutrition research. Products include new risk management approaches, such as the integration of partially-subsidized index insurance into social safety nets that cost-effectively increase the resilience of vulnerable households; and approaches to effectively and sustainably change nutrition behaviors or the adoption of improved seeds.*
 - 2.

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]

See Annex 1 at the end of this PIRS for guidance on counting and reporting technologies, practices, and approaches by category (pp. 124-127 of the [FTF Indicator Handbook](#), 2023).

A description of the four phases of research and development is below. Technologies, practices, and approaches should be reported under the highest phase reached during the reporting year. It is not required that all technologies, practices, and approaches pass through all four phases to be reported under the indicator, nor is it essential that all investments start at Phase I. For example, a seed variety that is only being field tested for country-level adaptation and then submitted for country-level certification would only be tracked through Phases II and III.

As the indicator is purposefully defined broadly to ensure that a full range of technologies, practices, approaches, and uptake modalities can be captured, no assumptions should be made regarding comparability of the level or type of uptake across technologies, practices, or approaches, or the value or depth of support for and by the public and/or private sectors for any technology, practice, or approach.

In some cases more than one operating unit (OU) may count the same technology or practice. This would occur if the technology or practice were developed, for instance, in collaboration with a U.S. university under a mechanism funded by one OU and then passed through a regional collaboration mechanism funded by a different OU to other countries. If multiple OUs are co-funding development of the same technology, practice, or approach under the same R&D mechanism, they should coordinate with the COR/AOR to decide which OU should report on the indicator in Feed the Future reporting in DIS on behalf of all contributing OUs. We discourage individual OUs reporting prorated results based on funding proportions in these cases.

Four Phases of Research, Development, and Uptake:

Phase I—Under research as a result of U.S. government assistance: Count new technologies, practices, or approaches under research in the current reporting year. Technologies and management practices are under research when the process to develop or support the development of the product is conducted under ideal or controlled conditions, such as a laboratory or greenhouse. Note that for non-biotech crops, much or all of this phase might be conducted outdoors and in soil, and yet be considered to be in controlled conditions; these attributes do not make this work

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]

“field testing.” Additionally, livestock research conducted on-station and in confined settings would also be considered to be in controlled conditions. For social science research, only theoretical, efficacy, or secondary data research on a specific approach (e.g., the use of index insurance to increase on-farm investment) that could significantly improve development outcomes should be counted.

Phase II—Under field testing as a result of U.S. government assistance: “Under field testing” means that research has moved from focused development, where a promising technology or practice has been identified, to broader testing of effectiveness under conditions intended to resemble those that the potential users of the new technology will encounter. Testing might be done in the actual facilities or fields of potential users, or it might be in a facility set up to duplicate those conditions to prove expected performance or superiority to current technologies or practices. For biotechnology research, a change of location from a contained laboratory or greenhouse to a confined field with the receipt of a permit indicates that the research has completed the “under research” phase and moved into the “under field testing” phase. The goal of this phase is to achieve a documented “real world” assessment of potential performance and feasibility by accumulating technical information and test results that indicate that the expected performance is achievable. Some technologies may have legal requirements for the collection, submission, and approval of assessment data, which must be satisfied before completing this phase. Social science research conducted through a randomized controlled trial (RCT) or quasi-experimental pilot for identification of effectiveness or causal impact should be counted under this phase.

Phase III—Made available for uptake as a result of U.S. government assistance: Count technologies, practices, or approaches that are ready to be taken up or adopted by a public or private sector entity, which would then disseminate the technology, practice, or approach to end-users in a manner that promotes sustainable, widespread adoption at the population level (e.g., hundreds of thousands to millions, depending on the technology or practice and context). This phase does not count the number of technologies and practices actually transferred by public or private entities, including implementing partners (Ips). Completing a research activity or transferring a technology, practice, or approach to another researcher for continued R&D activities do not in themselves constitute having made something available for uptake. Conditions may need to be met before a technology, practice, or approach can move into the public domain such as licensure, certification, or policy guidelines and this phase captures technologies, practices, and approaches that have

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]

met these conditions. It must have passed all required regulatory approvals such that intermediaries and end-users (i.e., service input providers and farmers) are able to use and disseminate it legally. Any technology, practice, or approach made available for uptake in a previous year should not be included, unless the availability has increased in geographic scope (i.e., made available for uptake in another country) in this reporting period.

Phase IV—Demonstrated uptake by the public and/or private sector: A technology, practice, or approach has “demonstrated uptake” if any public sector and/or private sector actor has institutionalized or provided support for dissemination, independent of U.S. government assistance, at any point during the reporting period. This phase aligns with the Foreign Assistance indicator for Science, Technology, Innovation, and Research 11 (STIR-11). As a result, it does not include uptake by the end-user (i.e., individual customers or farmers) or by bilateral or multilateral donor organizations (e.g., USAID Missions). End-users applying new technologies are measured under indicator EG.3.2-24: Number of individuals in the agriculture and food system who have applied improved management practices or technologies with U.S. government assistance (activity/IM level). While technologies, practices, and approaches are often delivered successfully through donor pathways, the goal is to identify a sustainable pathway for delivery through the public or private sector. Examples of demonstrated uptake include: 1) non-USAID financial support provided through public, private, or public-private agreements (i.e., non-revenue monies from non-donor sources) for dissemination, including—but not limited to—private investments, grants, loans, funds, or government bonds; 2) incorporation/institutionalization of an approach into a host country government’s national or subnational guidelines, policies, or other legal frameworks; 3) market introduction, such as the technology or practice being offered for sale; and 4) distribution or delivery of a technology or practice to an end-user via the public and/or private sectors, such as by agricultural extension agents.

A technology, practice, or approach should be reported each year it is actively in Phase I or Phase II during the mechanism’s life of activity. A technology, practice, or approach reported under Phases III and IV should be counted only once per country by each IP across the life of the activity, and should be reported on during the first reporting year when the technology, practice, or approach is made available for uptake (Phase III) or has demonstrated uptake (Phase IV). It should only be counted once in Phase IV for each country, regardless of whether the private sector and the public sector have both demonstrated uptake of the technology, practice, or approach, or whether multiple private or public sector actors have done so. In some

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cases, multiple Ips may have provided support in Phase I, II, or III and IV for a technology, practice, or approach. Each IP may report on the technology, practice, or approach at each of the phases it supports, even if this results in multiple Ips counting the same technology, practice, or approach in the same phase in the same country. This indicator does not count whether a technology, practice, or approach has ever been made available for uptake or been taken up in the past—only whether that technology, practice, or approach has been made available for uptake or has demonstrated uptake by the public and/or private sectors during the life of the activity and during the current reporting period.

Total number of unique technologies: Alongside tracking the progress of technologies, practices, and approaches across four phases of research and development, Feed the Future reporting in DIS also captures the number of unique technologies. Since technologies, practices, and approaches are reported under the highest phase reached during the reporting year, the number of unique technologies should be the sum of the counts by phase. Technologies, practices, and approaches cannot be double counted in each of the different phases it reaches in a single year, nor can the same technology be double counted across multiple categories of research.

The public sector includes nongovernmental organizations, public sector higher education institutions, recipient country governments (i.e., any department, office, subdivision, or other entity within the national or subnational government of the country where the technology, practice, or approach is supported), and other organizations that are part of the public sector but not included in the categories above. The private sector includes private organizations (i.e., businesses and corporations; business, industry, and trade associations; corporate foundations; social enterprises; financial institutions; investors; and impact investors), private philanthropy (i.e., private foundations and philanthropists), and other organizations that are part of the private sector but not included in the categories above. A blended adoption includes uptake by both the public and private sectors. This could be simultaneous uptake by both, or separate uptake by each, during a reporting period. However, the technology, practice, or approach would only be reported once in both of these scenarios.

Precise definition(s): Consistent with the Standard definition, this definition will include and be used to report on the number of technologies, practices, and approaches (or Tools, Technologies, Methods and Insights) under various phases of research, development, and uptake, centered around CRCIL’s Objective 2 (Research

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]	
	<p>& Development), which seeks to discover novel alleles / haplotypes /germplasm for traits critical in climate adaptation, validate, and transfer to elite breeding lines that improve the efficiency and accuracy of partner countries’ traits discovery and breeding efforts for the chosen Target Product Profiles. These may include phenotyping methods, genetic tools, or other approaches to develop new varieties with improved traits such as productivity; abiotic (drought, heat, salt tolerance, etc.) and biotic (disease, pests) stress tolerance; quality traits such as nutritional content, consumer preference, or processing characteristics; or other properties as identified in the product profiles. The R&D category is then Plant and animal improvement research, focused on gene discovery and improved germplasm (varieties, breeds, etc.).</p>
Unit of Measure	Number of technologies, practices, and approaches
Disaggregation(s)	<p>Location, category of research, and phase of development</p> <p>Category of Research</p> <ul style="list-style-type: none"> • Plant and Animal Improvement Research • Production Systems Research • Social Science Research <p>Within each category disaggregate by phase of development:</p> <ul style="list-style-type: none"> • Phase I: Under research as a result of USG assistance • Phase II: Under field testing as a result of USG assistance • Phase III: Made available for uptake as a result of USG assistance • Phase IV: Demonstrated uptake by the public and/or private sector with USG assistance
Rationale for Indicator	<p>According to the USAID Scientific Research Policy (2014), research allows USAID to develop, test, refine, and evaluate the acceptability and cost-effectiveness of new and improved products, tools, approaches, and interventions that focus on the key concerns of developing countries. Research also helps inform policy, strategic direction of programs, and methods to overcome barriers to implementation in developing country settings by strengthening the evidence-base for development. The GFSS Research Strategy frames research programming in terms of an R&D pipeline, in which new or significantly improved technologies advance through phases of research before being transferred to technology-scaling partners for dissemination and, ultimately, widespread adoption by developing-country beneficiaries. The R&D pipeline contains innovative, scalable products and practices to improve productivity, nutrition, and resilience in Feed the Future partner countries. This indicator tracks</p>

EG.3.2-7 Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance [IM-level]	
	the four phases of research and development and aligns with the crosscutting contributions of research under the GFSS Results Framework.
MEASUREMENT NOTES	
Data Source(s)	Project activity records, reports or survey
Method of Data Collection and Construction	<p>Project monitoring</p> <p>Data is collected by relevant technical staff, and stored in an M&E database. All the data will be reviewed, verified, analyzed, and summarized by the MEL POC, and reviewed and approved by Pis before submission to USAID.</p> <p>Level of collection: Activity-level; only those technologies under development with USG support</p>
Collection Frequency	Annually
Collection Reporting:	Annually
Baseline Information	Baseline is zero
Reporting Notes	<p>FEED THE FUTURE REPORTING IN THE DIS DATA ENTRY NOTES:</p> <p>DIS will sum the unique number of technologies, practices, and approaches entered by phase and research category. Do not double count technologies/practices/approaches across the phases of research (only report it under the highest phase achieved), nor across the categories of research.</p> <p>Any data reported under Phases III and IV must include the specific technology, practice, or approach in an indicator comment in Feed the Future reporting in DIS. Phase IV information must also include an explanation of which Phase(s) (I, II, and/or III) received U.S. government support before there was demonstrated uptake by the public or private sector. Details for all technologies, practices, and approaches in Phases III and IV will also be collected for the Research Rack Up database through a separate survey instrument.</p> <p>Annex I: Guidance on Counting Technologies, Practices, and Approaches by Phase of Research.</p> <p>As indicator EG.3.2-7: Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of U.S. government assistance; is broadly inclusive of different disciplines of food security R&D and uptake, it is necessary to further define how technologies, practices, and approaches</p>

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	are categorized in each category. Thus, the following chart (pp. 124-127 of the FTF Indicator Handbook , 2023). Was created to further define the categories of technologies, practices, and approaches as well as how to count them at each phase.
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	It may be challenging to capture the full spectrum of technologies and practices. The indicator relies on comprehensive tracking of innovations across diverse research institutions, potentially facing issues related to inconsistent reporting, varying definitions of research and development phases, and the dynamic nature of technology adoption. Additionally, the indicator might encounter difficulties in precisely attributing the impact of USG assistance among the multitude of contributing factors influencing the adoption and advancement of technologies, practices, and approaches in complex settings. Data collection methods should be sensitive to these nuances, and ongoing refinement of measurement approaches may be necessary to address these limitations and ensure accurate reporting without eliminating the possibility to align/unify data for reporting.
CHANGES TO INDICATOR	
Description of changes:	A precise definition specific for CRCIL, aligned with the standard definition, has been added.
Other Notes (optional)	N/A
Last Updated	May 2024

INDICATOR 6

FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
Result Measured	Objective 3. Resource leverage: Access and leverage resources and align efforts that support CRCIL activities and objectives through coordination amongst essential stakeholders across the broader global research community.
Indicator Type	Output
Performance Plan and Report (PPR) indicator	Yes Program Area EG.3.2: Agricultural Sector Capacity

FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
	Initiative Affiliation: Global Food Security Strategy (GFSS) – Crosscutting Intermediate Result (CCIR) 1: Strengthened global commitment to investing in food security
DESCRIPTION	
Definition	<p>Standard definition(s): The indicator includes new, long-term capital investments (e.g., property, plant, equipment, and other fixed assets) and new operating or working capital (e.g., inputs or inventory) leveraged by the U.S. government. Private sector co-investment—both cash and in-kind—for implementing specific activities (e.g., resulting from a successful Global Development Alliance (GDA) application) should also be included. It includes both upstream and downstream investments. Upstream investments include any type of agricultural capital used in the agricultural production process, such as inputs (e.g., seeds, fertilizer, pesticides, etc.) and machinery. Downstream investments could include capital investments in equipment used for post-harvest transformation or processing of agricultural products or the transport of agricultural products to markets. In-kind investments, which should be valued at market rates, could include legal or business development services.</p> <p>“Private sector” includes for-profit, formal companies and their affiliated foundations managing nutrition, agriculture, or food system-related activities. A community-based organization (CBO) or nongovernmental organization (NGO) investment may be included if the CBO or NGO engages in for-profit nutrition, agriculture, or food system-related activities. “Private sector” does not include individual producers (e.g., farmers, fishers, pastoralists), so investments made by individual producers should not be counted under this indicator.</p> <p>“Investment” is defined as any use of private sector resources intended to increase future production, output, income, etc. Investments are recorded on a yearly basis, as they are made. In-kind investments are recorded at market value in U.S. dollars. Also, the value of the private sector investment can only be counted in this indicator once the money is disbursed, i.e. an actual outlay of cash or in-kind investment and not simply a commitment or written agreement.</p> <p>“Leveraged by the U.S. government” indicates that the new investment was directly encouraged or facilitated by activities supported by the Feed the Future initiative. Usually, the Feed the Future activities will take the form of a grant, direct loan, guarantee, or insurance coverage from the U.S. government (see examples below). For the private sector investment to be “leveraged” and thus eligible for counting in this indicator, there must be the presence of a U.S. government monetary</p>

FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
	<p>commitment intended to leverage private sector investment beyond the regular funding of the Activity/IM (i.e. funding for routine activity implementation by the U.S. government).</p> <p>For the private sector partner leveraged amount, “leveraged” includes both cash and in-kind investment valued at market rates from the private sector partner.</p> <p>Examples:</p> <p>U.S. International Development Finance Corporation (DFC):</p> <ul style="list-style-type: none"> U. DFC provides political risk insurance for a \$40 million equity investment by a U.S. investor in a large-scale commercial farm in Zambia that produces wheat, maize, barley, and soy. The farm’s expansion is also financed by a \$10 million loan from a local commercial bank and a \$5 million loan from the International Finance Corporation (IFC) of the World Bank Group directly to the Zambian farm. The investment and loan funds will be used to expand and upgrade the farm’s irrigation system and other infrastructure improvements. The total private sector capital leveraged is \$50 million, consisting of the sum of the U.S. equity firm’s investment (\$40 million) and the local commercial debt (\$10 million). The debt and equity investments are reported in the year in which they are made. The IFC’s \$5 million is not included, as it is money from a multilateral, and is not considered “private sector investment,” nor is it “leveraged” by the DFC. U. DFC provides a \$5 million direct loan to a U.S.-based for-profit NGO to expand its working capital lending to small farmers and co-ops located in South America. The total \$35 million expansion also includes \$20 million raised through private placement bonds and \$10 million in cash equity from the NGO. In this example, the private capital leveraged by the DFC investment is \$30 million (the \$20 million private placement bonds + \$10 million cash equity from the NGO; the DFC contribution is not counted here since those are U.S. government funds). These investments are reported in the year in which they are made. <p>U.S. Agency for International Development (USAID):</p>

FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
	<p>U. USAID was the initial partner contributing to a market incentive facility with other government donors and a private sector foundation to provide incentives for local banks to increase their lending to women-owned enterprises, agricultural small and medium enterprises (agri-SMEs), and enterprises addressing climate change outcomes through financial incentives or bonuses. USAID's founding contribution was \$10 million, other government's contributions were \$15 million, and the private sector foundation's contribution was \$20 million.</p> <p>A. The contribution of the private sector foundation can be included at the time that the loan they incentivized was actually disbursed. Once the loan is disbursed, count the value of the loan plus the incentive from this private sector foundation. Do not count the value of any incentive coming from the U.S. government, other governments, or any source not considered the private sector as defined in this indicator.</p> <p>b. The increased lending disbursed by local banks can be included as private sector investment in the year that it was disbursed (as well as under indicator EG.3.2-27: Value of agriculture-related financing accessed as a result of USG assistance).</p> <p>U. USAID is launching a fund to provide loans to agri-SMEs. USAID's investment of \$6 million is intended for first loss and has generated commitments from other government donors of \$5 million. Other investors, including a private sector foundation, have committed \$2 million. The fund hopes to attract additional private capital once it is operating and demonstrating results.</p> <p>A. The contribution of the private foundation in the amount of \$2 million can be included as private sector investment once the contribution has been made in the year of the contribution.</p> <p>b. Additional private capital investment in the fund, once contributed, can be counted in the year of contribution.</p> <p>c. The \$5 million from other government donors is not counted, because that is not considered 'private sector'.</p> <p>Notes:</p>

FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
	<ul style="list-style-type: none"> • There is a separate financing-related indicator, EG.3.2-27: Value of agriculture-related financing accessed as a result of USG assistance [activity/implementing mechanism (IM) level]. • In some cases, the “value of financing accessed” that is counted under EG.3.2-27 can also be counted here under EG.3.1-15: Value of private sector investment leveraged..., because the U.S. government has provided some form of monetary commitment. <ul style="list-style-type: none"> 3. • For example, USAID might work with a bank to guarantee a loan so that the bank is more willing to dole out the financing to an otherwise high-risk small business owner in a USAID activity. In this example, USAID could count the amount of financing the small business owner received under indicator EG.3.2-27 as “value of financing accessed” and also that same amount under EG.3.1-15 as “value of private sector investment leveraged” since the U.S. government guarantee of the loan leveraged the private sector bank to provide the loan. <ul style="list-style-type: none"> 4. • However, in other cases, the “value of financing accessed” (reported in EG.3.2-27) would not also count as “private sector investment leveraged” (reported under EG.3.1-15). For example, if financing was a result of technical assistance USAID provided to a small business on how to develop a business plan as part of a loan application that resulted in a loan to the small business, but USAID did not provide any sort of financial guarantee for the loan. USAID’s technical assistance enabled the small business to get the loan because USAID assisted them in having a stronger application, but there was no commitment of U.S. government funds involved in facilitating the small business’ access to the loan.
Unit of Measure	<p>U.S. Dollars</p> <p>Note: Convert local currency to U.S. Dollars at the average market foreign exchange rate for the reporting year or convert periodically throughout the year if there is rapid devaluation or appreciation.</p>
Disaggregation(s)	<p>Location, type of resource partner</p> <p>Type of resource partner:</p>

FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
	<ul style="list-style-type: none"> • For-profit company • NGO (if engaged in for-profit nutrition, agriculture, or food system-related activities) • Private Higher Education Institution • Public Higher Education Institution • Other (e.g., private philanthropy)
Rationale for Indicator	<p>Increased investment is the predominant source of economic growth in the agricultural and other economic sectors. Private sector investment is critical because it indicates that the investment is perceived by private agents to provide a positive financial return and, therefore, is likely to lead to sustainable improvements in agricultural market systems. Agricultural growth is critical to achieving the Feed the Future goal to “Sustainably Reduce Global Poverty, Hunger and Malnutrition.” This indicator is linked to CCIR 1: Strengthened global commitment to investing in food security in the GFSS Results Framework.</p>
MEASUREMENT NOTES	
Data Source(s)	<p>Project activity records.</p> <p>U.S. government agencies and Ips get the data from private sector financial records and program data.</p>
Method of Data Collection and Construction	<p>Project monitoring</p> <p>Data is collected by relevant technical staff, and stored in an M&E database. All the data will be reviewed, verified, analyzed, and summarized by the MEL POC, and reviewed and approved by Pis before submission to USAID.</p> <p>Level of collection: Activity/IM level; investment leveraged within reporting year by the U.S. government activity.</p>
Collection Frequency	Annually, as of year 2
Reporting Frequency	Annually, as of year 2
Baseline Information	Baseline is zero
Reporting Notes	<p>FA indicator PSE-4 can also be considered: Value of private sector resources leveraged by the USG to support U.S. Foreign Assistance Objectives. PSE-4 is a broader indicator than EG.3.1-15 that also counts private sector contributions to USAID activities without the presence of a targeted U.S. government monetary commitment designed to mobilize that investment. Private sector investments may also be reported under PSE-4 once a formal commitment has been made by the private sector entity (via a written agreement), prior to an actual outlay of cash or in-kind investment.</p>

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FTF Indicator: EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition [activity/implementing mechanism (IM) level]	
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	This indicator will help capture the magnitude of the intent to engage with the private sector and is not intended to be a financial indicator subject to financial audit.
CHANGES TO INDICATOR	
Description of changes	A customized disaggregation has been created for CRCIL to account for other types of potential investment. Following the standard definition, only new private sector investment will be reported.
Other Notes (optional)	CRCIL's overall Program Research Portfolio is integrated by Quick Win activities, Competitive Project activities (Core Projects), and Commissioned Activities, Buy-Ins and Associate Awards. CRCIL takes a consortium approach to establish a foundational set of sub-awardees, ensuring diversity and strong scientific capacity from the outset. As the CRCIL program further develops, several strategies will be used to expand a diverse portfolio of high-quality partners. This approach will provide CRCIL with opportunities to leverage additional commitments and private sector investment, ultimately covering all CRCIL's objectives. Individual research projects also have the potential to engage with the private sector.
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INDICATOR 7

Number of formal agreements formed as a result of USG assistance (custom 1)	
Result Measured	Objective 3: Resource Leverage: Access and leverage resources and align efforts that support CRCIL activities and objectives through coordination amongst essential stakeholders across the broader global research community.
Indicator Type	Output
Performance Plan and Report (PPR) indicator	No
DESCRIPTION	
Definition	PRECISE DEFINITION(S): The indicator measures the total number of formal agreements, contracts, or Memorandum of Understanding (MOUs) established

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Number of formal agreements formed as a result of USG assistance (custom I)	
	<p>between various stakeholders in the target research and agricultural value chains as a direct result of USG assistance. These agreements may involve partnerships between government entities, private sector organizations, research institutions, non-governmental organizations, or other agricultural entities. Agreements between two or more formal entities are formed so that parties work together to achieve a common objective.</p> <p>These agreements will aim to facilitate the development, validation, and transfer of new seed varieties, enhance research collaboration, or support scaling of innovative agricultural practices, among other common objectives.</p> <p>An agreement is considered to be formalized when it is documented in writing, signed by authorized representatives of the involved parties, and includes specific terms and conditions that govern the collaboration or partnership.</p>
Unit of Measure	Number of formal agreements
Disaggregation(s)	Location, type of agreement (e.g., MOU, partnership agreement, collaborative research agreements, technology transfer agreements, licensing agreements, distribution agreements, Public-Private Partnerships, service agreements, cooperative agreements, material transfer agreements, data sharing/access/transfer agreements, etc.).
Rationale for Indicator	The formation of formal agreements is a key indicator of collaboration and capacity building in the target agricultural research sectors. It reflects the level of engagement and commitment among stakeholders to collectively address challenges and leverage opportunities within the agricultural research system, ultimately contributing to the improvement of agricultural practices and outcomes.
MEASUREMENT NOTES	
Data Source(s)	Program activity records or reports.
Method of Data Collection and Construction	Project monitoring
Collection Frequency	Annually
Collection Reporting	Annually
Baseline Information	Baseline value is zero
Reporting Notes	N/A
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A

Number of formal agreements formed as a result of USG assistance (custom 1)	
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	N/A
CHANGES TO INDICATOR	
Description of changes	N/A
Other Notes (optional)	N/A
Last Updated	May 2024

INDICATOR 8

STIR-12: Number of peer-reviewed scientific publications resulting from USG support to research and implementation programs	
Result Measured	Objective 4. Learning and adapting: Coordinate CRCIL research activities and outputs with other activities across the broader FTF cereal crops improvement portfolio with both upstream market demand and downstream seed system and scaling efforts.
Indicator Type	Output
Performance Plan and Report (PPR) indicator	Yes Working group: STIR SPS category: Cross-cutting
DESCRIPTION	
Definition	<p>Standard definition(s): This output indicator captures annually the number of scientific publications resulting from USAID support to develop projects and activities. This indicator is meant to capture peer-reviewed publications resulting from research-focused awards or contracts as well as from research activities embedded within awards or contracts whose purpose is not mainly research. This indicator is NOT cumulative and captures only new publications not reported previously.</p> <p>'Peer-reviewed publications' are defined as and include: scientific studies published in technical journals which conduct technical peer review of the submissions as part of their decision process; technical reports that are subject to external peer-review and then disseminated; and conference proceedings (a collection of the abstracts and papers presented at conferences) only when the conference submissions are subject to peer-review and the proceedings are published and disseminated more broadly than conference participants.</p>

STIR-12: Number of peer-reviewed scientific publications resulting from USG support to research and implementation programs	
	<p>This indicator does not include publications by USAID Staff that are not the result of USAID funded activities.</p> <p>STIR stands for the cross-cutting issue area of Science, Technology, Innovation and Research</p>
Unit of Measure	Number of peer-reviewed scientific publications
Disaggregation(s)	N/A
Rationale for Indicator	Tracking the count of jointly published papers and ongoing research
MEASUREMENT NOTES	
Data Source(s)	Project activity records
Method of Data Collection and Construction	Project monitoring
Collection Frequency	Annually, as of year 2
Reporting Frequency	Annually, as of year 2
Baseline Information	Baseline value is zero
Reporting Notes	N/A
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection
Known Data Limitations	N/A
CHANGES TO INDICATOR	
Description of changes	N/A
Other Notes (optional)	N/A
Last Updated	May 2024

INDICATOR 9

Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts (custom 2)	
Result Measured	Cross-cutting

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Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts (custom 2)	
Indicator Type	Output
Performance Plan and Report (PPR) indicator	No
DESCRIPTION	
Definition	<p>This indicator counts the number of USG-funded activities that promote: the participation of women in the climate-resilient crop-improvement sector institutions and activities, such as those targeted to build leadership and management capacity of women’s scientists; an increase in the understanding of gendered challenges and opportunities in germplasm enhancement in all actors involved in CRCIL, such as those that help actors to identify opportunities within their programs and institutions for smooth gender integration; the integration of gender perspectives, needs, and priorities in climate-resilient crop-improvement sector initiatives or activities, such as research/breeding activities that synergize with TPP development and variety deployment; the increased ability of individuals or institutions in the climate-resilient crop-improvement sector to address the distinct needs and priorities of males and females; or, the engagement with women-led businesses in the target countries when taking demand-led breeding-produced seeds to market and commercialization. Additional activities that increase knowledge, skills, awareness or empowerment of participants are to be counted under this indicator.</p> <p>Climate-resilient crop-improvement sector training and capacity building activities include, but are not limited to, training events, workshops, courses, professional development programs, focus group discussions, or seminars whose purpose is to build leadership and management capacity of women’s scientists, ensure that actors involved have a basic understanding of gendered challenges and opportunities in germplasm enhancement, or integrate meaningful attention to gender and inclusion into research and TPP development, among others.</p> <p>Illustrative examples of training and capacity building activities:</p> <ul style="list-style-type: none"> • Gender Training for Senior Managers and Leadership • Gender responsiveness for Accelerated Agricultural Gains • Business development trainings • Professional development or mentoring program for new female researchers. • Women’s Leadership and Management • Equipping Emerging Leaders • Building Science Skills and Mentoring

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Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts (custom 2)	
Unit of Measure	Number of training and capacity building activities
Disaggregation(s)	Location, type of activity
Rationale for Indicator	<p>The output increases knowledge, skills, and awareness of those trained or participating in capacity building, thereby contributing to the intermediate objective of promoting the participation of women and integration of gender perspectives the climate-resilient crop-improvement sector and the long-term result of inclusive, just, and sustainable agriculture and breeding research.</p> <p>CRCIL germplasm enhancement relies on well-informed Target Product Profiles (TPPs). While the primary focus of CRCIL is on allele/haplotype discovery, validation and transfer to elite breeding materials (Areas of Inquiry 1-3), cross-cutting activities synergize with the Target Product Profile Synthesis and Deployment (TPPD) team’s efforts to enhance TPP development and variety deployment, further supporting women and youth touched by CRCIL. Effective and informed NARI-led TPP development is essential to achieving high adoption of varieties, since their characteristics will serve the needs and preferences of farmers, processors, consumers, and others in the crop value chain. Engaging with women-led businesses will increase CRCIL’s access to inputs and catalyze market linkages.</p>
MEASUREMENT NOTES	
Data Source(s)	The primary data for this indicator will be provided by implementing partners and collected through review of relevant project/program documents (e.g. quarterly and final reports, project monitoring records, etc.) describing completed training or capacity building activities.
Method of Data Collection and Construction	Project monitoring
Collection Frequency	Ongoing, as or year 2
Reporting Frequency	Annually, as of year 2
Baseline Information	Baseline value is zero
Reporting Notes	N/A
DATA QUALITY	
Dates of Previous Data Quality Assessments and Name of Reviewer(s)	N/A
Date of Future DQA (optional)	After one year of data collection

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Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts (custom 2)	
Known Data Limitations	N/A
CHANGES TO INDICATOR	
Changes to indicator	N/A
Other Notes (optional)	The indicator counts activities supported by AWARD and additional activities promoted by research projects.
Last Updated	May 2024

Annex C: Indicator targets disaggregated by Quick Win research projects

Targets are currently presented through year 2; full five-year targets will be set as competitive research project team subawards are granted. For the moment, Quick Win research projects’ targets for FY24 and FY25 are shown below – the “Other” Country category currently represents the US. After initial implementation, targets will be reviewed annually to ensure initial estimations continue to align to project activities.

When activities are split between research projects, the disaggregate is counted towards both countries to reflect collaboration, but the total figure counts integrated efforts (e.g., indicators 5, 7 and 8).

INDICATOR 1

EG.3-2: Number of individuals participating in USG food security programs					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	3	2	TBD	TBD	TBD
Ethiopia	0	2	TBD	TBD	TBD
Senegal	56	24	TBD	TBD	TBD
Other	5	1	TBD	TBD	TBD
Total	64	29	TBD	TBD	TBD

INDICATOR 2

CBLD-9: Percent of USG-assisted organizations with improved performance					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	0	100	TBD	TBD	TBD
Ethiopia	0	100	TBD	TBD	TBD
Senegal	0	100	TBD	TBD	TBD
Total	0	100	TBD	TBD	TBD

INDICATOR 3

EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	0	1	TBD	TBD	TBD
Ethiopia	0	1	TBD	TBD	TBD
Senegal	0	12	TBD	TBD	TBD
Other	0	1	TBD	TBD	TBD
Total	0	15	TBD	TBD	TBD

INDICATOR 4

EG.3.2-1: Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	0	2	TBD	TBD	TBD
Ethiopia	0	2	TBD	TBD	TBD
Senegal	0	24	TBD	TBD	TBD
Other	0	1	TBD	TBD	TBD
Total	0	29	TBD	TBD	TBD

INDICATOR 5

EG.3.2-7: Indicator name: Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	1	1	TBD	TBD	TBD
Ethiopia	1	1	TBD	TBD	TBD
Senegal	6	6	TBD	TBD	TBD
Other	8	8	TBD	TBD	TBD
Total	9	9	TBD	TBD	TBD

INDICATOR 6

EG.3.1-15: Value of new private sector investment leveraged by the USG to support food security and nutrition					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	0	0	TBD	TBD	TBD
Ethiopia	0	0	TBD	TBD	TBD
Senegal	0	TBD	TBD	TBD	TBD
Other	0	0	TBD	TBD	TBD
Total	0	TBD	TBD	TBD	TBD

INDICATOR 7

Custom 1: Number of formal agreements formed as a result of USG assistance					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	1	0	TBD	TBD	TBD
Ethiopia	1	0	TBD	TBD	TBD
Senegal	1	3	TBD	TBD	TBD
Other	3	2	TBD	TBD	TBD
Total	3	5	TBD	TBD	TBD

INDICATOR 8

STIR-12: Indicator name: Number of peer-reviewed scientific publications resulting from USG support to research and implementation programs					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	0	0	TBD	TBD	TBD
Ethiopia	0	0	TBD	TBD	TBD
Senegal	0	2	TBD	TBD	TBD
Other	0	2	TBD	TBD	TBD
Total	0	2	TBD	TBD	TBD

INDICATOR 9

Custom 2: Number of training and capacity building activities conducted with USG assistance that are designed to promote the participation of women or the integration of gender perspectives in climate-resilient crop improvement efforts					
Country	FY24	FY25	FY26	FY27	FY28
Bangladesh	0	0	TBD	TBD	TBD
Ethiopia	0	0	TBD	TBD	TBD
Senegal	0	1	TBD	TBD	TBD
Other	0	1	TBD	TBD	TBD
Total	0	2	TBD	TBD	TBD