idh
transforming markets

FarmFit Learning Framework

2nd Edition

The Learning Framework underpins a great deal of the work carried out by FarmFit and has four key purposes

This document provides an overview of the FarmFit Learning Framework, replacing the first comprehensive Learning Framework that was developed in 2020. Having received constructive feedback on the initial Learning Framework, this updated version incorporates the notion of innovations, provides a more comprehensive overview of our learning activities, better accommodates our qualitative learning agenda and provides greater clarity

	Purpose	Why does it matter?	How is it used?
1	**Supports business development**	Guides the sectors and organizations with which we choose to work with	• Insights generated can be mapped against the Learning Framework to identify gaps in knowledge • During business development, these learning gaps can be prioritized in the scoring matrices to ensure that additional SDM Analyses and TA Projects are additional
2	**Guides data collection processes**	Allows us to measure the performance of SDMs and compare business models and contexts	• The Learning Framework is operationalized into a series of data collection tools and templates (e.g., SDM indicator template, Enabling Environment Survey, PDC Question Library, TA KPIs, Data Request Template) • During SDM Analyses and TA Projects these data collection tools and templates are used to collect relevant data in a semi-standardized format to facilitate comparison and analysis
3	**Informs analysis to be undertaken**	Ensures that SDM analyses, TA engagements and aggregate analyses are answering relevant questions for the sector	• On an individual project/case basis, the questions and hypotheses of the Learning Framework are consulted by Business Support teams to select/prioritize engagements and, within engagements, to guide analysis and inquiry • At an aggregate level, the questions and hypotheses of the Learning Framework are used by the Intelligence Centre to conduct analyses across the full portfolio of data and insights
4	**Outlines the innovations we seek to test**	Provides guidance on what innovations can help resolve challenges and boost performance	• During SDM Analyses, the innovations can be consulted to investigate opportunity pathways and provide recommendations to SDM operators on potential improvements • During TA projects, these innovations are designed and implemented to improve the performance of an SDM. The outcomes of the implementation of these innovations are then evaluated

Document overview

	Section	Content	Mainly relevant for
Core Slides	Introduction	High-level overview on core concepts in addition to why and how we learn	All internal and external colleagues seeking to understand what is meant by our Learning Framework and what it consists of
Core Slides	Approach to Learning	Overview of what we are seeking to measure in terms of performance and how we aim to learn what drives performance	
Core Slides	Approach to Innovation	How we understand innovation and the areas that we are seeking to prioritise when innovating with our clients	
Annex	Performance Outcome Indicators	Overview of SDM, TA and PDC indicators that are used to measure performance	IC: Data team, Innovation Managers, M&E BS: SDM Analysts, TA Managers
Annex	Performance Outcome Mapping	Further information on what are the drivers that we consider to most directly influence different outcomes	IC: Data team, Innovation Managers BS: SDM Analysts
Annex	Driver Details	Detailed information on each of the drivers in the framework, including definitions, innovations, learning questions and hypotheses	IC: Data team, Innovation Managers, M&E BS: SDM Analysts, TA Managers
Annex	Innovations Catalogue	Non-exhaustive set of priority innovations and the expected outcomes from their implementation	IC: Innovation Managers BS: SDM Analysts, TA Managers

Introduction

We aim to catalyse innovation in the private sector and contribute to market transformation

We aim towards …	We do that by …	We learn…
Smallholder agricultural markets which are **inclusive, sustainable and commercially viable** While we recognize that achieving this requires broad action across multiple areas*, we believe the private sector is vital to leading and driving the transformation**	Focusing on private sector development, and providing four complementary types of support: • Analytics (SDM analyses) • Technical support (TA) • Catalytic financing (FarmFit Fund) • Intelligence and insights (FarmFit Intelligence)	About what drives SDM performance and how to get companies to innovate, i.e., to change their behaviour and service delivery design to enhance how they **create, deliver, capture and distribute value**

* E.g., Policy and regulatory support; R&D and academia; technological innovation; etc.
** Further elaboration of this thinking in the Private Sector Development Strategies Insights Brief (section 3)

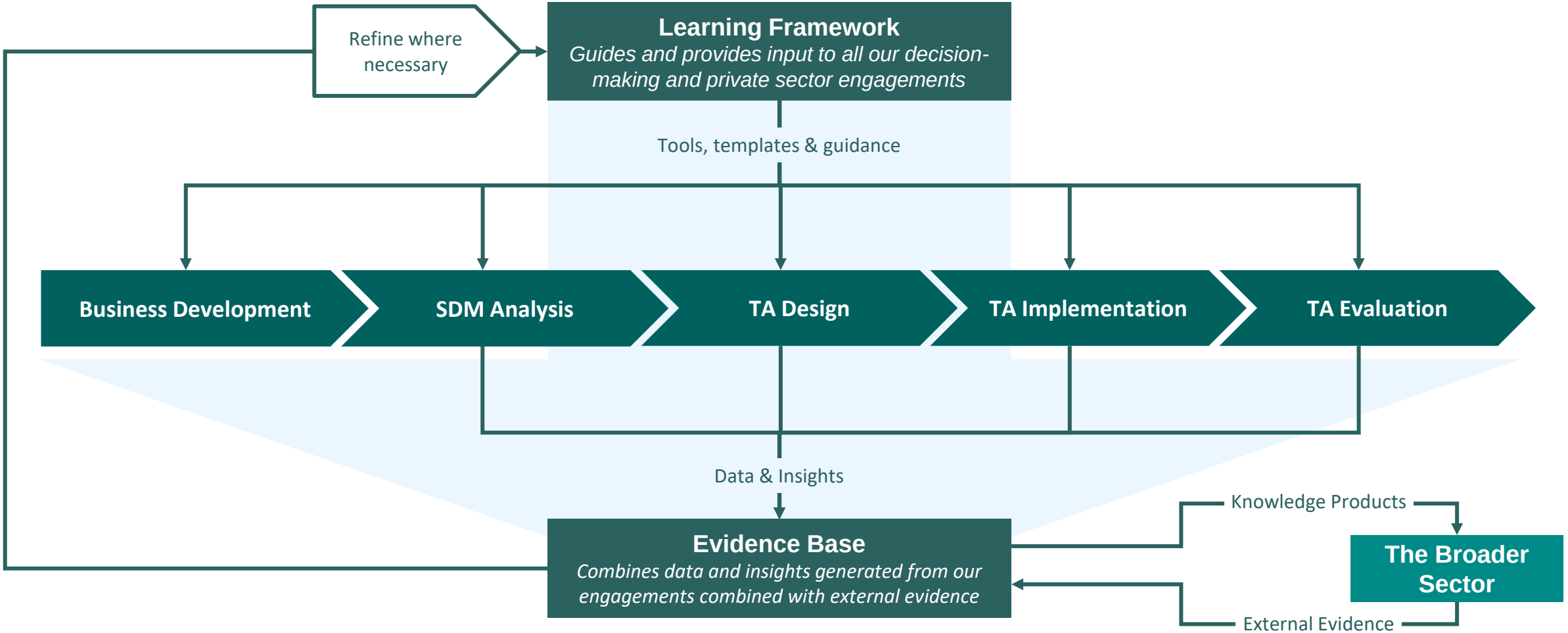
The Intelligence Centre aims to generate insights and share advice on what works where, why and how to the broader sector

Type of Insights	1 What works where?	2 Why things work?	3 How to implement?
			
Description	Identify patterns, trends, solutions and innovations at business- and farm-level through case studies and aggregate analysis	Assess the challenges & success factors around service delivery, while generating proof of concept through testing innovations in TA	Understand the steps involved in the implementation of interventions and innovations
Key Audiences	• Companies • Investors • Support Organizations	• Companies • Governments • Support Organizations	• Companies • Support Organizations

Data Sources

- SDM Analyses
- Technical Assistance Projects
- 3rd Party External Evidence

The Intelligence Centre works closely with Business Support teams to direct learning and uses generated insights to spur innovation



In the subsequent slides on the Learning & Innovation Framework, a number of core concepts are used

Concept	Description
Service Delivery Model	Supply chain structures which provide services, such as training, access to inputs and finance to farmers to improve their performance and ultimately their profitability and livelihoods
Learning Questions	Represent lines of enquiry for our learning. These are selected and prioritized based on how relevant and impactful we believe these are
Performance Outcomes	The factors which we measure to assess the relative performance of different service delivery models and interventions
Drivers	Factors that influence the performance of service delivery models. These drivers can be related to the context that an SDM operates within as well as the design of an SDM
Innovations	Substantive changes to SDMs based on the application of learnings. Innovations can include new products, services, methods, models, and technologies that enhance the creation, delivery, capturing and sharing of value
Hypotheses	Statements that reflect our expectations based on internal or external evidence, and which we seek to prove (or disprove) through analysis
Indicators	Indicators represent ways of measuring performance (quantitatively) or codifying drivers (qualitatively and quantitatively) which facilitates the comparison across different SDMs and interventions

Learning: Performance, Themes and Drivers

idh
transforming markets

Our Learning Framework is anchored by a single overarching learning question and six sub-questions

- We believe that **the private sector should play a leading role in driving agricultural transformation** to improve outcomes for smallholder agricultural markets. **This requires well-functioning SDMs** for the delivery of goods and services as well as farmer access to markets
- To build and improve SDMs that deliver value to farmers while being commercially viable, replicable and investable, we believe **6 key dimensions** need to be optimized and in balance with each other. Our Learning Framework seeks to understand each of these components

Under what conditions can SDMs and coalitions/partnerships of SDMs be **effective**, **cost-efficient**, **resilient** and create a **sustainable return** on investment, at **scale**?

Effectiveness	Resilience	Efficiency	Revenue Generation	Scalability	Risk
• How can SDMs effectively improve farmer livelihoods?	• How can SDMs improve farm-level resilience?	• What drives the costs of service delivery and sourcing?	• How can SDM operators generate revenues from service provision?	• What improves the scaling potential of an SDM?	• How can the risk profile of SDMs be reduced?

We measure the performance of SDMs using outcomes linked to each of the six learning questions

Farm-Level Performance Outcomes	
Effectiveness	Income
	Productivity
	Gender Empowerment
	Farmer Satisfaction
Resilience	Income Stability & Diversification
	Climate Resilience
	Food Security
	Poverty Status

Business-Level Performance Outcomes	
Efficiency	Cost-to-Service
	Cost-to-Source
Revenue Generation	Service Revenues
	Sourcing Income
Scalability	Scale & Growth
Risk	Credit & Market Risk
	Cash Flow & Performance Stability
	Balance Sheet Position

See annex for more details on how we measure each outcome

Our Learning Framework represents a more comprehensive approach to understanding what drives outcomes than peer organizations

Learning Approach 1.0	Learning Approach 2.0	Learning Approach 3.0
Report on activities related to an intervention	Measure outcomes after an intervention	Analyze how context and business model design influence the outcomes of an intervention

- Going further than most organizations in the sector, the Farmfit approach combines **deep analysis within individual SDMs** with **aggregate analysis across different SDMs**
- To better understand what drives the relative performance outcomes of different SDMs, these analyses look at the influence of two types of drivers:
  - → **Design Drivers:** Factors within the direct control of the SDM, e.g., the farmer engagement strategy and the SDM's operational structure
  - → **Contextual Drivers:** Factors that the SDM operator typically does not have direct control over, e.g., farming systems, market dynamics and the enabling environment
- On the next page, we list **a non-exhaustive list of drivers** that we have either observed through our experiences or researched from the broader smallholder agriculture sector
- In practice, drivers may be partially in/out of the control of SDM operators, or may be in control for some SDM operators but not others

We focus on a broad but non-exhaustive range of design and contextual drivers categorized across 5 themes

Design Drivers		
Farmer Engagement	**Service Offering**	Financial Services
		Post-Harvest Services
		Input Services
		Equipment & Labor Services
		Training & Information Services
	Service Structure & Delivery	
	Procurement	
	Farmer Management	
	Farmer Organization	
Operational Structure	People, Processes & Governance	
	Financing & Capitalization	
	Partnerships & Service Coalitions	

Contextual Drivers	
Farming Systems	Land Size & Consolidation
	Farming Practices
	Household & Off-Farm Activity
	Climatic & Agro-Ecological Conditions
Market Dynamics	Market Formality & Supply
	Market Demand
Enabling Environment	Infrastructure
	Policy & Regulatory Environment
	Investor Environment

See annex for more details on each driver

Together with performance outcomes we use the drivers to understand what works where, why and how

Performance

Farm-Level Performance Outcomes	
Effectiveness	Income
	Productivity
	Gender Empowerment
	Farmer Satisfaction
Resilience	Income Stability & Diversification
	Climate Resilience
	Food Security
	Poverty Status

Business-Level Performance Outcomes	
Efficiency	Cost-to-Service
	Cost-to-Source
Revenue Generation	Service Revenues
	Sourcing Income
Scalability	Scale & Growth
Risk	Credit & Market Risk
	Cash Flow & Performance Stability
	Balance Sheet Position

Drivers

Design Drivers		
Farmer Engagement	Service Offering	Financial Services
		Post-Harvest Services
		Input Services
		Equipment & Labor Services
		Training & Information Services
	Service Structure & Delivery	
	Procurement	
	Farmer Management	
	Farmer Organization	
Operational Structure	People, Processes & Governance	
	Financing & Capitalization	
	Partnerships & Service Coalitions	

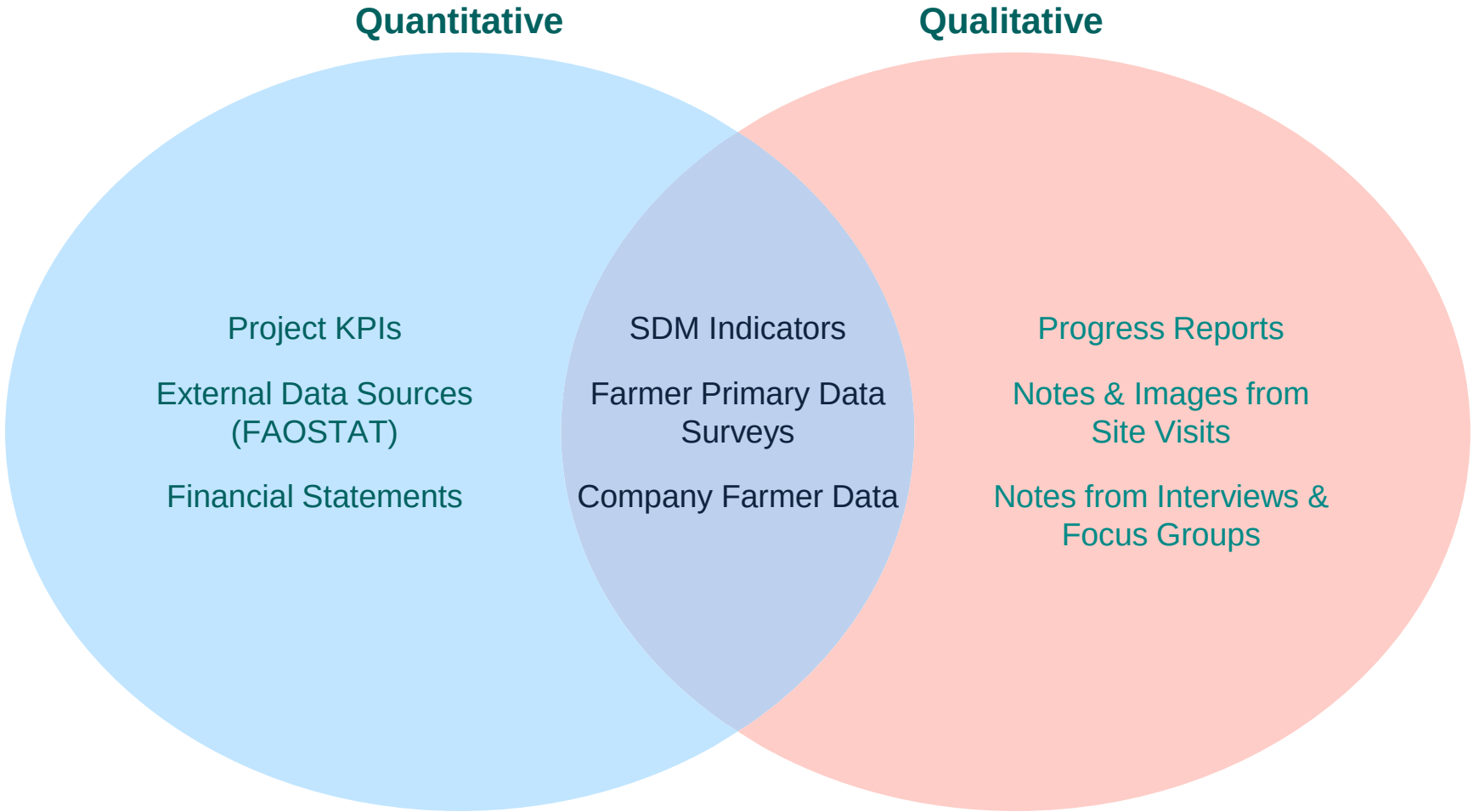
Contextual Drivers	
Farming Systems	Land Size & Consolidation
	Farming Practices
	Household & Off-Farm Activity
	Climatic & Agro-Ecological Conditions
Market Dynamics	Market Formality & Supply
	Market Demand
Enabling Environment	Infrastructure
	Policy & Regulatory Environment
	Investor Environment

Against each of the drivers and performance outcomes we collect a series of indicators in addition to qualitative reports, notes and insights. With this data we ask numerous questions, such as the following:

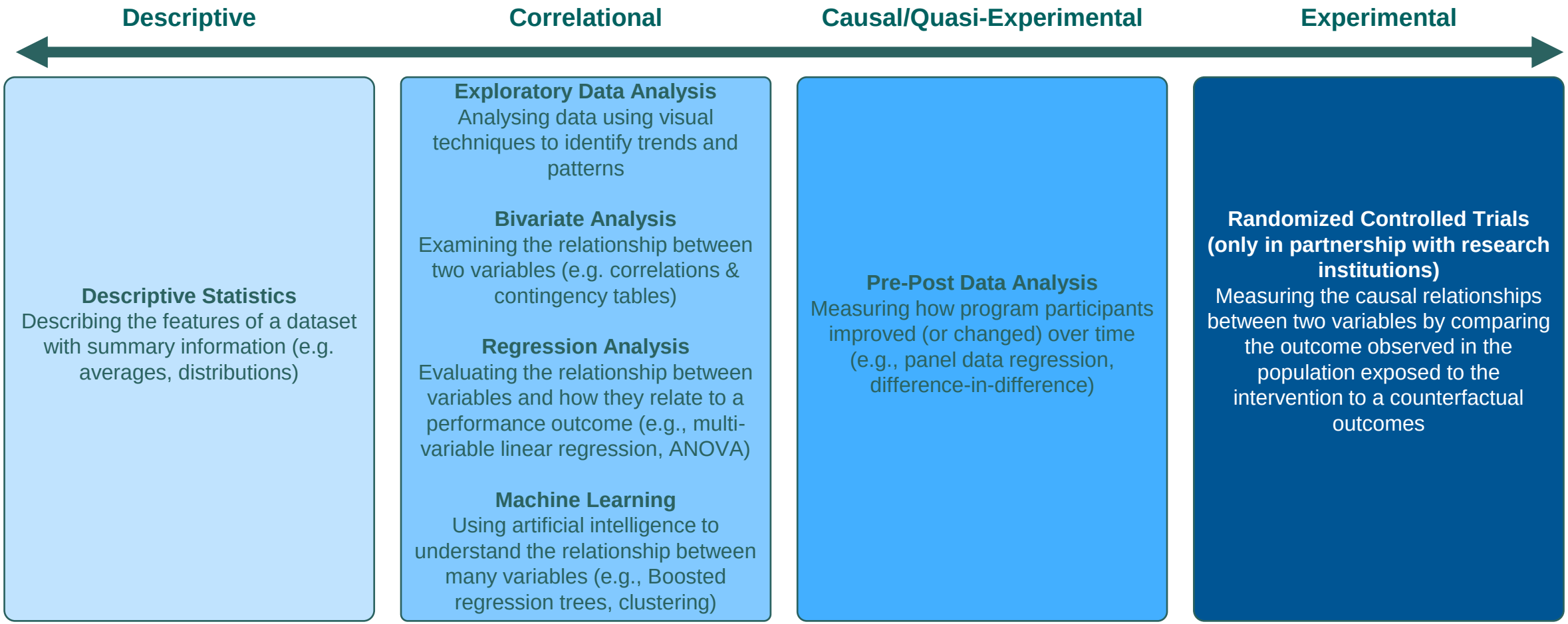
- How do drivers link to outcomes, either on standalone basis or when combined with other drivers?
- What is the relationship between different drivers?
- What is the relationship between different sets of outcomes?

See for on how we link performance to driversannexmoredetail

We use a combination of quantitative and qualitative data to allow for more comprehensive learning



We apply a range of methods for the analysis of quantitative and categorical qualitative data



With qualitative data, we also use a several methods for case-specific and aggregate analysis

Within-Case Analysis

Single Case Study Analysis
Analysing a single SDM at a given moment of time to identify the main uses and come up with viable solutions (included in SDM analyses)

Narrative Analysis
Analysing an SDM over a sequence of time to understand how business model change and context influences performance (carried out during TA)

Contribution Analysis
Assessing the contribution of development interventions on businesses and farmer performance (carried out after TA)

Aggregate/Cross-Case Analysis

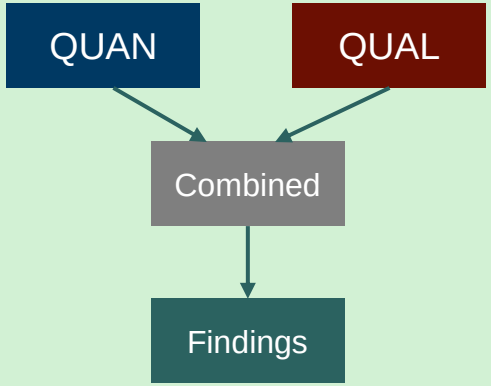
Multiple Case Study Analysis
Comparing two or more cases to compare the relationships between context, design and performance

Content & Thematic Analysis
Coding qualitative data against the learning framework to identify key themes with respect to the relationships between context, design and performance

Qualitative Comparative Analysis
Identifying configurations of conditions that lead to specific outcomes to better understand what works well where

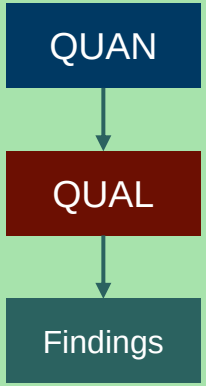
In most situations, we are mixing methods to answer our learning questions, to develop insights and to create knowledge products

Triangulation / Convergent



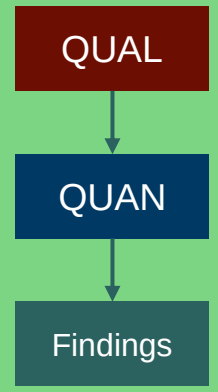
Comparing the findings of qualitative and quantitative analyses simultaneously to develop final conclusions

Explanatory Sequential Design



Analysing quantitative and categorical qualitative data to test hypotheses before conducting qualitative data collection and analysis to explain patterns and findings

Exploratory Sequential Design



Collecting and analysing qualitative data to generate hypotheses which can then be tested using quantitative research methods

Main approaches applied by FarmFit

Innovation: Interventions and Design Tips

idh
transforming markets

Our Learning Framework aims to inform learning and generate actionable insights

	Learning	Innovation
Description	• **Acquiring knowledge** on what works, where, and why and how	• **Acting on learnings** (or hypotheses) in a **practical context** to create new or adapt existing products, services, methods, models, and technologies that enhance how our **partners create, deliver, capture and/or distribute value**
How we do it	• Collecting standardized, comparable and aggregate data • Analysing, evaluating, synthesizing data to generate insights • Disseminating and sharing results and insights • Validate and complement with external (non-FarmFit) learning as relevant	• Aggregating internal and external evidence on how SDMs can optimize their models with interventions and design elements – building on learning insights • Co-designing and implementing new elements to (or adapting existing elements of) SDMs through TA engagements
Example	• **Service Structure & Delivery**: bundling multiple services together tends to have a higher farm-level impact	• **Service Structure & Delivery**: using farmer and soil-level data to co-design optimal bundles and go-to-market strategy

We follow a structured process to identify what topics and innovations to focus on, and how we support the private sector

1 Prioritization of drivers for our innovation efforts

- We prioritize those **drivers** within which we focus our learning and innovation efforts based on 3 main criteria (**additionality, evidence** and **influence**)
- These criteria allow us to identify the overlap between i) areas in which **innovation is needed** and ii) areas in which **we are the right party** to contribute

Pages 18-20

2 Identification of specific innovations

- Within the prioritized drivers, we develop and maintain a database of promising innovations, based on both internal (SDM analyses and TA engagements) and external (literature review, insights from our partners) evidence
- Each of these innovations can be at different levels (products & services, business models, or ecosystems)
- Depending on the SDM, these innovations can be adjustment of existing or introduction of new business practices

Pages 21-23

3 Testing and implementation of innovations

- We operationalize our insights and innovations when we engage with our partners in the private sector
- Besides focusing on prioritized innovations as outlined in step 2 above, we work with our partners to identify innovations based on their needs and willingness, and the potential for impact given their model and the context in which they operate

Page 24-25

The following pages lay out the topics we focus on, how we focus on them, and the types and examples of innovation we support

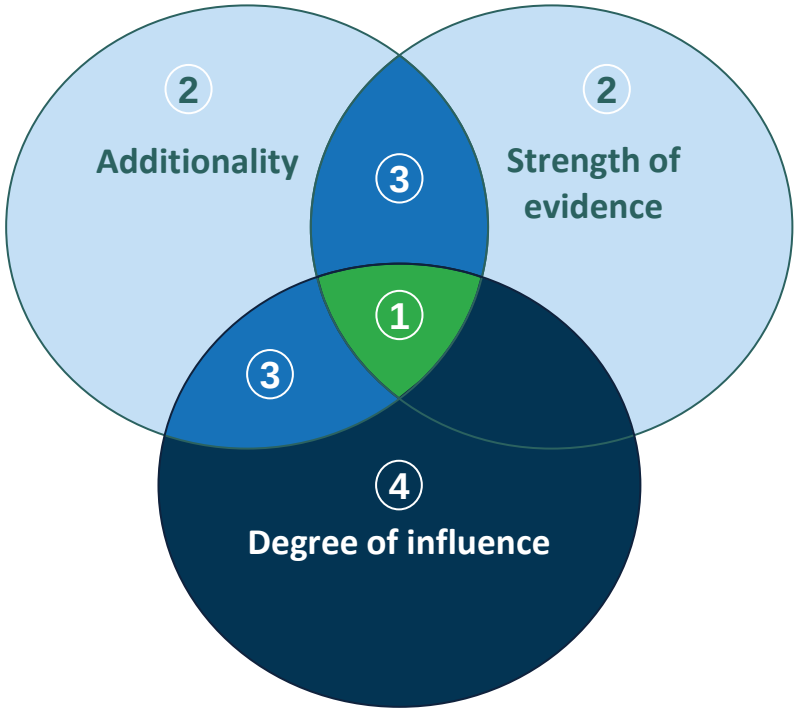
1

We use three main criteria to prioritize the outcome drivers on which we focus our innovation efforts

	Prioritization criteria for innovation focus areas		Examples
External	Additionality	Gaps exist in the sector's knowledge and/or no or limited other organizations are focused on the topic	✓ Evidence on how **Farmer Management** can be optimized to boost efficiency and impact is somewhat limited ✗ Evidence on **Farming Practices** is plentiful
Internal	Degree of influence	Suited to our skills, experience and relationships	✓ We can use our TA funding to support companies change their **Service Structure & Delivery** ✗ Our interventions are not well suited to influencing the **Policy & Regulatory Environment**
Internal	Strength of evidence	Farmfit collects strong (quantity and quality) evidence allowing us to have credible insights	✓ We produce detailed and standardised evidence on the **Training & Information Service Offering** ✗ Generating evidence on the state of the **Investor Environment** has not been a priority of our work

1

At the intersection of additionality, evidence and influence we find our core innovation areas, where we focus most of our efforts



1	**Farmfit Core Areas of Innovation**	*The core of Farmfit's focus, these are topics in which we the right positioning (access to the right data and relationships to support change), and on which there is limited existing knowledge and focus*	• Land size & consolidation • Financial service offering • Input service offering • Post-harvest service offering • Equipment & labor service offering • Service structure & delivery • Procurement • Farmer management • Farmer organization • People, process & governance • Partnerships & service coalitions
2	**Learning Areas**	*Topics on which we tactically collect and analyze learnings, but do not prioritize or take a leading role on*	• Farming practices • Climate & agro-ecological conditions • Market demand • Infrastructure
3	**Collaboration Areas**	*Topics where we collaborate with others as our influence or evidence is limited. These are often specialized topics*	• Household & off-farm activity • Financing & capitalization • Market formality and supply • Policy & regulatory environment
4	**Project by project basis**	*Topics that we may focus on in specific engagements if they are relevant to our partners and the context of the engagement*	• Training & information service offering

1

We have scored each of the drivers, allowing us to identify "core innovation areas" - areas in which we seek to identify and spur innovation

Themes	Drivers	External	Internal		Comments	Segment
		Additionality	Degr. of influence	Strength of evidence		
Farming Systems	Land size & consolidation	■		■	• PDC provides evidence that many other orgs do not produce	1
	Farming practices				• Heavier focus by other organizations. Our relationships with companies do not give us much influence on these topics	2
	Household & off-farm activity					3
	Climate & agro-ecological conditions				• We seek to strengthen our data and support companies on this topic	2
Farmer Engagement	Financial service offering		■	■	• The core of our work is to generate data and insights on service offering, and support companies with improving and scaling this • Many other organizations – especially implementers – also focus on service provision. Our differentiating capability is the strong business angle and standardized data collection	1
	Input service offering		■	■		
	Post-harvest service offering		■	■		
	Training & information service offering		■	■		4
	Equipment & labor service offering		■	■		
	Service structure & delivery	■	■	■		
	Procurement	■			• With SMEs partners, we have stronger evidence and positioning than MNCs	1
	Farmer management	■	■	■	• Largely untouched area and a focus of our work (e.g., segmentation, FMS)	
	Farmer organization		■		• We focus on the role of FOs in SDMs, rather than as standalone bodies	
Operational Structure	People, process & governance	■			• Has not been an intentional focus of our work, despite clear gap in the market	1
	Financing & capitalization				• Has not been an intentional focus of our work, limited by our capabilities	3
	Partnerships & service coalitions		■		• In most SDMs, no/limited insights on partnerships	1
Market Dynamics	Market formality & supply				• Currently mainly used to assess and compare SDM suitability to market context • More focus would allow stronger positioning on procurement and PSDS	3
	Market demand					2
Enabling Environment	Infrastructure				• Light-touch assessment as part of SDM analysis • Where regional food trade is important, more focus on these drivers	2
	Policy & regulatory environment					3
	Investor environment				• Could have some relevance to us if we focus on SDM financing & capitalization	

Low ■ High

2

Within our core innovation areas, we can innovate at different levels and in different ways

Innovation Levels

Products and services	The goods and services provided to SHFs as part of SDMs, as well as the design and delivery method(s) used to deliver these
Business models	How products and services are provided, including among others strategy and objectives, operating model, commercial model, and pricing
Ecosystems	The broader market in which an SDM operates, including their relationships with and dependencies on other actors (businesses, development organizations, public sector)

Innovation Types

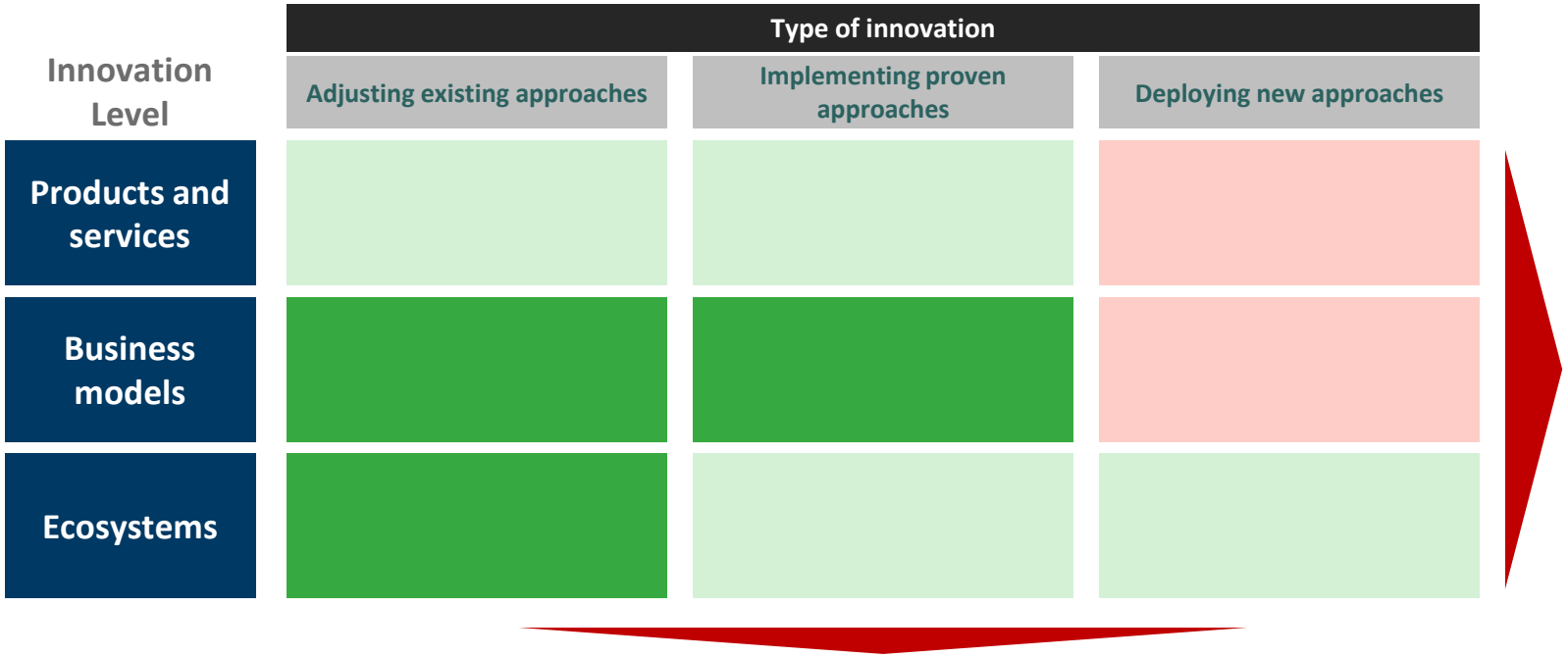
Incremental

Transformative

Adjusting existing approaches	Adapting existing practices and design features of an existing business model
Implementing new but proven approaches	Adding new elements (products, services, methods, etc.) to an SDM inspired by other SDMs
Deploying new and unproven approaches	Deploying new, relatively unproven and promising approaches with an aim of validating them

2

Combining innovation levels and innovation types helps us identify the clusters where we can play different roles



Legend: Farmfit focus

High	Medium	Low

Our focus areas have been chosen based on:

- **Overall market needs:** The market overall needs innovation across all mapped areas in the above visual
- **Our client needs:** Our clients mainly seek innovations that are an adjustment of current models or implementation of proven innovations; very few are able and willing to deploy entirely new approaches
- **Our positioning:** Our capabilities, relationships and experience are not well suited to identifying and deploying new approaches, as this requires more technical expertise as well as R&D mandates and budgets
- **Additionality:** The biggest gap in the market is at the level of business models, the smallest gap at products and services

Products and services:

- While not a core focus, we analyze costs, revenues, etc. of individual products and services and find ways of implementing and improving these
- In some cases, we support SDMs with introducing new, innovative approaches

Business models:

- Core expertise is in analyzing and improving SDMs
- This is mainly informed by best-in-class benchmarks

Ecosystems:

- The PSDS bring an ecosystem lens to our work
- We often support building and strengthening relationships between actors in SDMs (e.g., as part of value chain driven and service coalition approaches)

3

We maintain a catalogue of promising innovations across the prioritized outcome drivers

Land Size & Consolidation	• Block farming models • Clustering and nucleus farming models • Land titling
Input Service Offering	• Soil testing bundling with inputs • Community-based nurseries & seed multipliers • Climate-smart input packages
Financial Service Offering	• Non-standard credit scoring • Digitization of loan application • Flexible collateral requirements • Gender-tailored loans • Village savings and loans associations • Mandatory insurance bundling with loans • Digital payments
Training & Information Service Offering[1]	• Digital Extension Services • Geodata Assisted Information Provision • Social Networking Platforms • Women-Only Training
Post-harvest Service Offering	• Community/group-based post-harvest assets • Mobile drying/threshing/cleaning units • Warehouse receipt systems • Mobile aggregation centers • Cold-chain storage • Solar dryer installation at aggregation centers
Equipment & Labor Service Offering	• Equipment/Mechanization/ Labor rental services • Shared ownership schemes • Sensor-assisted irrigation/equipment
Service Structure & Delivery	• Crop diversification packages • Regenerative agriculture service packages • Service pricing strategies • Service bundling and sequencing strategy development
People, processes & governance	• *None identified yet*
Procurement	• Pre-season contract farming • Market information systems • Broker scoring/segmentation • Digital weighing scales • Minimum pricing • Shorter payment terms
Famer management	• Farmer Segmentation • Gender gap tracking • Harvest & delivery forecasting
Famer organizations	• FO segmentation & graduation schemes • Credit risk pooling • Women-only/led Farmer Groups
Partnerships & Service Coalitions	• Tripartite financing agreements • Commission fee structures • Interoperable data systems & APIs • Secretariat establishment • Data sharing protocols • Cost sharing frameworks

1) Although training & information service offering as a whole is something we do not see ourselves as additional on (as there are a lot of actors active and specialized in the topic), we do believe we can offer additionality and value on specific innovations, such as those outlined here

See annex for descriptions of each innovation, incl. their links to different types of impact

3

Innovation is firmly embedded in our engagement with the private sector, and specific innovations are tailored to company and context

- Identify opportunities for innovation with private sector partners
- Evaluate impact and business case of current model and sensitivity analyses for targeted innovations where relevant and possible

- Support companies with refining their SDMs and implementing innovations
- Our work also supports companies with creating the conditions for innovations, focusing on building blocks such as operational capacity, financing, technology and baseline data collection
- Validate and evaluate the success of the implemented innovations

Our general approach to innovations is one that seeks to implement different innovations in different contexts. This allows us to better understand what works where and why
To determine where we are already testing innovations

3

We have already worked on a variety of innovations in TA engagements with our private sector partners

Innovation Level	Type of innovation: Adjusting existing approaches	Type of innovation: Implementing proven approaches	Type of innovation: Deploying new approaches
Products and services	• **Equipment & labor service offering**: Introducing rental fees for use of mechanization services (Alluvial, Coscharis)	• **Post-harvest services:** Implementation of mobile aggregation and threshing technology (Smart Logistics)	• **Post-harvest services**: Introduction of solar-powered dryers in aggregation centers (Nestlé Nigeria)
Business models	• **Procurement**: Introduction of minimum pricing in forward contracts with SHFs (USSL)	• **Farmer organizations:** Analyzing and strengthening graduation models for cooperatives, with differentiated criteria, services and relationships with SDM operator (AIF, Anatrans, Olam)	• N/A
Ecosystem approaches	• **Partnerships & service coalitions:** Adjusting cost sharing agreements between up- and downstream SDM partners (McCormick)	• **Partnerships & service coalitions:** Introduction of a secretariat within a service coalition (Syngenta)	• **Partnerships & service coalitions:** Establishment of interoperable data sharing platform for enhanced service provision (Agriculture Exchange)

Improvement opportunities identified in SDM analyses tend most often to require incremental changes to existing business models

Best practices identified by Intelligence Center based on Business Support data used to inform improvement opportunities for other SDMs

While least often focused on by Farmfit, most innovative approaches tend to have higher likelihood for funding support

3

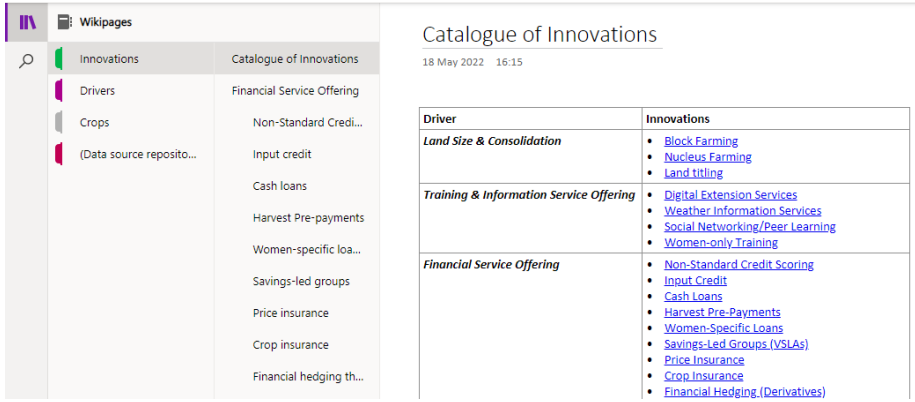
Our approach to innovations aims to implement them in different contexts to better understand what works where

Portfolio Coverage & Identifying Gaps

Driver	Innovation	Total	Smart Logisti	Syngenta	USSL
Financial Service Offering	Non-standard credit scoring	1			
	Digitization of loan process	3		x	
	Loan bundling with index insurance	5	x	x	x
	Company purchased farm level insurance	1			
	Tripartite financing agreements	6	x	x	x
	Village savings & loans associations	3			
	Mobile money payments	5	x		
	Gender-tailored financial products	2	x		
	Direct Input financing	5	x		
Input Service Offering	Soil testing/mapping-enhanced input provision	2	x	x	
	Climate-smart input packages (2+ of drought resistant seeds, organic fertilizer etc.)	5			
	Crop diversification input packages (Inputs for 2+ crops)	2			x
	Drip irrigation	1			
	Grain banking (for seed provision)	1			
	Seed multiplication In-house	3			
	Seed multiplication Farmer based	3	x	x	
	Seedling Nursery (by SDM operator)	1			
Training & Information Service Offering	Apprenticeship scheme for company staff	1			
	Digital Extension Services (inc two way communication, Whatsapp)	4		x	x
	Experimental Farmer Field School	1			
	Training Academy (joint with other SDM)	2			
	Women-only/gender-tailored training	1	x		
	Social networking platforms	0			
	Payment for training (bundles)	1			

- Innovations that are being implemented in the Farmfit Africa TA portfolio can be found in the TA Learning Dashboard on the "Innovations Tracker" tab
- Here, you can find a list of all prioritised innovations and the projects they are being implemented in
- There is a key interest in gathering insights from SDM Analyses for innovations that aren't covered by our TA portfolio
- For innovations captured in our TA portfolio, we have the biggest interest in SDM insights where the innovation is being implemented in cash crops

Choosing Innovations & Building Recommendations



- When it comes to identifying innovations to either recommend as part of an SDM analysis or to implement as part of TA design, individuals can make use of:
  - → **Wikipages:** On the Innovation wikipages there is information about a range of different innovations, including design tips, the key enabling conditions for success, and evidence of the impact on businesses and farmers
  - → **Knowledge products:** For various innovations we produce blogs, guides and longer knowledge products that can provide additional inspiration on what can be implemented

Annexes

idh
transforming markets

Annex Directory

Annex Section	Explanation
Performance Outcome Indicators	Details the SDM, TA and PDC indicators that are used to measure performance
Performance Outcome Mapping	Provides further information on what are the drivers that we consider to most directly influence different outcomes
Theme and Driver Details - Farming Systems Drivers - Farmer Engagement Drivers - Operating Structure - Market Dynamics Drivers - Enabling Environment Drivers	Detailed information on each of the drivers in the framework, including definitions, innovations, learning questions, hypotheses, indicators and data points. This should be consulted for individuals looking to better understand the importance of each driver and how we go about learning and innovating around each
Innovation Catalogue	Provides the expected outcomes from the implementation of selected innovations

Annex: Performance Outcome Indicators

idh
transforming markets

Outlining the data we use to measure and track performance

- For each performance outcome, we collect predominately quantitative data through the SDM Indicators, TA KPIs and the Farmer Primary Data Collection Surveys
- In the coming slides, we highlight the indicators and data points that we prioritize for our learning purposes. Those highlighted tend to be those most used in our knowledge production

Effectiveness

How we measure and track it

	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Income	• Farmer Income Indicators (**C 2.17; C 2.10; FNI_S**) • **C 2.03** Profitability Growth Rate • **C 2.04** Farmer SDM Crop net income vs baseline • **C 2.16** Farmer cost of production (SDM Crop) • **C 2.09** Value creation at farm-level	• **5.2.2** - Farmer net income	• **F_focus_quant_sold, F_othermaincrop_quant_sold** – Crop revenue • **F_livestock_income_total** – Livestock income • **F_nonfarm_, F_income_** – Non-farm income • **F_inputs_** – Input costs
Productivity	• Farmer Yield Indicators (**FY_S**) • Farmer Production Indicators (**FP_S; FMP_S**) • **C 2.01** Yield average annual rate of change • **C 2.02** Yield change versus baseline crop • **C 5.05** Post-harvest losses	• **5.2.1** - Yield per hectare	• **F_focus_quant_prod, F_othermaincrop_quant_prod** – Crop production • **F_focus_lost_yn, F_focus_quant_lost** – Post-harvest crop losses
Gender Empowerment	• **D 1.13** Female ratio of income, SDM farmers • **D 1.14** Female ratio yield, SDM • **D 1.18** Women's undertaking of productive activities • **D 1.35** Women's decision-making productive activities	• **4.2.1 & 4.2.2** – Farmers reached (gender disaggregated)	• **G_** - Female decision-making • **HH_** - Household demographics
Farmer Satisfaction	• **C 2.21** Net Promoter Score • **C 2.19** Difference between market interest rate and rate offered to SDM farmers	N/A	• **FO_** - Future outlook • **CS_** - Relationship with SDM operators

- According to the three main sources of performance data, we list the key indicators/data points and their relevant codes
- Note: For each outcome, some indicators and data points may be better suited to analysis, depending on the context and purpose of the analysis

Effectiveness

How we measure and track it

	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Income	• Farmer Income Indicators (**C 2.17; C 2.10; FNI_S**) • **C 2.03** Profitability Growth Rate • **C 2.04** Farmer SDM Crop net income vs baseline • **C 2.16** Farmer cost of production (SDM Crop) • **C 2.09** Value creation at farm-level	• **5.2.2** - Farmer net income	• **F_focus_quant_sold, F_othermaincrop_quant_sold** – Crop revenue • **F_livestock_income_total** – Livestock income • **F_nonfarm_, F_income_** – Non-farm income • **F_inputs_** – Input costs
Productivity	• Farmer Yield Indicators (**FY_S**) • Farmer Production Indicators (**FP_S; FMP_S**) • **C 2.01** Yield average annual rate of change • **C 2.02** Yield change versus baseline crop • **C 5.05** Post-harvest losses	• **5.2.1 -** Yield per hectare	• **F_focus_quant_prod, F_othermaincrop_quant_prod** – Crop production • **F_focus_lost_yn, F_focus_quant_lost** – Post-harvest crop losses
Gender Empowerment	• **D 1.13** Female ratio of income, SDM farmers • **D 1.14** Female ratio yield, SDM • **D 1.18** Women's undertaking of productive activities • **D 1.35** Women's decision-making productive activities	• **4.2.1 & 4.2.2** – Farmers reached (gender disaggregated)	• **G_** - Female decision-making • **HH_** - Household demographics
Farmer Satisfaction	• **C 2.21** Net Promoter Score • **C 2.19** Difference between market interest rate and rate offered to SDM farmers	N/A	• **FO_** - Future outlook • **CS_** - Relationship with SDM operators

Resilience

How we measure and track it

	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Income Stability & Diversification	• **A 3.25** Coefficient of Variation • **C 5.02** Average months of cashflow shortages • **C 5.03** Annual cashflow volatility • **C 5.06** Farmer yield variance • **C 2.14** Degree of diversification	N/A	• **CF_shortage_** – Cash flow shortages • **CF_credit_** – Access to credit when needed • **CF_savings_** – Access to savings
Climate Resilience	• **C 5.07** Climate change impact farmer level • **C 5.08** Farmers adopting climate adaptation practices	• **4.2.3** – Farmers reached with services to support them cope with the effects of climate change	• **CL_loss_** – Losses from climate events • **CL_coping_mechanisms** – Climate risk coping mechanisms
Food Security	• **D 2.03** Regularity of food access at household level	N/A	• **FS_shortage_** – Food shortages • **FS_water_** – Access to water
Poverty Status	• **C 2.20** Living income gap (income per household) • **C 5.01** Farmer loan to income ratio	• **4.2.4, 4.2.5 & 4.2.6** – Farmers accessing financial services	• **Ppi_** – Poverty probability index • **CF_cope_** – Financial coping mechanisms

Efficiency

How we measure and track it

	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Cost-to-Service	• Service Expense Indicators (**SP_13 to SP_18**) • **C 1.01** Average annual expenses per farmer • **C 1.02** Net Service Delivery Income (Loss) per farmer • **C 1.28** Net Service Delivery & Grant Income (Loss) per farmer • **C 1.05** Net Service Delivery Income (Loss) as a % of production • **C 1.06** Net Service Delivery Income (Loss) as a % of sourcing • **C 1.18** Farmers per field agent • **C 1.21** Cost to income ratio • **C 1.22** Overhead rate • **C 1.16** Average farmer relationship length • **C 1.17** SDM Attrition rate	• **4.3.6 & 4.3.8** – Total Service Costs	N/A
Cost-to-Source	• Commercial Expenses (**SP_12**) • **C 1.19** Volume sourced per farmer • **C 1.09** Net sourcing efficiency per metric tonne • **C 1.31** Gross sourcing efficiency per metric tonne • **C 1.11** SDM loyalty rate	• **4.3.3 & 4.3.4** – Volume sourced • **4.3.7** – Total sourcing costs	N/A

Revenue Generation

How we measure and track it

	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Service Revenues	• Service Revenue Indicators (**SP_3 to SP_8**) • **C 3.05** SDM Return on investments (service revenues only) • **C 3.07** % of Costs covered by service revenues • **C 3.08** % of Costs covered by donor funding • **C 3.13** Break-even years • **C 3.14** Average customer lifetime value	• **4.3.2** – Service Revenues	N/A
Sourcing Income	• Commercial Revenues (**SP_2**) • **C 3.06** % of Costs covered by commercial activities • **C 3.11** SDM Gross Cost as a percentage of crop value	• Total sourcing revenue • Gross margin on commodity production	N/A

Scalability

How we measure and track it

	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Scale & Growth	• **A 1.21** Number of Farmers Served at the time of engagement • **C 4.01** Total number of farmers • **C 4.02** Growth in number of farmers • **C 4.03** Number of farmer organizations • **C 4.04** Growth in number of farmer organizations • **A 2.02** Size of farmer organization	• **4.2.1 & 4.2.2** – Farmers reached	N/A

Risk

How we measure and track it

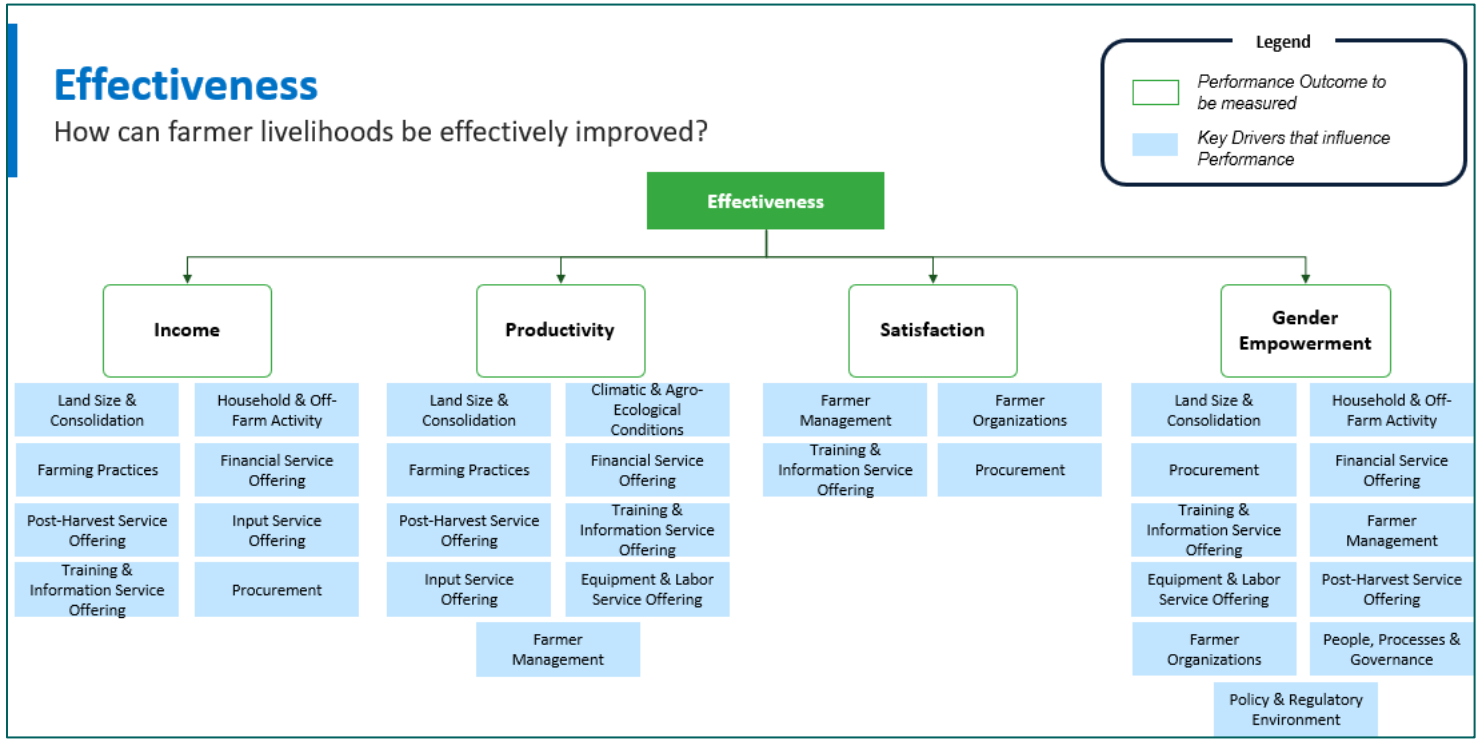
	Key SDM Indicators	TA KPIs	Relevant PDC Questions/Tags
Credit & Market Risk	• **A 1.15** Cost of capital • **C 5.09** Loan default rate 90 day rate • **C 5.10** Loan default rate 180 day rate • **C 5.14** Write-off rate farmer loan portfolio • **C 5.11** Market risk (price volatility) • **C 5.15** Annual exchange rate loss	• % of loans written off	N/A
Cash Flow & Performance Stability	• **C 5.12** Revenue Stability (annual volatility)	N/A	N/A
Balance Sheet Position	• **C 3.15** Debt service coverage ratio • **C 3.16** Capitalization ratio	N/A	N/A

Annex: Performance Outcome Mapping

idh
transforming markets

Mapping the relationship between drivers and performance outcomes

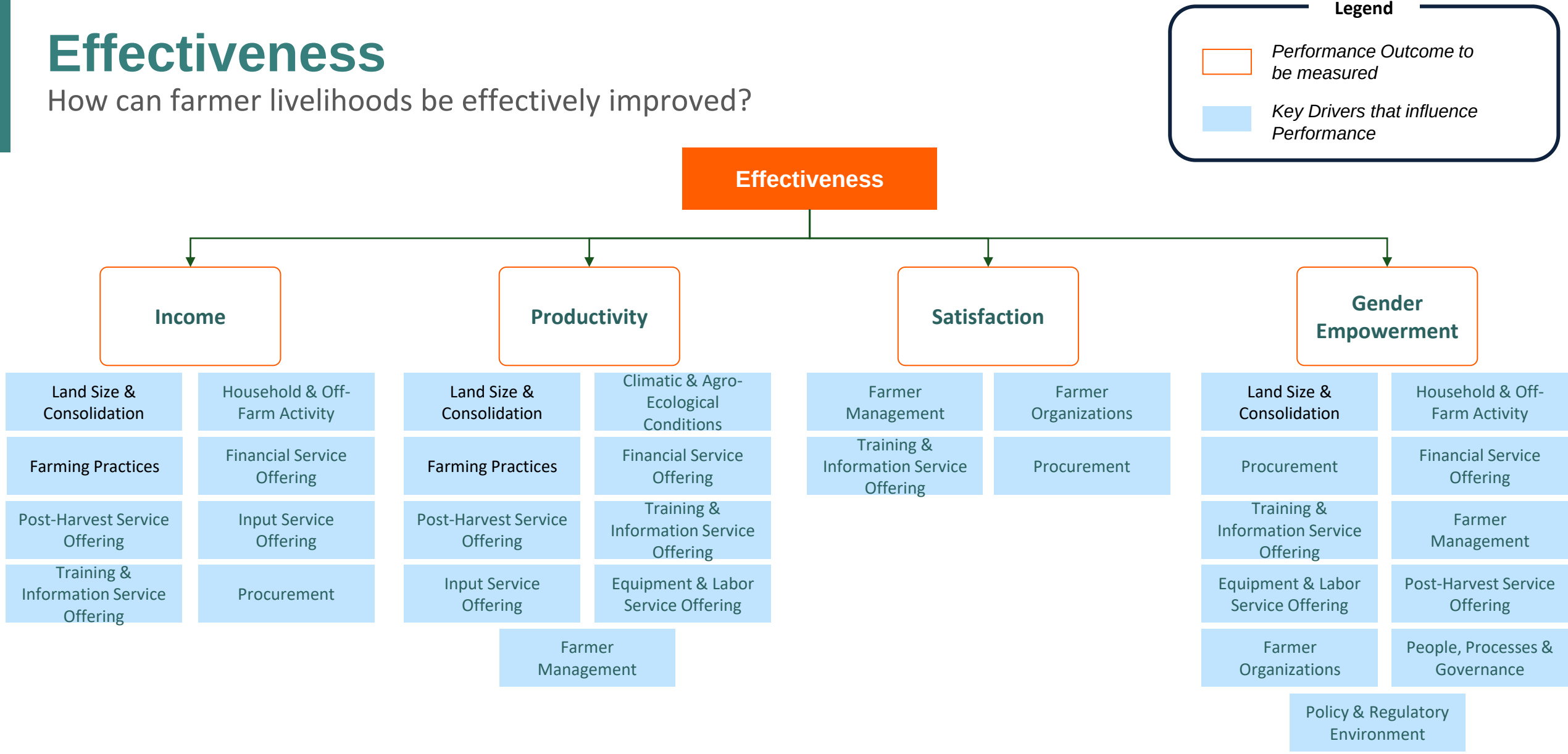
- There are a multitude of relationships between different drivers and the performance objectives. In our Learning & Innovation Framework, we focus on a selection of these relationships
- In the coming slides, we illustrate the focus relationships between drivers and Effectiveness, Resilience, Efficiency, Revenue Generation, Scalability and Risk



- Each outcome is broken down to the sub-outcomes that are outlined earlier
- Under these performance outcomes, we highlight the key drivers that we see as having a direct influence on these outcomes
- Note: there are other relationships we could analyze but they are not currently a priority

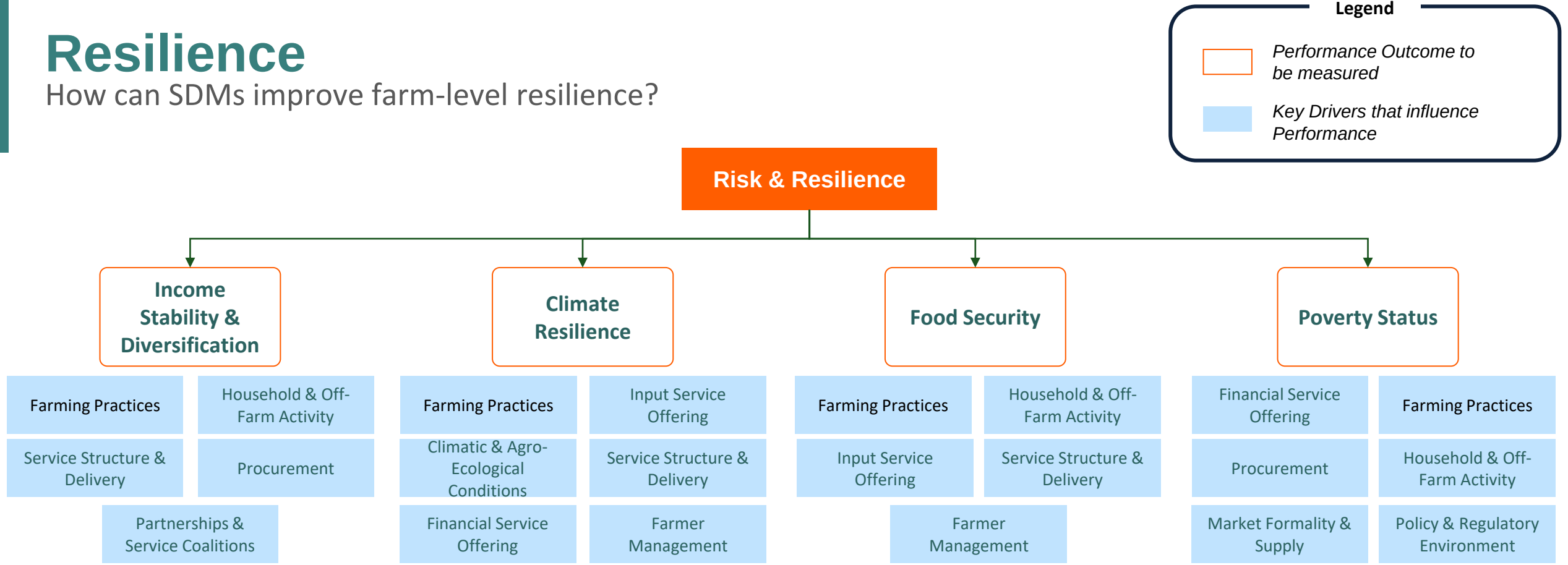
Effectiveness

How can farmer livelihoods be effectively improved?



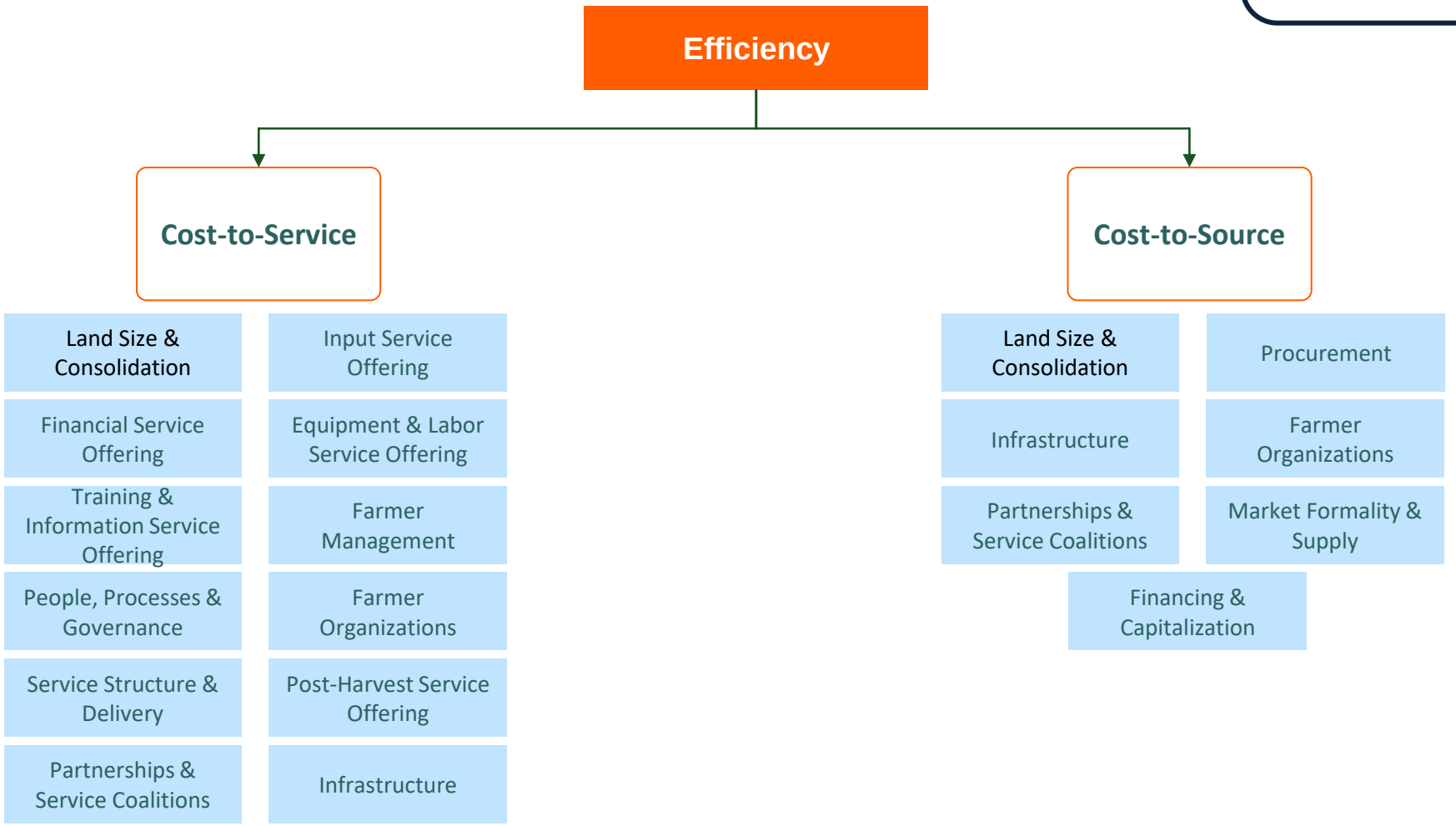
Resilience

How can SDMs improve farm-level resilience?



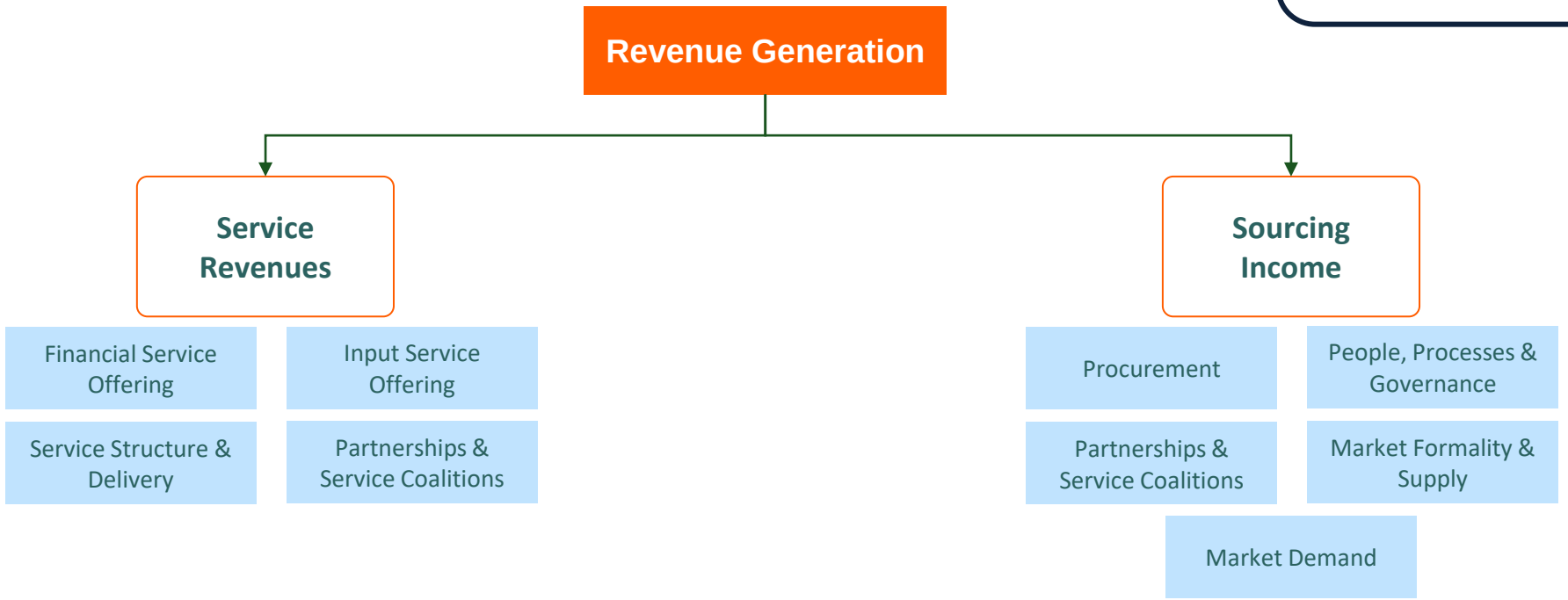
Efficiency

What drives the costs of service delivery and sourcing?



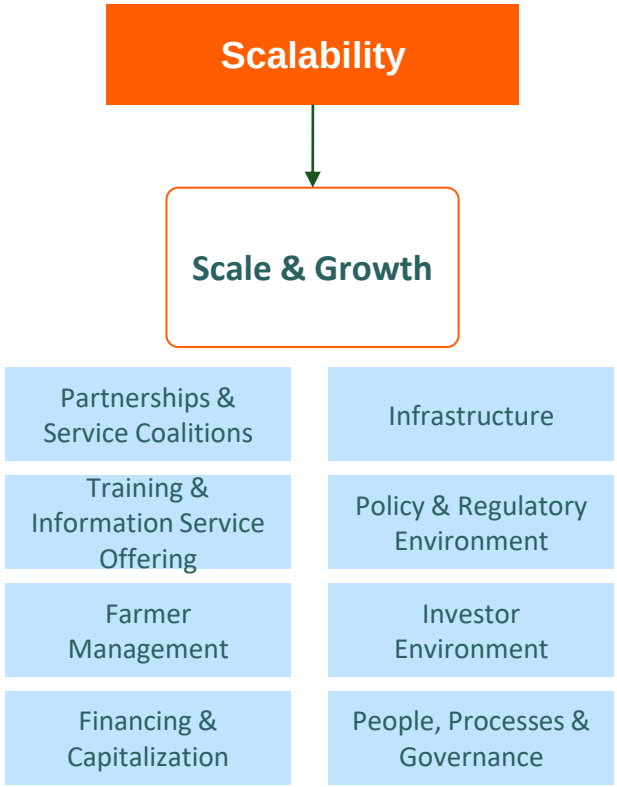
Revenue Generation

How and under which conditions can an SDM be profitable?



Scalability

What improves the scaling potential of an SDM?



Legend

Performance Outcome to be measured

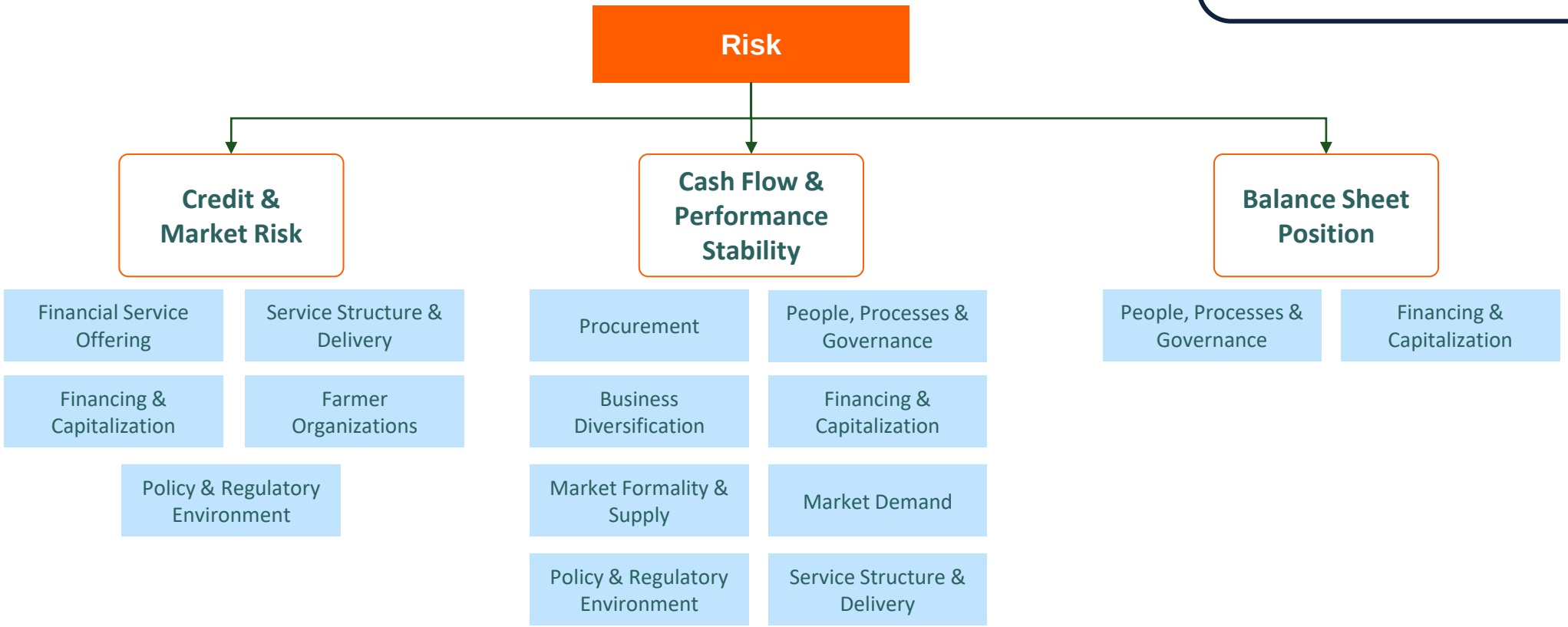
Key Drivers that influence Performance

Risk

How can the risk profile of SDMs be reduced?

Legend

- *Performance Outcome to be measured*
- *Key Drivers that influence Performance*



Annex: Theme & Driver details

idh
transforming markets

Definitions of Themes

Theme	Definition
Farming Systems	The structure of individual farms, comprising characteristics such as the farm size, climate and household dynamics as well as practices such as farm activities and the use of technologies
Farmer Engagement	The management of relationships and interactions (including service delivery and procurement) between farmers and service providers/off-takers
Operational Structure	The framework to which an SDM deploys resources, human and financial, in order to create value and enhance its competitive advantage versus the other players
Market Dynamics	The forces that will impact prices and the behaviours of producers and consumers within a market
Enabling Environment	The range of institutional factors (policy, infrastructure, etc.) that can facilitate and inhibit sourcing and service provision within a value chain

Breaking out the themes and drivers into more detail

- For understanding what influences the performance of SDMs and interventions, we carry out deep investigations into the roles of different drivers alongside relationships across drivers

Farming Systems | **Land Size & Consolidation**

Definition	Importance	Innovations (only if a priority driver)
The size of land available to smallholder farmers and the level at which fragmented parcels of land are (re-)allocated and/or (re-) organized into contiguous or larger units	The small size and level of fragmentation among smallholder farms means that there are often higher transaction costs related with providing services to or sourcing from smallholder farmers than there are for larger farms. Through consolidation or the increase of land sizes, many of these relative transaction costs can be reduced. From a farmer income perspective, small land size is often touted as a key constraint for escaping poverty and/or reaching a living income.	• Block farming models • Clustering and nucleus farming models • Land titling

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. How strong is the relationship between **land size** and **effectiveness**?	1.1a Smaller land sizes are associated with higher productivity 1.1b Land size is a key constraint to reaching a living income	1.2a What are the key challenges in land acquisition and expansion
2. How strong is the relationship between **land consolidation** and **SDM efficiency**?	2.1a SDMs where farmers are organized on contiguous/consolidated land have a lower cost to serve	2.2a What approaches can be used to resolve geographic fragmentation within SDMs?
3. What are the consequences of **inequalities** in **land ownership**?	3.1a Land ownership and security over tenure is associated with higher investment at farm-level 3.2a Gender inequalities in land ownership reduce women's access to SDM services	3.2a How do different SDM operators adjust services to account for differences in land ownership among their farmers?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
• **A 3.02, A3.05 & A 3.06** - Average farm size • **A 3.27** - Land ownership • **B 2.02** - Farming model		• **f_size** - Total size of farm and size dedicated to specific crops • **f_ownership_type** - Land ownership

- For each driver, we provide a definition and outline why the driver is considered as important to analyze
- Related innovations are listed to provide inspiration on how this relates to SDM and TA activities practically
- In the second row, we outline our learning agenda for the driver, consisting of:
  1. **Research Questions:** High-level questions that guide enquiry at a case-specific and aggregate-level
  2. **Hypotheses:** Testable hypotheses that we will analyze quantitatively at an aggregate level
  3. **Exploratory Sub-Questions**: Selected sub-questions where we will use a combination of quantitative and qualitative methods to learn more
- Finally, on the bottom rows, we list the related data points and indicators that capture the details around the driver
- Note, the learning agenda for each driver is non-exhaustive. On a case-by-case basis we recommend further specified and contextualized learning questions

Understanding research questions, sub-questions and hypotheses

- The complexity of smallholder agriculture creates almost endless possibilities in terms of research questions and hypotheses to test. To have a sufficiently focused learning framework, priorities must be set
- In the Farmfit Intelligence Center, we have used a combination of desk research, expert interviews and our own experiences to set our priorities

Our selected research questions and hypotheses are based on the following principles

Credible

Within Farmfit we have the means to appropriately test a given hypothesis or answer a given question

Relevant

The questions and hypotheses provide insights that are relevant to the audiences that we are seeking to influence

Additional

The answers that we seek focus on questions and hypotheses where there is not yet consensus

Annex: Farming Systems driver detail

idh
transforming markets

Farming Systems | **Land Size & Consolidation**

Definition	Importance	Innovations (only if a priority driver)
The size of land available to smallholder farmers and the level at which fragmented parcels of land are (re-)allocated and/or (re-) organized into contiguous or larger units	The small size and level of fragmentation among smallholder farms means that there are often higher transaction costs related with providing services to or sourcing from smallholder farmers than there are for larger farms. Through consolidation or the increase of land sizes, many of these relative transaction costs can be reduced. From a farmer income perspective, small land size is often touted as a key constraint for escaping poverty and/or reaching a living income.	· Block farming models · Clustering and nucleus farming models · Land titling

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. How strong is the relationship between **land size** and **effectiveness**?	1.1a Smaller land sizes are associated with higher productivity 1.1b Land size is a key constraint to reaching a living income	1.2a What are the key challenges in land acquisition and expansion
2. How strong is the relationship between **land consolidation** and **SDM efficiency**?	2.1a SDMs where farmers are organized on contiguous/consolidated land have a lower cost to serve	2.2a What approaches can be used to resolve geographic fragmentation within SDMs?
3. What are the consequences of **inequalities** in **land ownership**?	3.1a Land ownership and security over tenure is associated with higher investment at farm-level 3.2a Gender inequalities in land ownership reduce women's access to SDM services	3.2a How do different SDM operators adjust services to account for differences in land ownership among their farmers?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 3.02, A3.05 & A 3.06** - Average farm size · **A 3.27** - Land ownership · **B 2.02** - Farming model		· **f_size** - Total size of farm and size dedicated to specific crops · **f_ownership_type** - Land ownership

Farming Systems | **Farming Practices**

Definition	Importance	Innovations (only if a priority driver)
Practices at farm level which relate to Good Agricultural Practices, Post-Harvest Handling, on-farm diversification and those which may be taken to either adapt to or mitigate risks such as climate, disease and production risks	The application of the appropriate practices at farm level is a key determinant of the performance of the farm through increased productivity and lower post-harvest losses, but also aspects such as the farm's resilience against risks such as those created by climate change. The degree of farming practices is influenced by services in addition to labour availability (including family labour)	N/A – Learning Only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the relationship between **farming practices** and **effectiveness**?	1.1a Crop diversification and/or rotation can lead to improved productivity	1.2a What is the ideal rate/speed for rehabilitation and renovation with respect to productivity and profitability and how does this differ by crop and country? 1.2b What is the breakeven point for farmers switching to regenerative agriculture?
2. What is the relationship between **farming practices** and **risk and resilience** at farm level?	2.1a Crop diversification leads to improved income stability 2.1b Farmers which adopt more climate adaptation practices see more stable income	2.2a How does risk perception at farm-level influence decisions over crops to produce?
3. What drives farmers to apply certain **farming practices**?	3.1a Shifting to regenerative agricultural practices requires long-term finance to overcome short-term losses	3.2a What are the key constraints to crop diversification? 3.2b How can farmers be incentivised and supported to rehabilitate and rejuvenate their crops? 3.2c How can farmers be incentivised and supported to switch to regenerative agriculture?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 1.09** - Main crop · **B 7.01** - Number of crops · **B 1.11** - Diversification as an objective · **C 5.08** - Farmers adopting climate change practices		· **f_focus, f_cocoa, f_coffee, f_othermaincrop** - Specific crop questions · **f_integrated_farming** - Integrated Farming System · **f_labour** - Labour on Farm questions

Farming Systems | **Household & Off-Farm Activity**

Definition	Importance	Innovations (only if a priority driver)
The composition and intra-household relationships, including gendered power dynamics, in addition to the activities of a household beyond the farm	The household and the power within a household impacts both the members of the household as well as the performance of the farm. Evidence shows that women with higher decision making power perform better at farm level. Off-farm activity has historically not been factored in to agricultural interventions but remains an ever-important facet of a farming household and their ability to obtain a decent livelihood	N/A – Learning Only

Priority Learning Agenda

Research Questions	Hypotheses to Test	Exploratory Sub-Questions
1. What is the relationship between **HH & off-farm activity** and **farmer resilience**?	1.1a Farming households with substantial off-farm activity are more food secure	1.2a How can off-farm activity best be combined with effective farming practices?
2. What role do **household (and gender) dynamics** play in farming (and SDM) performance?	2.1a Increased female decision-making at farm and/or household level leads to higher productivity levels 2.1b SDMs with smaller gender productivity gaps in their value-chains perform have a higher return on investment	2.2a To what extent do intra-household gender dynamics have an impact on farming outcomes? 2.2b How does farming performance differ between female-operated farms and male-operated farms? 2.2c How does farming performance differ between female-operated farms in male-headed households, and female-operated farms in female-headed households

Data points relevant to Driver

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **A 3.28 & A 3.29** - Age of farmers · **A 3.07** - Household size · **D 1.17 & D 1.18** - Women's undertaking of (re)productive activities · **D 1.35** - Women's decision-making		· **f_nonfarm, f_income_other -** Off Farm activity questions · **G_ -** Female decision-making questions · **hh_size, hh_head, hh_farmer, hh_education -** Household characteristics questions

Farming Systems | **Climatic & Agro-Ecological Conditions**

Definition	Importance	Innovations (only if a priority driver)
The conditions of a particular area that have a high degree of influence on the suitability of growing certain crops and their sensitivity to particular risks	Farming practices and patterns have typically been underpinned by acro-ecological conditions which dictate what crops may grow well in what conditions. Climate variability and farming practices impacts these conditions (e.g. soil health) which consequently impacts the suitability of certain crops in certain regions	N/A – Learning Only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. How do **climatic and agro-ecological conditions** influence the **effectiveness** of farm practices and service delivery?		1.2a What groups of farmers within an SDM are most impacted by climatic conditions? 1.2b What SDMs are most impacted by climatic conditions? 1.2c What are the key benefits of soil testing and soil health analyses in guiding service delivery?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 1.08** - Country · **A 1.10** - Crop type · **A 1.22** – Perishable		· **pi_location** - Farm location · **geolocation** - Farm geolocation · **f_harvest_num** - Number of harvests · **cl** - Climate resilience questions

Annex: Farmer Engagement driver detail

idh
transforming markets

Farmer Engagement | **Financial Service Offering**

Definition	Importance	Innovations (only if a priority driver)
The provisions of funds that are repaid in some form (e.g. loans, input credit), contingent forms of finance (e.g. insurance), and savings products (e.g. savings accounts)	Many smallholder farmers do not have access to finance (or the cash flow) to sufficiently invest in productivity enhancing inputs, assets and services. By facilitating access to loans, farmers can borrow sufficient amounts at the appropriate moments in order to invest in such inputs and services. Alternatively, many farmers lack access to formal savings and accounts, which makes it challenging to reserve cash for investments when needed, or the access to insurance to reduce the risk faced by smallholder farmers.	· Non-standard credit scoring · Digitalization of loan process · Insurance bundling · Village savings & loans associations · Gender tailored products

Priority Learning Agenda

Research Questions	Hypotheses to Test	Exploratory Sub-Questions
1. How can farmers **access to finance** be improved?	1.1a SDMs that bundle agricultural insurance with loans increase farmer loan uptake	1.2a What are effective strategies/innovations in improving access to and uptake of financial products? 1.2b What are effective strategies/innovations in improving women's access to financial products?
2. What is the relationship between **financial service offering** and **effectiveness** at farm level?	2.1a Increasing farmers' access to financial products increases their investment in farming activities 2.1b SDMs that establish direct payment systems to women to increase their incentive to invest in their agricultural production, this will increase productivity over time	2.2a To what extent does access to financial services increase farmers investments, and is there a difference in investments for farming their main crop compared to investments in alternative farming activities (e.g. secondary crops, livestock) and off farm activities?
3. What is the relationship between **financial service offering** an **resilience** at farm level?	3.1a Access to capital reduces farmers' vulnerability to price and yield shock 3.1b Access to insurance products make farmers less sensitive to climate shocks	3.2a What is the relationship between farmers' access to financial services and farmer food security? 3.2b What is the relationship between farmers' access to financial services and (more & stable) farmer income? 3.2c What are unintended consequences of financial service offering for farmer livelihoods and how can these be best minimized?
4. What is the relationship between **financial service offering** and **risk** at SDM level		4.2a What role does financial service offering play in improving farmer loyalty? 4.2b What are successful strategies to lowering loan defaults?
5. What role does **financial service offering** play in SDM **revenue generation**?		5.2a How can profits from financial service provision offset costs of services that have lower income generation potential (i.e. training)?

Data points relevant to Driver

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **B 4.10a** - Financing: total # farmers · **B 4.19-4.22** - Specific financial services · **B 8.01-8.20** - Finance indicators	· **4.2.4, 4.2.5 & 4.2.6** – Farmers accessing financial services	· **hh_mobile_money, hh_bank_account -** Accounts · **hh_loan -** Loan use questions · **Cf_credit –** Access to credit questions · **su_services_usage** - Access to services

Farmer Engagement | **Input Service Offering**

Definition	Importance	Innovations (only if a priority driver)
The provision of some sort of agricultural input such as fertilizer, crop protection and planting material (machinery and labour are excluded from this definition)	Inputs such as fertilizer and seed are vital in terms of intensifying production and increasing yields. In areas where land size increases are difficult, then intensification is a key mechanism to improve farmer livelihoods. Crop protection, such as herbicides and pesticides allows crops to grow with a reduced chance of damage. The use of inputs must be appropriate given it impacts soil health, plant health and food safety	· Soil testing bundling with inputs · Community-based nurseries/seed multipliers · Climate-smart input packages

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the relationship between **input service offering** and **effectiveness** at farm level?	1.1a Farmers operating in food-crops (particularly subsistence crops) have the highest income gains from climate-resilient inputs	1.2a What conditions/innovations improve the likelihood that the inputs lead to increased yield and income? (e.g. soil testing with inputs, training)
2. What is the relationship between **input service offering** and **farmer resilience**?	2.1a SDMs that provide access to high quality fertilizers improve farmer food security	2.2a What inputs (e.g. fertilizers, drought-resistant/high yielding seeds) impact (and in what way) farmer food security and climate resilience?
3. How can farmers' **access to inputs** be improved?	3.1a Offering financial services to farmers improves their uptake of improved inputs	3.2a What are the main challenges farmers experience in accessing inputs? 3.2b What bundles of services (e.g. finance and GAP training) and/ or innovations are successful in improving farmers uptake of (improved) inputs?
4. What role does **input service offering** play in SDM **revenue generation**?	4.1a Input profits are typically the biggest contributor to service revenues	4.2a How are the profits on input sales influenced by the type of farmers engaged by an SDM?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **B 4.18a** - Inputs: total # farmers · **B 4.07-4.09, B 4.18, B 4.31** - Specific input services · **B 6.01-6.12** - Inputs indicators	· Farmers accessing improved inputs	· **f_inputs -** Inputs Use and Cost questions · **su_services_usage -** Access to services

Farmer Engagement | **Post-Harvest Service Offering**

Definition	Importance	Innovations (only if a priority driver)
The provision of services designed to support a farmer's post-harvest activities such as storage, transport and aggregation services	The post-harvest period can often be the time where crop losses are accrued (due to perishability and conditions like aflatoxins) or farmers side sell. Services that enable the appropriate storage and on-farm processing can reduce the chance of losses, where timely and efficient transport and aggregation can restrict side-selling	· Community/group ownership · Warehouse receipt systems · Cold chain storage · Mobile drying/threshing/cleaning units · Solar dryer installation at aggregation centers · Mobile aggregation centers

Priority Learning Agenda

Research Questions	Hypotheses to Test	Exploratory Sub-Questions
1. What is the relationship between **post-harvest services** and farmer **income**?	1.1a Post-harvest services have a higher impact on farmer incomes in food crops than cash crops	1.2a What post-harvest service(s) contribute most to income gains?
2. What is the relationship between **post-harvest services** and **farmer resilience**?	2.1a SDMs that provide post-harvest services increase farmer resilience through reducing post-harvest losses	
3. What types of farmers experience (high) **post-harvest losses** and what are successful solutions?	3.1a Women experience lower post-harvest losses	3.2a What is the difference between female and male operated farms in reported post-harvest losses and how can differences be explained? 3.2b To what extent do different post-harvest services (e.g. storage, aggregation, transport) lower post-harvest losses?
4. What is the relationship between **post-harvest services** and **efficiency** at SDM level?	4.1a SDMs offering post-harvest services have higher loyalty rates	

Data points relevant to Driver

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **B 4.28a** - Post-harvest services: total farmers · **B 4.25-4.28** - Specific post-harvest services	N/A	· **su_services_usage** - Access to services

Farmer Engagement | **Training & Information Service Offering**

Definition	Importance	Innovations (only if a priority driver)
Activities designed to improve the performance and awareness of farmers (and groups) by passing on information such as through farmer training, extension services, organizational support and forms of information services (e.g., market and price data)	Many smallholder farmers continue to use old techniques which may no longer be suitable for the optimal performance of their farms. By providing information through the form of training and other mechanisms, farmers can be capacitated to change their practices. Similarly, farmers may often be unaware of information (e.g., price, quality and weather information) that could affect their ability to make informed decisions on production and trading.	· Digital extension services · Geodata assisted information provision · Social networking platforms · Women-only training

Priority Learning Agenda

Research Questions	Hypotheses to Test	Exploratory Sub-Questions
1. What is the relationship between **training and information services** and **effectiveness** at farm level?	1.1a SDMs that use demo-farms and/or farmer field schools have a bigger impact on productivity than those relying solely on classroom or digital training 1.1b SDMs that invest in capacity building and knowledge dissemination support (e.g., training) facilitate the widespread adoption of climate-smart agricultural practices and inputs (e.g., climate-resilient seeds)	1.2a How does the relationship between training offering and farmer productivity differ depending on the way training is offered (demo farm, farmer field schools, digital)? 1.2b To what extent do training & information offered by SDM company increase use of inputs?
2. How can farmers' **access to training and information services** be improved?	2.1a Gender tailored service provision can help increase women's attendance at training	2.2a What are effective strategies to increase women's attendance at training?
3. What is the relationship between **training and information services** and **efficiency** at SDM level?	3.1a Training and Information Services are typically the biggest contributor to service revenues on a net basis	3.2a What are the most cost-efficient ways of offering training and information to farmers for the service provider? 3.2b What are success factors to scaling training offering to farmers while ensuring effectiveness at farm level?

Data points relevant to Driver

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **B 4.05d** - Training and Information: total # farmers · **B 4.04-4.06** - Specific training and information services · **B 5.03-5.12** - Training and information indicators	· Farmers trained	· **su_services_usage** - Access to services

Farmer Engagement | **Equipment & Labor Service Offering**

Definition	Importance	Innovations (only if a priority driver)
The provision of agricultural equipment and/or labour to support the farmer's agricultural production (up until harvest) such as those related to mechanization and irrigation	Smallholder farming is often done in households, supported by the use of family labour (often a constraint). The use of hired labour can enable more (or specialized) practices to be carried out, whereas mechanization can improve the productivity of labour (reducing labour costs), and irrigation can support the intensification and resilience of production	· Rental services and platforms · Shared ownership schemes · Sensor assisted irrigation/equipment

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the relationship between **equipment and labour services** and **effectiveness** at farm level?	1.1a Mechanisation and equipment has a bigger impact on the cost of production for food crops compared to cash crops 1.1b SDMs that offer mechanisation are more successful in reaching female farmers	1.2a What is the relationship between mechanisation and farmer income, and what are possible mechanisms driving this relationship (e.g. time for alternative income generating activities)? 1.2b What is the business case for farmers investing in irrigation and how does this differ across crops?
2. What drives farmers to **mechanize** and use **hired labour**?		2.2a What are the key constraints to hiring labour for farming activities?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **B 4.24a** - Equipment and Labour: total # farmers · **B 4.11-4.12, B 4.23-4.24** - Specific equipment and labour services · **B 13.01-13.04** - Equipment and labour indicators		· **f_labour & f_crop_labour** - Labour on Farm questions · **f_nonmech_equip, f_mech_equip & f_materials** - Asset Costs questions · **f_equipment & f_transport_types** - Asset Ownership questions · **hh_phone** - Mobile phone access · **su_services_usage** - Access to services

Farmer Engagement | **Service Structure & Delivery**

Definition	Importance	Innovations (only if a priority driver)
The manner in which complementary services are combined, sequenced, priced and delivered	The challenges faced by smallholder farmers are multidimensional in nature, meaning a range of services is often necessary. The efficacy of services is often influenced by other services, which means the bundling, sequencing and delivery of services can have a major impact on a wide range of outcomes	· Service bundling and sequencing strategy development · Pricing strategies · Crop diversification packages · Regenerative agriculture service packages

Priority Learning Agenda

Research Questions	Hypotheses to Test	Exploratory Sub-Questions
1. What is the relationship between **service structure & delivery** and **efficiency** at SDM level?	1.1a Delivering services directly to farmers is on average costlier, but can lead to a stronger farmer relationship	1.2a What are successful last-mile delivery approaches (direct vs indirect service delivery to farmers) across SDMs in terms of cost-efficiency? 1.2b What (elements of) last-mile delivery strategies are successful in building a strong relationship between farmer and SDM operator?
2. How does **service structure & delivery** relate to **revenue generation, risk and resilience** at SDM level?	2.1a SDMs that are able to cover costs through service payments are more likely to reach financial sustainability	2.2a What role do services revenues play in SDM financial profitability and how does this compare across value chains? 2.2b What is the relationship between farmer food security and uptake of SDM services?
3. What is the relationship between **service structure & delivery** and **effectiveness** and **resilience** at farm level?	3.1a SDMs that employ digital technologies to deliver services are more successful in accessing women 3.2a SDMs that offer a holistic set of services (e.g. training, inputs, access to markets, finance) are more likely to increase farmer's income	3.2a What type of service or bundle of services are associated with high levels of farmer resilience e.g. climate Resilience, Income Stability Food Security)
4. In what SDMs is **bundling and/or sequencing of services** important?		4.2a What type of farmers typically receive a bundle of services vs a standalone service? 4.2b In what SDMs (or in what context) is bundling of services observed vs offering of a standalone service to farmers? 4.2b In what SDMs (or in what context) is sequencing of services observed and why?

Data points relevant to Driver

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **B 4.01** - Service offering · **B 4.02** - Service sequence · **B 4.03** - Last mile delivery		

Farmer Engagement | **Procurement**

Definition	Importance	Innovations (only if a priority driver)
The linkage of farmers to formal and informal markets such as through the purchase and/or brokerage of goods	A lack of access to markets makes smallholder farming risky for both households and those wishing to invest in them. Contracting and pricing arrangements can help shield smallholder farmers from price volatility and/or ensure that profit margins are better (desirably) distributed across the value chain. The shielding of smallholder farmers from price volatility can give them the confidence to invest whereas incentives such as premiums can influence farming practices by creating reward mechanisms	· Pre-season contract farming · Minimum pricing · Shortened payment terms · Market Information Systems · Broker Scoring/Segmentation · Digital weighing scales

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. How can **market access** improve **effectiveness** and **resilience** at farm level?	1.1a SDMs that link farmers to markets reduce farmers' income volatility 1.1b Long-term offtake contracts increase farmers' willingness to invest and ultimately their productivity and income	1.2a To what extent does access to markets reduce farmer income volatility and how does this relationship differ according to the type of buyer (formal vs informal) ? 1.2a What type of investments do farmers with offtake contracts make and how does this compare to the investments made by farmers without contracts?
2. What is the relationship between **sourcing** produce from farmers and SDMs **revenue generation**?		2.2a What role does sourcing from farmers play in SDM's financial sustainability and how does this compare across value chains? 2.2b What are successful strategies SDM operators can take to improve the quality of sourced produce?
3. How can farmers' **access to markets** be improved?		3.2a How and in what ways does farmers' access to markets differ across SDMs? 3.2b What are successful strategies/innovations that connect farmers to informal markets?
4. What is the relationship between **pricing and incentives** and **cost-to-source**?	4.1a SDMs that offer premiums have higher farmer loyalty 4.1b SDMs that offer farmers a guaranteed price for produce reduce attrition rates	
5. What is the relationship between **pricing and incentives** and **resilience** at farm level?	5.1a SDMs that offer farmers guaranteed off-take/ prices have a bigger impact on food security	

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **B 1.02** - Sourcing integration · **B 1.03** - Sourcing agreement · **B 1.12** - SDM off-take contract	· # of farmers with contract in place · Average price paid to farmers	· **m_crops** - Access to market questions · **m_sellingpoint** - Point of sale · **cs_timely_payment** - SDM payment on-time · **su_services_usage** - Access to services

Farmer Engagement | **Farmer Management**

Definition	Importance	Innovations (only if a priority driver)
The arrangements that govern how SDM operators interact with farmers, including whether services and processes differ based on farm(er) characteristics	The degree to which the needs, capabilities and resources of farmers are understood can greatly influence the efficacy of services provided. By understanding farmers better, these interventions can be better tailored. Furthermore, strong farmer management can foster longer-term healthy relationships that can create conditions for improved knowledge sharing and reduced side-selling	· Farmer segmentation · Gender gap tracking · Harvest and Delivery forecasting

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the relationship between **farmer management** and **effectiveness** at farm level?	1.1a SDMs that make use of graduation schemes deliver better outcomes for farmers, in terms of increased farmer productivity and incomes	1.2a To what extent and how can gender tailored service provision improve production/income?
2. What is the relationship between **farmer engagement** and **efficiency** and **scalability** of an SDM?	2.1a SDMs with longer-term relationships with farmers face lower rates of default 2.1b Female farmers are more likely to remain in an SDM; therefore, SDMs that target female farmers have higher rates of farmer retention and are more scalable 2.1c SDMs with longer-term relationships with farmers face lower rates of default	2.2a What is the relation between duration of farmer engagement and SDM efficiency?
3. What are **successful approaches to farmer management** that foster long term farmer engagement and improve access to services?		3.2a To what extent does sharing back of data to farmers by SDM increase duration of farmer engagement? 3.2b How can FMS be used in segmenting farmers and tailoring creating access to services?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **B 3.01-3.07** - Farmer Segmentation Indicators		· **cs_SDM_company -** Company relationship questions · **cs_recommendation, cs_postive_recommendation & cs_negative_recommendation -** Farmer satisfaction

Farmer Engagement | **Farmer Organization**

Definition	Importance	Innovations (only if a priority driver)
The level to which farmers are organized into institutions of participatory governance with grassroots structures, representing their interests, and with a certain level of accountability to them.	The aggregation of farmers into groups often means the farmers benefit from shared resources, increased bargaining power and economies of scale. From the perspective of businesses, this can reduce transaction costs if they are facing groups rather than individual farmers	· FO segmentation & graduation schemes · Credit risk pooling · Women-only farmer groups

Priority Learning Agenda

Research Questions	Hypotheses to Test	Exploratory Sub-Questions
1. What is the role of **farmer organizations** in improving **efficiency & scalability** of an SDM and lowering **risk**?	1.1a SDMs can reduce costs by working with strong farmer organizations 1.1b SDMs that lend to farmer groups rather than farmers have a lower rate of default	1.2a What are successful modes of interaction between FOs and SDM operators that lead to efficiency and lower risk of operations (for both FOs and the SDM operator)? 1.2b How important is the degree of farmer organizations in reaching greater scale?
2. What is the role of **farmer organizations** in improving **effectiveness** at farmer level?		2.2a What are the key benefits for farmers that are part of a farmer group (e.g. cost of production, access to finance, markets, empowerment)? 2.2b How does the creation and support of women's farmer groups translate into reducing gender gaps?
3. What are success factors to **building strong farmer organizations**?	3.1a Female representation in the management of farmer producer organizations can improve the management and efficacy of these organisations	3.2a What are successful strategies to build strong FOs? 3.2b What are recurring factors/conditions that SDM operators and industry stakeholders use/value to rank FOs according to level of maturity? 3.2c What are successful strategies to ensure inclusion of female farmers in FOs?

Data points relevant to Driver

SDM Indicators	TA/KPI Indicators	PDC Questions/Tags
· **A 2.01** - Target group · **A 2.02** - Size of farmer organization · **B 2.04-2.09** - Farmer organization segmentation indicators · **B 2.12** - Farmer organization strength indicators	· # of Farmer organizations trained · # of Farmer organizations sourced from	· **su_farmer_organization** - FO membership · **f_coop** - FO questions

Annex: Operational Structure driver detail

idh
transforming markets

Operational Structure | **People, Process, and Governance**

Definition	Importance	Innovations (only if a priority driver)
The degree of professionalisation and stability within an organization including managerial capacity, governance and processes	The ability for businesses to effectively execute their activities is ultimately impacted by their people, processes and resources. Across all sectors is organizational strength heavily connected to business performance	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the relationship between **governance** of an SDM operator and its **efficiency**?	1.1a SDMs with professional governance structures (such as unqualified audited accounts and a business plan) operate more efficiently	1.2a What governance structures or elements of processes within an SDM drive efficiency?
2. What is the relationship between the **people and processes** of an SDM operator and its **revenue generation** and **risk profile**?	2.1a Gender equality (inclusive and diverse workforce) in the SDM's workplace can boost a company's profitability 2.1b SDMs that source multiple crops have more stable income	2.2a How can gender equality in the SDM's workplace improve SDMs profitability? 2.2b What is the relation between integration of climate resilience, gender and food security in decision-making and SDMs profitability? 2.2c What are critical capabilities and opportunities SDM operators need to have to commercialize their business?
3. What is the role of technology in improving **operational processes and scale**?	3.1a SDMs that make use of technology are more successful at scaling their businesses	3.2a What technologies are effective in scaling up SDMs?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **B 1.08** - SDM staff · **B 1.13** - Audited accounts · **B 1.14** - Business plan · **B 1.15** - SDM staff turnover (management) · **B 12.01-08** - Data and technology indicators	· **4.3.5** - # of Full-time jobs within service provider	

Operational Structure | **Financing & Capitalization**

Definition	Importance	Innovations (only if a priority driver)
The approaches, mechanisms and instruments that are used to provide suitable financing for the operating and scaling of a business	Healthy capitalization within a business can enable the generation of its own investment capacity. However, for many businesses, financial support is needed for both working capital and capital expenditures. The cost and availability of finance can have a major impact on a business' ability to scale and withstand shocks	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the relationship between SDMs' **capitalization ratio** and **scalability**?	1.1a SDMs that have a healthy capitalization ratio are more successful at achieving scale	1.2a How is finance used by the SDM operator to scale business?
2. What **financing and capitalization structures** influence **profitability** and **risk** at SDM level?	2.1a SDMs with a longer track record are less likely to be dependent on concessionary funding 2.1b SDM operators with (long-term) off-take contracts are more able to access affordable finance 2.1c SDMs implementing climate solutions, are mostly reliant on subsidies to remain sustainable	2.2a What role can subsidies play in the implementation of climate solutions by SDMs?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **B 1.04** - Funder · **B 1.05** - Funding proportion · **B 1.16** - Main geographic source of funding · **A 1.15** - Cost of capital		

Operational Structure| **Partnerships & Service Coalitions**

Definition	Importance	Innovations (only if a priority driver)
The formation and formalization of partnerships with other service providers and/or off-takers to advance mutual interests with respect to service delivery and procurement	Partnering with other organizations allows each organization to focus on its core competencies thereby increasing the efficacy of service delivery and procurement. The sharing of resources can create economies of scale, while as a collective, coalitions may have greater bargaining power that allows them have a bigger influence on other stakeholders such as governments and policy makers in addition to offer a broader range of goods and services provided by more specialized providers	· Commission fee structures · Secretariat establishment · Interoperable data systems & APIs · Data sharing protocols · Cost sharing frameworks · Tripartite financing agreements

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1.How can **partnerships/service coalitions** improve **efficiency** and **lower risk** at SDM level?	1.1a Partnerships that enable SDMs to share elements of service delivery reduce the unit cost of service delivery to farmers 1.1b Service Coalitions that adopt shared infrastructure reduce costs 1.1c Sharing of data among partners reduces risk across a coalition	1.2a How does shared data and/or infrastructure reduce costs and risks for coalition partners? 1.2b What are the optimal incentive structures among the coalition partners? (i.e. cost, risk and revenue sharing mechanisms) 1.2c What type of data should be shared among partners and how should this be shared?
2. What are success factors to building **partnerships/service coalitions**?	2.1a Platforms with direct farmer relationships and supporting data infrastructure find it easier to attract additional service partners	2.2a What are the success factors behind coalition building (e.g. data sharing, and governance structures like leadership, accountability, decision-making)?
3. What is the benefits/disadvantages of service provision via **partnerships/service coalition** for farmers?		3.1a How can service coalitions improve access to finance for farmers? 3.1b What are the benefits (or unintended consequences) of service provision by a coalition of partners for farmers?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **B 2.01** - Formal relationships · **B 2.10** - Degree of shared infrastructure · **B 2.11** - Degree of shared data		

Annex: Market Dynamics driver detail

idh
transforming markets

Market Dynamics| **Market Formality & Supply**

Definition	Importance	Innovations (only if a priority driver)
The degree to which the supply side of a (produce) market maintains transparent and stable norms, rules and incentives that govern the practices of actors in the exchange of goods services	Supply chains vary in structure from 'tight' value chains where there are close relationships between actors and limited sales and distribution options for farmers (often cash crops or those requiring processing) to 'loose' value chains which are more informal and farmers have a range of options as to where they sell (often food crops). Loose value chains are inherently riskier and tend to be characterised by higher side-selling	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1.What is the influence of **market formality** on **revenue generation** at SDM level?	1.1a SDMs operating in loose value chains are less profitable than those in tight value chains 1.1b SDMs operating in loose value chains could expect a longer time to break even	1.2a What is the difference in revenue generation across SDMs operating in loose vs tight value chains? 1.2b What are successful strategies to limit side-selling and how does this differ in informal markets?
2. What elements of a SDM work well in loose vs tight value chains?	2.1a Upfront contracting is less-likely to be a feature of looser value chains	2.2a What are the characteristics of SDMs that operate in loose value chains? 2.2b What service delivery and procurement approaches work best in informal markets?
3.How does **market formality** influence farmer **resilience** and income?		3.1a What is the difference in resilience for farmers that are part of SDMs operating in loose vs tight value chains?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 1.11 -** Value chain organization · **A 1.12** - Supplier		

Market Dynamics| **Market Demand**

Definition	Importance	Innovations (only if a priority driver)
The key elements that influence the demand for goods in a market including the quantity, quality and elasticity (price sensitivity)	Market demand can be a key driver in, pricing, how a value chain can attract investment and the creation of opportunities. Demand based on the quality, quantity and standards of production can be channelled to have an effect on farm practices through incentives such as premium and mechanisms such as certification	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the influence of **market demand** on the scalability of an SDM?	1.1a Markets exhibiting excess demand make it more possible for SDMs to achieve scale	1.2a What is the relation between SDMs that operate in a market with excess demand and their growth in farmers?
2. What are the **key characteristics of local, regional and global demand** and implications for farmers and SDM operators?		2.2a What are the key differences in SDMs where demand for produce is local/regional vs intercontinental? 2.2b How do market entry barriers or opportunities differ for farmers producing for local, regional or global consumption? 2.2c How can value chain driven approaches where large downstream actors are linked to an SDM incentivise investments further upstream 2.2d What support and capabilities do SDM operators need when trading regionally?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 1.26** - Export/import size of the value chain		

Annex: Enabling Environment driver detail

idh
transforming markets

Enabling Environment | **Infrastructure**

Definition	Importance	Innovations (only if a priority driver)
The general term for the basic physical and digital systems of a business, region, or nation—for instance, transportation systems, communication networks, sewage, water, and electric systems are all examples of infrastructure	Transaction costs, competitiveness and even the viability of some agricultural value-chains, especially perishable food crops, are particularly reliant on the existence of suitable physical infrastructure – particularly transport and adequate storage facilities. Digitization has emerged as a key means to lower cost, but the cost-effectiveness of digitization is largely dependent on the available digital infrastructure	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the influence of the **infrastructure** on the **scalability** of SDMs?	1.1a The business case for digitization improves where there is a supportive digital environment, even in the absence of good physical infrastructure	1.2a What conditions are required for SDM operators to digitize their service offering/use digital tools? 1.2b What aspects of the infrastructure most promote or hinder the scaling of operations?
2. What is the influence of the **infrastructure** on SDMs' level of **efficiency**?	2.1a The impact of the quality of physical infrastructure on efficiency is significant, especially in perishable crops	2.2a What is the impact of the physical infrastructure in which an SDM operators on its efficiency and how does this differ across type of crops?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 4.17** - Digital technology environment · **A 4.18** - Physical infrastructure environment		

Enabling Environment | **Policy & Regulatory Environment**

Definition	Importance	Innovations (only if a priority driver)
The set of policies, laws and regulations that are put in place to achieve the government's objectives, and have an influence on how the private sector is able to operate	Policy and regulation influences the cost of production for farmers and businesses operating in smallholder agriculture as well as the extent to which they can benefit from investment and trade. By having more supportive regulations, farmers' integration in agricultural markets can be optimised	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the influence of the **policy and regulatory environment** on the **scalability** and **efficiency** of SDMs?	1.1a SDMs operating in markets with an unsupportive enabling environment are less able to achieve scale	1.2a What aspects of the policy and regulatory environment most promote or hinder the scaling of operations? 1.2b How does government investment in agriculture influence the costs faced by SDM operators?
2. What is the influences of the **policy and regulatory environment** on farming practices and **resilience** of farmers?		2.2a What improvements in policies and regulations are needed to improve stability of farming practices and food security?

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 4.19-4.26** - Enabling environment indicators		

Enabling Environment | **Investor Environment**

Definition	Importance	Innovations (only if a priority driver)
The economic, financial, and socio-political conditions in a country/industry/value-chain that affect whether individuals, banks, and institutions are willing to lend money and acquire a stake (invest) in the businesses operating there	The availability of affordable capital in a country (or a particular value chain) can influence the ability of businesses and farmers to prosper. This capital can include public investments, donor funding, commercial and concessional financing	N/A – Learning only

Priority Learning Agenda		
Research Questions	**Hypotheses to Test**	**Exploratory Sub-Questions**
1. What is the influence of the **investor environment** on SDMs' ability to **attract capital**?	1.1a Value chains that are situated within a supportive enabling environment are more able to attract investment	1.2a How does the investor environment influence SDMs ability to attract capital? 1.2b What is the relation between SDMs with climate adaptation business models and their ability to attract scaling capital?
2. What is the influence of the **investor environment** on SDMs' ability to **scale** operations?	2.1a SDMs with climate adaptation business models are more scalable in countries where there is more climate related investment by donors and government	

Data points relevant to Driver		
SDM Indicators	**TA/KPI Indicators**	**PDC Questions/Tags**
· **A 1.15 -** Cost of capital		

Annex: Innovation Catalogue

idh
transforming markets

In this annex, we have listed how we believe selected innovations relate to our performance outcomes

Innovations Catalogue | Priority Areas (1/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Profitability	Risk	Scalability
Land Size & Consolidation	**Block farming models:** Farming models where clustered land is owned by an SDM operator but leased to farmers	Slightly Positive	Limited/Neutral	Very Positive	Slightly Positive	Limited/Neutral	Slightly Negative
	Clustering and nucleus farming models: Farming models where farms are clustered around a nucleus estate (or a plantation)	Slightly Positive	Limited/Neutral	Very Positive	Slightly Positive	Limited/Neutral	Slightly Negative
	Land titling: The process of securing land tenure security for farmers	Very Positive	Limited/Neutral	Limited/Neutral	Limited/Neutral	Slightly Positive	Limited/Neutral
Input Service Offering	**Soil testing bundling with inputs:** Soil testing techniques to tailor the inputs provided to farmers so they are more appropriate for the land	Very Positive	Slightly Positive	Slightly Negative	Slightly Positive	Slightly Positive	Limited/Neutral
	Community-based nurseries & seed multipliers: Community actors charged with the production and multiplication of specific seed varieties	Very Positive	Very Positive	Slightly Positive	Limited/Neutral	Limited/Neutral	Slightly Positive
	Climate-smart input packages: The combination of seeds, (organic) fertilizer and pesticides that are appropriately bundled to optimize climate impact	Very Positive	Very Positive	Limited/Neutral	Limited/Neutral	Slightly Positive	Limited/Neutral

Legend: Expected Outcome

Very Positive | Slightly Positive | Limited/Neutral | Slightly Negative

- For the drivers that have been prioritized for innovation, we list and define some innovations (defined at a high level)
- For each innovation, we indicate what impact we think that they will have, from slightly negative to very positive
- Note that exact innovations would be more granularly defined for each project and the expected outcome will vary on a case-by-case basis, and this is merely an indication based on a combination of theory and desk research

Innovations Catalogue | Priority Areas (1/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Land Size & Consolidation	**Block farming models:** Farming models where clustered land is owned by an SDM operator but leased to farmers	Slightly Positive	Limited/Neutral	Very Positive	Slightly Positive	Limited/Neutral	Slightly Negative
	Clustering and nucleus farming models: Farming models where farms are clustered around a nucleus estate (or a plantation)	Slightly Positive	Limited/Neutral	Very Positive	Slightly Positive	Limited/Neutral	Slightly Negative
	Land titling: The process of securing land tenure security for farmers	Very Positive	Limited/Neutral	Limited/Neutral	Limited/Neutral	Slightly Positive	Limited/Neutral
Input Service Offering	**Soil testing bundling with inputs**: Soil testing techniques to tailor the inputs provided to farmers so they are more appropriate for the land	Very Positive	Slightly Positive	Slightly Negative	Slightly Positive	Slightly Positive	Limited/Neutral
	Community-based nurseries & seed multipliers: Community actors charged with the production and multiplication of specific seed varieties	Very Positive	Very Positive	Slightly Positive	Limited/Neutral	Limited/Neutral	Slightly Positive
	Climate-smart input packages: The combination of seeds, (organic) fertilizer and pesticides that are appropriately bundled to optimize climate impact	Very Positive	Very Positive	Limited/Neutral	Limited/Neutral	Slightly Positive	Limited/Neutral

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Innovations Catalogue | Priority Areas (2/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Financial Service Offering	**Non-standard credit scoring:** The use of alternative data, such as weather data and psychometric assessments to determine creditworthiness						
	Digitization of loan application: The use of digital technology to allow clients to apply for loans, and for decisions on granting loans to be made						
	Flexible collateral requirements: The acceptance of alternative forms of collateral such as off-take contracts						
	Gender-tailored loans: Loan products that are designed to overcome the unique barriers that women face in accessing credit						
	Village savings and loans associations: Self-managed and self-capitalized savings groups that use members' savings to lend to each other						
	Mandatory insurance bundling with loans: The enforced bundling of crop, price, weather or other insurance with loans						
	Digital payments: The use of mobile money and other digital financial services enabling the flow of cash without physical infrastructure						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Innovations Catalogue | Priority Areas (3/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Post-Harvest Service Offering	**Community/group-based post-harvest assets:** Storage, threshing and transportation equipment that is owned by communities or FOs						
	Mobile drying/threshing/cleaning units: Machinery that can be transported to farms to facilitate the on-farm drying, threshing or cleaning of produce						
	Warehouse receipt systems: Storage facility that provides safe custody to produce with farmers issued a warehouse receipt in return						
	Mobile aggregation centers: Aggregation teams or centers that are mobile and can facilitate the aggregation of crops from farmers						
	Cold-chain storage: A temperature-controlled supply chain consisting of systems that monitor or maintain produce at a given temperature						
	Solar dryer installation at aggregation centers: The installation of solar powered dryers at aggregation sites to reduce moisture						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Innovations Catalogue | Priority Areas (4/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Training & Information Service Offering	**Digital Extension Services:** The provision of extension support to farmers via mobile and computer-based services						
	Geodata Assisted Information Provision: The provision of weather and climate data to farmers						
	Social Networking Platforms: The use of online platforms such as Whatsapp and Wechat for farmers to exchange information digitally						
	Women-Only Training: Providing separate training for women to account for unique challenges they face or to create separate space for their learning						
Equipment & Labor Service Offering	**Equipment/Mechanization/Labor rental services:** Services allowing farmers to rent equipment or labor at a fee						
	Shared ownership schemes: Schemes that facilitate the shared ownership of (mechanization) equipment among a community or FO						
	Sensor-assisted irrigation/equipment: Automated (irrigation) equipment that performs an activity based on a sensor						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO
Ministry of Foreign Affairs
DANIDA
BILL & MELINDA GATES foundation
UKaid
idh transforming markets

Innovations Catalogue | Priority Areas (5/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Service Structure & Delivery	**Crop diversification packages:** Service packages (especially training, finance and inputs) that facilitate diversification of farming activities						
	Regenerative agriculture service packages: Service packages underpinned by long-term finance to allow the transition of farms to regenerative agriculture						
	Service pricing strategies: Approaches to charge for particular services where income previously was not generated						
	Service bundling and sequencing strategy development: Approaches to provide services in bundles or sequences to meet farmer needs						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Innovations Catalogue | Priority Areas (6/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Procurement	**Pre-season contract farming:** A sales arrangement between farmer and firm agreed before production begins providing assurance on volumes and/or price						
	Market information systems: Systems that collect, process and disseminate information (e.g., pricing, quality) to create transparency in a market						
	Broker scoring/segmentation: The assessment of brokers on a range of criteria (e.g., quality/volume requested, prices offered, track record)						
	Digital weighing scales: The provision of weighing scales to farmers to record produce weight and limit possibilities of exploitation by traders						
	Minimum pricing: A contract mechanism guaranteeing farmers a minimum price while retaining the benefits of price increases						
	Shorter payment terms: The reduction in the time span from when farmers are paid after harvest						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO
Ministry of Foreign Affairs
DANIDA
BILL & MELINDA GATES foundation
UKaid
idh transforming markets

Innovations Catalogue | Priority Areas (7/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Farmer Management	**Farmer Segmentation:** The subdivision of farmers into segments based on certain characteristics to enable more tailored service provision						
	Gender gap tracking: The continuous monitoring of gender gaps in production, income and service access to support service provision						
	Harvest & delivery forecasting: The use of systems to plan collection and transportation based on forecasts of farmer harvests						
Farmer Organizations	**FO segmentation & graduation schemes:** The subdivision of FOs into segments based on performance to enable more tailored service provision						
	Credit risk pooling: A lending mechanism which allows a group of individuals to provide collateral or loan guarantee through a group repayment pledge						
	Women-only/led Farmer Groups: The formation/support of farmer groups whose members are (predominately) women						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Innovations Catalogue | Priority Areas (8/8)

Indicative & Non-Exhaustive

Driver	Innovations	Effectiveness	Resilience	Efficiency	Revenue Generation	Risk	Scalability
Partnerships & Service Coalitions	**Tripartite financing agreements:** An agreement between off-takers, loan providers and farmers that allows use of off-take contracts as loan collateral						
	Commission fee structures: Conditions for service providers and off-takers for participation in a service coalition/partnership						
	Interoperable data systems & APIs: The sharing of data among different service providers and off-takers in a coalition to improve decision making						
	Secretariat establishment: Establishment of a single actor responsible for the governance and functioning of a service coalition/partnership						
	Data sharing protocols: Rules that establish what data can and should be shared between different members to a service coalition/partnerships						
	Cost sharing frameworks: Mechanisms that aim to distribute costs based on the risks taken and value generated by different partners in a coalition						

Legend: Expected Outcome

Very Positive | *Slightly Positive* | *Limited/Neutral* | *Slightly Negative*

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO
Ministry of Foreign Affairs
DANIDA
BILL & MELINDA GATES foundation
UKaid
idh transforming markets