

# External Evaluation of the 2SCALE program

## Final Report

Volume II – Annexes



**ADE**  
Evidence for better policy



**KIT** Royal  
Tropical  
Institute



# **Table of Contents**

## **Volume II – Annexes**

Annex 1 ToR

Annex 2 Measuring Resilience

Annex 3 Sample description and Summary Statistics

Annex 4 Additional Data

Annex 5 Questionnaire

Annex 6 Data Collection Steps

Annex 7 Precipitation Overview

Annex 8 KII's & FGD Guideline

Annex 9 Phase 2 Methodology

Annex 10 List of Documents

Annex 11 Portfolio Overview

# Terms of Reference | Service Provider(s) for External Evaluation of the 2SCALE-program (Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship)

## Table of Contents

<b>1</b>	<b>Background</b>	<b>3</b>
<b>2</b>	<b>Overall Aims and Objectives of the External Evaluation</b>	<b>4</b>
2.1	Impact assessment - phase 1 partnerships	4
2.2	Contribution analysis - phase 2 partnerships	5
2.3	Strategic lessons for partnership programs	5
<b>3</b>	<b>Evaluation questions</b>	<b>5</b>
3.1	Specific evaluation questions for the ex-post impact assessment – phase 1 partnerships	5
3.2	Specific evaluation questions for endline evaluation – phase 2 partnerships	6
3.3	Specific evaluation questions for strategic lessons	7
<b>4</b>	<b>Evaluation approach</b>	<b>8</b>
4.1	Impact assessment - phase 1 partnerships	8
4.1.1	Inception phase	8
4.1.2	Ex-post impact evaluation	9
4.2	Contribution analysis - phase 2 partnerships	9
4.2.1	Inception phase	10
4.2.2	Endline evaluation	11
<b>5</b>	<b>Key Responsibilities of the Evaluation Service Provider(s)</b>	<b>11</b>
5.1	Impact assessment – phase 1 partnerships	12
5.1.1	Inception	12
5.1.2	Ex-post impact evaluation	12
5.2	Contribution analysis – phase 2 partnerships	13
5.2.1	Inception	13
5.2.2	Endline evaluation	14
<b>6</b>	<b>Guiding Principles for the Evaluation</b>	<b>15</b>
<b>7</b>	<b>Evaluation Governance and Management Mechanism</b>	<b>16</b>
<b>8</b>	<b>Recipient of Evaluation Findings</b>	<b>17</b>
<b>9</b>	<b>Deliverables</b>	<b>17</b>
<b>10</b>	<b>Requirements from Evaluation Service Provider(s)</b>	<b>18</b>
<b>11</b>	<b>Indicative Budget &amp; assessment criteria</b>	<b>19</b>
<b>12</b>	<b>Requirements for Proposals</b>	<b>Error! Bookmark not defined.</b>



## 1 Background

The 2SCALE program is approaching the end of its second phase. 2SCALE is an incubator program that manages a portfolio of public-private partnerships (PPPs) for inclusive business in agri-food sectors and industries. The program and its funder call for proposals to evaluate its way of working with a rich portfolio of inclusive agribusiness partnerships and assess the outcomes and impacts achieved by targeting food and nutrition security in local and regional markets. 2SCALE focuses on establishing agribusiness clusters built around business champions. Champions are either entrepreneurial producer organizations or local SMEs that trade or process the produce of farmers. By providing support to these clusters, 2SCALE is developing products and markets for local consumer markets, preferably at the base of the pyramid (BoP). In the first phase of the program (2012-2018), many partnerships were concluded with agribusiness clusters and grassroots producer organization that usually target a variety of market outlets and aim for diversification in production and marketing to ensure incomes and livelihoods for smallholder farmers. The impact target of the second phase of 2SCALE (2019-2024) is to improve access to nutritious food for at least 1.5 million BoP consumers, improve the livelihoods of 1,000,000 smallholder farmers, and to develop inclusive business with 15,000 micro-entrepreneurs and small and medium enterprises (MSMEs) or farmer producer organizations, of which 50% are led by women.

The 2SCALE program is financially supported by the department of Inclusive Green Growth of the Directorate General of International Cooperation of the Dutch Ministry of Foreign Affairs (DGIS/IGG). This department ensures universal access to and wise use of natural resources. 2SCALE is one the flagship programs of the Dutch Food and Nutrition Security policy contributing to SDG-2. In addition, the program is expected to generate an equivalent of the received public funds through a private sector contribution from the business partners it works with. An important feature of the program is that the strategies and priorities of the Private Public Partnerships (PPPs) are set in a bottom-up manner and reflect a degree of flexibility based on moderated reflection and adaptation processes. The program is implemented by a consortium of International Fertilizer Development Center (IFDC), SNV and BoP Innovation Center (Bopinc).

2SCALE is a complex portfolio program working with multiple partners in rapidly changing market and production environments. During two phases, 2SCALE developed and established partnerships in Benin, Burkina Faso, Ethiopia, Ghana, Ivory Coast, Kenya, Mali, Niger, Nigeria, Uganda, and Mozambique, and in recent years expanded to Egypt and South Sudan. In the period 2012-2023, 2SCALE supported in total 127 PPPs and four pilots with small and medium enterprises or larger firms to incubate inclusive agribusiness and foster food and nutrition security. In its first phase (2012-2018), the program worked with 58 partnerships in 9 countries in East and West Africa. During the second phase, 2SCALE incubated and supported 69 partnerships and four pilots driving inclusive agribusiness strategies in 10 countries in Sub-Saharan Africa, and the MENA region. The partnership portfolio of 2SCALE is embedded in four main sub-sectors: staple crops, soy and oil seeds, fresh produce, animal production related, including feed and fodder.

## 2 Overall Aims and Objectives of the External Evaluation

The overall aim of the external evaluation is to assess whether and how inclusive agribusiness contributes to food and nutrition security for low-income consumers while also realizing remunerative and attractive conditions for the inclusion of smallholder farmers and micro-entrepreneurs. The evaluation has a specific interest in assessing the level and sustainability of the impacts for smallholder farmers. The external evaluation assesses the impacts of 2SCALE on smallholder farmer in the largely closed phase 1 and scrutinizes the impact claims made by the program in the on-going phase 2. In addition, the external evaluation entails a rigorous analysis of the claimed contributions of 2SCALE and the supported partnerships to realizing changes in practices, rules and relations underlying inclusive agribusiness conducive to making an impact.

The overall aims of the External Evaluation are twofold:

1. To determine the size and sustainability of the intended impacts on incomes, productivity, and resilience of smallholder farmers connected to, by now, closed partnerships supported by 2SCALE;
2. To scrutinize the additionality, contributions, and necessity of the *modus operandi* of 2SCALE to inclusive agribusiness partnerships (supported in phase 2 of the program) that consistently foster food and nutrition security in dynamic market environments.

The external evaluation is complementary to the self-evaluation that will be conducted by the 2SCALE-program itself in 2023, led and coordinated by the Monitoring, Evaluation, Accountability and Learning (MEAL) team. The self-evaluation is based on continuous monitoring during the second phase of the program of the accomplishment of the partnership-specific impact pathways and the progress towards the targets set for the program's impact domains at partnership, country, and program levels. The self-evaluation also comprises a portfolio analysis of the cost-efficiency of the second phase of the program.

The specific objectives for the external evaluation are as follows:

### 2.1 Impact assessment - phase 1 partnerships

- Evaluate the changes in income and productivity levels of smallholder farmers attributable to partnerships for which 2SCALE-support ended more than 3 years ago and, if feasible, use the evidence of this sample to extrapolate the attributable impacts on income and productivity to the number of smallholder farmers impacted by the partnership portfolio of 2SCALE.
- Assess the contribution of supported inclusive agribusiness to enhancing the resilience of smallholder farmers coping with risks and responding to short and long-term shocks.
- Assess the sustainability of the results at both partnership level and smallholder farmer level of PPPs incubated during the first phase of 2SCALE for which the support was withdrawn.

## 2.2 Contribution analysis - phase 2 partnerships

- Assess the design, strategy and delivery performance of 2SCALE;
- Assess the progress and outcomes of 2SCALE in relation to its program-level Theory of Change (ToC) and the context-specific impact pathways created and agreed upon in the supported partnerships.
- Assess the input and development additionality, contributions, and the necessity of 2SCALE to incubating inclusive agribusiness development processes that foster access to affordable and nutritious food by BoP-consumers and/or remunerative arrangements linking smallholder farmers and micro-entrepreneurs to agribusinesses in local and regional markets.

## 2.3 Strategic lessons for partnership programs

- Generate evidence and lessons learned on 2SCALE partnership facilitation and learning approach for future inclusive business partnership programs.
- Capture unexpected or unintended outcomes of the *modus operandi* of 2SCALE and the incubating and acceleration of inclusive agribusiness.

# 3 Evaluation questions

## 3.1 Specific evaluation questions for the ex-post impact assessment – phase 1 partnerships

1. What type of smallholder farmers supply the business partners of 2SCALE? And what type of business partners are they supplying?
  - Smallholder farmers are no uniform category, and it is important to classify them further by looking at, for example, land size, diversity of crops or products, alternate sources of income, and the food and nutrition security situation of the smallholder farmers targeted by 2SCALE. In addition, 2SCALE partners with different buyers of the crop or product, varying from large firms, medium enterprises, or producer organizations, which differ in terms of size, scale of operation, network affiliations, etc... The program itself does not have selection criteria for smallholder farmers; it basically aligns with the business practices and preferences of the business partners deciding from whom and where to source raw material. These decisions are shaped by proximity to processing facilities, accessibility, previous working relationship, cost advantage, level of competition for raw material in the area and sometimes possibility of enabling local environment. This shapes endeavors by the program to influence the terms of inclusion of smallholder farmers, which directs the potential development additionality of 2SCALE. For comparing 2SCALE smallholder beneficiaries and other smallholder groups, this needs to be considered. In addition, methods proposing how to capture what smallholder farmers consider as meaningful changes for their livelihood strategies emerging from aligning with inclusive agribusiness development processes are relevant to consider.



2. Income: Did incomes of smallholder farmers supplying the inclusive agribusinesses partnering with 2SCALE increase consistently over time? How many smallholder farmer households, at partnership and possibly at program level, have increased income and what is the average change (in %) of income because of 2SCALE?
  - Incomes of smallholder farmers are related to prices received for the specific crop / product supplied to the inclusive agribusiness, in comparison with prices of the same or similar crops / products in agricultural markets in the area, the costs for agricultural inputs. Income levels can be measured in terms of Purchasing Power Parities (PPP) or another proposed measure.
3. Productivity: Did productivity levels of smallholder farmers supplying the inclusive agribusinesses partnering with 2SCALE increase consistently over time? How many smallholder farmers, at partnership and possibly at program level, have increased productivity and what is the average change (in %) of productivity because of 2SCALE?
  - Productivity levels depend on the type of crops or products, the seasonality of production, the combination of surplus sold to commercial buyers and the use for household purposes, and the amounts of agricultural inputs applied. In addition, productivity is contingent on context-specific agro-ecological conditions.
4. Resilience: Did the resilience of smallholder farmers targeted by 2SCALE increase because of the alignment with the inclusive agribusiness?
  - Smallholder farmers are vulnerable and the arrangement with the business partners of 2SCALE may enhance their capacity to cope with market and production risks and to respond to the area-specific implications of climate change or other long-terms or short-term shocks observed in the area.

### 3.2 Specific evaluation questions for endline evaluation – phase 2 partnerships

5. **Relevance:** To what extent and in what ways was 2SCALE able to harmonize inclusive agribusiness and food and nutrition security?
  - Was the selection of the food product(s) central to the incubated partnerships proper for ensuring access to affordable and nutritious food given the food basket needs in the specific areas or sub-sectors?
  - Was the program able to bring the food and nutrition security goals in line with priorities and strategies of its business partners?
  - Were the program's methods and procedures suitable for enhancing deliberation and coordination among and with partners to strategize towards food and nutrition security goals?
  - Was the program capable of supporting its partners in responding to emerging changes and shocks while keeping direction towards food and nutrition security?
6. **Effectiveness:** To what extent and through what type of activities, interventions and partnerships has 2SCALE achieved or will achieve the incubation and acceleration of inclusive agribusiness?
  - To what extent has 2SCALE supported partnerships in prioritizing and achieving immediate, intermediate, and ultimate outcomes and, if needed, re-strategize?

- How successful have the program and the country teams been in building an optimal portfolio of projects to achieve its outcomes and contribute to food and nutrition security impacts?
  - How realistic has the program been in setting targets and supporting partners in identifying do-able and demonstrable outcomes and impacts?
7. Impact: To what extent has the *modus operandi* of 2SCALE generated or is expected to generate the interrelated outcomes and impact targets as specified in its theory of change?
- To what degree do 2SCALE's facilitation, co-investments and technical assistance provided to partnerships demonstrate additionality?
  - What type of partnership-level impact pathways have been more effective in contributing to systemic change in agribusiness and transformative processes in a sub-sector?
  - What were any plausible unintended positive (or negative) effects of the partnerships not captured by the program's M&E-system?
  - Systemic Changes: To what extent and in what ways was 2SCALE able to contribute directly or indirectly to changes in nature of doing business and the related modification of the terms of inclusion of smallholder farmers, SMEs and micro-entrepreneurs and the terms of access of BoP-consumers in context-specific food provisioning systems?
8. Sustainability: To what extent are outcomes and impacts of 2SCALE likely to continue?
- What was the contribution of internal processes, methods and/or structures in place to support the continuation of inclusive agribusiness fostering food and nutrition security beyond the support of 2SCALE?
  - To what extent are supporting practices offered by coaches or Business Service Suppliers integrated into the operations and cost structure of inclusive agribusiness and/or value chain?
  - To what extent and in what form did other economic actors or stakeholders in the area or sub-sector respond to novel ways of working emerging in the partnerships supported by 2SCALE?
  - To what extent was the program able to engage its partners in replicating proven practices geared towards the realization of inclusive agribusiness?

### 3.3 Specific evaluation questions for strategic lessons

9. What are the implications of the evidence on size and sustainability of impacts at the level of smallholder farmers for future designs of partnership programs in the domain of food and nutrition security?
10. What lessons can be learned for the design and implementation of complex programs working with a portfolio of partnerships co-creating inclusive agribusiness while fostering food and nutrition security?

## 4 Evaluation approach

### 4.1 Impact assessment - phase 1 partnerships

For evaluating the impact of PPPs and 2SCALE to the realization of inclusive agribusiness fostering food and nutrition security, the evaluation assesses the sustainability and impacts of PPPs supported in phase 1 of the program (2012-2018). The main objective of this assessment is to quantitatively determine whether the business-as-unusual central to the PPPs realizes sustainable impacts for smallholder farmers in terms of improved income and productivity. The impact assessment establishes whether increases in income and productivity are attributable to the changes in the terms of inclusion of smallholder farmers realized by the inclusive agribusinesses and 2SCALE's support.

This entails a carefully designed comparison of income and productivity levels of farmers working with other agribusinesses and in comparable sub-sectors, production areas. The smallholder farmers supplying the sampled inclusive agribusinesses supported by 2SCALE can be compared with smallholder farmers supplying other commercial buyers, e.g. traders, middlemen, SMEs, under comparable market and agro-ecological conditions.

In addition to evaluating the intended impact on income and productivity, the evaluation tries to establish whether being linked to an inclusive agribusiness partnership enhances the resilience of smallholder farmers under conditions of long- or short-term shocks, in particular climate change or the recent pandemic or implications of the conflict in Ukraine. This part of the evaluation allows the assessment of the sustainability of the inclusive agribusinesses and PPPs previously supported by 2SCALE.

#### 4.1.1 Inception phase

The objective of the inception phase is to design a credible and feasible approach to an ex-post impact assessment in the absence of a reliable baseline and considering the complexity of establishing a proper comparison group, partly due to the constrained influence of the program in selecting target smallholder farmers. The phase is concluded by a go no-go decision by the Evaluation Reference Group. It should contain the following steps for the impact assessment of phase 1:

- *Step 1* Sample size calculations to determine what sampling approach is feasible. The focus is on partnerships from which 2SCALE withdrew more than 3 years ago and needs to consider the absence of a baseline and limited availability of monitoring data beyond reach figures. Specifically, the sample size calculations will answer the question to what extent it is feasible to conduct an ex-post, representative sample of partnerships to establish attribution of the program to income, productivity and resilience of smallholder farmers. The IFAD Evaluation Manual (2022; <https://ioe.ifad.org/en/w/evaluation-manual-third-edition>) is considered a useful source for conceiving the sampling approach and tailoring it to the realities of the portfolio of PPPs supported by 2SCALE in a range of sub-sectors and contexts.

- *Step 2* The consultant will propose the most feasible sampling approach for the impact assessment, based on the results of the sample size calculations in step 1 and bearing in mind the assessment should lead to quantitative, attributable results. Specifically, the consultant will provide clarity on whether the sample will be random or purposeful, how (if any) clusters will be applied and how this influences the extrapolation of results. The approach will be approved by the program and the funder.
- *Step 3* A transparent and feasible procedure for identifying and selecting a comparison group, which accounts for the types of smallholder farmers supplying 2SCALE's business partners, the variety of commercial buyers involved, and the limited influence of the program in selecting smallholder farmers.
- *Step 4* A comprehensive plan for data collection, based on sampling in line with the sample size calculations and sampling approach.
- *Step 5* An analysis plan, detailing the analysis methods that will be applied to investigate attribution to impact. For instance, structural equation modelling, propensity score matching or regression analysis. The analysis plan indicates what variables will be controlled for to establish effects. In this step the survey tool will also be developed

#### 4.1.2 *Ex-post impact evaluation*

- *Step 6* Collect a limited set of data among the smallholder farmers linked to the 2SCALE PPP and the context-specific control group.
- *Step 7* Perform rigorous statistical analysis of the impact on income and productivity of smallholder farmers supplying the inclusive agribusinesses partnering with 2SCALE and assess whether intended changes can be attributed to *modus operandi* of 2SCALE.
- *Step 8* Assess the level of resilience of smallholder supplying the inclusive agribusinesses partnering with 2SCALE and compare this with the capacity to cope with risks and respond to shocks of smallholder farmers operating under similar circumstances.
- *Step 9* Present the findings in an impact assessment report in a format and sense-making process that is catered for the different audiences that are interested in the results, such as commissioners and 2SCALE implementing staff. The discussion part of the report translates the findings on impact at the level of smallholder farmers to implications for future designs of partnership programs.

#### 4.2 Contribution analysis - phase 2 partnerships

For assessing the contributions and necessity of 2SCALE to inclusive agribusiness fostering food and nutrition security, the consortium and donor of 2SCALE are seeking a theory-based evaluation. They are asking the Evaluation Service Provider(s) to propose an appropriate evaluation methodology and a combination of quantitative and qualitative methods within the overarching theory-based evaluation approach to address the evaluation questions. The current Theories of Change and Impact Pathways at program and partnership levels presented in the Annex should be considered living frameworks that may be revised as additional evidence is gathered during the evaluation process. As such, the Theory of Change presented here is the current model that will be added to and refined and should not be seen as a static 'final' Theory of Change framework. The evaluation approach is focused on learning and therefore of an

iterative nature. The external evaluation team is asked to conceive and organize an evaluation process inclusive to 2SCALE partners and staff.

The external evaluation team is expected to work closely with the Monitoring, Evaluation and Learning (MEAL) team of the 2SCALE program. The current MEAL-approach of 2SCALE has been mainly designed, refined, and implemented in the second phase. The theory-based approach to learning and evaluation is closely linked to reflect and adaptation processes among the partners involved and facilitated by 2SCALE-staff. The 2SCALE-program organizes various ways to continuously monitor achievements and feed this back into the strategizing by partners and management of the program:

- First, the partnerships articulate their intervention strategies based on a template for impact pathways, which differentiates between reach, immediate, intermediate and ultimate outcomes at partnership level. These impact pathways are strongly oriented towards inclusive agribusiness, framed as business-as-unusual.
- Second, the program monitors so-called Universal Impact Indicators (UIIs), which are used as proxies for assessing progress towards targets set for the impact domains central to 2SCALE. The impact domains of the program combine food and nutrition security goals with private sector development strategies.
- Third, monitoring of program-level impact pathways generates information about how the portfolio program progresses with incubating and replicating inclusive agribusiness and relates this to facilitating sub-sector system change.

The external evaluation team will have access to all data available in the M&E information system and is expected to include and use this data.

#### 4.2.1 Inception phase

The evaluation process should contain the following steps as part of the contribution analysis:

- *Step 1* A moderated and forward-looking dialogue focused on how to ensure that the external evaluation supports learning and adaptive management in a complex portfolio program, which translates into recommendations for future programs;
- *Step 2* A participatory and iterative process actualizing and refining theories of change and related key assumptions at program and partnership level, which guides the assessment of whether, with whom and how the *modus operandi* of 2SCALE contributes to incubating and accelerating inclusive agribusiness;
- *Step 3* An assessment of the M&E evaluation information available in 2SCALE and identification of information gaps, which translates into a focused and feasible data collection plan;
- *Step 4* The above leads to an inception report, as an intermediary deliverable, which decides the key assumptions (causal hotspots) to focus additional data collection on, whereby there is complementarity between existing M&E information and the data collection and analysis done for the end evaluation.

#### 4.2.2 Endline evaluation

- **Step 5** A comprehensive plan for and feasible process generating evidence proper for both rigorously scrutinizing contribution claims and critically assessing reported impacts of PPPs realizing inclusive agribusiness, which also identifies the specific enabling or catalyzing contributions of the 2SCALE program itself. Proposals for the collection of evidence and the implementation of the evaluation process include the following elements:
  - An assessment of the feasibility of the original business idea of the champion and an identification of the plausible explanations for partnerships that were closed or considered unsuccessful by the program;
  - An assessment of the immediate, intermediate, and ultimate outcomes identified in the impact pathways at partnership level, which are monitored qualitatively and quantitatively. This would include a selection and purposeful sampling of partnerships proper for conducting an in-depth contribution analysis starting from the specific impact pathways used, refined and/or adapted by the partners following the steps of a contribution analysis at partnership level;
  - A verification of the strongest impact claims by partnerships supported in phase 2 of making an impact for BoP-consumers (UII-1) and smallholder farmers (UII-2). This verification involves a systematic way of counterfactual reasoning, which may entail the use of a quasi-experimental design.
  - An assessment of the contribution claims associated with the impact pathways focusing on incubating and accelerating inclusive agribusiness at program level, and a further refinement of the theory of change proper for complex portfolio programs partnering with businesses in dynamic market environments;
  - A reflection on the potential and conditions for scaling and sustainability of the successful inclusive agribusiness partnerships fostering food and nutrition security, which includes interviews with stakeholders in the context of partnerships selected for the facilitating sub-sector system change pathway, and is sensitive to the implications of climate change for establishing inclusive agribusiness;
- **Step 6** Present the findings in an evaluation report in a format and sense-making process that is catered for the different audiences that are interested in the contribution story of partnership programs working towards inclusive (agri) business:
  - Commissioners;
  - 2SCALE implementing staff;
  - 2SCALE beneficiaries;
  - Similar inclusive business programs.

## 5 Key Responsibilities of the Evaluation Service Provider(s)

The objectives of the evaluation will be realized in two parallel processes. The first process evaluates the impacts of phase 1 partnerships and commences immediately. The second process assesses the contribution claims of the program. Both start with an Inception Phase. Details are provided in the sub-sections below.



## 5.1 Impact assessment – phase 1 partnerships

### 5.1.1 Inception

Starting point for this part of the evaluation is an inventory study by the MEAL-team of the program completed in 2021, which reveals the status of active and inactive PPPs in 2021. Based on this inventory, the external evaluation team is expected to conduct sample size calculations, propose a sampling strategy of both the entire PPP-portfolio of 2SCALE Phase 1 and of the beneficiaries in the selected PPPs (either purposeful or random). A feasibility study of a selection of PPPs (and countries), and a check whether a suitable comparison group can be identified and included in the evaluation is an option to be considered for the inception phase. Next, the team composed an analysis plan for a quantitative ex-post assessment of the impacts of PPPs no longer supported by 2SCALE. These will need the approval of the program and the funder before continuation. It is up to the service provider to suggest additional activities for the impact assessment inception phase. This phase will provide an opportunity to further detail data collection needs and methods, including survey instruments, census data, recall of situation 10 year ago, etc..

#### 5.1.1.1 Deliverables & timelines

The ex-post impact assessment of phase 1 partnerships is expected to start immediately on signing of the contract between the Program Director of 2SCALE and the Service Provider. It is currently expected to start in June 2023. The first product is a convincing sample strategy and identification of comparison groups and a focused and lean survey design, which ensures that the Service Provider can report on impacts within a period of 4 months. This design needs to be available 2 months after the signing of the contract and needs to be approved by the Evaluation Reference Group. The inception report explains how the design and approach allow for measuring attributable impacts at the level of smallholder farmers. The evaluation design needs to explicitly address how this will be done in the absence of a baseline and what the approach is to identify suitable comparison groups. This is the basis for a decision about whether they should continue with the impact study, which includes the quality and validity of the proposed control groups and the sample strategy. The Go / No Go decision may imply that part of the assignment will not be pursued because the attribution is considered infeasible by the Evaluation Reference Group and the Program Director.

### 5.1.2 Ex-post impact evaluation

The ex-post impact assessment evaluates the impacts on incomes and productivity of smallholder farmers supplying the inclusive agribusinesses partnering with 2SCALE and compare this with the incomes and productivity levels of smallholder farmers supplying the same or a similar crop / product to other commercial buyers, e.g. traders, middlemen, SMEs, under comparable market and agro-ecological conditions. This part of the evaluation is expected to lead to attributable results and support an extrapolation or projection of the sustainable impact on smallholder farmers of the entire partnership portfolio of 2SCALE. It is expected that the size of the comparison group is larger ( $\approx 120$ -150%) than the group of smallholder farmers supplying the inclusive agribusinesses and therefore targeted by 2SCALE.

The impact evaluation should lead to statistically sound attribution claims of phase 1 partnerships on income and productivity impacts for smallholder farmers. The consultant is responsible for organizing data collection in the areas of operation of the 2SCALE PPP and of the control group. The consultant is tasked to analyze the data and perform the statistical analysis.

The impact evaluation also assesses the effects on resilience and relates to specified risks and shocks affecting the livelihood strategies of smallholder farmers. In line with this, the impact evaluation assesses the sustainability of PPPs and the results and qualifies the conditions under which this is more or less likely to materialize.

#### *5.1.2.1 Deliverables & timelines*

The main product is a concise evaluation report with an exclusive focus on the impact of inclusive partnerships on smallholder farmers, compared with the situation of similar types of farmers in other areas and/or sub-sectors. This report is expected to be available at the end of 2023. The report will guide a forward-looking dialogue organized with the department of Inclusive Green Growth of the Netherlands Ministry of Foreign Affairs (DGIS/IGG) engaging policy and practice in a conversation on the future design of partnership aiming for enhancing the lives of smallholder farmers in East and West Africa.

### *5.2 Contribution analysis – phase 2 partnerships*

#### *5.2.1 Inception*

The Inception Phase will layout a stepwise technical and implementation framework to be used in undertaking the Endline Evaluation. As part of the proposed approach for each step, the Evaluation Service Provider will be expected to propose an evaluation framework based on the combination of methods and data required to answer the evaluation questions. The Inception Phase will provide further details of the specific primary and secondary data required to refine and respond to evaluation questions, as well as the data collection and analytical method(s) to be used to answer each question as well as the approach to build a sample of 2SCALE supported PPPs that will be the focus of the evaluation. In a participatory process with the 2SCALE management and MEAL-team, the external evaluators carefully investigate and assess what evidence is available from internal monitoring and evaluation processes, and how the framework integrates and complements this. This consultation process advances the capacity of complex portfolio programs to combine internal learning and adaptive procedures with an external evaluation anchored in contribution analysis.

It will be up to the service provider to propose detailed activities, which may include but not limited to: assessing the overall evaluability of 2SCALE, document and literature review, workshops or other stakeholder engagement events to support the evaluation design, assessing both the 2SCALE overall theory of change and the more detailed, nested theories of change and impact pathways of the supported PPPs where the link between outputs and activities and the subsequent immediate, intermediate and ultimate outcomes are presented in more detail). This will lead to refined evaluation questions together with the Evaluation Reference Group, and the assigned 2SCALE management, etc. The final set of evaluation questions for the Endline

Evaluation of phase 2 of the program will need to be included in the Inception Report and require approval by deliberations on these questions with the Evaluation Reference Group. These are grounded in the identified causal hotspots that guide and focus the contribution analysis.

#### *5.2.1.1 Deliverables & timelines*

The Inception Phase is expected to be a maximum of 3 months long and will start immediately on signing of the contract between the Program Director of 2SCALE and the Service Provider. It is currently expected to start in June 2023.

The main deliverable of this Phase will be the Inception Report that will need to be submitted at the end of Inception Phase. Once the Service Provider is contracted, it will be expected to share a proposed structure of the Inception Report with the Program Director of 2SCALE at least 6 weeks prior to the final submission of the Inception Report.

The Inception Report will undergo a rigorous review and quality assurance process under the guidance of Evaluation Reference Group. Work on the Endline Evaluation will only begin after the approval of the Inception Report by the Program Director of 2SCALE based on the advice and recommendation from the Evaluation Reference Group.

#### *5.2.2 Endline evaluation*

Endline Evaluation is expected to determine the contributions of 2SCALE to achievement of inclusive business outcomes and food and nutrition security impacts by its supported partnerships. It is also expected to assess the structural and systemic changes in the relevant sub-sectors and production areas that are likely because of the contributions made by the PPPs and 2SCALE. In addition, it is also expected to generate substantive and critical lessons for the design of inclusive agribusiness programs.

In assessing the contribution of 2SCALE to inclusive agribusiness fostering food and nutrition security, the evaluation should pay particular attention to both input and development additionality of 2SCALE, i.e., to what extent 2SCALE has added value for projects as compared to other potential sources or mechanisms of co-financing investments, or what would have happened in the absence of 2SCALE. Doing so, requires counterfactual reasoning across two dimensions: (1) the extent to which the partnerships and involved businesses would have had similar activities and results, without the support of the 2SCALE being in place; and (2), whether, in absence of 2SCALE, alternative funding sources and support would have been available for the activities that would have led to similar results. The evaluation service provider will be expected to propose combinations of methods within the overarching theory-based evaluation approach that can potentially address these two dimensions.

##### *5.2.2.1 Deliverables & timelines*

The End line Evaluation is expected to be concluded in the final year of 2SCALE's implementation. An Endline Evaluation Report will be expected to be submitted to the Evaluation Reference Group in the second quarter of 2024, with precise timelines to be determined. Halfway, a progress report will be shared for review by the Evaluation Reference

Group. The Evaluation Service Provider will be expected to propose an outline of the report in advance to the Evaluation Reference Group to ensure that all key requirements of the program as well as the stakeholders are met before the final report is produced. Preliminary findings and insights will be exchanged in validation, learning and sense-making processes with 2SCALE program staff when needed for writing a proposal for a possible continuation of the program. The end report will be part of a design-oriented workshop opening space for identifying pathways for making partnering processes effective in contributing to system change and in realizing development outcomes in dynamic and changeable agri-food contexts.

## 6 Guiding Principles for the Evaluation

The following principles would underpin the collaboration between evaluation service provider and Marina Diboma, the Program Director of 2SCALE.

- **Independence:** Recognize the independence of 2SCALE and the Evaluation Service Provider, where the Program Director has responsibility for and authority over the design and implementation of 2SCALE activities whereas Evaluation Service Provider retains independence in design and implementation of the evaluation.
- **Collaboration:** Work in close collaboration, while maintaining the independence of the evaluation. Recognize that 2SCALE is a large-scale, multi-year program implemented in complex environments that will require consistent engagement of all parties involved, and that all stakeholders will work in an organized and timely manner that minimizes adverse effects on those delivering 2SCALE and its evaluation.
- **Communication:** Communicate proactively to ensure effective and timely joint planning and sharing of updates on activities within the Terms of Reference agreed with Evaluation Reference Group.
- **Cooperation:** Deal with any methodological and operational issues as they arise, in a timely and cooperative manner, recognizing the efficiency of dealing with matters at the appropriate level.
- **Confidentiality:** Acknowledge the confidentiality of materials and information shared during 2SCALE implementation and evaluation. Agree to undertake appropriate measures for protection of this information. Special precautions will be taken when handling and transferring Personally Identifiable Information (PII) of beneficiaries and partners. If in any doubt about the status of such information, we will seek clarity from the concerned party before making use of this information.
- **Resolving disputes:** Adhere to agreed procedures for resolving disputes, where an agreement cannot be reached quickly.
- **Data sharing:** Recognize the interdependence of roles of the Program Director and the Evaluation Service Provider(s) and to this end agree to share data relevant to the program, its successes, and its weaknesses, openly with one another. It needs to be recognized that this shared information and data should be treated sensitively and with respect for our partners and their respective organizations.

- **Ethical Consideration:** Adhere to established ethics and principles for evaluation and research.

## 7 Evaluation Governance and Management Mechanism

The evaluation will be overseen by an official Evaluation Reference Group composed of representatives of the Ministry of Foreign Affairs and 2SCALE, and of experts in evaluation in private sector programs and in contribution analysis. To ensure the evaluation's credibility and independence, the Evaluation Reference Group that will have the following mandate:

- Advise on the Terms of Reference for the evaluation as well as recommending any follow-on changes to them;
- Oversee and quality assure the procurement of the Evaluation Service Provider and making recommendations for final selection decision based on the technical and commercial parameters;
- Monitor the progress of evaluation activities and deliverables;
- Assess the quality of the deliverables produced and making recommendations for their revisions;
- Review of and advise on the approval of contractual deliverables defined within the evaluation's Terms of Reference, contingent on timely submission of deliverables, with at least 3-4 weeks of review time built-in for review by the Reference Group;
- Address and resolve any issues that emerge during the evaluation.

The Reference Group members may also draw attention to possible complications and (political) sensitivities of the research results and reports.

The composition of the Evaluation Reference Group will be the following:

- Jeroen Rijniers, 2SCALE focal point at Ministry of Foreign Affairs / Senior Policy Officer from the department of Inclusive Green Growth (DGIS/IGG), Food and Nutrition Security Team;
- Hugo Verkuijl, Senior Policy Officer DGIS/IGG, Food and Nutrition Security Team;
- Ferko Bodnár, from Policy and Operations Evaluation Department (IOB);
- Marina Diboma, Program director 2SCALE
- Adodo Abalo, MEAL manager 2SCALE
- Sietze Vellema, Strategic advisor to the 2SCALE program
- Optional: independent evaluation experts engaged by the Evaluation Reference Group.

## 8 Recipient of Evaluation Findings

The principal recipients of this evaluation will be the department of Inclusive Green Growth (DGIS/IGG) and the Consortium, who will benefit from the recommendations and lessons generated.

Evidence and lessons generated by 2SCALE will be publicly available, to contribute to the global evidence base on development interventions creating and integrating inclusive economic development with food and nutrition security in the focus regions. In addition to the 2SCALE Donor and Consortium, the principal users of the evidence generated include policymakers, practitioners, businesses, and financial agencies.

## 9 Deliverables

Evaluation component	Specific deliverable	Timeline
<b>Impact assessment – phase 1 partnerships</b>		
Inception phase – design ex-post impact assessment	Sample strategy and survey design (15% of the overall contract payment)	September/October 2023
Go / No Go decision	Inception report	October/November 2023
Ex-post impact assessment – progress report	Status report	December 2023
Ex-post impact assessment – evaluation report	End report (25% of the overall contract payment)	February 2024
<b>Contribution analysis – phase 2 partnerships</b>		
Inception phase - evaluation design	Structure of Inception Report that provides an overview of how the report be organized.	September 2023
	Evaluation Design and Inception Report presenting the revised and expanded evaluation questions, updated evaluation methodology for each phase of the evaluation, and the final evaluation and implementation framework. (15% of the overall contract payment)	November/December 2023
Endline Evaluation – contribution analysis	Progress report	March 2024
	Exchange of preliminary findings and insights during validation, learning and sense-making processes with 2SCALE staff	Q2 2024
	Structure of End line Evaluation Report that provides an overview of how the findings will be organized.	May 2024
	Preliminary report	July 2024



Evaluation component	Specific deliverable	Timeline
	End-line Evaluation Report with assessment of the program's contribution to the impact and outcomes achieved by the partnerships, and specific recommendations for future programming on inclusive agribusiness and food and nutrition security. (35% of the overall contract payment)	August 2024
<b>Strategic lessons</b>		
Reflection and learning	Forward-looking dialogue with relevant stakeholder and event report	September / October 2024
	Expert dialogue reflecting on MEAL-approaches for portfolio programs and multi-actor partnerships in dynamic market environments based on a lessons-learned brief (10% of the overall contract payment)	November / December 2024

## 10 Requirements from Evaluation Service Provider(s)

2SCALE is looking for proposals by Evaluation Service Provider(s) with the following qualifications:

- Proven experience in sample size calculations, sample design and quantitative data analysis for attributable impact of development programs.
- Proven experience and innovative capacity in the field of contribution analysis;
- Track record in evaluation of complex market-led programs that work with multiple partners;
- Engagement with development interventions in the domains of food and nutrition security and inclusive agribusiness;
- Experience in evaluations detecting and demonstrating signs of system change in rapidly changing market environments;
- Orientation towards learning in portfolio programs;
- Ability to organize primary data collection in the countries in West and East Africa where 2SCALE operates and shown capacity to work in both Anglophone and Francophone contexts and with the use of relevant local languages;
- Familiarity with realist and context-sensitive approaches to evaluation to expose unexpected or unintended consequences of programs working with multiple interventions;
- Capacity to combine quantitative and qualitative data.

## 11 Indicative Budget & assessment criteria

The impact assessment study will be conducted by an independent team selected from the list of candidates approved under the MoFA framework agreement. The total budget of the study (including all costs related to the implementation of the assignment) should not exceed EUR 500,000 (incl. VAT).

Responsibility	Share of budget
Impact assessment - inception	15%
Impact assessment – ex-post evaluation	25% - 35%
Contribution analysis - inception	15%
Contribution analysis – endline evaluation	25% - 35%
Strategic lessons	10%

	Award criteria	Weighting factor
<b>1</b>	<b>Evaluation team</b>	30 %
a	Expertise team leader <ul style="list-style-type: none"> <li>CV (max. 1)</li> <li>Optional: Interview team leader</li> </ul>	
b	Expertise other team members <ul style="list-style-type: none"> <li>CV's (max. number will be indicated)</li> </ul>	
c	Team composition and available expertise complements each other and matches the ToR Requirements.	
<b>2</b>	<b>Methodology: technical proposal</b>	50 %
a	Detailed methodology for two evaluation questions.	
b	This detailed methodology considers 3-5 evaluation quality criteria.	
<b>3</b>	<b>Plan</b>	10%
a	Calendar, realistic, according to ToR.	
b	Involvement of team members in different tasks and phases.	
<b>4</b>	<b>Budget and Price: financial proposal</b>	10 %
a	Division of budget over different evaluation team members (number of days, daily fees) and other costs.	
b	Total price, ex. and incl. VAT.	
	<b>TOTAL</b>	100%

Ad 1: The qualifications and experience of the team as a whole (if more than one person is required). This is assessed on the basis of CVs. In general:

- Existing collaboration between network partners on the specific subject will be an advantage in the assessment of the proposal;
- The technical ability and experience of the team will be assessed on the basis of the CVs and an (optional) interview with the team leader.

Ad 2: A technical proposal will be requested in which the candidate elaborates a detailed methodology for the evaluation. The quality of the methodology will be used to judge the candidate's understanding of the assignment and research approach. Evaluation quality criteria must be elaborated in order to guarantee a sufficient quality level.

Ad 3: The plan will show a calendar with the different phases of the evaluations, and the roles that the different evaluation team members will play in these phases. The plan should reflect the ToR and be realistic.

Ad 4: A quotation should be provided that falls within the range stated in the Tender document and provides details about person-days, fees for the various evaluators and details of all other costs. The quotation is used to assess the cost of the evaluators and the total price, as well as the overall feasibility of the proposal. Also a maximum fee can be set as a requirement in the request for a Full Proposal. Fees should not exceed the maximum tariffs that apply for external staff by government as set in the Wet Normering Topinkomens (English: Standards for Remuneration Act). At the signing of the Framework Agreement Evaluation 2020 (September 2020) this maximum fee is € 193 per hour, excluding VAT.

Kindly note that the information provided by the candidate in this phase should be in line with the information provided in the Concept Note.

## 12 Requirements for Proposals

See Model invitation to submit Full Proposal, sent separately.

## Annex 1: Model call-off contract

### **DRAFT CALL-OFF CONTRACT**

**for the provision of services related to effect/other evaluations**

**for the Dutch Ministry of Foreign Affairs**

**Relating to lot 1 / 2**

#### **The undersigned:**

1. The State of the Netherlands, which has its seat in The Hague,  
represented by the Minister of Foreign Affairs / for Foreign Trade and Development  
Cooperation,

legally represented in this matter by

Director or Ambassador of [department or Embassy],

[name of director or ambassador],

hereinafter referred to as the Contracting Authority,

and

2. [Contractor's name],

which has its registered office in ...,

legally represented in this matter by

..... [and ...] [signatory's name and position],

hereinafter referred to as the Contractor,

## **WHEREAS:**

1. The Contracting Authority and the Contractor concluded a Framework Agreement on 15 September 2020 relating to the implementation of services related to evaluations, ref. 201800266.041, hereafter referred to as 'the Agreement', which applies to all contracts for the performance of Services that the Contracting Authority awards during the term of the Agreement;
2. By letter (ref. ...) the Contracting Authority asked the Contractor and the other service providers with which a corresponding Framework Agreement was concluded on ...[date] to submit a Quotation for the performance of the Services described therein. The Request for Quotations forms an integral part of this Call-off Contract as Annex 1;
3. The Contractor submitted a Quotation, ref. ..., to the Contracting Authority on ...[date];
4. The Contracting Authority has awarded the contract as defined in the Request for Quotation to the Contractor on the basis of the award criterion of the most economically advantageous bid;
5. This Call-off Contract lays down the specific conditions applicable to the performance by the Contractor of the Services specified in the Request for Quotations.

## **AGREE AS FOLLOWS:**

### **1. Applicable conditions**

- 1.1 This Call-off Contract is governed by the provisions of the Agreement, in so far as this Contract does not depart from it. The terms written with initial capitals in this Call-off Contract are defined in the Agreement. The term 'Contract' in the ARVODI 2018 is to be read as 'Call-off Contract' for the purpose of this Contract.
- 1.2 The conditions included in the Quotation (including price indexation, discounts and guarantees) do not apply in so far as they are less favourable for the Contracting Authority than those included the Agreement.

### **2. Object of the Call-off Contract / further details concerning the Services**

- 2.1 The Contracting Authority hereby commissions the Contractor to perform the Services specified in the Quotation submitted on the basis of the Request for Quotations, which commission the Contracting Authority hereby accepts, in so far as this Call-off Contract does not depart from it.
- 2.2 The following documents are an integral part of this Call-off Contract. In the event of inconsistencies, a higher ranked document takes precedence over a lower ranked document:
1. this Call-off Contract;
  2. the Framework Agreement, including ARVODI 2018 (consisting of the General Government Terms and Conditions for Public Service Contracts and Processing agreement)
  3. the Request for Quotation for the performance of services (also known as ToR);
  4. the Quotation for the performance of services (also known as proposal).

### 3. Duration

- 3.1 This Call-off Contract enters into force on [date] and ends on [date]. The result of the Services specified in the Request for Quotations will be supplied to the Contracting Authority in its final form no later than [date].
- 3.2 If the result of the Services is provided in the form of a final report, Contractor will respect following details/dates:
- The Contractor will provide the draft report in electronic form no later than [date]. The Contractor will make the changes requested by the Contracting Authority to the report within [period], and submit the amended draft report to the Contracting Authority no later than the deadline referred to in the next sentence.
  - The Contractor will provide the final report in electronic form no later than [date], in accordance with the requirements set out in the Request for Quotation this Call-off Contract.
- 1.3 Further details are presented in the Request for Quotation.

### 4. Financial provisions

- 4.1 The following provisions apply in addition to the financial provisions of the Agreement:

In accordance with article 4.1 of the Agreement, the Contractor will perform the Services to be provided on the basis of this Call-off Contract for a fixed total price of €... (excluding VAT) and €... (including VAT).

- 4.2 Payment will be made as follows:



- a sum of €... (including VAT) will be paid after this Call-off Contract has been signed
- and ... (instalment(s)) have been accepted
- and
- the remainder will be paid after the result of the Services has been received and accepted.

## 5. Contacts and reports

- 5.1 For the purpose of this Call-off Contract, the Contracting Authority's contact is [name] and the Contractor's contact is [name]. The contacts will hold consultations on the Contractor's implementation of the work as frequently as the Contracting Authority demands, and at least once per [period].
- 5.2 Notwithstanding the provisions of article 10.2 of the ARVODI 2018, the contacts cannot make legally binding agreements on the parties' behalf.

## 6. Place

- 6.1 The work will in principle be performed at the offices of [name] at [street], [town/city], [country].

Done and signed in duplicate on the later of the two dates stated below.

The Hague, [date]

For the Minister of Foreign Affairs /for Foreign Trade and Development Cooperation

[signatory's name and position]

[town/city], [date]

For [Contractor's name]

*[signatory's name and position]*

*[town/city], [date]*

Annexes:

- Request for Quotation (=ToR)
- ARVODI 2018
- Processing Agreement
- (only for non-EU contracts): Addendum ARVODI datalek AVG proof (to be signed by Contractor)<sup>1</sup>
- (only for non-EU contracts): Contractual clauses of the European Commission (to be completed by Contractor)

---

<sup>1</sup> See [Addendum ARVODI datalek AVG proof.docx \(buzaservices.nl\)](#).

## Annex 2 - Measuring Resilience

While resilience was not mentioned as an explicit objective in the Phase 1 proposal, there are various activities such as improved farming techniques, introduction of new varieties and other inputs that are meant to make SHFs more resilient to climate shocks. In line with this, the Theory of Change focuses on 2SCALE's activities (outputs) promoting resilience strengthening activities such as the use of eco-efficient farming practices: integrated pest management practices, organic fertilizer, efficient fertilizer use, intercropping and crop rotation.

As a result, the ET focused on assessing whether 2SCALE support led to more sustainable eco-efficient farming practices. The changes in resilience capacity resulting from the partnership activities are represented by the adoption of eco-efficient farming practices (**resilience outcome**). In the short term the effect of those resilience capacities on the household's wellbeing can be measured through their effect on the ability to recover (intermediate impact), while in the long term on the households' well-being (Béné et al. 2015; 2017, 2020; USAID 2018; Conostas et al. 2014). For the analysis we have used the different indicators associated to the adoption of eco-efficient farming practices (resilience outcomes), while to measure the farmer's ability to recover from shocks and stressors (intermediate impact) we have used the resilience ability to recover index (IFAD, 2015<sup>1</sup>), as described in the section 2.4. Impact on Resilience through Improved Farming Practices.

The **Resilience Ability to Recover Index (ATR)** is a resilience measure adopted by IFAD (2015)<sup>2</sup>. The Ability to Recover Index is easily measured through farmers' self-assessment of their **perceived ability to recover** from shocks. It can be built only for farmers who have experienced a shock, considering the following variables:

**Shock exposure:** defined as a weighted average of the incidence of experience of each shock (a variable equal to 1 if it was experienced and 0 otherwise), multiplied by the perceived severity of the shock (during the past 12 months).

**Ability to recover:** a base "perceived ability to recover" index was calculated based on responses to the following question: "To what extent were you and your household able to recover?" Possible responses were: • Did not recover • Recovered some, but worse off than before • Recovered to same level as before • Recovered and better off • Not affected.

**Shock severity:** defined as the mean severity of shocks experienced by a household (based on a scale of 1 to 5, where 1 represents unaffected and 5 represents highly affected), averaged over all severity scores of all shocks experienced during the past 12 months. Severity is measured using

---

<sup>1</sup> The Resilience Ability to Recover Index (ATR) is a resilience measure adopted by IFAD (2015). This Index is easily measured through farmers' self-assessment of their perceived ability to recover from shocks.

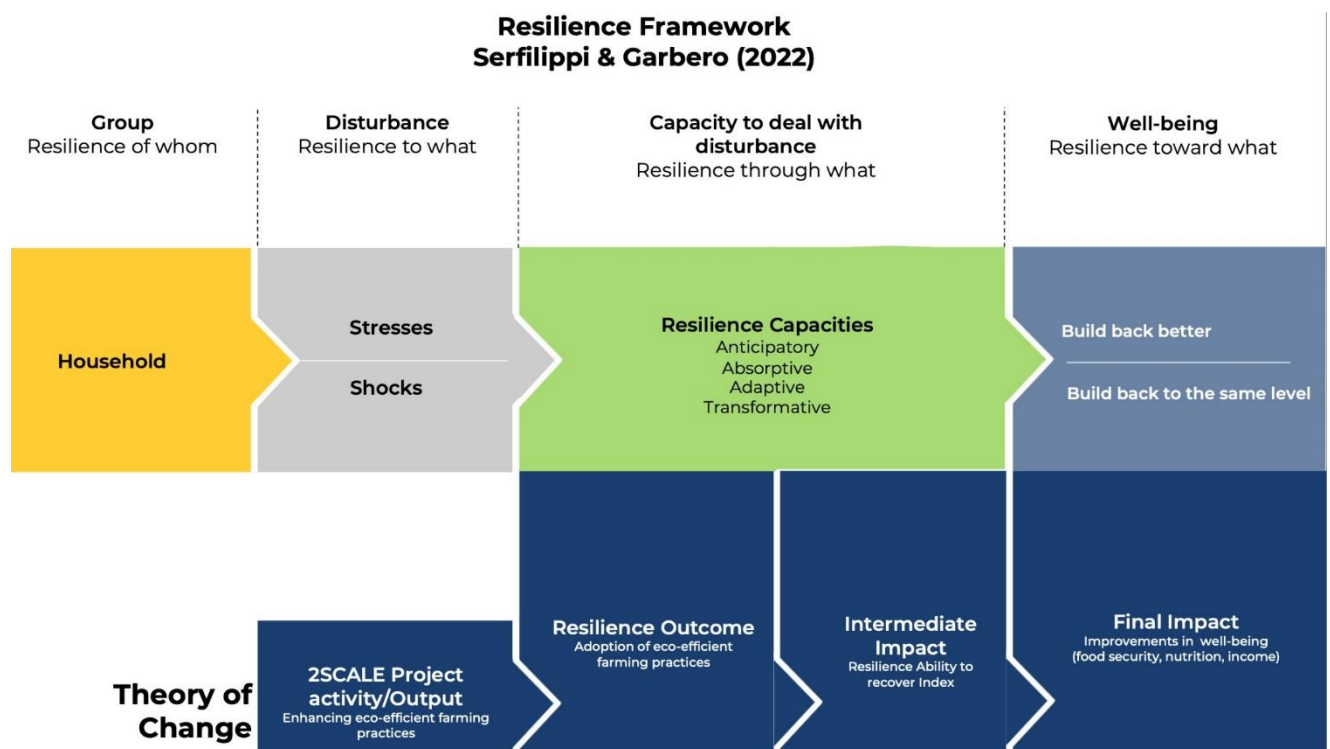
<sup>2</sup> <https://www.ifad.org/documents/38714170/39318582/Measuring+IFAD%E2%80%99s+impact.pdf/36c251f1-854e-42de-8990-773728abe1f7?t=1540911311000>

respondents' answers to the question asked concerning each shock experienced, "How severe was the impact on your income and food consumption?"

The possible responses were: • None • Slight impact • Moderate impact • Strong impact • Worst ever happened. consumption?" The possible responses were: • None • Slight impact • Moderate impact • Strong impact • Worst ever happened.

An overview of the resilience framework tied to 2SCALE's ToC is depicted in [Figure 1](#) below.

Figure 1: Resilience framework



Source: Serfilippi & Garbero (2022)

## Annex 3 – Sample description & Summary Statistics

### Sample description

The PPPs selected to be part of the sample of the Phase 1 Impact Assessment were the **Shalem** partnership in Kenya (KEN03) and the **Yedent** partnership in Ghana (GHA02). To maintain consistency with the methodology deployed in the 2018 IA, the ET selected the same villages for both the treatment and control groups across both PPPs. This approach enables the integration of previous waves of data into the current analysis. The 2SCALE MEAL teams provided crucial assistance by identifying a local contact person in each treatment village ensuring a close match with the baseline sample characteristics. Assistance for the for the identification of the control areas (nearby communities/villages with similar characteristics) was also provided. A recommended sample size of 630<sup>1</sup> observations derived from the power calculation<sup>2</sup> presented in the Inception Report.

Figure 1: Kenya PPP Data Collection Map

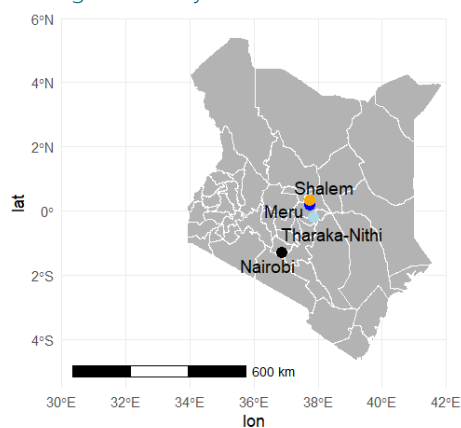
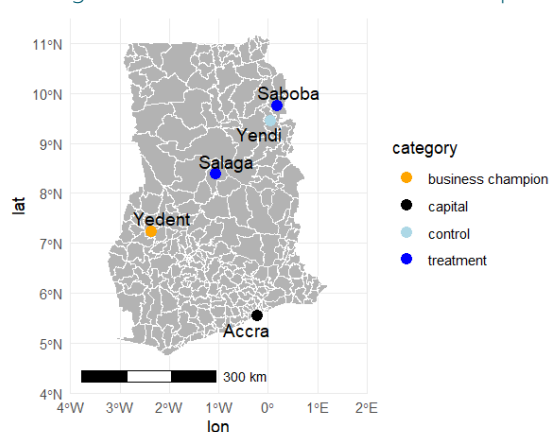


Figure 2: Ghana PPP Data Collection Map



Source: ADE-KIT, based on google earth data

<sup>1</sup> The ET proposed 630 observations in each country, as this is the recommended sample size for a minimum detectable effect of a 20% change.

<sup>2</sup> In statistics, Power is the probability of avoiding a Type II error, that is, failing to reject a false null hypothesis in favor of a true alternative hypothesis.

Table 1: Sample description 1

Variable	Ghana (N=819)			Kenya (N=616)		
	Treatment (n=438)	Control (n=381)	Significance Level <sup>3</sup>	Treatment (n=305)	Control (n=311)	Significance Level
<b>Related to the person in charge of the farming activities</b>						
%Female	45%	49%		71%	50%	***
Average age	47,6	43,2	***	52,8	45,1	***
% who completed secondary education	21%	19%		69%	92%	***
Average years of experience	24,1	21,4	***	24,1	18,8	***
<b>Related to the household composition</b>						
Average HH size	10,50	11,77	***	7,11	5,32	***
<b>Related to the farm</b>						
Average land cultivated (in acres)	6,4	7,3	**	3,1	3,8	***
Average quality of land <sup>4</sup>	0,1	0,1		0,4	0,7	***
Average number of natural shocks suffered <sup>5</sup>	0,88	0,74	*	1,81	1,32	***

Source: ADE &amp; KIT from data collected in 2024

<sup>3</sup>The difference between the treatment and control groups for respective variables is determined to be statistically significant as follows:

- \*The result is statistically significant at the 0.05 level ( $p < 0.05$ ), meaning there is a less than 5% probability that the result is due to chance.
- \*\*The result is statistically significant at the 0.01 level ( $p < 0.01$ ), meaning there is a less than 1% probability that the result is due to chance.
- \*\*\*The result is statistically significant at the 0.001 level ( $p < 0.001$ ), meaning there is a less than 0,1% probability that the result is due to chance.

<sup>4</sup>Land quality is determined through factors such as soil erosion and water retention (proxied by plot slope), as well as soil composition (inferred from plot color).

<sup>5</sup> Shocks



This table compares treatment and control groups in Ghana and Kenya, highlighting differences in demographics, education, and farming characteristics.

In Kenya, key differences between the treatment and control groups include the farming head's gender, age, experience, education, and household characteristics. The treatment group has more female farming heads (71% vs. 50%), is older (53 vs. 45 years), more experienced (24 vs. 18 years), but less educated (69% vs. 92% with secondary education). Households are larger, but land size is smaller and poorer in quality, with more shocks faced than the control group.

In Ghana, the treatment group farming heads are older (48 vs. 43 years) and more experienced (24 vs. 21 years). Treatment households are smaller, with less land but similar quality, and have also faced more significant shocks.

To address these disparities, a matching process was applied, allowing for unbiased comparisons of productivity, resilience, and income under the 2SCALE intervention.

## Summary statistics

This section presents summary statistics to understand the status of 2SCALE Phase 1 beneficiaries from selected Ghana and Kenya partnerships in 2023 (data collected in early 2024) across various dimensions. It provides descriptive analysis based on the 2024 survey (referring to the 2023 agricultural season), six years after the partnerships ended, and answers the evaluation questions from the ToR. The statistics in Tables 5 to 7 cover production, allocation, income, farming practices, and resilience within the treatment group.

The survey of 438 beneficiaries of the 2SCALE project in Ghana revealed variability in farming practices, land cultivation, and soy yields, highlighting disparities in agricultural productivity (Table 5). In 2023, beneficiaries in Ghana reported cultivating an average of 5.51 acres. On average, about 40% of the cultivated land is dedicated to soy. When examining soy yield per acre, the average yield was 217 kg, with high variation across farmers (123,89 Standard Deviation (SD)). This variability in yields suggests that while most farmers have relatively low yields<sup>6</sup>, a few achieve exceptionally high yields. These disparities could be due to more productive farming practices, better access to resources, differences in land allocation strategies or different in land quality or climate conditions faced during the last planting season.

The 305 interviewed beneficiaries in Kenya show that there is high variability in both the size of land cultivated and the sorghum yields. These beneficiaries, on average, cultivate 2,71 acres of land, with some variability. Approximately 49% of this cultivated land is dedicated to sorghum, the target crop promoted by 2SCALE in Kenya. On average, farmers produce 780 kg of sorghum, on average around 716 kg per acre. Although the amount of sorghum harvested per acre is relatively consistent across farms, the total production varies much more widely, likely due to differences in farm size or the number of acres planted.

In Ghana, the majority of target crop production is sold. On average, 89% of the beneficiary's income is generated from agricultural activities, and around 44% of their income, comes from soy. Reported levels of income from farming varies, with agriculture being the primary source of income for most beneficiaries (Table 6). Specifically, 68% of crop production is sold, 16% is consumed by the farmers' households, and 8% is saved for seeds. The average income from the main crop accounts for 36.3% of the household's annual income, though this varies widely, with some farmers earning no income from 2SCALE target crop (Soybeans), while

---

<sup>6</sup> Yield refers to the total amount of production or output obtained from a specific area of land, typically expressed as the ratio of total production to the total land area used for cultivation.

for others, it represents their entire income.

In Kenya, most of the target crop production is also sold, with sorghum contributing significantly to household income, accounting for 57% of agricultural earnings on average. Regarding the allocation of crop production, 95% of crops produced is sold, while only 3% is consumed by the farmers' households. An average of 80% of household income is derived from agricultural activities. Income from the main crop on average accounts for about 43% of the total household income, though this varies widely among farmers.

In 2023, eco-efficient farming techniques were adopted in both Ghana and Kenya, albeit to varying extents (Table 7). In Ghana, in 2023, the most common eco-efficient farming practices as reported in the treatment group were crop rotation (41%) and integrated pest management practices, (42%) followed by the removal of plant residuals (28%). In 2023, 62% of farmers in Ghana faced various shocks, with natural events being the most common (53%). In Kenya, in 2023, the most used eco-efficient farming practices were related to the sphere of organic fertilizer application (74%), crop rotation (73%) and removal of plant residuals (66%). Even if most Kenyan farmers with use organic fertilizers, many farmers (77%) experienced shocks in 2023, with plant pests 48%), livestock diseases (48%), increase of food price (48%) and natural events (44%) being the most prevalent.

In 2023, the recovery ability of farmers in both Ghana and Kenya was moderate. In Ghana and in Kenya, in 2023, the ability to recover index for the treatment is set at 0.63 and 0.67 respectively, showing a moderate level of ability to recover on a scale between 0-1<sup>7</sup>.

---

<sup>7</sup> A detailed definition of the Ability to Recover Index can be found in the **Error! Reference source not found.**Section.

Table 2: Production - Summary Statistics for Beneficiaries in 2023 for Ghana and Kenya

Production (Soybeans-Sorghum)	Ghana						Kenya					
	obs.	mean	median	sd	min	max	obs.	mean	median	sd	min	max
Area cultivated (in acres)	418	5,51	5	3,34	0	16	298	2,71	2,35	1,64	0,25	8
Area (in acres) allocated to target crop	431	1,89	2	1,18	0	6	296	1,16	1	0,66	0,25	3
Share of the total cultivated area allocated to the target crop	438	40%	0,33	0,23	0,03	1	305	49%	0,5	0,21	0,1	1
Production (in kg) of the target crop	420	407	300	334,9	0	1750	287	780	640	517,55	50	2290
Yield of the target crop (in kg/acres)	420	217	200	123,89	0	650	298	716	697,5	336,14	33,33	1600
Diversification of crops	438	2,92	3	1,24	1	7	305	3,94	4	1,12	1	7

Source: ADE-KIT, based on ADE-Kit survey data collected in 2024

Table 3: Allocation of Production and Income - Summary Statistics for Beneficiaries in 2023 for Ghana and Kenya

Allocation of production (Soybeans-Sorghum)	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	max
Share consumed	436	16%	10%	0,210	0%	100%	285	3%	0%	0,09	0%	90%
Share sold	436	68%	75%	0,270	0%	100%	303	95%	100%	0,13	0%	100%
Share stored	436	4%	0%	0,110	0%	100%	288	1%	0%	0,08	0%	100%
Share lost to wastage	436	0,00%	0%	0,010	0%	10%	251	1%	0%	0,03	0%	20%
Share saved for seeds	436	8%	6%	0,090	0%	62%	286	1%	0%	0,03	0%	31%
Share given away	436	4%	0%	0,070	0%	83%	284	1%	0%	0,02	0%	20%
Income	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	max
Total HH Income <sup>8</sup>	408	4744,70	3855,0	3485,5	0,0	16250,0	284	78589,3	62150,0	59503,7	0,00	274500,0
Income from target crop (in ksh <sup>9</sup> or ghs <sup>10</sup> )	419	1572,26	1200,0	1461,86	0,0	7500,00	264	33644,3	28000,0	23354,1	0,00	97600,00
Profits from the target crop (in ksh or ghs)	438	2033,34	940,0	6078,1	-2875,0	89905,0	287	34827,4	24300,0	37700,1	-15707,5	287552,0
Share of income from agricultural activities	438	0,89	1	0,21	0	1	305	0,8	0,95	0,29	0	1
Share of agricultural income from the target crop	435	0,44	0,4	0,29	0	1	286	0,57	0,57	0,25	0	1

<sup>8</sup> Total HH income is measured combining all the income sources of the respondent from which data was collected in 2024.<sup>9</sup> 1 Kenyan Shilling (KES) = 0,007 Euro<sup>10</sup> 1 Ghanaian Cedi (GHS) = 0,058 Euro

Average price per kilo (between the two main buyers)	413	4,94	5,00	2,33	0,00	11,00	299	40,60	41,00	5,68	30,00	55,00
Wealth index <sup>11</sup>	438	0,13	-0,02	1,04	-1,77	5,68	305	0,13	-0,03	1,23	-1,78	7,01
Percentage Borrowing	438	36%	0%	0,48	0%	100%	305	42%	0%	0,49	0%	100%
Average loan amount (among those borrowing) (in ksh or ghs)	153	451,99	250,00	557,78	0,00	2000,00	107	18781,79	15000,0	16062,4	0,00	57000,00

Source: ADE-KIT, based on ADE-Kit survey data collected in 2024

Table 4: Farming practices and Resilience - Summary Statistics for Beneficiaries in 2023 for Ghana and Kenya

Farming practices	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	max
Intercrop	438	3%	0	0,180	0	1	305	44%	0	0,500	0	1
Cleaning the Field	438	28%	0	0,450	0	1	305	66%	1	0,470	0	1
Crop rotation	438	41%	0	0,490	0	1	305	73%	1	0,440	0	1
Checks pests high	438	42%	0	0,490	0	1	305	30%	0	0,460	0	1
Use of inorganic fertilizer	434	17%	0	0,370	0	1	264	22%	0	0,410	0	1
Use of organic fertilizer	435	7%	0	0,260	0	1	264	74%	1	0,440	0	1
Use of pesticides	436	61%	1	0,490	0	1	265	90%	1	0,300	0	1
Number of farming practices utilized	438	1,63	1	1,000	0	5	305	3,55	4	1,020	1	6
Resilience	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	max
Number of shocks faced during the last year	438	0,88	1,00	0,86	0	3,00	305	1,81	2,00	1,21	0	3,00
Resilience index 2023	261	0,65	0,63	0,19	0	1,02	248	0,69	0,72	0,12	0	1,00

Source: ADE-KIT, based on ADE-Kit survey data collected in 2024

<sup>11</sup> The Wealth Index is created following the DHS approach. This is a composite measure of a household's cumulative living standard. The wealth index is calculated using data on a household's ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities.

## Annex 4 Additional Data

### Kenya and Ghana 2015 & 2017 data

Table 1: Kenya (2015, 2017) and Ghana (2017) Sample Description

Variable	Kenya					Ghana	
	2015		2017			2017	
	Treatment	Control	Treatment	Control	Country Total	Treatment	Control
Sample Size	402	402	379	380	759	406	362
<b>Related to the person in charge of the farming activities</b>							
% Female	28%	18%	24%	19%	22%	18%	12%
% who completed secondary education	95%	92%	98%	95%	96%	26%	26%
Average years of experience	23,0	19,1	25,3	22,3	23,8	28,9	26,9
<b>Related to the household composition</b>							
Average HH size	6,06	6,48	3,99	4,97	4,48	9,15	9,50
% of HH with women majority	37%	33%	30%	33%	32%	35%	40%
% of HH with at least 30% of members younger than 14	58%	76%	49%	67%	58%	81%	79%
<b>Related to the farm</b>							
Average land cultivated (in Acres)	4,1	3,6	3,7	3,3	3,5	4,0	4,1
Average quality of land	0,2	0,9	0,1	0,5	0,2	0,2	0,2

Source: ADE-Kit using Dalberg Data

Table 2: Summary Statistics for Beneficiaries in 2017 for Ghana and Kenya

Production	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	max
Area cultivated (in acres)	390	4,0	4	2,04	0	10	360	3,70	3,25	1,85	0	9
Area (in acres) allocated to target crop	399	1,7	2	0,7	0	4	350	2,23	2	1,13	0	5
Share of the total cultivated area allocated to the target crop	404	51%	0,5	0,3	0	4	370	66%	0,67	0,26	0	1,3
Production (in kg) of the target crop	388	375	300	279,9	2	1300	319	1671	1530	1016,9	40	4320
Yield of the target crop (in kg/acres)	395	228	200	140,4	0,67	625	360	944	900	533,7	22,8	2333,3
Diversification of crops	406	2,2	2	0,6	1	5	379	3,18	3	1,2	1	8
Allocation of production												
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	max
Share consumed	404	16%	10%	0,21	0%	100%	371	0%	0%	0,03	0%	50%
Share sold	404	80%	83%	0,22	0%	100%	371	100%	100%	0,05	0%	100%
Income	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	Mean	Median	sd	min	max
Total HH Income	375	1260,4	999,0	1107,4	-1,0	4599,0	330	114256,2	83735	98892,1	0	383200,0
Income from main crop	361	449,8	350,0	359,3	0	1700,0	325	52670,2	46800	34442,6	0	148500,0
Profits from the target crop	391	613,0	278,0	1842,9	-465	30675	370	64002,7	39723,5	86536,9	-62150	766577,0
Share of income from agricultural activities	406	0,6	0,8	0,3	0	1,0	344	0,7	0,8	0,3	0	1
Share of agricultural income from the target crop	335	0,6	0,5	0,9	0	10,5	296	0,6	0,5	0,8	0	12,2
Average price per kilo (between the two main buyers)	365	1,5	1,5	0,6	0	3,2	358	30,8	30,0	2,5	22	38,0
Wealth index	406	0,30	0,3	0,3	-0,47	1,1	379	0,5	0,6	0,3	-0,27	1,3
Percentage Borrowing	68	96%	100%	0,2	0%	100%	99	80%	100%	0,4	0%	100%
Average loan amount (among those borrowing)	65	293,23	350,0	167,4	0,0	500	88	20159	20000	16102,3	0	50000
Farming practices	Ghana						Kenya					
	obs	mean	median	sd	min	max	obs	mean	median	sd	min	Max
Intercrop	406	26%	0	0,44	0	1	379	54%	1	0,50	0	1
Cleaning the Field	406	69%	1	0,46	0	1	379	92%	1	0,28	0	1
Crop rotation	406	29%	0	0,45	0	1	379	80%	1	0,40	0	1
Checks pests high	406	88%	1	0,33	0	1	379	50%	1	0,50	0	1
Use of inorganic fertilizer	403	6%	0	0,23	0	1	372	76%	1	0,43	0	1
Use of organic fertilizer	403	2%	0	0,13	0	1	372	37%	0	0,48	0	1
Use of pesticides	403	0,35	0	0,48	0	1	372	0,83	1	0,38	0	1

Source: ADE-Kit using Dalberg data

# Matching Difference in Difference Results

## Kenya

Table 3: Kenya Matching Difference in Difference results

Variable	2015 Mean		2017 Mean		2023 Mean		Difference 2023 – 2015			Difference 2023 - 2017		
	Treatment	Control	Treatment	Control	Treatment	Control	Difference	p-value	Significance level	Difference	p-value	Significance Level
Use of organic fertilizer	0,32	0,3	0,36	0,23	0,74	0,36	0,36	0	***	0,21	0,01	*
Use of inorganic fertilizer	0,58	0,15	0,74	0,17	0,22	0,07	-0,26	0	***	-0,41	0	***
Intercrop	0,64	0,72	0,55	0,78	0,44	0,28	0,25	0	***	0,39	0	***
Crop rotation	0,88	0,83	0,81	0,86	0,73	0,88	-0,2	0	***	-0,1	0,03	*
Cleans the field	NA	NA	0,9	0,76	0,66	0,28	NA	NA		0,23	0	***
Checks pests high	0,78	0,61	0,51	0,65	0,3	0,25	-0,1	0,06		0,19	0	***
Total HH Income	66145,18	57765,56	97562,12	57207,21	78589,33	90972,39	-19499,64	0,01	**	-56416,47	0	***
Income from main crop	19134,97	9131,59	49604,87	11171,48	33644,3	22520,73	791,27	0,76		-28128,12	0	***
Profits from target crop	17903,99	9988,25	52734,04	6648,17	34827,42	27932,61	-149,7	0,61		-24410,22	0	***
Avg price (per kg)	22,05	23,03	30,84	30,66	40,6	38,99	2,97	0	***	1,82	0,13	
Production of target crop	815,14	410,55	1592,61	250,74	779,92	603,38	-255	0	***	-1224,88	0	***
Yield	673,08	291,73	920,27	159,57	715,69	473,26	-107,28	0,01	**	-518,7	0	***
Wealth Index	-1,02	-1,23	0,58	0,67	0,13	-0,13	0,05	0,57		0,35	0	***

Using propensity score (optimal) matching technique.

\*: the result is statistically significant at the 0.05 level ( $p < 0.05$ ), meaning there is a less than 5% probability that the result is due to chance.



\*\* : the result is statistically significant at the 0.01 level ( $p < 0.01$ ), meaning there is a less than 1% probability that the result is due to chance.

\*\*\* : the result is statistically significant at the 0.001 level ( $p < 0.001$ ), meaning there is a less than 0,1% probability that the result is due to chance.

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

## Ghana

Table 4: Ghana Matching Difference in Difference results

Variable	2017 Mean		2023 Mean		Difference 2023 – 2017		
	Treatment	Control	Treatment	Control	Difference	p-value	Significance level
Use of organic fertilizer	0,02	0,01	0,08	0,03	0,03	0,06	-
Use of inorganic fertilizer	0,06	0,01	0,17	0,06	0,05	0,06	-
Intercrop	0,26	0,13	0,03	0,08	-0,17	0	***
Crop rotation	0,29	0,4	0,39	0,24	0,25	0	***
Cleans the field	0,69	0,57	0,29	0,32	-0,14	0,01	**
Checks pests high	0,88	0,77	0,42	0,37	-0,07	0,12	
Total HH Income	1260,46	1196,14	4785,73	5590,59	-709,76	0,09	-
Income from main crop	449,8	571,71	1603,37	2527,27	-902,53	0	***
Profits from target crop	613,07	759,69	2080,96	3728,91	-731,54	0	***
Avg price ( <i>per kg</i> )	1,54	1,38	4,92	4,98	-0,15	0,39	
Production of target crop	374,7	266,52	217,93	291,72	-45,63	0	**
Yield	227,86	266,52	217,93	291,72	-45,63	0	**
Wealth Index	0,3	0,47	0,12	-0,13	0,45	0	***

Using matching technique. Resilience estimates not included.

\* : the result is statistically significant at the 0.05 level ( $p < 0.05$ ), meaning there is a less than 5% probability that the result is due to chance.

\*\* : the result is statistically significant at the 0.01 level ( $p < 0.01$ ), meaning there is a less than 1% probability that the result is due to chance.

\*\*\* : the result is statistically significant at the 0.001 level ( $p < 0.001$ ), meaning there is a less than 0,1% probability that the result is due to chance.

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

# Difference in Difference Regression results

## Kenya

Table 5: Kenya regression Difference in Difference results

Variable	2015 Mean		2017 Mean		2023 Mean		Difference 2023 - 2015			Difference 2023-2017		
	Treatment	Control	Treatment	Control	Treatment	Control	Difference	p-value	Significance level	difference	p-value	Significance level
Use of organic fertilizer	0,32	0,3	0,36	0,23	0,74	0,36	0,37	0	***	0,12	0,19	
Use of inorganic fertilizer	0,58	0,15	0,74	0,17	0,22	0,07	-0,25	0	***	-0,28	0	***
Intercrop	0,64	0,72	0,55	0,78	0,44	0,28	0,32	0	***	-0,1	0,13	
Crop rotation	0,88	0,83	0,81	0,86	0,73	0,88	-0,23	0	***	-0,1	0,13	
Cleans the field	NA	NA	0,9	0,76	0,66	0,28	NA	NA		0,33	0	***
Checks pests high	0,78	0,61	0,51	0,65	0,3	0,25	-0,14	0,01	*	-0,04	0,64	
Total HH Income	66145,18	57765,56	97562,12	57207,21	78589,33	90972,39	-8921,17	0,19		-43143,56	0	***
Income from main crop	19134,97	9131,59	49604,87	11171,48	33644,3	22520,73	818,67	0,71		-24779,95	0	***
Profits from target crop	17903,99	9988,25	52734,04	6648,17	34827,42	27932,61	329,45	0,88		-23049,31	0	***
Avg price (per kg)	22,05	23,03	30,84	30,66	40,6	38,99	4,03	0	***	4,76	0	
Production of target crop	815,14	410,55	1592,61	250,74	779,92	603,38	-276,9	0	***	-1151,21	0	***
Yield	673,08	291,73	920,27	159,57	715,69	473,26	-148,49	0	***	-452,11	0	***
Wealth Index	-1,02	-1,23	0,58	0,67	0,13	-0,13	0,13	0,1		0,47	0	***

Using regression technique.

\*: the result is statistically significant at the 0.05 level ( $p < 0.05$ ), meaning there is a less than 5% probability that the result is due to chance.

\*\*\*: the result is statistically significant at the 0.01 level ( $p < 0.01$ ), meaning there is a less than 1% probability that the result is due to chance.

\*\*\*: the result is statistically significant at the 0.001 level ( $p < 0.001$ ), meaning there is a less than 0,1% probability that the result is due to chance.

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

# Ghana

Table 6: Ghana regression Difference in Difference results

	2017 Mean		2023 Mean		Difference 2023-2017		
Variable	Treatment	Control	Treatment	Control	Difference	P-value	Significance level
Use of organic fertilizer	0,02	0,01	0,08	0,03	0,03	0,15	-
Use of inorganic fertilizer	0,06	0,01	0,17	0,06	0,08	0,01	**
Intercrop	0,26	0,13	0,03	0,08	-0,14	0	***
Crop rotation	0,29	0,4	0,39	0,24	0,19	0	***
Cleans the field	0,69	0,57	0,29	0,32	-0,16	0	**
Checks pests high	0,88	0,77	0,42	0,37	0,04	0,36	
Total HH Income	1260,46	1196,14	4785,73	5590,59	-827,58	0,01	**
Income from main crop	449,8	571,71	1603,37	2527,27	-805,93	0	***
Profits from target crop	613,07	759,69	2080,96	3728,91	-783,74	0	***
Avg price ( <i>per kg</i> )	1,54	1,38	4,92	4,98	-0,28	0,15	
Production of target crop	374,7	266,52	217,93	291,72	-45,63	0	**
Yield	227,86	266,52	217,93	291,72	-10,93	0,47	
Wealth Index	0,3	0,47	0,12	-0,13	0,44	0	***

Using regression technique. Resilience estimates not included

\*: the result is statistically significant at the 0.05 level ( $p < 0.05$ ), meaning there is a less than 5% probability that the result is due to chance.

\*\* : the result is statistically significant at the 0.01 level ( $p < 0.01$ ), meaning there is a less than 1% probability that the result is due to chance.

\*\*\*: the result is statistically significant at the 0.001 level ( $p < 0.001$ ), meaning there is a less than 0,1% probability that the result is due to chance.

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

## Difference in Difference Resilience Results

Table 7: Resilience Regression Difference in Difference

Variable	Country	2017 Mean		2023 Mean		Estimate	P-value	Significance level
		Treatment	Control	Treatment	Control			
Ability to recover index	Kenya	0,688	0,629	0,666	0,645	-0,03	0,138	
Ability to recover index	Ghana	0,597	0,631	0,65	0,695	-0,004	0,87	

Using regression technique with control

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

Table 8: Yield prediction using good agricultural practices in Kenya, 2023

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	2491,07	3297,26	0,76	0,45
Intercrop	-102,95	32,19	-3,2	0,01
removes_residue1	111,205	36,24	3,07	0,01
Crop rotation	-115,29	35,19	-3,28	0,01
Checks pests	-0,3052	28,78	-0,01	0,1
Use of inorganic fertilizer	52,87	41,28	1,28	0,20
Use of organic fertilizer	183,33	31,09	5,9	6,57
Use of pesticides	57,11	39,10	1,46	0,15
remove_high_es	-133,52	38,41	-3,48	0,01
mean_tmmx	-6,40	9,52	-0,67	0,50
Avg precipitation	0,67	1,59	0,42	0,67
Land quality	-30,03	29,97	-1,00	0316686
Area cultivated (in acres)	-23,16	7,9	-2,93	0,01

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

Table 9: Yield prediction using good agricultural practices in Ghana, 2023

Variable	estimate	std.error	statistic	p.value
(Intercept)	-1901,18	940,15	-2,02	0,04
Intercrop	56,96	20,74	2,75	0,01
removes_residue1	-14,98	20,68	-0,72	0,47
Crop rotation	4,13	10,53	0,39	0,7
Checks pests	-5,36	10,25	-0,52	0,60
Use of inorganic fertilizer	9,9	15,42	0,64	0,52
Use of organic fertilizer	-26,50	20,08	-1,32	0,18
Use of pesticides	30,04	10,57	2,84	0,01
remove_high_es	19,23	21,64	0,89	0,37
mean_tmmx	6,52	2,81	2,33	0,02
Mean precipitation	0,04	0,5	0,07	0,94
Land quality	-55,51	19,02	-2,92	0,01
Area cultivated (in acres)	1,57	1,32	1,2	0,23
factor(cluster)Saboba	6,78	41	0,16	0,87
factor(cluster)Yiendi	86,4	31,80	2,72	0,01

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected



Table 10: SEM regression of GAPs application on resilience in Kenya

Outcome Variable	Predictor Variable	Exogenous	Estimate	Standard Error	Z-Value	P-Value
Resilience Index	GAPs Application	0	0,01	0,05	0,08	0,93
Resilience Index	Number of Shocks	0	-0,12	0,05	-2,56	0,01
Resilience Index	Land Slope Score	0	-0,01	0,04	-0,35	0,73
Resilience Index	Soil Quality Score	0	0,09	0,05	2,01	0,04
Resilience Index	Area Cultivated (Acres)	0	-0,04	0,1	-0,39	0,7
GAPs Application	Program Treatment	0	-0,2	0,04	-3,76	0,01
GAPs Application	Education Score	0	0,01	0,05	0,25	0,81
GAPs Application	Farming Experience (Years)	0	0,03	0,04	0,60	0,55

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

Table 11: SEM regression of GAPs application on resilience in Ghana

Outcome Variable	Predictor Variable	Exogenous	Estimate	Standard Error	Z-Value	P-Value
Resilience Index	GAPs Application	0	-0,01	0,03	-0,3	0,78
Resilience Index	Number of Shocks	0	0,14	0,06	2,29	0,02
Resilience Index	Land Slope Score	0	0,05	0,09	0,56	0,58
Resilience Index	Soil Quality Score	0	-0,08	0,05	-1,76	0,08
Resilience Index	Area Cultivated (Acres)	0	-0,03	0,04	-0,71	0,48
GAPs Application	Program Treatment	0	0,15	0,06	2,68	0,01
GAPs Application	Education Score	0	0,03	0,08	0,35	0,72
GAPs Application	Farming Experience (Years)	0	-0,09	0,06	-1,52	0,13

Source: ADE-KIT, based on Dalberg and ADE-KIT Survey data collected

## Annex 5 Questionnaire

Questionnaire
Village
What is your name?
<b>Respondent type:</b>
Does anyone in this household conduct any farming activities on owned or rented land?
Are you the person in this household who is mainly responsible for the farming activities?
<b>Respondent section</b>
What is the primary farming activity of the person responsible for the farming activities?
Have you been growing SOYBEANS/SORGHUM in an area of at least 0.25 acres/ 0.10 hectares for the last 7 years?
Did you grow SOYBEANS/SORGHUM in an area of at least 0.25 acres/0.10 hectares in the 2023 harvest?
What is your preferred unit of measure for land area?
What is the total amount of land that you usually cultivate (all crops)?
Are you the household head?
How many years of farming experience do you have?
How old are you?
What is your gender?
What is the highest level of education you attained?
What is your main occupation?
Currently, are you or anyone in the household a member of a farmer organization, including a cooperative, union, processor, or another contractor?
For the last 7 years, has you or anyone in the household been a member of a farmer organization, including a cooperative, union, processor, or another contractor?
<b>Household</b>
How many <b>**male**</b> household members are 9 years old or younger?
How many <b>**female**</b> household members are 9 years old or younger?
How many <b>**male**</b> household members are between 10 and 14 years old?
How many <b>**female**</b> household members are between 10 and 14 years old?
How many <b>**male**</b> household members are between 15 and 64 years old?
How many <b>**female**</b> household members are between 15 and 64 years old?
How many <b>**male**</b> household members are older than 65?
How many <b>**female**</b> household members are older than 65?
<b>Plots</b>
The following section is intended to collect information on the land your household is cultivating.
How many plots of land does your household cultivate?

Plot
Please provide a descriptive name for this plot
What is the surface of \${S4Q1}, in \${S2C1}?
For \${S4Q1}, what is the land tenure?
What is the cost of the rent per season for \${S4Q1}?
Which crops do you cultivate in \${S4Q1}?
In \${S4Q1} what is the area allocated to SOYBEANS/SORGHUM, in \${S2C1}?
What percentage of \${S4Q1} is irrigated?
What is the color of the soil for \${S4Q1}?
How would you characterize the soil fertility of \${S4Q1}?
What is the slope of \${S4Q1}?
Is there any erosion on \${S4Q1}?
You indicated that you cultivate a total land of \${calc_plots_area} \${S2C1}. Proceed if it is correct.
<b>SOYBEANS/SORGHUM production</b>
What is your preferred unit to measure production
How many \${calc_unit_production_name} of SOYBEANS/SORGHUM did you produce in the last planting season?
The total production was \${calc_production_kg} kilograms
How many times did you harvest SOYBEANS/SORGHUM in the last twelve months?
<b>**Use of inputs for SOYBEANS/SORGHUM production**</b>
The following questions are intended to collect information on the cost of the inputs you used <b>**for your most recent SOYBEANS/SORGHUM harvest**</b> . Please provide your answer in the local currency unit.
For the most recent harvest, what was the total cost of seeds used for your SOYBEANS/SORGHUM production?
For the most recent harvest, what was the total cost of pesticides used for your SOYBEANS/SORGHUM production?
For the most recent harvest, what was the total cost of other biological control agents used for your SOYBEANS/SORGHUM production?
For the most recent harvest, what was the total cost of inorganic fertilizer used for your SOYBEANS/SORGHUM production?
For the most recent harvest, what was the total cost of organic fertilizer used for your SOYBEANS/SORGHUM production?
The total amount spent on production of SOYBEANS/SORGHUM during the last planting season, was \${inputs_costs_calc} units of the local currency.
<b>**Allocation of soybean production**</b>
Now you will be asked to allocate your total production of \${calc_production_kg} Kg between various possible uses. Do you prefer to do so in terms of percentages or of units? Select the preferred unit or percentage
In the last planting season, you produced a total of \${calc_production_kg} Kg. <b>**In terms of percentages**</b> , how much did you:

Use for consumption
Give away
Save for seeds
Store for later (still not used)
Sell
Lose to wastage
You allocated a total of \${calc_allocation_total_percent}% of your production
In the last planting season you produced a total of \${calc_production_kg} Kg. **In Kg**, how much did you:
Use for consumption
Give away
Save for seeds
Store for later (still not used)
Sell
Lose to wastage
You allocated a total of \${calc_allocation_total_amount} Kg of your production
**You indicated that you allocated more than you produced. Please correct the data you inserted**
**Sales of SOYBEANS/SORGHUM produced during the last planting season**
To how many buyers do you sell your SOYBEANS/SORGHUM production?
**Independent selling**
Did you sell your SOYBEANS/SORGHUM independently?
Why did you sell part or all of your SOYBEANS/SORGHUM independently?
Where did you sell part or all of your SOYBEANS/SORGHUM independently?
*Answer the following questions for the main buyer/s (in terms of quantity sold) *
**Please answer these questions for the MAIN buyer**
Type of main buyer
Name of main buyer
Contracted
Quantity sold to \${buyer_name_max_1_calc} in \${calc_unit_production_name}
Price per \${calc_unit_production_name} paid by \${buyer_name_max_1_calc}
The revenue from \${buyer_name_max_1_calc} was \${buyer_revenue_1}
**Please answer these questions for the SECOND main buyer**
Type of **second** main buyer
Name of **second** main buyer
Contracted
Quantity sold to \${buyer_name_max_2_calc} in \${calc_unit_production_name}

Price per \${calc_unit_production_name} paid by \${buyer_name_max_2_calc}
The revenue from \${buyer_name_max_2_calc} was \${buyer_revenue_2}
<b>**Relationship with \${buyer_name_max_1_calc} **</b>
The following questions refer to your relationship with \${buyer_name_max_1_calc}
Did you get in touch with \${buyer_name_max_1_calc} through 2SCALE?
What kind of contract do you have with \${buyer_name_max_1_calc}?
How many years have you supplied your SOYBEANS/SORGHUM to \${buyer_name_max_1_calc}?
Has the relationship with \${buyer_name_max_1_calc} been terminated since the last harvest?
Did you have pre-established production and marketing conditions with \${buyer_name_max_1_calc}?
Who decided the parcel(s) cultivated with SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the area(s) cultivated with SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the seeds used for SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the number of seeds used for SOYB SOYBEANS/SORGHUM EANS for \${buyer_name_max_1_calc}?
Who decided the amount of organic or biological fertilizer used for SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the amount of pesticide (chemical or biological) used for SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the amount of biological crop protection (insects, micro-organisms, traps) used for SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the amount of labour hours used for SOYBEANS/SORGHUM for \${buyer_name_max_1_calc}?
Who decided the date production started for \${buyer_name_max_1_calc}?
Who decided the date for delivery of harvest for \${buyer_name_max_1_calc}?
Was the price you received from \${buyer_name_max_1_calc} for your SOYBEANS/SORGHUM known before production started or negotiated after harvest?
The price received for your SOYBEANS/SORGHUM for \${buyer_name_max_1_calc} was:
Did \${buyer_name_max_1_calc} provide price adjustments for the quality of your crop?
Which of these inputs /activities did \${buyer_name_max_1_calc} facilitated your access to?
What are the main reasons you did business with \${buyer_name_max_1_calc}?
What problems if any did you face when selling your SOYBEANS/SORGHUM to \${buyer_name_max_1_calc}?
<b>**Relationship with \${buyer_name_max_2_calc} **</b>
The following questions refer to your relation with \${buyer_name_max_2_calc}
Did you get in touch with \${buyer_name_max_2_calc} through 2SCALE?
What kind of contract do you have with \${buyer_name_max_2_calc}?
How many years have you supplied your SOYBEANS/SORGHUM to \${buyer_name_max_2_calc}?
Has the relationship with \${buyer_name_max_2_calc} been terminated since the last harvest?

Did you have pre-established production and marketing conditions with \${buyer_name_max_2_calc}?
Who decided the parcel(s) cultivated with SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the area(s) cultivated with SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the seeds used for SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the amount of seeds used for SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the amount of organic or biological fertilizer used for SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the amount of pesticide (chemical or biological) used for SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the amount of biological crop protection (insects, micro-organisms, traps) used for SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the amount of labour hours used for SOYBEANS/SORGHUM for \${buyer_name_max_2_calc}?
Who decided the date production started for \${buyer_name_max_2_calc}?
Who decided the date for delivery of harvest for \${buyer_name_max_2_calc}?
Was the price you received from \${buyer_name_max_2_calc} for your SOYBEANS/SORGHUM known before production started or negotiated after harvest?
The price received for your SOYBEANS/SORGHUM for \${buyer_name_max_2_calc} was:
Did \${buyer_name_max_2_calc} provide price adjustments for the quality of your crop?
Which of these inputs /activities did \${buyer_name_max_2_calc} facilitated your access to?
What are the main reasons you did business with \${buyer_name_max_2_calc}?
What problems if any did you face when selling your SOYBEANS/SORGHUM to \${buyer_name_max_2_calc}?
<b>General practices</b>
Did you plant the same crops in the same location in the last planting season or did you rotate the crops by planting something different?
Why did you rotate crops?
Prior to planting, did you remove all plant residue of the previous crops in the area you planted?
How did you remove the residue?
For the most recent harvest, did you intercrop/mixed crop any of your crops?
What is the primary reason for intercropping/mixing crop?
During the cropping season, how often do you check crops for the presence of pests or diseases?
<b>Cooperative/producer group</b>
Were you part of a cooperative / producer group that supports your production of SOYBEANS in any way over the period that preceded the last harvest?
Why were you not part of a cooperative/producer group during the period that preceded the last harvest?

Have you belonged to a cooperative / producer group that supports your production of SOYBEANS/SORGHUM in any way in the last 7 years?
Why were you not part of a cooperative/producer group in the last 7 years?
The group for SOYBEANS/SORGHUM of which you were part at the time of the last harvest facilitates access to:
How many farmers, including yourself, does this group for SOYBEANS/SORGHUM typically work with?
Are you involved in negotiating the contract with the cooperative/producer group?
Do you need to pay a fee to become a member of this group for SOYBEANS/SORGHUM?
What is the yearly cost of the fee (dues) that you pay to this cooperative/producer group?
How long have you or anyone from your household belonged to this group for SOYBEANS/SORGHUM?
Does this group support the transportation of your SOYBEANS for commercial purposes?
How are your SOYBEANS/SORGHUM usually delivered to clients thanks to this support from this group?
After joining the cooperative/producer group, have the types of crops you grow changed?
After joining the cooperative/producer group, has the quantity that you harvested of SOYBEANS/SORGHUM changed?
Do you discuss prices for SOYBEANS/SORGHUM with other farmers?
<b>Income</b>
In the questions below, please indicate how much you earned from the following sources of income over the last 12 months
Soybean Production
Sorghum Production
Local Maize Production
Rice Production
Beans Production
Production Of Other Crops
Livestock
Remittances
Sale Of Assets
Agricultural Wages
Non-Agricultural Wages
Revenues From Non-Agricultural Business (For example: If the respondent owns a store)
The total income over the last 12 months, in local currency units, was \${S9C1}
Did the 3 main sources of income of your household change over the last 7 years?
What were the 3 main sources of income in your household 7 years ago?
With respect to 7 years ago, the revenues from SOYBEANS/SORGHUM (the money you earn selling it) has:
<b>Loan/borrowing</b>



Over the past 12 months, did you or anyone else in this household borrow on credit?
What was the main reason for obtaining the loan?
Who provided the loan?
How much does your household owe from the loans contracted in the last 12 months?
During the last 12 months, did you or anyone in the household try to borrow and were turned down?
To whom did you try to borrow from?
What was the main reason for trying to obtain the loan?
Why was your loan request turned down?
With respect to 7 years ago obtaining a loan:
<b>Living Conditions</b>
How would you assess your household's living conditions?
Compared to 7 years ago, do you consider your household to be better off, the same or worse off now?
In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?
<b>Wealth – related questions</b>
Do you or your household own a Plough/ Animal Cart?
How many Plough/ Animals Cart do you or your household own?
Do you or your household own a Planter?
How many Planters do you or your household own?
Do you or your household own a Knapsack Sprayer?
How many Knapsacks Sprayer do you or your household own?
Do you or your household own a Tresher?
How many Tresher do you or your household own?
Do you or your household own a Grinder?
How many Grinders do you or your household own?
Do you or your household own a Mill?
How many Mills do you or your household own?
Do you or your household own a Grinding Hammer Mill?
How many Grindings Hammer Mill do you or your household own?
Do you or your household own a Rump Presses/Oil Expeller?
How many Rumps Presses/Oil Expeller do you or your household own?
Do you or your household own a Sheller?
How many Sheller do you or your household own?
Do you or your household own a Watering Can?
How many Watering Can do you or your household own?
Do you or your household own a Sickle?

How many Sickles do you or your household own?
Do you or your household own Cattle?
How many Cattle do you or your household own?
Do you or your household own a Trough?
How many Troughs do you or your household own?
Do you or your household own a Carpentry Plane?
How many Carpentries Plane do you or your household own?
Do you or your household own a Small/Hand Driven Tractor?
How many Small/Hands Driven Tractor do you or your household own?
Do you or your household own a 4-Wheel Tractor?
How many 4-Wheel Tractor do you or your household own?
Do you or your household own a Chaff Cutter?
How many Chaffs Cutter do you or your household own?
Do you or your household own a Screenhouse?
How many Screenhouse do you or your household own?
Do you or your household own a Water Tank?
How many Waters Tank do you or your household own?
Do you or your household own a Mattress?
How many Mattresses do you or your household own?
Do you or your household own a Mosquito Net?
How many Mosquitoes Net do you or your household own?
Do you or your household own a Sofa/Lounge Set?
How many Sofa/Lounges Set do you or your household own?
Do you or your household own a TV?
How many TV do you or your household own?
Do you or your household own a Computer/Laptop?
How many Computer/Laptops do you or your household own?
Do you or your household own a Cellular Phone (Yam)?
How many Cellular Phone (Yam) do you or your household own?
Do you or your household own a Smart Phone?
How many Smart Phone do you or your household own?
Do you or your household own a Solar Panel?
How many Solar Panel do you or your household own?
Do you or your household own a Stove?
How many Stoves do you or your household own?
Do you or your household own a Refrigerator?

How many Refrigerators do you or your household own?
Do you or your household own an AC/Ventilator/Fan?
How many AC/Ventilator/Fans do you or your household own?
Do you or your household own a Sewing Machine?
How many Sewing Machine do you or your household own?
Do you or your household own a Water Pump?
How many Waters Pump do you own?
Do you or your household own a Generator?
How many Generators do you or your household own?
Do you or your household own a Bicycle?
How many Bicycles do you or your household own?
Do you or your household own a Donkey Cart?
How many Donkeys Cart do you or your household own?
Do you or your household own a Motorcycle?
How many Motorcycles do you or your household own?
Do you or your household own a Car?
How many Cars do you or your household own?
Do you or your household own a Small Truck?
How many Small Truck do you or your household own?
Do you or your household owns a Large Truck?
How many Large Truck do you or your household own?
Do you or your household own a Van/Minibus?
How many Van/Minibuses do you or your household own?
Do you or your household own an Oxen?
How many Oxen do you or your household own?
Do you or your household own a Donkey?
How many Donkeys do you or your household own?
Do you or your household own a Tricycle?
How many Tricycles do you or your household own?
What is your current housing-tenure status?
How many rooms are there excluding bathrooms/toilets?
What is the type of shelter?
What kinds of materials is the **floor** of your dwelling made of?
What kinds of materials is the **roof** of your dwelling made of?
What kinds of materials are the **walls** of your dwelling made of?
What is the **main** source of drinking water for this household?

How far away is this drinking source (One way, in minutes)?
Does the house have electricity?
What is the main type of energy used for cooking?
What is the main type of toilet facility does the household have?
Was your household's food consumption sufficient or insufficient over the last month?
Was your household's housing sufficient or insufficient over the last month?
Was clothing in your household sufficient or insufficient over the last month?
Was your health care your household received sufficient or insufficient, over the last month?
Is your children education sufficient or insufficient?
<b>Resilience</b>
During the last harvest of SOYBEANS, did you experience any damage due to insects, fungus, disease or other pests?
By what percentage did these problems (insects, fungus, disease, or pests) affect the quality of your harvest?
By what percentage did these problems (insects, fungus, disease, or pests) affect the price at which you were able to sell the product of your harvest?
In the following questions, you will be required to select the shocks that affected your household over the last years, and to answer some questions about how they impacted your household.
In the last 12 months, was your household or any member of your household affected by any of the following negative events (i.e., negative event that affected your household the most leading to a significant reduction of your household income, assets or consumption of goods)?
In the last 12 months, how severe was the negative impact of \${S14C1}?
In the last 12 months, to what extent was your household able to recover from \${S14C1}?
In the last 12 months, how many times did you face \${S14C1}?
Last time \${S14C1} occurred, what did you do to deal with the effects of this shock?
In the following questions, you will be required to select the shocks that affected your household 7 years ago, and to answer some questions about how they impacted your household. In your answers, please consider the period from January to December 2017.
In the last 7 years, was your household or any member of your household affected by any of the following negative events (i.e., negative event that affected your household the most leading to a significant reduction of your household income, assets or consumption of goods)?
\${S14C2}, 7 years ago
7 years ago, how severe was the negative impact of \${S14C2}?
7 years ago, to what extent was your household able to recover from \${S14C2}?
7 years ago, how many times did you face \${S14C2}?

Conclusion
Does the head of the household or another household member have a mobile phone that we can use to contact him/her?
Please enter your phone number:
Outcome of final visit:
Main language used by the enumerator?
Main language used by the respondent?
How many times have you had to visit before completing the interview
Any main issues during the survey? (Example: the Farmer didn't want to share some information with you during the survey)
Thank you very much for your participation in the survey.
Thank you very much for your participation in the survey. Would you please direct me to the person responsible for farming in this household?

## Annex 6 Data Collection Steps

As presented during the inception phase the ET has followed a collaborative approach with the 2SCALE MEAL<sup>1</sup> team at all stages of the process for efficiency and learning purposes. The data collection process for the Phase 1 impact assessment has included the following steps:

- **Review of the 2018 IA questionnaire<sup>2</sup>.** ET selected the most relevant questions to measure income, productivity, and resilience, as well as the necessary control variables. ET added some extra questions to capture exposure to treatment, potential contamination in the control area, exposure to shocks, as well as some recall questions for indicators that were not included in the previous IA. Particular attention was also paid to refer to appropriate agricultural seasons to ensure comparability with previous IA measurement.
- **Revision of the preliminary version of questionnaire with the 2SCALE team and our local experts** to ensure that the questionnaire was designed to capture partnerships' activities and adapted to countries' contexts.
- **Final adaptation of the questionnaire** during enumerators' training and survey pilot in each country. Final versions of the questionnaires used for Ghana and Kenya can be found in Annex 5 – Questionnaire 2024.
- **Sampling design was developed at smallholder farmers' level for treated and control areas.** The ET, together with each 2SCALE country team, selected small-scale farmers with similar characteristics to those in the previous IA, to facilitate matching and thus comparability between the previous and current.
- **Enumerators' training.** Carefully selected groups of experienced enumerators and supervisors underwent a two-day training course run by ADE-KIT, with the participation of 2SCALE teams, to ensure a good understanding of the data collection process. The ET collaborated with local partners in both countries to ensure a smooth and efficient data collection on the field, leveraging their thematic knowledge and county context.
- **The pilot survey** was conducted to test the questionnaire, validate the procedures and ensure that the questions were relevant and understood by both respondents and interviewers.
- **Survey data collection on the field.** The questionnaire was administered to 618 Sorghum production Farmers in Kenya and to 819 Soybean production farmers in Ghana (cf. sample description in the next section). The data collection process was carried out in close collaboration with ADE-KIT on the field and in constant contact with 2SCALE country teams.

---

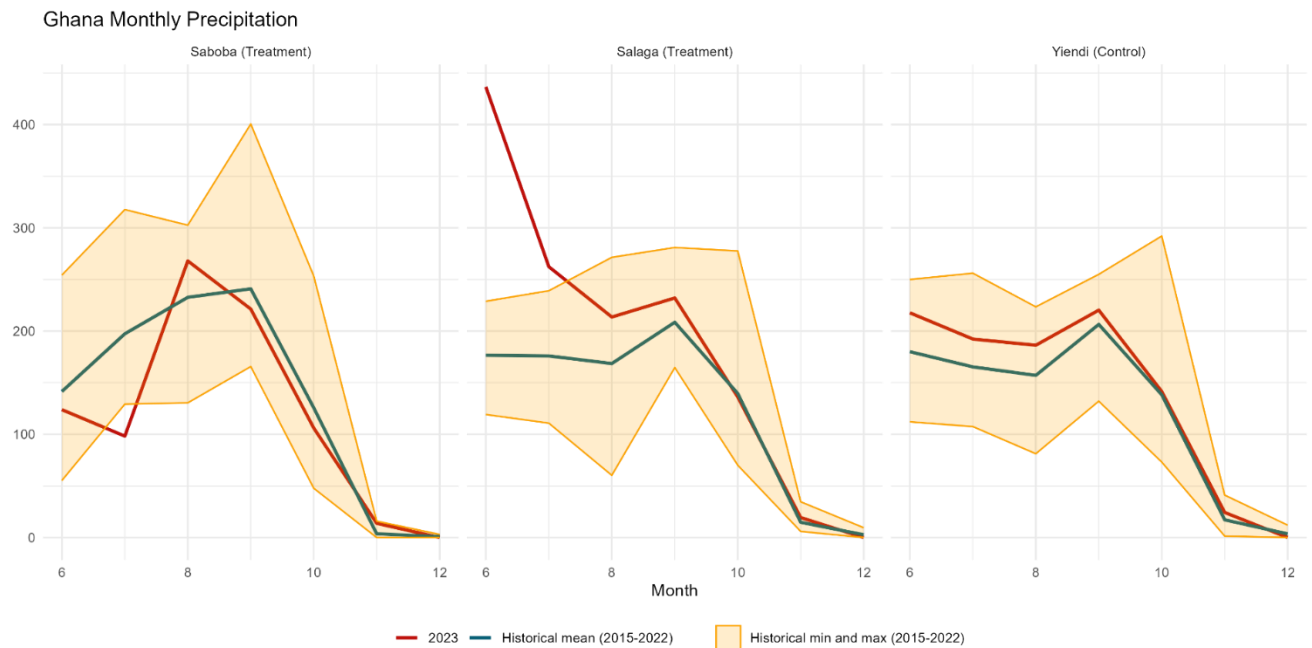
<sup>1</sup> 2SCALE M&E data could not be used for Phase 1 Impact Assessment as the type of variables required to measure income, productivity and resilience were not available in the system in a disaggregated format.

<sup>2</sup> The '2018 IA questionnaire' refers to the survey that was used by the American Institutes for Research (AIR) in the previous Impact Assessment of the 2SCALE program in 2018.

- **Qualitative data collection on the field.** The ET drew on the methodology designed for the Phase 2 evaluation, to collect qualitative information through FGDs and KII with farmers, 2SCALE staff and business champions representatives. The objective was to better understand the mechanism of change and/or factors hindering change as well as to enable the team to contextualize (e.g., some shocks) and triangulate the findings from the survey. These exchanges were useful to understand the adoption of more sustainable eco-efficient farming practices by SHFs, and their ability to better cope with climate shocks, as defined by the reconstructed ToC, also to get a better understanding of the factors driving income trends and their link with agricultural productivity, farming and planning practices, as well as resilience (see FGD guide in Annex XX). Both in Kenya and in Ghana 40 SHFs, two BC (Yedent and Shalem), one aggregator (Rujo Agritrade), one BSS representative (SEND Ghana), and four 2SCALE staff members were interviewed respectively.
- **Previous IA data processing:** After many interactions the ET got access to the raw data collected in 2015 and 2018 by Dalberg. After an extensive analysis of the datasets, the ET extracted the relevant variables to reconstruct the indicators used for the 2018 Impact Assessment by AIR.
- **Data analysis.** ET analyzed all the available data using robust econometric approach to define the characteristics of smallholder farmers and to measure the attributable impact of 2SCALE on the three dimensions (income, productivity, resilience and sustainability), for more details, see section **Error! Reference source not found..**

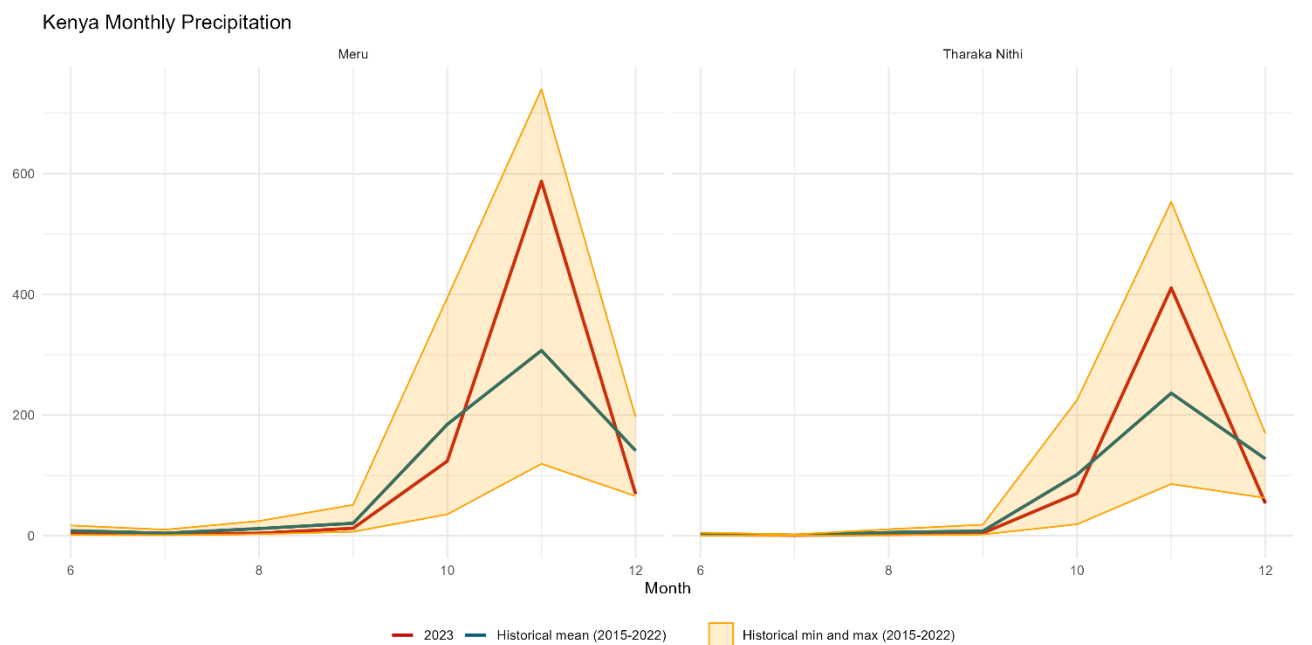
## Annex 7 Precipitation Overview

Figure 1: Ghana Monthly Precipitation



Source: Source: ADE-KIT from Google earth engine data

Figure 2: Kenya Monthly Precipitation



Source: ADE-KIT from Google earth engine data



Table 1: Ghana weather statistics 2024

Variable	Mean	Mean Treatment	Mean Control
Drought severity index	-104.724	32.07	-364.633
Precipitation	107.241	109.991	102.017
Soil moisture	1463.621	1540.496	1317.558

Source: Google earth engine

Table 2: Kenya weather statistics 2024

Variable	Mean	Mean Treatment	Mean Control
Drought severity index	-660.937	-732.454	-590.799
Precipitation	86.166	102.879	69.776
Soil moisture	576.196	640.316	513.313

Source: Google earth engine

## Annex 8 KII's & FGD Guideline

<b>Structure for the KII's &amp; FGDs interviews:</b>
<b>Activity/support level</b>
Who did provide agricultural advice/extension services?
What kind of advice (crop focus). Difference between past (2015 and before, after 2028 till present)?
Do they know 2SCALE and how do they consider 2 SCALE advice compared with others.
What about agricultural inputs? Where did they obtain these in the past and present?
Challenges
What about access to credit? Trends over time
What about farmer organisations/cooperatives...Does everyone participate?
Men/women? Young/old?
<b>Output level</b>
Appreciation of service provision by 2SCALE and BSS (compared to others)
Appreciation and knowledge of the BC?
Contracts with the BC? Pricing mechanism
Functioning of farmer organisations and ABC: joint planning
Improved knowledge of better (climate-resilient) farming practices?
Improved market access and better terms?
<b>Outcome and impact level</b>
Changes in productivity/yields?
Increased production (yields but also expansion of land?)
Improved farming practices?
Diversification
Stronger negotiation position vis-à-vis BC and other VC actors?
<b>Sustainability</b>
Do they expect that benefits will last?
What are the main factors/challenges affecting lasting benefits?

## Annex 9 Phase 2 Methodology

### Evaluation Matrix

Table 1: Phase 2 Evaluation Matrix

Phase 2 evaluation questions	Indicators	Data collection and analysis methods	Sources
<b>1. RELEVANCE: Is the program doing the right things?</b>			
1.1.What are the main characteristics of the beneficiaries/stakeholders of 2SCALE, i.e SHFs and business partners? How have PPPs and food products been selected/targeted to enhance the terms of inclusion and to realise food and nutrition goals?	<p><b>Characteristics SHFs:</b></p> <ul style="list-style-type: none"> <li>• Male – female</li> <li>• Youth</li> <li>• Farm size</li> <li>• Main crops (food and cash crops)</li> <li>• Farming methods and use of inputs</li> <li>• Income sources</li> </ul> <p><b>Characteristics business champions:</b></p> <ul style="list-style-type: none"> <li>• Type of firm (grassroots, lead firm national or international)</li> <li>• Size</li> <li>• Focus</li> <li>• ESG adherence</li> </ul> <p><b>Selection process:</b></p> <ul style="list-style-type: none"> <li>• Selection criteria for PPPs, esp focusing on terms of inclusion and interpretation of selection criteria</li> <li>• Selection criteria on food products for PPPs</li> </ul>	<p>Desk research/portfolio analysis</p> <p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases</p> <p>Desk research/portfolio analysis focused on selection and rejection of PPPs</p> <p><i>Validation and triangulation</i></p>	<p><i>Strategic analysis:</i> Portfolio data, 2 SCALE documents, incl. AkvoLumen, Documents Selection committee Interviews: Selection committee members or FGD with selection committee, 2SCALE programme management and Board, MEAL team, all country teams Interviews for selected cases:</p> <p><i>Intermediate level analysis (desk cases):</i> Self-assessment reports, case study template filled out by MEAL team, folder with PPP documents 2SCALE team Interviews online or phone: For each case; responsible 2 SCALE team, Business champions</p> <p><i>Deep-dive assessment (field cases):</i> Similar to desk cases. In addition: Interviews with other Business Support</p>

	<ul style="list-style-type: none"> <li>• # of requests rejected on inclusion grounds</li> <li>• # of PPPs with positive appreciation of terms of inclusion</li> </ul>		Service providers, BoP-side value chain actors eg. Wholesalers, retailers. For sub-sector change: policy actors FGDs SHFs and if possible informal service providers
1.2 Did 2SCALE adequately respond to key needs of its stakeholders/beneficiaries, i.e. SHF, business champions, business service providers and were potentially conflicting interests adequately identified and addressed?	<ul style="list-style-type: none"> <li>• Identification of key needs of SHFs differentiated by gender and age</li> <li>• Identification of key needs of BCs</li> <li>• Identification of key needs of other stakeholders</li> <li>• Identification of food basket needs in the specific region or area</li> <li>• Recognition of potential conflicting needs and interests among stakeholders</li> <li>• Formulation and implementation of mechanisms to address conflicting interests incl mitigation</li> <li>• Perceptions of other stakeholders of the extent to which the 2SCALE approach has been relevant to changing development needs</li> </ul>	<p>Desk research/portfolio analysis</p> <p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases</p> <p><i>Validation and triangulation</i></p>	See above
1.3 Was 2SCALE adequately designed to contribute to the three overall objectives of increased sustainable food production and income for SHF, improved inclusive private sector growth and improved food consumption of nutritious	<ul style="list-style-type: none"> <li>• Clarity of objectives at different levels ie programme level and PPP level</li> <li>• Quality and consistency of ToCs at programme and PPP level</li> <li>• Alignment of 2SCALE objectives at various levels with MFA food and nutrition objectives</li> <li>• Adequacy of targets</li> </ul>	<p>Desk research strategic level /portfolio analysis</p> <p>Interviews strategic level</p> <p><i>Validation and triangulation</i></p>	<p>2 SCALE program documents as listed above plus case study documents</p> <p>Interviews esp. at strategic level: 2SCALE program management and Board, MEAL team, some country teams</p> <p>Strategic focus group discussion</p>

food by BoP consumers? Have adequate targets been defined?	<ul style="list-style-type: none"> <li>• Suitable and functioning 2 SCALE methods and procedures for enhancing coordination and deliberation among partners</li> </ul>		
1.4 Has the 2SCALE program been sensitive and responsive to the context and has the program been flexible to adapt to changes in context such as changes in the security situation or climate shocks?	<ul style="list-style-type: none"> <li>• Extent to which contextual factors have been taken into account in PPP strategies PPP ToCs;</li> <li>• Extent to which contextualized responses at different levels for different actors (e.g. needs related to agriculture, responses to emergency needs, environment degradation, climate change, gender equality, etc.) have been formulated and implemented;</li> <li>• Degree of flexibility of 2SCALE engagement to adjust to the changing context</li> <li>• Adequate 2SCALE risk assessment systems in place to identify and mitigate risks</li> </ul>	<p>Desk research/portfolio analysis</p> <p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases</p> <p><i>Validation and triangulation</i></p>	See ad 1.1. and 1.2
<b>2. EFFECTIVENESS: is the program achieving its objectives (outputs and outcomes)?</b>			
2.1 To what extent have outputs been realised?	<p><b>Sustainable food production outputs</b></p> <ul style="list-style-type: none"> <li>• Improved service provision, ie # of people reached</li> <li>• Better knowledge of eco-efficient farming practices, i.e. # of people trained</li> <li>• Improved access to inclusive finance</li> <li>• BSS capacity strengthened</li> <li>• # of SHFs reached</li> <li>• Improved market engagement for SHFs</li> </ul>	<p>Desk research/portfolio analysis</p> <p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases</p>	See 1.1 and 1.2 intermediate level analysis and deep-dive assessments

	<ul style="list-style-type: none"> <li>• Better joint planning</li> </ul> <p><b>Private sector development outputs:</b></p> <ul style="list-style-type: none"> <li>• # of (M) SMEs in partnerships (UII)</li> <li>• Strengthened capacity of SMEs - # of SMEs (UII)</li> <li>• Improved production /transformation processes</li> <li>• Improved product quality</li> <li>• Improved local sourcing</li> </ul> <p><b>Sub-sector change outputs:</b></p> <ul style="list-style-type: none"> <li>• Regular meetings informal change alliance</li> <li>• Joint planning</li> <li>• Joint action and follow-up</li> <li>• Establishment of knowledge platform</li> </ul> <p><b>Nutrition outputs:</b></p> <ul style="list-style-type: none"> <li>• Improved nutritious food products <ul style="list-style-type: none"> <li>• Improved awareness BoP consumers of nutritious food</li> </ul> </li> </ul>	Validation and triangulation	
2.2.To what extent have outcomes been realised?	<p><b>Sustainable food production outcomes:</b></p> <ul style="list-style-type: none"> <li>• # of SHFs with Increased food production and income (UII)</li> <li>• Changes in (eco-efficient) farming practices and skills - # of ha with eco-efficient farming practices (UII)</li> <li>• Diversification of crops</li> <li>• Empowered women and youth</li> </ul>	<p>Desk research/portfolio analysis</p> <p>Interviews strategic level, desk cases and field cases</p>	See 2.1 only intermediate level analysis and deep-dive assessment

	<ul style="list-style-type: none"> <li>Improved access to financial services for SHFs</li> </ul> <p><b>Private sector development outcomes:</b></p> <ul style="list-style-type: none"> <li>Increased turnover and/or profits</li> <li>Increased employment (decent jobs) - # of non-farming jobs (UII)</li> <li>Changed ways of doing business (business as unusual)</li> <li>Recognised partners; seat at the table</li> <li>Technical adoption of innovations - # of innovations adopted by MSMEs (UII)</li> <li>Improved access to financial services for SMEs (UII)</li> </ul> <p><b>Sub-sector change outcomes:</b></p> <ul style="list-style-type: none"> <li>Change in policy, procedures and regulations affecting sub-sector level partners</li> <li>Value chain actors work better together</li> </ul> <p><b>Nutrition outcomes:</b></p> <ul style="list-style-type: none"> <li># of BoP consumers with improved availability, and access to nutritious and affordable food (UII)</li> <li>Improved acceptability of nutritious food</li> </ul>	<p>Focus groups field cases</p> <p><i>Contribution analysis</i></p>	
2.4 What are the main explanatory factors -external and internal- for the realisation of outputs and outcomes?	<p><b>Internal factors:</b></p> <ul style="list-style-type: none"> <li>2 SCALE processes and procedures, such as incubation, acceleration of inclusive</li> </ul>	Desk research/portfolio analysis	See 2.1 and 2.2

	<p>agribusiness, adaptive management, MEAL-systems</p> <ul style="list-style-type: none"> <li>• 2 SCALE organization and capacity of staff</li> <li>• Targeting of support (incl selection)</li> <li>• Quality of partnerships and ownership of partners</li> <li>• Synergies realised among impact pathways and outcomes</li> </ul> <p><b>External factors:</b></p> <ul style="list-style-type: none"> <li>• Country context: governance, security, macro-economic situation, income level, gender equality, food security.</li> <li>• Ecosystems in relation to climate shocks.</li> <li>• Private Sector Development: enabling environment, investment climate, infrastructure, access to finance.</li> <li>• Food and nutrition: food availability (food products, volumes, food subsidies), BoP information</li> <li>• Other Development Partners active in inclusive agribusiness</li> </ul>	<p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases</p> <p><i>Validation and triangulation</i></p>	
<b>3. IMPACT: to what extent has the 2SCALE approach been replicated and did it lead to intended or unintended higher-level effects?</b>			
3.1 How plausible is it that 2SCALE Phase 2 PPPs have led to a significant change in production and income of SHFs, growth of private sector	<p><b>Impact plausibility:</b></p> <ul style="list-style-type: none"> <li>• Evidence of a significant change in production and income of SHFs</li> <li>• Evidence of growth of private sector (esp. MSMEs)</li> </ul>	Desk research/portfolio analysis	See 2.1, 2.2 and 2.3, but possible that given the lack of primary data, no good data can be collected.



<p>(esp. MSMEs and improved consumption of nutritious food by BoP consumers?</p> <p>3.2 To what extent and how did 2SCALE cause positive or negative, intended or unintended higher-level effects, including transformational change and replication of the 2SCALE approach?</p>	<ul style="list-style-type: none"> <li>• Evidence of improved consumption of nutritious food by BoP consumers</li> <li>• Evidence of increased resilience to climate shocks</li> <li>• Evidence of transformation change *nature of doing business, terms of inclusion, terms of access of BoP consumers to nutritious and affordable food</li> </ul> <p><b>Unintended positive and negative effects</b></p> <p><b>Replication:</b></p> <ul style="list-style-type: none"> <li>• Evidence that economic actors or stakeholders in the area or sub-sector have responded to novel ways of working emerging in the partnerships supported by 2SCALE with support from 2SCALE or without support</li> <li>• Evidence of engaging partners in replicating proven practices geared towards the realization of inclusive agribusiness</li> </ul>	<p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases</p> <p><i>Validation and triangulation</i></p> <p><i>Generalisation of Phase 1 IA?</i></p>	
<b>4. SUSTAINABILITY: will the benefits last?</b>			
<p>4. To what extent are outcomes of 2SCALE likely to continue?</p>	<p><b>Sustainability:</b></p> <ul style="list-style-type: none"> <li>• Institutional sustainability of results - evidence that institutions, such as BCs and BSS, will maintain the capacity and continue to deliver the same services</li> </ul>	<p>Desk research/portfolio analysis</p>	<p>See 2.1, 2.2 and 2.3, but possible that given the lack of primary data, no good data can be collected.</p>

	<p>without 2SCALE support, collaboration among partners will be continued</p> <ul style="list-style-type: none"> <li>• Financial sustainability (evidence that (increased income and production for SHFs and (M) SMEs will continue without external support)</li> <li>• Resilience of capacities and systems to address new sustainability challenges i.e.</li> <li>• Social sustainability: Terms of inclusion will continue to be improved, BoP consumers have lasting access to affordable and nutritious food</li> </ul>	<p>Interviews strategic level, desk cases and field cases</p> <p>Focus groups field cases <i>Validation and triangulation</i></p> <p><i>Generalisation of Phase 1 IA?</i></p>	
<b>5. ADDITIONALITY: what does the private sector add?</b>			
5.What is the additionality of 2SCALE in the funding of PPPs, taking into account development additionality, input additionality (financial and non-financial) and output additionality?	<p><b>Financial and non-financial input additionality:</b></p> <ul style="list-style-type: none"> <li>• Evidence that the public support could not have been funded by the private market eg to bridge the gap between the unviable phase of product or market development and long-term viable inclusive commercial business</li> <li>• Evidence on reduced risk and uncertainty during implementation</li> <li>• Evidence that BCs and other business partners continue with 2SCALE funded activities during phasing out and exit</li> <li>• Non-financial technical 2SCALE support to BCs and other business partners that could not have been funded by these business partners</li> </ul>	<p>Desk research/portfolio analysis</p> <p>Interviews strategic level, desk cases and field cases</p> <p><i>Additionality analysis</i></p>	<p><i>Strategic analysis:</i> Program documents on additionality, documents selection committee, portfolio data on 2SCALE contribution and private sector contribution</p> <p><i>Interviews:</i> Program management, financial team, selection committee, country teams</p> <p><i>Intermediate level analysis and deep-dive assessments:</i> See 1.1. and 1.2</p>

	<p><b>Output additionality:</b></p> <ul style="list-style-type: none"> <li>• Volume and trends in private sector financial contribution during the 2 SCALE support</li> <li>• Volume and types of private sector non-financial contribution</li> <li>• Evidence that the private sector contribution would not have happened without 2SCALE support</li> </ul> <p><b>Development additionality</b></p> <ul style="list-style-type: none"> <li>• The BC demonstrated commitment to ESG and inclusive agribusiness</li> <li>• The BC provides services or has a good dialogue with SHFs or MSMEs</li> <li>• The BC provides or sells products at affordable prices</li> <li>• The development outcomes and impact are more than what could have been achieved by ODA alone</li> <li>• Blended finance contributed to changes in the business environment, which would not have been possible with OPA or private sector funding alone</li> </ul>		<p><i>In the case studies, an attempt was made to collect relevant information regarding development additionality. However, insufficient robust information could be collected. Therefore, The ET refrained from assessing development additionality</i></p>
--	--	--	---

## Evaluation Questions

Table 2: Evaluation Questions

ToR questions	Impact assessment questions	Phase 2 evaluation questions	Comments
<b>1. RELEVANCE: Is the program doing the right things?</b>			
1. What type of smallholder farmers supply the business partners of 2SCALE? And what type of business partners are they supplying?	1.1. What are the main characteristics of the beneficiaries/stakeholders of 2SCALE, i.e SHF and business partners? How are they selected/targeted to enhance the terms of inclusion?	1.1. What are the main characteristics of the beneficiaries/stakeholders of 2SCALE, i.e SHF and business partners? How are they selected/targeted to enhance the terms of inclusion? 1.2 Did 2SCALE adequately respond to key needs of its stakeholders/beneficiaries, i.e. SHF, business champions, business service providers and were potentially conflicting interests adequately identified and addressed? 1.3 Was 2SCALE adequately designed to contribute to the three overall objectives of increased sustainable food production and income for SHF, improved inclusive private sector growth and improved food consumption of nutritious food by BoP	The OECD-DAC definition of relevance comprises four dimensions: responding to needs, policies and priorities; being sensitive and responsive to context; quality of design; and responsiveness over time. All four dimensions are relevant for 2SCALE. Therefore, these dimensions have been included in the reformulated relevance questions based on the reconstructed Theory of Change. In addition, the question on the characteristics of smallholders and stakeholders is not only relevant for the impact assessment but for the entire evaluation.
5. Relevance: To what extent and in what ways was 2SCALE able to harmonize inclusive agribusiness and food and nutrition security? <ul style="list-style-type: none"> <li>Was the selection of the food product(s) central to the incubated partnerships proper for ensuring access to affordable and nutritious food given the food basket needs in the specific areas or sub-sectors?</li> <li>Was the program able to bring the food</li> </ul>			

<p>and nutrition security goals in line with priorities and strategies of its business partners?</p> <ul style="list-style-type: none"> <li>o Were the program's methods and procedures suitable for enhancing deliberation and coordination among and with partners to strategize towards food and nutrition security goals?</li> <li>o Was the program capable of supporting its partners in responding to emerging changes and shocks while keeping direction towards food and nutrition security?</li> </ul>		<p>consumers? Have adequate targets been defined? Have adequate mechanisms and procedures for selection of PPPs and for coordination and consultation mechanisms been established?</p> <p>1.4 Has the 2SCALE program been sensitive and responsive to the context and has the program been flexible to adapt to changes in context such as changes in the security situation or climate shocks?</p>	
<b>2. EFFECTIVENESS: is the program achieving its objectives (outputs and outcomes)?</b>			
<p>6. To what extent and through what type of activities, interventions and partnerships has 2SCALE achieved or will achieve the incubation and acceleration of inclusive agribusiness?</p> <ul style="list-style-type: none"> <li>o To what extent has 2SCALE supported partnerships in prioritizing and achieving immediate, intermediate, and ultimate outcomes and, if needed, re-strategize?</li> <li>o How successful have the program and</li> </ul>		<p>2.1 To what extent have outputs been realised?</p> <p>2.2. To what extent have outcomes been realised?</p> <p>2.3 What are the main explanatory factors -external and internal- for the realisation of outputs and outcomes?</p>	<p>The questions have been reformulated to reflect the reconstructed Theory of Change with a focus on output and outcome realisation in the various domains.</p> <p>2SCALE processes such as incubation and acceleration are means to achieve outcomes, and therefore they are part of the explanatory factors. Target</p>

<p>the country teams been in building an optimal portfolio of projects to achieve its outcomes and contribute to food and nutrition security impacts?</p> <p>o How realistic has the program been in setting targets and supporting partners in identifying do-able and demonstrable outcomes and impacts?</p>			<p>setting is part of the relevance assessment (see EQ 1.3).</p>
<p><b>3. IMPACT: what difference does the intervention make?</b></p>			
<p>2. Income: Did incomes of smallholder farmers supplying the inclusive agribusinesses partnering with 2SCALE increase consistently over time? How many smallholder farmer households, at partnership and possibly at program level, have increased income and what is the average change (in %) of income because of 2SCALE?</p> <p>3. Productivity: Did productivity levels of smallholder farmers supplying the inclusive agribusinesses partnering with 2SCALE increase consistently over time? How many smallholder farmers, at partnership and possibly at program level, have increased productivity and what is the average change</p>	<p>3.1 Did productivity and production levels of SHFs partnering with 2SCALE increase over time?</p> <p>3.2 Did 2SCALE lead to more sustainable eco-efficient farming practices, allowing SHFs to cope better with climate shocks?</p> <p>3.3 Did incomes of SHFs partnering with 2SCALE increase over time?</p>	<p>3.3 How plausible is it that 2SCALE Phase 2 PPPs have led to a significant change in the livelihoods of the intended beneficiaries?</p> <p>3.4 To what extent and how did 2SCALE cause positive or negative, intended or unintended higher-level effects, including transformational systemic change and replication of the 2SCALE approach?</p>	<p>As the evaluation questions in the ToR for the impact assessment (EQ 2,3 and 4) include references to specific indicators, the questions have been broadened. The specific indicators and trends in indicators over time will be elaborated separately.</p> <p>EQ7 in the ToR regarding impact includes effectiveness questions, such as on outcomes, system change at outcome level and explanatory factors, which have been captured in the reformulated effectiveness</p>

<p>(in %) of productivity because of 2SCALE?</p> <ul style="list-style-type: none"> <li>Productivity levels depend on the type of crops or products, the seasonality of production, the combination of surplus sold to commercial buyers and the use for household purposes, and the amounts of agricultural inputs applied. In addition, productivity is contingent on context-specific agro-ecological conditions.</li> </ul> <p>4. Resilience: Did the resilience of smallholder farmers targeted by 2SCALE increase because of the alignment with the inclusive agribusiness?</p> <p>7. Impact: To what extent has the modus operandi of 2SCALE generated or is expected to generate the interrelated outcomes and impact targets as specified in its theory of change?</p> <ul style="list-style-type: none"> <li>To what degree do 2SCALE's facilitation, co-investments and technical assistance provided to partnerships demonstrate additionality?</li> <li>What type of partnership-level impact</li> </ul>			<p>questions.</p> <p>Given the emphasis in the ToR on assessing development and input additionality, and in line with literature and the methodology developed for the IOB climate finance evaluation<sup>1</sup>, additionality is a separate evaluation criteria (see below).</p> <p>The EQs 3.3. and 3.4 deal with main impact issues.</p>
---	--	--	---

<sup>1</sup> IOB, May 2021, Funding commitments in transition. Dutch climate finance for development 2016-2019, p.80-103

<p>pathways have been more effective in contributing to systemic change in agribusiness and transformative processes in a sub-sector?</p> <ul style="list-style-type: none"> <li>o What were any plausible unintended positive (or negative) effects of the partnerships not captured by the program's M&amp;E-system?</li> <li>o Systemic Changes: To what extent and in what ways was 2SCALE able to contribute directly or indirectly to changes in nature of doing business and the related modification of the terms of inclusion of smallholder farmers, SMEs and micro-entrepreneurs and the terms of access of BoP-consumers in context-specific food provisioning systems?</li> </ul>			
<b>4. SUSTAINABILITY: will the benefits last and are they likely to be replicated?</b>			
<p>8. Sustainability: To what extent are outcomes and impacts of 2SCALE likely to continue?</p> <ul style="list-style-type: none"> <li>o What was the contribution of internal processes, methods and/or structures in place to support the continuation of inclusive agribusiness fostering food and</li> </ul>	<p>4. To what extent have the intended impacts been sustained over the years, for PPPs incubated during the first phase of 2SCALE for which the support was withdrawn?</p>	<p>4. To what extent are outcomes and impacts of 2SCALE likely to continue or to be replicated by other actors in the region?</p>	<p>In principle, the sustainability question focuses on lasting benefits for stakeholders. In this case, evidence for replication of 2SCALE approaches and benefits are part of the sustainability question, as indicated in the ToR.</p>



<p>nutrition security beyond the support of 2SCALE?</p> <ul style="list-style-type: none"> <li>o To what extent are supporting practices offered by coaches or Business Service Suppliers integrated into the operations and cost structure of inclusive agribusiness and/or value chain?</li> <li>o To what extent and in what form did other economic actors or stakeholders in the area or sub-sector respond to novel ways of working emerging in the partnerships supported by 2SCALE?</li> <li>o To what extent was the program able to engage its partners in replicating proven practices geared towards the realization of inclusive agribusiness?</li> </ul>			<p>Explanatory factors are included in the effectiveness question and will not be repeated here.</p>
<b>5. ADDITIONALITY: what does the private sector add?</b>			
<p><i>To what degree do 2SCALE's facilitation, co-investments and technical assistance provided to partnerships demonstrate additionality?</i></p>		<p>5.What is the additionality of 2SCALE in the funding of PPPs, taking into account development additionality, input additionality (financial and non-financial) and output additionality?</p>	<p>The ToR pays specific attention to the assessment of various types of additionality, which can be considered as a separate evaluation criterion. Defining and assessing additionality is notoriously difficult.<sup>2</sup> Various</p>

<sup>2</sup> IEG, WBG, June 2022, what next for additionality: promoting better understanding of its role in development?

			types of additionality have been distinguished by IOB and others, which are reflected in the reformulated EQ, which will be further elaborated in the methodology.
--	--	--	--



# Case Study Template

CASE STUDY: NUMBER AND NAME

## 1. Key characteristics and methods

Business Champion, name and type	
Industry	
Commodity	
Start date: planned and actual	
End date	
Background	
Methods	

1.

**Overall assessment**

Relevance

*1.1 Main characteristics of beneficiaries, terms of inclusion including gender*

*1.2 Design of the PPP, ToC*

*1.3 Addressing key needs of stakeholders, context sensitivity*

2.

**Overall assessment**

Effectiveness

*2.1 Outputs and outcomes Smallholder Farmers*

	Target: initial and revised	Baseline value 2019	Achieved 2023 (2SCALE)	Achieved (evaluation team)	Comments
UII2: # of SHFs					
UII3: # of EEP ha					

*2.2 Outputs and outcomes Private Sector*

	Target: initial and revised	Baseline value 2019	Achieved 2023 (2SCALE)	Achieved (evaluation team)	Comments
UII5 # of non- farming jobs					
UII6 # of MSMEs					

### 2.3 Outputs and outcomes BoP consumers

	Target: initial and <i>revised</i>	Baseline value 2019	Achieved 2023 (2SCALE)	Achieved (evaluation team)	Comments
UII1  # of BoP consumers					

### 2.4 Other outputs and outcomes and explanatory factors

## 3. Impact and sustainability

### **Overall assessment**

#### 3.1 Impact

#### 3.2 Sustainability

## 4.

*Overall assessment*

**Additionality**

*4.1 Financial and non-financial input additionality*

*4.2 Output additionality*

*4.3 Development additionality*

## Annex 10 List of Documents

Documents Consulted for the Evaluation
2SCALE Highlights Report 2017
2SCALE Highlights Report 2018
2SCALE Highlights Report 2019
2SCALE Highlights Report 2020
2SCALE Highlights Report 2021
2SCALE Highlights Report 2022
2SCALE Annual Report 2017
2SCALE Annual Report 2018
Incubating Inclusive Agribusiness 2SCALE 2012 – 2018 End-of-program Report
2SCALE 2019 Narrative Progress Report
2SCALE Year Two Narrative Progress Report Overview 2020
2SCALE Year Three Narrative Progress Report Overview 2021
2SCALE Year Four Narrative Progress Report Overview 2022
Mid-term Review of 2SCALE – SEO Final Report 2021
Impact Evaluation of 2SCALE: Endline Report, J. Bonilla & N. Rai (2018)
External Evaluation 2SCALE, 2012-2017, SEO Amsterdam Economics
2SCALE Management Team consolidated reply to the SEO final report (2 <sup>nd</sup> Draft) 2SCALE External Evaluation 2012-2017
2SCALE's Program Level Theory of Change September 2020 (final)
Monitoring and Evaluation in 2SCALE Programs working in complex, rapidly changing environments, November 2023
Business as unusual insights from 2SCALE project
Towards Sustainable Clusters in Agribusiness through Learning in Entrepreneurship (2SCALE) Performance Monitoring Plan
Inception Report for the Impact Evaluation of "Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship
Towards Sustainable Clusters in Agribusiness through Learning in Entrepreneurship (2SCALE) Performance Monitoring Plan at Program level version December 2015
Evaluation of 2SCALE: Baseline Report, AIR, 2016



Gender Mainstreaming in Agribusiness Partnerships, insights from 2SCALE
Manual 2SCALE Private Sector Contribution June 2021
The reflect & Adapt process in 2SCALE, January 2021
Realist impact evaluation; an introduction. Methods Lab publication. Overseas Development Institute. Westhorp G. 2014.
2SCALE Proposal 2019-2023, IDCC, SNV, PRC
2SCALE Public-Private Partnership Proposal, IFDC, BoP, ICRA
Investing in Global Prospects. MFA, 2020
Agricultural productivity in Kenya: barriers and opportunities. Izzy Birch December 2018. UK Department for International Development
Small family farms data portrait basic information document Methodology and data description. FAO, 2017.
Peer review of the Draft Monitoring, Evaluation and Learning Approach developed for the 2SCALE Program. IDS, CDI, November 2019
2SCALE, October 2020, Fura with a difference: A modernized way.
2SCALE, Guidelines, addressing sub-sector system challenges to accelerate inclusive business, Work document for facilitating sub0sector systems change, Version 2 March 2021.
Marijn Faling and Sietze Vellema, Contribution analysis manual, Version 3, 1st December 2023
IOB evaluation 2021, Funding commitments in transition. Dutch climate finance for development 2016-2019, May 2021,
Demonstrating additionality in working with the private sector, A summary. Evaluation Cooperation Group, 2022, Report on Additionality, DCED, 2017
Value Chain Laboratory, 2017. Alternative evaluation method for assessing value chain dynamics by Wageningen University
Agribusiness cluster formation & development Strategy, October 2020, Ultimate outcome protocol guide
Public-Private Partnerships in 2SCALE Protocol – Version of April 8, 2019
Agribusiness cluster formation & development Strategy, October 2020
Reflect and Adapt evaluation note-2021
2SCALE's Program-level Theory of Change, September 2020
MFA, 2019, Investing in Global Prospects
Investeren in Perspectief (Beleidsnota 2018)
IOB, 2021, Coherence or Co-existence, A Study on the Implementation of the Aid, Trade and Investment Agenda in three Partner Countries; Bangladesh, Ethiopia and Kenya

## Annex 11 Portfolio Overview

Table 1: Portfolio Overview

PPP codes 2	Status (2.5 years)	Industry	Actual Private sector contribution	Actual 2SCALE financial contribution	# UII2 SHF revised targeted	# UII2 SHF reached 2022 (val.)	# UII2 SHF reached 2023	# UII1 BOP revised targeted	# UII1 BOP reached 2022 (val.)	# UII1 BOP reached 2023
BF21_Cassava_Nananim	Phase 2 PPPs for analysis	Staple Crops	794086	1015906	6817	10410	10411	56945	63811	63811
BF22_Soybeans_Siatol	Phase 2 PPPs for analysis	Soy and Oil Seeds	1513534	1025578	3198	4324	4324			
BF23_Maize_FAGRI	Stopped or Suspended	Staple Crops		206466	0	0				
BF24_Groundnuts_Innofaso	Phase 2 PPPs for analysis	Soy and Oil Seeds	1828230	762046	8247	8247	1193	5000	2348	930
BF25_Rice_Nebnooma	Phase 2 PPPs for analysis	Staple Crops	526275	761804	62263	89752	89752	62933	112336	112336
BF26_Vegetable_Bioprotect	Phase 2 PPPs for analysis	Fresh Produce	421023	761935	18067	18068	6142	25122	52679	52679
BF27_Maize_Agroserv	Phase 2 PPPs for analysis	Staple Crops	1321055	725260	29904	25531	37961			0
BF28_Poultry_Sobupra	Phase 2 PPPs for analysis	Animal production Related	1096777	666561	26159	26161	11733			
EG21_Vegetables_SFII	Stopped or Suspended		2073							
EG22_Groundnuts_Kernile	Stopped or Suspended		951							
ET06_Indigenous oilseeds_Tsehay	Phase 2 PPPs for analysis	Soy and Oil Seeds	2042705	741034	40000	33907	33907	55000	25740	3307
ET10_Sorghum_FCU	Stopped or Suspended	Staple Crops	3676	211049	3102	3102		0		
ET21_Spices_Damascene	Phase 2 PPPs for analysis	Fresh Produce	576012	626876	6000	5577	5230	0		

ET22_Maize_EATBI	Phase 2 PPPs for analysis	Staple Crops	264593	227804	22000	19772		15000		
ET23_Honey_BMFCU	Phase 2 PPPs for analysis	Animal production Related	225827	575316	7000	7707	7707	35000	24251	0
ET24_Beans_Ras-Gaint	Phase 2 PPPs for analysis	Staple Crops	1539647	608852	39000	36212	36212	20000		
ET25_Teff_Kesem	Phase 2 PPPs for analysis	Staple Crops	524166	676992	40666	35483	32075	50000	35883	24877
ET26_Dairy_Evergreen	Stopped or Suspended	Animal production Related	283430	202077	6898	869		50000	16131	0
ET27_Poultry_Chico Meat	Phase 2 PPPs for analysis	Animal production Related	162688	434419	0	0		55000	66902	66902
ET28_Vegetables_Awash Olana FCU	Phase 2 PPPs for analysis	Fresh Produce	231456	475935	22000	6961		20000	914	0
Maize-Dairy/ AKF-FAMILY MILK-ETETE	LIS_phase1	Animal production related		9490						
GH09_Sorghum_Faranaya	Phase 2 PPPs for analysis	Staple Crops	1398008	1494123	15523	24455	7493	14500	14255	8406
GH21_Maize_Kedan	Phase 2 PPPs for analysis	Staple Crops	1244310	1350761	11460	23431	10950	6500	7897	0
GH22_Rice_Tamanaa	Phase 2 PPPs for analysis	Staple Crops	1023026	732695	12608	23374	3135	39000	39820	23000
GH23_Soybean_Rujo Agritrade	Phase 2 PPPs for analysis	Soy and Oil Seeds	2360579	1276670	11523	21707	9119	0		
GH24_Poultry_Rockland	Phase 2 PPPs for analysis	Animal production Related	2384001	859778	15553	8624	5835	15000	37376	26391
CIV21_Groundnuts_K'Chibo	Stopped or Suspended	Soy and Oil Seeds	97722	115628	0	0				
CIV22_Rice_Syndicated_Locagri	Phase 2 PPPs for analysis	Staple Crops	805524	1099008	29100	59302	8170	20000	32726	952
CIV23_Fresh produce_Canaan Land	Phase 2 PPPs for analysis	Fresh Produce	66374	504919	2070	329		15000	15187	

Poultry_KDS	Phase 2 PPPs for analysis	Animal production Related	869162	690451	15313	21033	6099	30000	124032	124032
Cassava_PKL	Phase 2 PPPs for analysis	Staple Crops	180392	368878	20184	19913	51	10000	13254	13254
KE11_Dairy_KDPL	Phase 2 PPPs for analysis	Animal production Related	558201	1075049	8000	8121	8117	70000	156763	156763
KE21_African Indigenous vegetables_Sweet 'n' Dried	Phase 2 PPPs for analysis	Fresh Produce	208554	628667	1400	228	228	15000	17144	17144
KE22_Groundnuts_Batian	Phase 2 PPPs for analysis	Soy and Oil Seeds	371241	754882	5000	673	120	10000	0	0
KE23_Vegetables_Neighbourhood Freshmart	Phase 2 PPPs for analysis	Fresh Produce	228102	645338	3160	559	43	30000	53813	11194
KE24_Soybean_Prosoya	Phase 2 PPPs for analysis	Soy and Oil Seeds	635877	689400	11000	825		20000	2847	0
KE25_Poultry_Homerange	Stopped or Suspended	Animal production Related	250106	404859	6400	3164		5000		
KE26_Soybean_ENP	Phase 2 PPPs for analysis	Soy and Oil Seeds	1015321	928829	13000	8234	3481	30000	3070	226
KE27_Beans_Yash Commodities	Stopped or Suspended	Staple Crops	137069	227122	2383	143		0		
KE28_Dairy_Meru Dairy Union	Phase 2 PPPs for analysis	Animal production Related	2121396	727815	70000	93491	93491	350000	198784	198784
KE29_Cassava_Mhogo Foods	Stopped or Suspended	Staple Crops	110623	251179	4000	131		25000	2657	0
KE30_Sorghum & millet_Tegemeo	Phase 2 PPPs for analysis	Staple Crops	1054702	666663	12500	11819	11775	10000	2069	0
Dairy/ ELDOVILLE	LIS_phase1	Animal production related	7655	47970						
Rice/PO-MRGM	LIS_phase1	Staple crops	2352	73535						
Sorghum/ SHALEM	LIS_phase1	Staple crops	12332	46375						
Rice/Nyabon	LIS_phase1	Staple crops	20373	69415						
Maize/SONAF	LIS_phase1	Staple crops	9766	58919	35000					

ML05_Vegetables_SCS	Phase 2 PPPs for analysis	Fresh Produce	685731	1030976	11000	11842	11842	30000	15246	2061
ML06_Soybeans_EKT	Stopped or Suspended			29105						
ML21_Rice_Siguida Yeleen	Phase 2 PPPs for analysis	Staple Crops	512580	926866	10700	10375	10375	38000	20762	993
ML22_Dairy_Translait	Phase 2 PPPs for analysis	Animal production Related	1570369	882591	20000	95294	95294	60000	55443	37154
ML23_Soybeans_Keitala Negoce	Phase 2 PPPs for analysis	Soy and Oil Seeds	419993	667898	19000	8900	6130	45000	7654	1115
ML24_Fresh juice_Zabbaan	Stopped or Suspended	Fresh Produce	194869	367524	1000	1108		12000	12000	0
ML25_Fonio_Processors	Phase 2 PPPs for analysis	Staple Crops	209201	476064	21000	11074	11074	30000	11358	6174
ML26_Rice_Soprotrilad	Phase 2 PPPs for analysis	Staple Crops	949916	412054	28000	34048	34048	0		
ML27_Poultry_Wasaso	Stopped or Suspended	Animal production Related	91067	273298	1000	4		10000	10307	0
NE21_Dairy_RAB	Stopped or Suspended	Animal production Related	0	18871		0				
NE22_Cassava_COPROMA	Phase 2 PPPs for analysis	Staple Crops	375719	864483	14846	846	5791	13105	21488	21488
NE23_Groundnuts_AINOMA	Phase 2 PPPs for analysis	Soy and Oil Seeds	1048307	839671	21458	14592	14592	27095	43496	43496
NE24_MORINGA_Goroubi	Phase 2 PPPs for analysis	Fresh Produce	382524	597104	6262	1506	1506	23279	23288	64
NE25_Maize_AVINIGER	Phase 2 PPPs for analysis	Staple Crops	82514	507826	6525	325		0		
NE26_Potato_CCPHN	Phase 2 PPPs for analysis	Fresh Produce	2085617	810583	32281	19294	7770	64000	59042	6188
NE27_Poultry_Nuseb	Phase 2 PPPs for analysis	Animal production Related	535351	544450	12295	1712	1716	12263	11094	0

NE28_Millet_Mooriben	Phase 2 PPPs for analysis	Staple Crops	551570	522625	33000	20051	20852	10258	19982	19982
NG01_Dairy_FCW	Phase 2 PPPs for analysis	Animal production Related	12890697	873874	9290	6443	938	150000	332196	287240
NG09_Sorghum_Aggregators	Phase 2 PPPs for analysis	Staple Crops	5206352	1020731	42000	34606	20579	60000	45817	45411
NG11_Vegetables_Evergreen	Stopped or Suspended	Fresh Produce		41060		0			0	
NG12_Onion_TFL	Phase 2 PPPs for analysis	Fresh Produce	281029	612549	10000	9474		0		
NG21_Cassava_Promise Point	Phase 2 PPPs for analysis	Staple Crops	389775	458655	5000	5031		0		
NG22_Groundnuts_L&L	Phase 2 PPPs for analysis	Soy and Oil Seeds	457262	461437	6000	6670		20000	17755	154
NG23_Plantain_Crystal Dominion	Stopped or Suspended	Fresh Produce	148360	384214	3000	3177		0		
NG24_Dairy_Nestle	Phase 2 PPPs for analysis	Animal production Related	1649816	604625	3297	404	80		1397	
NG25_Oilpalm_Okomu	Phase 2 PPPs for analysis	Soy and Oil Seeds	7396109	708321	6500	2256	155	30000	68641	22552
NG26_Cassava_Cato Foods	Phase 2 PPPs for analysis	Staple Crops	232440	511923	4080	1241	264	40000	4887	767
NG27_Maize_AFEX	Phase 2 PPPs for analysis	Staple Crops	160905	545616	42000	60951	35432	0		
NG28_Vegetables_RBC-VDS	Phase 2 PPPs for analysis	Fresh Produce	695853	321285	5500	3564	3564	0		
NG29_Dairy_Promasidor	Stopped or Suspended	Animal production Related		48645	0	0		0		
Soybeans/PO	LIS_phase1	Soy & oil seeds		14930						
Cassava-syrup/Psaltry, NB	LIS_phase1	Fresh produce		70625						
Chili Pepper/ACCE Foods	LIS_phase1		0	27780	2000	0	0			

SS21_Maize_Kanybek	Phase 2 PPPs for analysis	Staple Crops	74259		850	1349	1349	10000	6300	6300
SS22_Maize_Eden and Nzara unions	Phase 2 PPPs for analysis	Staple Crops	71420		4000	3877	3436	10000	7633	7633

Source: ADE-KIT from M&E 2SCALE Data

Table 2: Portfolio Overview Summary

Status (2.5 years)	Sum of Actual Private sector contribution	Sum of Actual 2SCALE financial contribution	Sum of # UII2 SHF revised targeted	Sum of # UII2 SHF reached (validated - AV)	Sum of # UII2 SHF reached (not validated, 2023, AL)	Sum of # UII1 BOP revised targeted	Count of # UII1 BOP reached (validated)	Sum of # UII1 BOP reached 2023 (not validated)
LIS phase1	52478	419039	37000	0	0			
Phase 2 PPPs for analysis	68508156,22	39782452,5	963599	1019952,693	731541	1758000	46	1413760
Stopped or Suspended	1319946,28	2781095,863	27783	11698,4033	0	102000	6	0
Grand Total	69880580,5	42982587,36	1028382	1031651,097	731541	1860000	52	1413760

Source: ADE-KIT from M&E 2SCALE Data