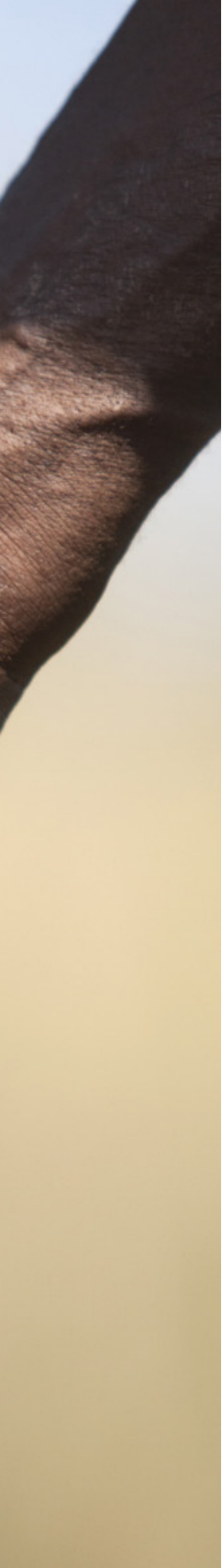
FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

STOCKTAKING REPORT ON FTF INOVA MOZAMBIQUE

Progress in Achieving Impact at Scale

MARSHALL A. BEAR

December 2019



CONTENTS

FIGURES

TABLES

1 INTRODUCTION

This paper, produced by the USAID/Mozambique Feed the Future (FTF) Agricultural Innovations (Inova) project, is the first of two case studies to explore this question: *How can a market system development (MSD) program achieve impact at scale in a thin market?* FTF Inova, a five-year (2017–2022) $21 million USAID-funded agribusiness program managed by DAI, was chosen for these case studies for a number of reasons: it operates in Mozambique's thin agriculture market, its two years of operating experience enables reflection on lessons from experience, and its design, set-up, and USAID-contractor relationship is fit for the purpose of facilitating market system change for inclusive growth.

This first paper documents, as of August 2019, how effectively FTF Inova is positioned to achieve impact at scale during its first two years of implementation,[1] a period of time required by MSD programs to discover, through trial and error, what works and why. By design, FTF Inova has formulated strategies to intervene simultaneously at multiple points in the agriculture market system to discover the best levers it can use to achieve its goals. These entry points include 1) input supply and distribution networks, 2) supply chain management to destination markets, and 3) services (spray, tillage, marketing, logistics, information, etc.) in support of agriculture markets.[2] This paper examines FTF Inova's lessons from experience across all three system change strategies, working with multiple private sector partners of different sizes, levels of sophistication, origin, and experience; in so doing, it takes stock of the project's current positioning to achieve impact at scale.

The research for this first paper was conducted from July 29 to August 9, 2019, and consisted of interviews with FTF Inova's staff and partners in Maputo and Nampula.[3]

FTF Inova's goal to increase sustainable, agriculture-led economic growth to reduce poverty and hunger by catalyzing more inclusive and competitive agricultural market systems is derived from two assumptions about market systems:

- *Market systems are more inclusive when all market actors—including traditionally disadvantaged groups (smallholder farmers, women, and youth)—have equal access to market opportunities and can benefit from their pursuit of them.*
- *Market systems are more competitive when all market actors can sell goods and services that deliver value to their customers and themselves while being able to adapt, learn, and change in the face of competition.*

The second case study will update FTF Inova's progress in achieving impact at scale by assessing its performance during the implementation of its third Annual Work Plan.[4] The second paper's focus will be on *how* FTF Inova has engaged with the private sector by taking stock of its set-up (systems, structures, staffing, skills) and its relationship with USAID to manage adaptively in thin market systems for impact at scale. Both papers are intended to offer a relevant illustration on how to translate USAID's Private-Sector Engagement Strategy into practice. Research for the second paper is planned for May 2020.

1 August 2019 was chosen to correspond with FTF Inova's first two Annual Work Plans: October 1, 2017–September 30, 2018 and October 1, 2018–September 30, 2019.
2 FTF Inova will increase its collaboration with the Supporting the Policy Environment for Economic Development (SPEED+), USAID/Mozambique's policy/enabling environment project to unblock policy/regulatory constraints to upgrading, including the route to formalization by smallholder farmers.
3 See Annex A for a list of organizations and people interviewed.
4 October 1, 2019 – September 30, 2020.

2 BACKGROUND

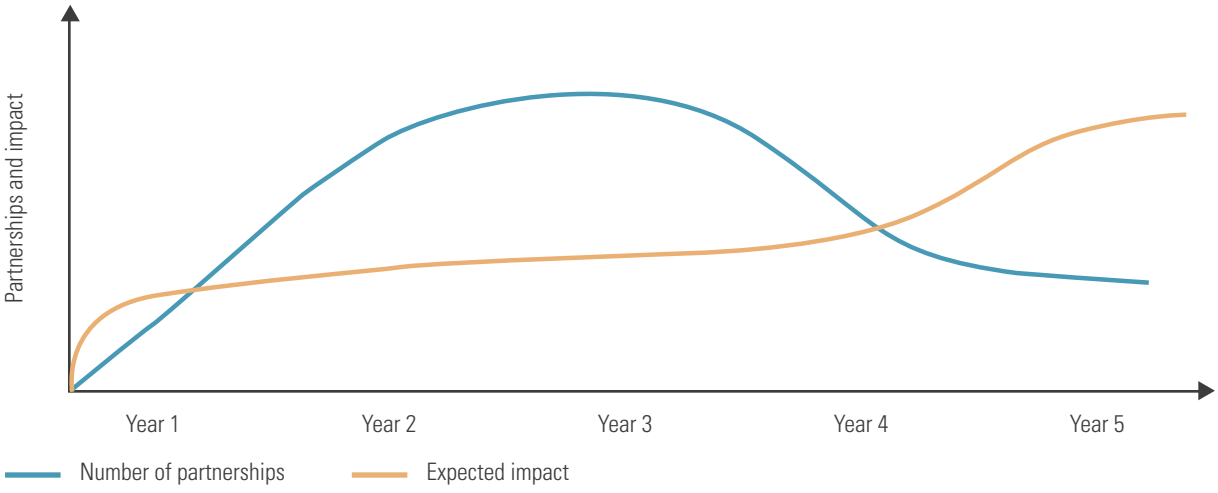
2.1 ORIGIN OF THESE CASE STUDIES

The unique selling point of an MSD approach over a more conventional direct delivery approach boils down to one word: *sustainability*. MSD programs aim to influence market system players—private, public, and civil society—to embrace inclusivity as vital to their business, policy, and advocacy interests. But it takes time for a program to carefully vet partners with relevant ideas and the willingness to invest in them, to negotiate formal memoranda of understanding with appropriate cost-sharing arrangements, and to generate sufficient evidence of results at a pilot scale to position a program for impact at greater scale. *Figure 1: Impact Over Time*[5] illustrates the acknowledged trade-off between level of effort (FTF Inova-supported partnerships) and expected impact over time (reducing poverty through income and jobs). The implications of this trade-off affect all aspects of an MSD program, including its design, management, and measurement.

[5] See Inova's Annual Work Plan, 2019, page 4.

Todd Flower, the Contracting Officer's Representative (COR) for FTF Inova at the time this task was defined, wanted to document what a private-sector engagement strategy using an MSD approach looks like at different points in time during implementation. Mr. Flower's particular interest was to show his USAID colleagues how this trade-off influences their roles, responsibilities, and expectations when managing a private-sector engagement project using an MSD approach.

FIGURE 1 IMPACT OVER TIME



2.2 AUDIENCES AND THEIR INTERESTS:

These case studies target USAID practitioners who work with the private sector and are tasked with implementing USAID's new Private Sector Engagement Policy. FTF Inova's experience, as it evolves over the project's five-year lifespan, could offer valuable lessons on how to formulate and implement a private-sector engagement strategy as part of a country's Journey to Self-Reliance. The case studies have three specific USAID audiences in mind:

- Early adopters of USAID's Private Sector Engagement Strategy (especially in the Food Security Bureau) who want to design and manage better programs based on lessons from experience.

- Fence sitters on private sector engagement strategies across multiple sectors—especially those with approval authority (e.g., CORs) for the allocation of project resources—who need to better understand what makes MSD programs tick and their role in effectively supporting them.

- Managing contractors' in-country leadership teams—especially teams that start with a low base of understanding of private-sector engagement and market system thinking—that need to understand how direct enterprise support is a means to better functioning systems and their contribution to impact at scale.

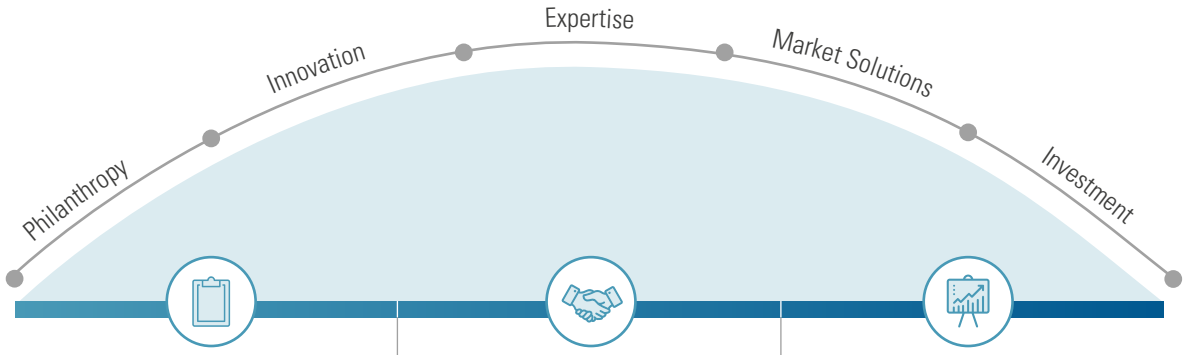
These case studies should also be relevant to a wider audience of MSD practitioners: other funders, host governments, implementing partners, and their in-country management teams.

2.3 KEY MESSAGES

2.3.1 FLEXIBLE PROGRAM DESIGN IS A MUST

FTF Inova is designed as a co-creation type of private sector engagement strategy as is shown in *Figure 2: Spectrum of Types of Private Sector Engagement.*[6] With USAID, the contractor determines the subsectors with which to engage, where to intervene (both geographically and in what specific market systems), with whom to partner (e.g., type, size, and sophistication of market players), and how best to allocate program resources (that is, staff and funds) to achieve pro-poor market outcomes. A flexible program design is essential where desired outcomes cannot be planned in advance because USAID is not paying for change; it is facilitating a private sector-led change process.

FIGURE 2 SPECTRUM OF TYPES OF PRIVATE SECTOR ENGAGEMENT



DONOR-LED	CO-CREATION	PRIVATE SECTOR-LED
USAID is the driver	USAID is a co-creator	USAID is the facilitator
Activities and assistance leverage private-sector resources and expertise	Joint identification of challenges	Activities and assistance address private-sector constraints or risks
Might or might not be aligned with commercial interests or core business operations	Joint design and programming that address shared interests, including through co-creation of market-based approaches	Engagements build on for-profit and market-based approaches to challenges

The intellectual rationale for a flexible program design comes from the literature on complex systems best illustrated by the Cynefin (pronounced ki-*neff*-in) Framework shown in *Figure 3: Cynefin Framework.*[7] The upper-left quadrant defines what most MSD practitioners have experienced in the early stages of a program: a market's response to an intervention is very hard to know in advance so interventions must be flexible as outcomes may be unforeseen.[8] When desired change starts to happen through a process of adaptive

6 This graphic is taken from USAID's Private-Sector Engagement Policy, page 7.
7 USAID, Complexity-Aware Monitoring, Version 1, July 2018.
8 Adapted from a graphic found in USAID Discussion Note: Complexity-Aware Monitoring, page 3, Version 1, July 2018.

management and learning then the implementer should be able to infer a cause-and-effect relationship and plan interventions (upper-right quadrant in the figure). These papers will use this Cynefin Framework as they document FTF Inova's journey in complex market system.

FIGURE 3 CYNEFIN FRAMEWORK

1 COMPLEX

Cause and effect are identifiable in retrospect, but is unlikely to conform with prior expectations of how things work. Interventions must be flexible as outcomes may be unforeseen.

2 COMPLICATED

Cause and effect are unclear at the time, but can be inferred using data, analysis and expert knowledge. Once understood, rules for intervention can be defined and followed.

3 CHAOTIC

No cause and effect relationships are identifiable, either in advance or in retrospect. Interventions act merely to bring immediate stability as outcomes are random.

4 SIMPLE

Cause and effect are predictable and the appropriate response to definable situations can be codified in Standard Operating Procedures which then drive interventions.

2.3.2 INTERVENE BEYOND THE CORE FUNCTION IN A MARKET SYSTEM...ESPECIALLY IN THIN MARKETS

Market systems are multifunction and multiplayer (private, public, membership, civil society, and nongovernmental) as shown in *Figure 4: Market System Matrix: Functions and Players.*[9] Transactions between buyers and sellers or demand and supply are at the heart of any market system depicted in *Figure 4* as a simplified value chain.

FIGURE 4 MARKET SYSTEM MATRIX: FUNCTIONS AND PLAYERS

PLAYERS

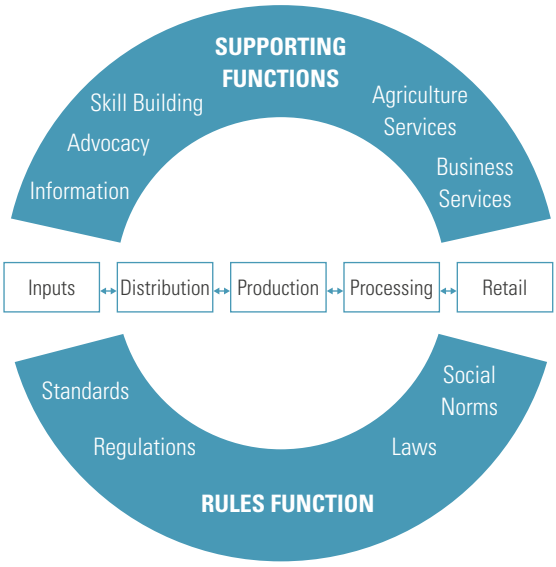
Private Businesses

Government Agencies

Private Sector Associations

Civil Society Organizations

NGOs



[9] Making Markets Work, Springfield Centre.

Thin markets are characterized by few buyers and few sellers and a low volume of overall transactions. This is true of Mozambique's agriculture markets for a number of reasons: the low population density located in diverse and difficult-to-reach locations with a very weak national road network; the major role the Government of Mozambique (GOM) and donors have played as distributors of free inputs and as a buyers of locally produced agriculture product; and the availability of cheaper agriculture goods imported from South Africa and neighboring countries. Low transaction volumes and distorted buyer/seller incentives resulting from direct government and NGO intervention can crowd out other firms—such as banks, media, consultants, information and communications technology (ICT) firms—that could play an important support role in strengthening agriculture markets.

Given these challenges, in thin markets, in particular, it is important for an MSD implementer to work beyond the core of the market and leverage private and public sector incentives wherever they may exist in the wider market system. Most of FTF Inova's partnerships are with firms in the core market—seed companies, input distributors, farmers cooperatives, processors, and retailers—but not all. Partners also include marketing firms, spray service providers, community radio stations, and others—all of which see a business opportunity to expand and/or diversify their products/services in agriculture. This report will examine how support players can drive change as much as players in the core of the market.

2.3.3 INTERVENING IN COMPLEX SYSTEMS NEEDS TO BE MANAGED IN SEQUENCE

MSD programs progress through two stages of development, with a relatively lengthy first stage (two or more years) that is required to create the conditions for improved system performance (market outcomes, outreach, and impact) in subsequent years.

Stage 1 is the period when a program sets out to partner with multiple market system players that are willing to invest in business innovations of their own design with uncertain returns. This is a time-intensive period—between 18 and 36 months—when a program must establish its presence with prospective market system players (private and public organizations, associations, and civil society organizations) as a partner in innovation rather than a hands-off funder. This is especially difficult in thin markets where there is a low degree of awareness among market players that they are part of a larger system and could mutually benefit from interactions with each other.

This is a period of learning, when an MSD program will discover answers to a number of questions:

- Are innovators being rewarded for changing their behaviors and are these behavior changes leading to better outcomes for low-income people?

- Are trust-based, win-win networks beginning to form at different points in the system: input distribution-led, producer-led, processor-led, retailer-led, output buyer-led, business or agriculture service-led?

- Are networks of firms encouraging specialization so that all firms in the network can focus on their core business and rely on the market to perform other critical functions required for success?

- Which market player-led networks (manufacturers, distributors, agro-dealers, service providers, aggregators, processors, or retailers) are better positioned to achieve impact at scale?

In Stage 1, MSD managers must send clear messages to staff to find and enter into partnerships with innovators and to form short-term meaningful relationships. The number of individual partnerships are expected to decline as proven and effective networks of firms take their place. An MSD program's monitoring, evaluation, and learning (MEL) system must be robust at capturing both *the what* and *the why* of the change process. FTF Inova, for example, aims to facilitate a shift in input markets from "take it or leave it" to delivering real "customer value" to smallholder farmers. The evidence to support this shift—*what changed*—can come from quantitative data on the volume and value of market-based transactions. However, *the why behind the what* will need to be examined by a set of inter-related, qualitative variables:

- Are *incentives* aligned between farmers and their input suppliers and output off-takers?

- Are *relationships* changing from win-lose transactions to longer-term win-win interactions?

- Do the players in the network have the *capacity* to deliver on their promises?

Implementation of FTF Inova's strategies and actions in Stage 1—this period of discovery—is this paper's focus. The following analysis unpacks what has changed, the drivers behind these changes, and how FTF Inova is positioned at this stage of implementation to achieve impact at scale.

Implementation of FTF Inova's strategies and actions in Stage 1—this period of discovery—is this paper's focus.

STAGE 2

Stage 2 is when a program leverages proven networks to reach impact at scale, sustainably. Scale must be defined from the outset in order to gauge Stage 1 positioning toward reaching scale and then Stage 2 progress toward achieving scale. This Stage 2 measurement will occur when FTF Inova's program has matured to the point when it is engaged with fewer, stronger networks that are able to leverage sustained pro-poor market outcomes (see *Figure 1: Impact Over Time*).

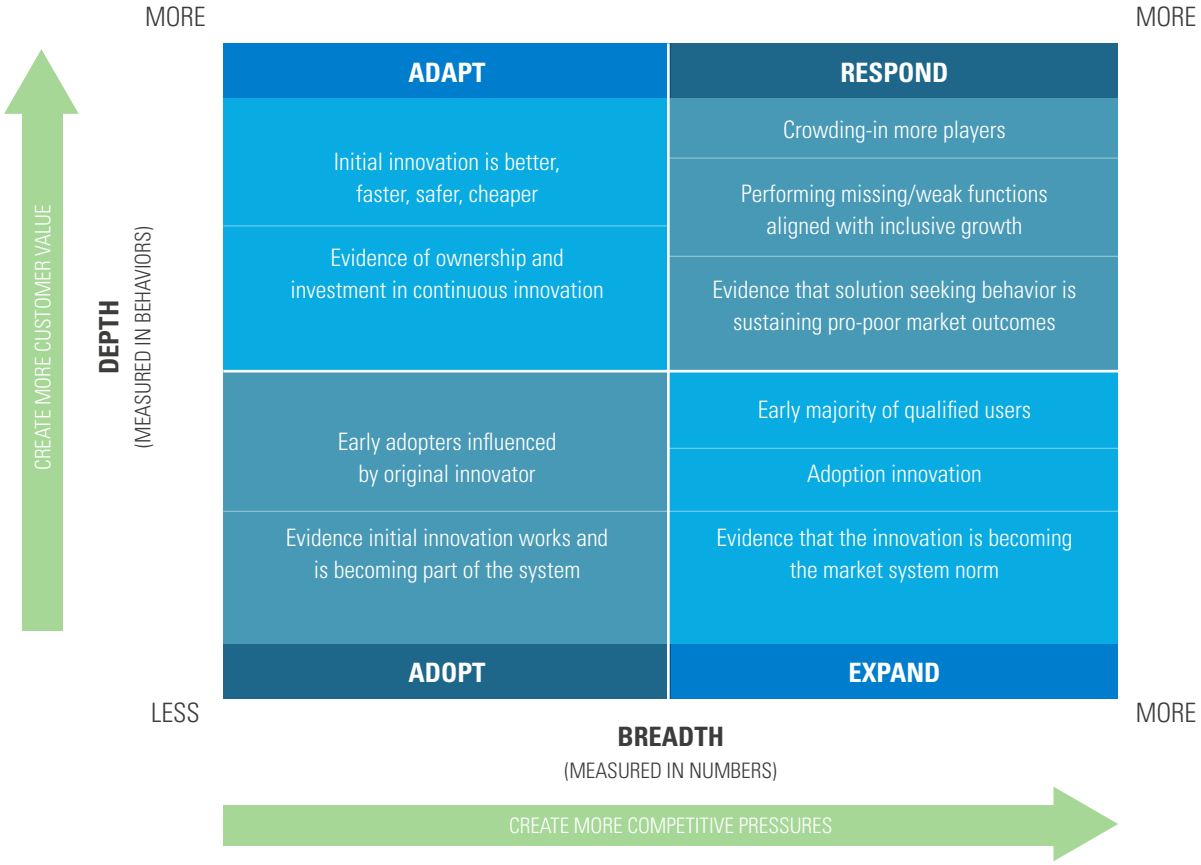
Scale in a market system context is a function of two inter-related variables:

- *Breadth:* The adoption of an innovation by an increasing number of qualified users signals that change (embedded in the innovation) works. Competitive pressures drive the adoption process (innovator, early adopters, early majority, late majority, and laggards)[10] and expand outreach to more qualified users. Numbers are useful indicators of breadth by comparing actual versus qualified users and disaggregating the data by 1) who adopts (demographic, economic, gender) and 2) *what* is adopted (concept and/or practices).
- *Depth:* Depth is when the original innovation is adapted (made better, faster, safer, cheaper) in order to create more value for its users. Continuous adaptation is a robust indicator of a competitive, solution-seeking market system[11] and is revealed in a couple of ways: 1) continuous firm innovation becomes the behavioral norm as evidenced by investing more in people, systems, and practices; and 2) the crowding-in of new market players performing missing/weak system functions as they come to realize that supporting innovation is aligned with their own interests (private sector) and mandates (public sector). Qualitative behavioral changes are useful indicators of both firm and system depth by tracking shifts in incentives (misaligned to better aligned), relationships (mistrusting transactional to longer-term interactions), and capacity (from waiting for others to solve problems to seeking solutions on their own).

Figure 5: Reaching Scale for Inclusive and Sustained Growth (below) uses a matrix[12] to illustrate this definition of scale across its two variables of breadth and depth.

[10] Rogers, Everett, *Diffusion of Innovations,* Simon and Schuster, 1962.
[11] Eric Beinhocker, *Origin of Wealth: Evolution, Complexity, and the Radical Remaking of Economics,* Harvard Business School Press, 2006.
[12] This matrix is an adaptation of The Springfield Centre's Adopt, Adapt, Expand, Respond (AAER) Framework (2014).

FIGURE 5 REACHING SCALE FOR INCLUSIVE AND SUSTAINED GROWTH



- *Breadth Axis:* The **Adopt** quadrant (lower left) captures the point when early adopters have embraced the change embedded in the original innovation. The **Expand** quadrant (lower right) tracks the adoption process to the point when the early majority of qualified users have adopted the innovation. When the innovation has reached the early majority it is presumed that the next stages—late majority and laggards—will follow without continued investment of project resources.

- *Depth Axis:* The **Adapt** quadrant (upper left) captures the process of innovating on the original innovation by making it better, faster, safer, and cheaper. Adaptation signals ownership and investment in innovating as a behavioral norm by market players (private, public, and civil society). The **Respond** quadrant captures the continuation and expansion of the innovating process by more market players performing missing/weak but critical market functions for inclusive growth. When the innovation process has reached an early majority of adopters (core, support, and rules functions) and when a high degree of adaptation is exhibited by these players, then processes of innovation and solution seeking behavior have become the market system norm.

Stage 2 implementation will be the focus of the second paper. It will unpack the correlation between impact at scale and how FTF Inova—USAID and DAI—uses a co-creation private sector engagement strategy to facilitate these changes.

2.4 CASE OUTLINE

Section 1 Introduction and *Section 2 Background* have set the context for the next three sections in this case study.

Section 3: Stocktaking: Stage 1 of FTF Inova's Program Implementation describes FTF Inova's interventions and partnerships to advance its goal of sustained, agriculture-led growth inclusive of disadvantaged groups. This section is divided into subsections for FTF Inova's three areas of strategic engagement: 1) customer-facing input supply and distribution networks; 2) mutually beneficial supply chain management arrangements; and 3) value-adding support services for inclusive agriculture growth. A limited number of FTF Inova's partners were chosen to showcase Stage 1 implementation.

Section 4: Position in Reaching Scale for Inclusive and Sustained Growth assesses FTF Inova's positioning, as of August 2019, to achieve impact at greater scale. This section describes the progress of FTF Inova's partners in advancing their innovations in favor of inclusive and sustained growth and then overlays this progress on the breadth and depth matrix (*Figure 5*). This section concludes with a synthesis of lessons from Stage 1 that positions FTF Inova for Stage 2 implementation.

Section 5: Case Study 2: A Synopsis briefly describes the planned focus and content for the second case study.

3 STOCKTAKING: STAGE 1 OF FTF INOVA'S PROGRAM IMPLEMENTATION

3.1 FTF INOVA'S STRATEGY

Desired change takes time, especially when a program aims to achieve sustained market-based outcomes using private sector engagement strategies and a market systems facilitation approach to implementation. It takes time to understand system dynamics and critical constraints to inclusive growth, and time to identify and engage with willing partners to unblock these constraints. Partnering experience indicates that no partner is *ready-made;* instead, partners are *made ready* to bring about the changes desired to achieve impact at scale, sustainably. Again, this takes time: anticipated incentives associated with change may not be realized; the cost-benefit calculation may no longer be favorable when short-term subsidies are removed; and unanticipated events may cast doubt on the original assumptions behind the importance of change in the first place. Further, in agricultural market systems, seasonal vagaries influence time in myriad ways.

As such, FTF Inova intervenes simultaneously at multiple points in the system to discover the best leverage points and related market system players to achieve its goal of a more competitive and inclusive agricultural market system. This is a strategic choice because in thin markets an MSD practitioner must identify from a much wider pool of market players who see an incentive to innovate in favor of a more competitive and inclusive market.

FTF Inova works with a broad range of crop types, from cashews to castor beans. To be included in FTF Inova efforts, the agricultural commodity must have inclusive growth potential and the ability to compete in either domestic or export markets. As such, FTF Inova aims to facilitate a better functioning market system by increasing smallholder farmers' access to and use of a bundle of appropriate inputs of genuine quality required to enter into higher-value domestic and export markets across a range of commodities in line with demand specifications (e.g., quality, quantity, and price) from multiple buyers (e.g., aggregators, processors, and retailers). Each of FTF Inova's entry points focuses on a desired systemic change relevant to the Mozambique context.

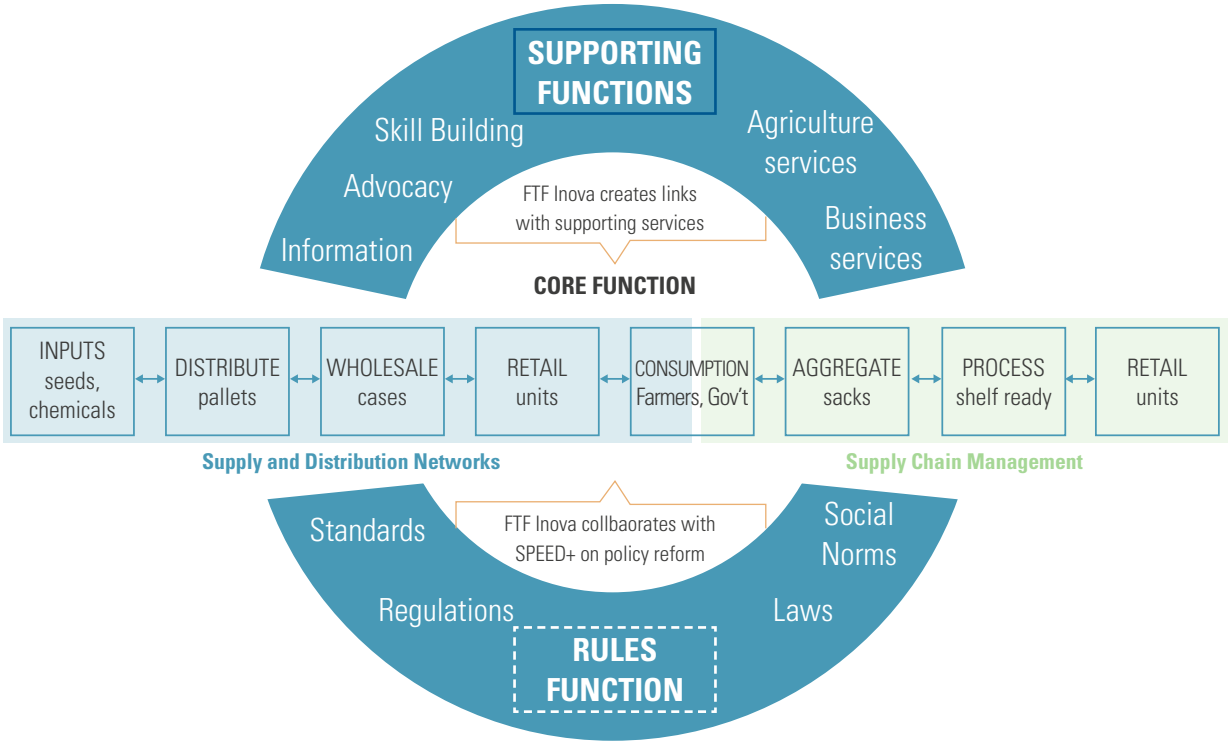
Figure 6: Multiple System Entry Points superimposes FTF Inova's core functions—the tightly linked functions in the chain of value-added services and products, from inputs of seeds and chemicals to retail of agricultural products—on the Market System Matrix (shown earlier as *Figure 4*), which presents Mozambique's multifunction (core, support, rules) and multiplayer (private, public, associations, civil society organizations, and nongovernmental organizations) agricultural market system. Within this chain, FTF Inova focuses on three major entry points:[13]

- *Customer-facing input supply and distribution networks* (the value chain functions highlighted by the light blue shaded area in *Figure 6*): Private markets for agricultural inputs are only now emerging in Mozambique as the government has significantly decreased its procurement of agricultural inputs[14] due to resource constraints resulting from sizable government debt. The government has acknowledged that poorly targeted government subsidies can undermine the private sector. Past donor investments' dedicated focus on agro-dealers failed to solve the problem of farm access to inputs: agro-dealers opened for business but with little or no inventory or capital to buy it. FTF Inova aims to build networks of firms—manufacturers (seeds/agro-chemicals), distributors, and retailers—to

[13] A fourth entry point, Policy and Enabling Environment (the orange dotted line in Figure 6), falls under the remit of USAID's SPEED+ project.
[14] Suppliers of seeds, chemical, and fertilizer report that government procurements have declined in recent years.

solve the access to inputs problem in ways that deliver customer value. This report will take stock of FTF Inova's progress in this intervention area in this changing context.

FIGURE 6 MULTIPLE SYSTEM ENTRY POINTS



- *Mutually beneficial supply chain management arrangements* (the value chain functions highlighted by the green shaded area in *Figure 6*): Supply chain management arrangements also are influenced by government rules and subsidies. In cotton, for example, the GOM grants land concessions to private firms provided the off-taker pre-finances the cotton farmer's crop with a bundle of inputs and services (e.g., Olam in cotton). Meanwhile, although cashew is not a concession crop, it benefits from a rich mix of production subsidies. In agricultural commodities where government is not directly involved (grains, beans, etc.) commodity traders have the power (few buyers and many sellers) to dictate prices and this creates mistrust and perverse incentives for cheating by both farmers and their buyers. In all three cases, the absence of performance-based incentives in these market systems makes it difficult to upgrade productivity more in line with international standards. This case study will look at how FTF-Inova and its partners are using different approaches to address these systemic constraints to productivity and inclusive growth.

- *Value-adding support services for inclusive agriculture growth* (the system's support functions highlighted by the orange solid line in *Figure 6*): All value chain actors could benefit from a range of specialized services to perform their core functions better, faster, safer, and cheaper. Yet, building a service economy around agriculture typically emerges only when crop volumes and or margins grow enough for farmers, their suppliers, and their buyers to outsource rather than doing these functions on their own. Government intervention in services tends to exacerbate the problem rather than correct it. Can an MSD approach do a better job? And, can it be done in Mozambique's thin market context? This report will take stock of FTF Inova's progress in creating incentives for innovators—

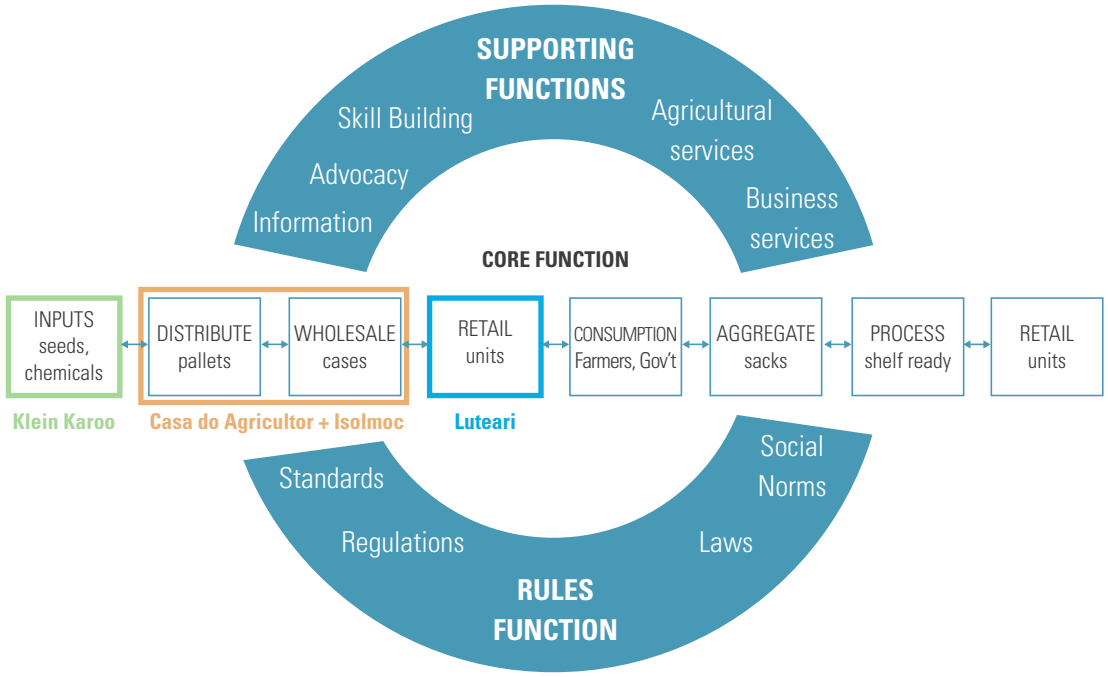
marketing and logistics firms, spray service providers, community radio, ICT firms, etc.—to test their ideas for mutually beneficial service arrangements with all value chain actors.

3.2 CUSTOMER-FACING INPUT SUPPLY AND DISTRIBUTION NETWORKS

Most firms in the input supply/distribution market have grown by winning tenders issued by government and donors. Yet, many firms acknowledge they must diversify to serve the small farm market in order to remain viable, especially in a context of declining government budgets. FTF Inova aims to discover why networks of interested market players form, who becomes part of them and how, with FTF Inova's support, these networks are able to create customer value (e.g. product range, convenience, timely availability, uniform pricing, information on product choice/uses) for large numbers of small sum buyers in Mozambique's thin agricultural market system. As shown in *Figure 7: Functions and Players in the Agricultural Inputs Market System,* FTF Inova strategically selected partners performing different functions in the input supply and distribution value chain to investigate the opportunities and challenges of various networks along this chain that would be capable of creating long-term mutually beneficial market relationships.

The following subsection (3.2.1) describes the networks formed and supported by four FTF Inova partners[15] —two distributors, Casa do Agricultor (CdA) and Isolomoc; Klein Karoo (K2), a seed company; and Luteari, a regional agro-dealer. Section 3.2.2 examines the performance of these different networks and Section 3.2.3 provides a synthesis of lessons from experience and FTF Inova's anticipated response in advancing an expanded customer-facing input supply market for smallholder farmers.

FIGURE 7 FUNCTIONS/PLAYERS AGRICULTURAL INPUTS MARKET SYSTEM



[15] Information for this case study was gathered from a sample of FTF Inova partners chosen from an agreed set of criteria. Not all of Inova's partners are represented in the figures or discussed in the narrative.

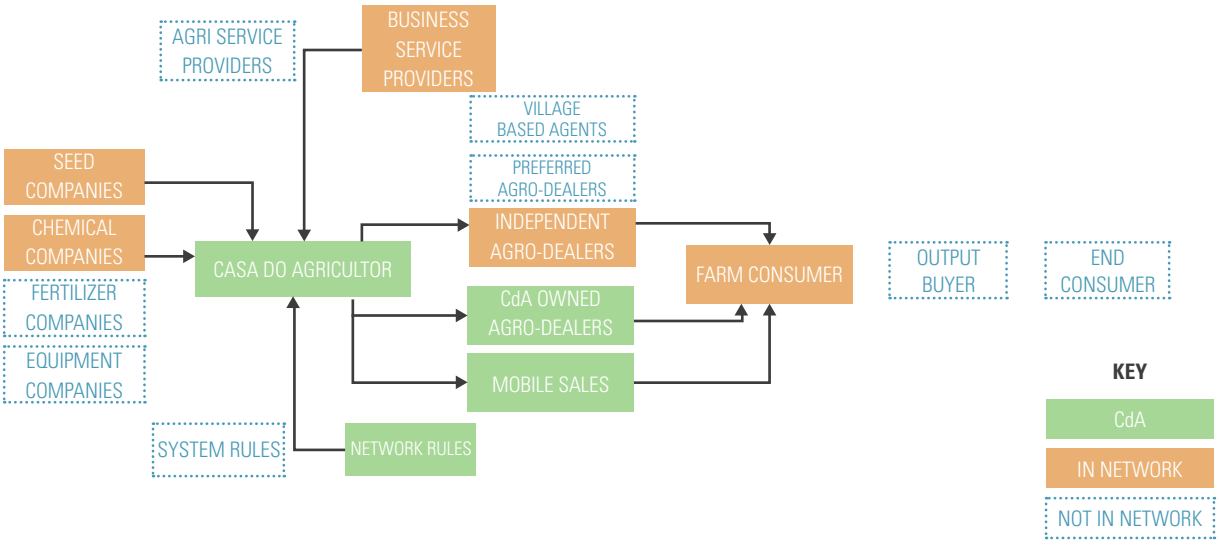
3.2.1 PARTNER-LED NETWORK DEVELOPMENT/FTF INOVA SUPPORT

Casa do Agricultor is Mozambique's leading nationwide agricultural distribution company. Its sales strategy is to be a one-stop shop for agriculture inputs in which all of the products and brands it distributes compete on price and quality at the point of sale to the agro-dealer. CdA's business model is expected to create customer value by bridging significant input access gaps to farmers in Mozambique's primary agriculture zones and by offering them a range of product options at different price points on a timely basis throughout the year.

CdA's business model is capital-intensive (that is, it requires inventory, warehouse, trucks, and staff). As such, its success in serving private markets, as government tenders decline, is tied to scale (volumes), scope (diversity),[16] efficiency in distribution (difficult in Mozambique's limited and weak transportation system), and customer-facing practices by agro-dealers. The creation of a formal network of input suppliers and agro-dealers is essential to CdA's success.

Figure 8: CdA's Network Development shows that, as of August 2019, CdA sourced inputs (beyond its own brands) in formal relationships with seed and chemical companies[17] (solid-lined boxes) and distributed them through a network of independent agro-dealers[18] (solid-lined box) and through its six wholly owned retail shops and mobile/van sales (solid-lined shaded boxes).Through CdA's network, manufacturing partners are able to penetrate markets with higher-quality and -priced seed (shifting farmer preferences from open-pollinated varieties to hybrid and certified seed) that would be too costly to reach on their own at scale. Retail partners also benefit; they are able to offer their customers a selection of products of genuine quality and appropriately priced products in a timely fashion. In exchange, CdA gets the scale (volumes) and scope (product mix) it requires to generate the revenues needed to recover its heavy capital investment (stock, warehouse, sophisticated inventory and customer management systems, trucks/vans) and become profitable. CdA sets the rules (shaded box) that govern the network.

FIGURE 8 CdA'S NETWORK DEVELOPMENT



16 CdA's own brands can't satisfy the customer choices required by a one stop shop model.
17 K2 (seeds) and Syngenta (chemicals) positioned their goods in CdA's network.
18 About 120 in multiple districts.

CdA's network had not yet included fertilizer and equipment companies (dotted boxes) for a variety of reasons. Fertilizer[19] companies have been reticent to join CdA's network because they require a partner who can move very high volumes of goods at very low mark-ups. CdA does not have the financing capacity to buy the volumes required by fertilizer suppliers. Equipment companies[20] are too busy serving the building industry to take much notice of agriculture. CdA has not yet, but plans to, attract agriculture service providers (e.g., spray and land preparation services) into their network to increase sales of inputs and link service providers to customers. Finally, CdA has drawn on the services of business services providers in marketing, distribution route planning, and the design and production of print and online product catalogues.

FIGURE 9 FTF INOVA SUPPORT TO CdA'S DISTRIBUTOR LED NETWORK

	Input Companies	Casa do Agricultor	Agro-Dealers	Consumers
NETWORK INTERESTS	Diversify markets	Deliver on "one-stop shop" promise	Distributor holds stock reduces amount of working capital	Access to inputs
CHALLENGES	Effective positioning of products through third party distributor	Efficiency in fulfilling orders Forecasting future demand	Readiness to shift from a low volume/high margin to a high volume/low margin business model	May not know how to satisfy their needs
INOVA SUPPORT	No direct support Links w/input Suppliers	Real Time Inventory Management System	Consumer Research (small farmers) Marketing Events (raffles, roadshows) Shop Re-model (CdA's own shops) Village Based Agents Route Surveys for Mobile (Van) Sales Print & On-Line Product Catalogue	No direct support

Figure 9: FTF Inova's Support to CdA's Network Development presents FTF Inova's support to CdA to form, build, and strengthen a network of firms it requires to overcome the high transaction costs in serving increasing numbers of small sum buyers (smallholder farmers who make only minimal input purchases) in distant, dispersed, and difficult-to-reach locations. FTF Inova's support—through consultants,[21] site visits[22], and staff support—has favored expanding a customer-facing retail function within CdA's distribution network (demand studies, marketing, agro-dealer upgrades, village-based agents) so that increasingly sophisticated demand by smallholder farmers can "pull" the input market system to satisfy their requirements.

19 FTF Inova has developed a concept note with Yara Fertilizer to position its brands in distributions targeting smallholder farmers.
20 Inova is working with Prodeca Sarl to increase access to mechanization services to smallholder farmers. See section 3.4 for more detail.
21 This includes local and international consultants on marketing and sales techniques and a specialist in route planning surveys.
22 Site visits included a trip to Kenya to witness the work of an agriculture distribution company.

CdA's success could be a game changer by creating the backbone of Mozambique's agricultural inputs market system. While the capital required and the risks associated with creating a nationwide distribution system will not attract many competitors,[23] it is important to consider how many viable and customer-facing nationwide distributors Mozambique's thin market can support.[24]

Isolmoc,[25] one of Bayer's distributors of agricultural chemicals in Mozambique, aims to stimulate demand by smallholder farmers for high-quality chemicals. In pursuit of a successful example of this (the first of many), FTF Inova supported Isolmoc/Bayer to test an offer to Olam, a seed cotton[26] buyer, and its out-growers of a professional spray service bundled with high-quality chemicals and information on their benefits/use to increase cotton yields (currently quite low at 250 kilograms [kg]/hectare [ha])[27] and returns. This combined sales/service model is expected to create value by demonstrating the benefits of investing in high-quality chemicals (versus generics) and outsourcing professional spray services (versus farmers doing it themselves) that will protect farmer health and the environment through safe chemical handling.

Figure 10: Isolmoc's Network Development (below) shows the roles and responsibilities of Isolmoc (shaded boxes) and its network partners (solid-lined boxes) in stimulating demand by cotton farmers in Olam's outgrower scheme for high-quality chemicals at market prices by embedding a professional spray service at no additional cost. Isolmoc organizes and manages a network of independent spray service providers and links them to potential customers through Olam's network of outgrowers. Isolmoc pays the salaries of the spray service providers and offers them incentives to top up their earnings. Bayer organizes educational roadshows in cotton growing areas to increase farmer awareness on the benefits/proper use of its chemicals.[28]

Cotton is a land concession crop where, according to government rules (solid-lined box), the licensee (in this case, Olam) is required to pre-finance farmer output. Olam's interest is to find ways to boost productivity by using the most cost-effective pre-financing package.[29] The presence of an off-taker (Olam) in this network can mitigate the farmer's investment risk by including a buy-back mechanism for farm output. Isolmoc/Bayer can lower their search costs to identify farmers, through Olam, who have a greater disposition to adopt productivity enhancing products and services. *Figure 10* shows that this network initiative bypassed independent agro-dealers (dotted box), an omission that will be examined in the next section on experience and lessons.

Cotton is a land concession crop where the licensee is required to pre-finance farmer output.

[23] Agri-Focus could become a competitor because of its access to finance through its parent company, the Arysta Life Sciences group.
[24] Malawi has one (Farmer's World). South Africa has two (Kaapagri and Hinterland – Afgri). Zimbabwe has one (CFI).
[25] Isolmoc is a recent entrant into agro-chemicals, expanding its distribution business beyond building materials.
[26] Seed cotton is the farm output that is ginned to make cotton fibers.
[27] The yield is half of the average yield of 500 to 750 kg/ha in Africa under rainfed conditions. Reference VIB, Cotton in Africa.
[28] The unique features of its products (a small amount goes a long way) and packaging (small vials) requires explaining to users.
[29] Olam is experimenting with different packages, such as chemicals alone and chemicals with services.

FIGURE 10 ISOLMOC'S NETWORK DEVELOPMENT

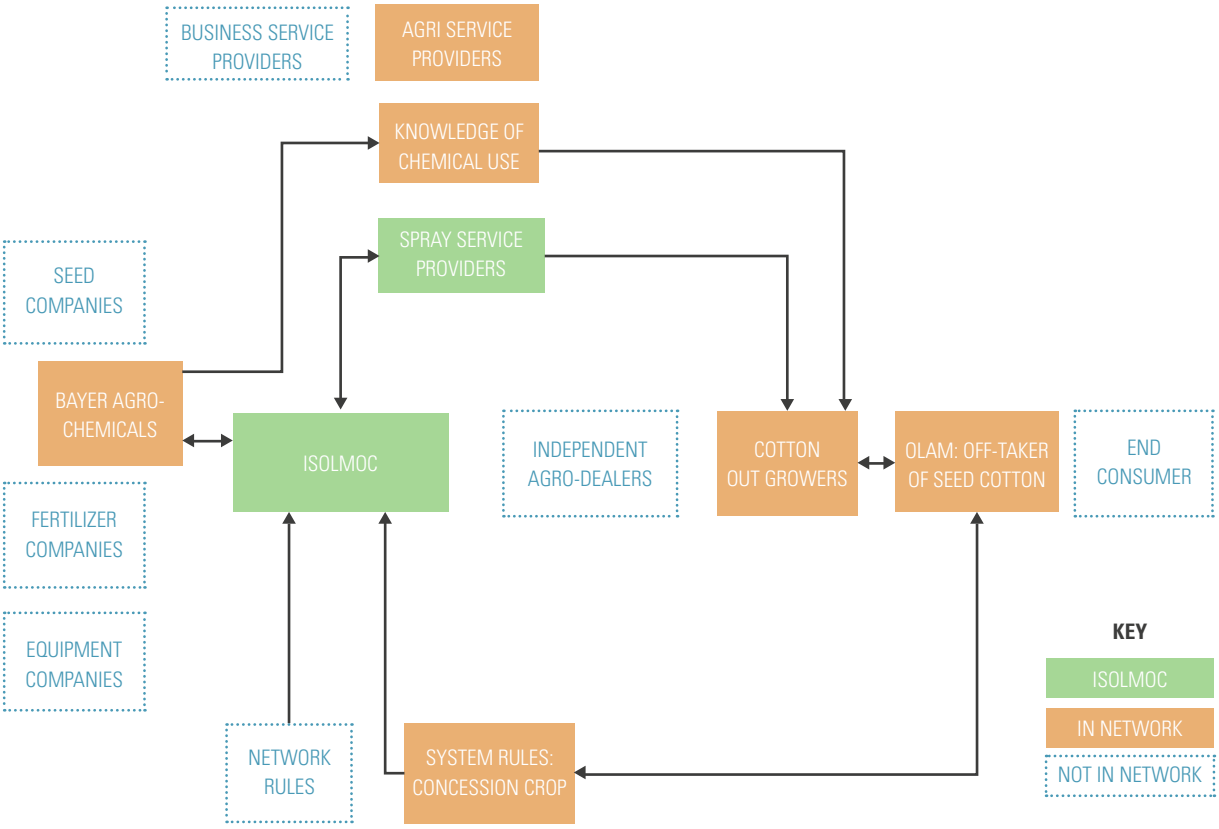


Figure 11: FTF Inova's Support to Isolmoc/ Bayer Network Development illustrates FTF Inova's support to Isolmoc/Bayer in piloting its combination sale/service business model while overcoming the potential challenges associated with this innovation. For instance, satisfying the interests of all network partners depends on the performance of spray service providers: Bayer risks undermining its brand through ill-informed and unprofessional service providers; Isolmoc stands to lose money on chemical sales by including its cost of managing a spray service unit; cotton farmers lose the benefits of direct access to agro-chemicals (selling or sharing) in a context where agricultural inputs are hard to come by; and Olam risks losing outgrowers by shifting the cost of chemicals to them in exchange for a free spray service. As such, FTF Inova's support has focused on assisting Isolmoc to create and manage a trained and certified network of spray service providers (now including 90 independent providers) with the knowledge and capacity to provide a professional service in compliance with best practices of safe chemical handling and disposal.

A successful pilot could have many system-wide benefits. Access to and proper use of higher-quality agro-chemicals proven to effectively combat pests at a time when they are becoming more resistant to generics will be a key feature in boosting agricultural productivity. Further, consolidating the widespread use of chemicals in the hands of professional service providers can protect the health and safety of farmers and their surrounding communities. Finally, a shift in the relationship between an off-taker (Olam) and outgrowers can reward—using different types of incentives—productivity and the improve the growth orientation of smallholder farmers.

FIGURE 11 FTF INOVA SUPPORT TO ISOLMOC'S DISTRIBUTOR LED NETWORK

	Bayer	Isolmoc	Cotton Farmer	Olam
NETWORK INTERESTS	Adoption of quality through awareness & trial	Increase sales by means of an embedded spray service	Returns on investment	Cost-effective pre-finance bundle
CHALLENGES	Protecting the integrity of its brand when using independent sprayers to increase sales	Getting expected returns on chemical sales while managing a new spray service unit	Compensating loss of free access to chemicals (to sell or share) with a free spray services	Retaining out-growers while shifting the cost of chemicals to them
INOVA SUPPORT	No direct support	Recruit, train, certify, cost-share of sprayers Promote use of independent spray service Capacity to comply with best practices of safe chemical handling & disposal	No direct support	No direct support

Klein Karoo Seed Marketing Company Mozambique is a subsidiary of Klein Karoo Seed Marketing Africa headquartered in South Africa, and a relatively recent entrant into Mozambique's agricultural input supply market. To date, most of K2's revenues have come from winning open tenders by GOM and donors[30] to supply subsistence farmers with open pollinated varieties (OPV) of seeds[31] with the aim to help their families become more food-secure. Government tenders have been on a steady decline partly due to debt-induced budget constraints but also to stimulate a viable local seed sector. K2, like its competitors,[32] understands that its future growth in Mozambique depends on diversifying its product/market mix by stimulating "latent" demand for high-quality inputs from large numbers of risk-averse[33] smallholder farmers in the country's most productive agriculture zones.

Figure 12: K2 Seed Marketing Channel Development shows the various supply channels K2 has used, currently uses, and is considering using to position its high-quality seed brands (hybrids and HYVs) in Mozambique's agricultural input market. Channel 1—the government/donor channel—does not requisition for hybrid and HYV seeds (the dotted lines/arrows) because seed quality does not fit the food security rationale behind their tenders.[34] K2 entered the market for high-quality seeds by opening up its own retail shops (Channel 5). The shops have since been closed (hence, the dotted lines/arrows indicating that they are not in network) because they were not commercially viable (it is difficult to specialize by brand in a thin market). K2 distributes its branded products through CdA's distribution network (Channel 2), through independent agro-dealers (Channel 3), or through it's pilot network of village-based agents (Channel 4). K2 also sells to an output buyer (channel 6) in support of its outgrower scheme.[35] At present, K2's strategy is to sell through as many channels as possible to discover the most cost-effective

30 Farmers redeem Food and Agriculture Organization of the United Nations vouchers for maize seed through agro-dealers.
31 K2 multiplies in-country OPV seeds, mainly maize.
32 Competitors include Pannar, Syngenta, Phoenix, and more.
33 Risks include fear of drought, price fluctuations of commodities, and no buy-back guarantee.
34 Hybrid or HYV seeds costs more, require more inputs to get expected yields, and cannot be saved for use the next season.
35 This involves supplying yellow maize and soybean to an output buyer in the poultry industry.

channels, learn about related investment and good business practices, and develop latent smallholder farmer demand for high-quality seeds at increasing scale.

FIGURE 12 KLEIN KAROO (K2) SEED MARKETING CHANNEL DEVELOPMENT

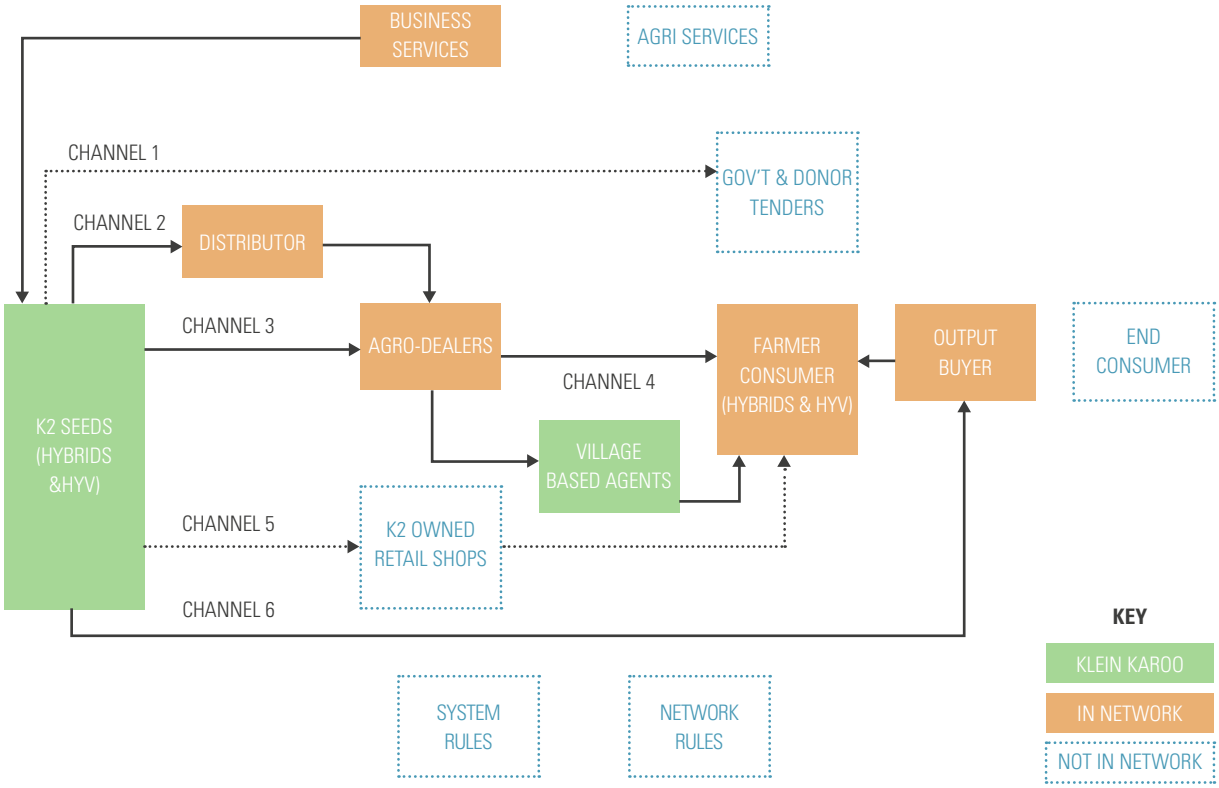


Figure 13: FTF Inova's Support to K2 Network Development illustrates FTF Inova's support to K2 to overcome the challenge of the high transaction costs of serving large numbers of small-sum buyers (smallholder farmers) in distant, dispersed, and difficult-to-reach locations. FTF Inova's support to K2 has focused on assisting K2 to learn more about its customers through direct marketing strategies and tactics (buying clubs, competitions, etc.), last mile distribution (piloting village-based agents in one district), and platforms for information exchange and customer feedback.[36] Encouraging product manufacturers, like K2, to solicit and value feedback from their customers in order to improve their product lines and offer a warranty of quality to their customers is a critical step in network development. K2, through FTF Inova's support, could fill critical gaps in demand-side information on customer types (segmentation), behaviors (preferences and spending habits), and trends (forecasts of future demand). Useful demand information through customer feedback—now almost completely lacking in Mozambique's input market—could benefit all players in K2's input supply and distribution network.

Luteari: FTF Inova has supported Luteari,[37] a woman-owned agro-dealer serving two districts in the Chimoio region, to pilot-test a "last-mile distribution" system (e.g., village-based agents and buyers' clubs) to extend Luteari's outreach into key agriculture districts with a range of high-quality

[36] In Mozambique, K2 is adapting a web-based customer relationship management system used by the company in Zimbabwe.
[37] Besides Luteari, FTF Inova had other independent agro-dealers (including Cantina 2001, Agro Dalton, and Sitole Commercial) in its portfolio, all piloting similar customer-facing last-mile distribution and aggregation models.

inputs. FTF Inova has also supported Luteari to buy back and aggregate farm products across a range of crops for sale to commodity traders. Like most independent agro-dealers, Luteari can overcome its limits to its small size by capturing margins on both the supply of inputs and the sale of farm outputs by leveraging its relationships with its consumers.

FIGURE 13 FTF INOVA SUPPORT TO K2'S MANUFACTURER LED NETWORK

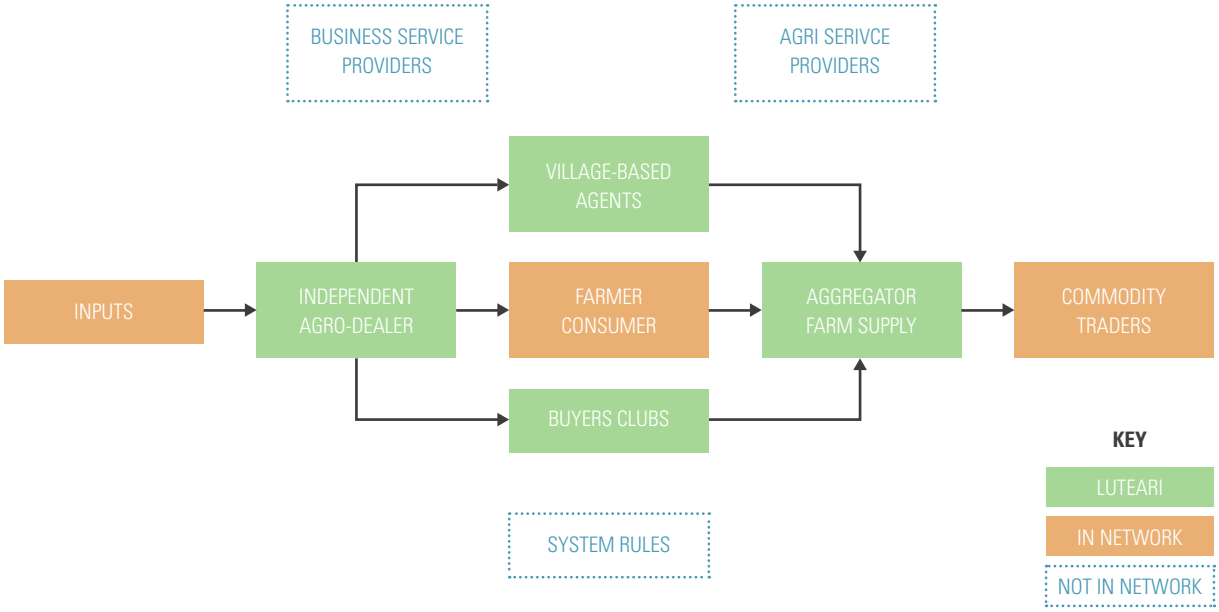
	K2	Distributor	Agro-Dealers	Consumers
NETWORK INTERESTS	Info on SHF seed use/benefits; Forecasting future SHF demand	Achieve economies of scale and scope	Quality seeds in stock to match local demand	Access to seeds & know how to use them effectively
CHALLENGES	High transaction costs to tap latent SHF demand for quality seeds in distant locations	Manage all input supplier brands with transparency and efficiency	Benefits outweigh risks when investing in a customer facing shopping experience	Benefits outweigh risks when investing in quality seeds and related agronomic practices
INOVA SUPPORT	Direct marketing strategy and tactics CRM system adapted & populated with data Pilot village agent network in one district	No direct support [Linkages w/CdA]	No direct support	No direct support

These retail-led innovations are expected to help shift the paradigm of agro-dealer/customer interactions from waiting for the customer to come to the retailer to the customer seeking the retailer. This shift in relationship is considered a necessary pre-condition to create enough volumes for distributors of agriculture inputs and buyers of farm supply to expand their networks to the last mile in highly dispersed and more distant locations.

Figure 14: Luteari's Network Development shows that Luteari employs different delivery channels (direct, village-based agents, and buyers' clubs) to expand sales to farmers near and far from its retail shop. An expanded retail footprint is expected to make Luteari more attractive to distributors of agricultural inputs. By incorporating aggregation of farm supply into its business model, Luteari provides an incentive to farmers to upgrade their farms by providing access to a range of high-quality inputs and information.

FTF Inova has provided Luteari with technical assistance to identify and train village-based agents to use direct marketing techniques and to organize buyers' clubs using best practices of similar clubs organized in retail networks. The challenges Luteari faces are similar to those of other market players that wish to tap into latent smallholder farmer demand for high-quality inputs: the cost-benefit balance for farmers who invest in high-quality seeds and related practices and the pace of market acceptance that will provide agro-dealers the incentive (or disincentive) to continuously upgrade and expand their retail footprint.

FIGURE 14 LUTEARI NETWORK DEVELOPMENT



3.2.2 NETWORK PERFORMANCE

CdA's Distributor-Led Network: CdA reports that it is close to reaching operational break-even from sales[38] through its network of about 120 independent agro-dealers and its own six retail shops. Van sales in Manica Province reached 32 agro-dealers and 3,200 farmer clients. CdA recorded an average monthly growth rate in van sales of 30 percent from January to July 2019. Most of the growth involves seed sales, which is smallholder farmers' priority input investment. CdA has taken steps without FTF Inova support to expand van sales by testing an additional four distribution routes reaching 54 agro-dealers.

CdA's product catalog allows it to centrally inventory products (a cost savings to retailers) until an order is placed by retailers and paid by a customer. Its utility is linked to a set of agreed-upon practices on uniform pricing, ordering, and commission that are being worked out among CdA, its suppliers, and its retailers (see next section lessons/response). CdA has taken steps without FTF Inova support to publish its catalog and distribute it along the Nampula and Manica van routes where the agro-dealers on these routes are comfortable with the ordering system.

Isolmoc's Distributor-Led Network: Isolmoc supplied agrochemicals to more than 6,000 farmers covering 7,000 ha in Ribaue, Lalaua, Tete, and Manica districts. In Ribaue and Lalaua, chemical sales, sold at market prices, were bundled with free professional spraying services provided by Isolmoc to cotton farmers in Olam's outgrower scheme. A total of 2,300 farmers took advantage of the spray services bundle. Of this number, 335 farmers applied the recommended five to six sprayings and reported yields of 800 kg/ha or more, doubling or even tripling previous yields. An early adopter rate of 15 percent of all participating outgrowers exceeded expectations on both sides: Isolmoc's pressure to get the service up and running and the pre-finance package requiring outgrowers to pay market rates for high-quality chemicals

[38] Sales covers direct costs excluding overheads, amortization of fixed costs, and taxes.

instead of free access to generics. While Isolmoc reports that it incurred losses from its chemical sales/spray service bundle, both Isolmoc and Bayer acknowledge the value of embedding an agricultural service to stimulate chemical sales and protecting farmer health and safety. They seek to include local agro-dealers with their direct links to farmers in their network in the future.

K2's Input Supplier-Led Network: K2 expects to reach about 2,000[39] customers through multiple sales points and in so doing increase hybrid seed sales to at least 10 percent of its total sales (K2 dominates market sales of lower-quality OPV varieties, especially maize seed). The jury is still out on the comparative benefits, risks, and costs of these different sales points but K2 continues to position its brand through CdA's network, including linking more of K2's agro-dealers to CdA's mobile sales routes. K2 has experienced a meaningful increase in sales on these routes. Village-based agents are showing some promise and, as such, K2 will support existing dealers in their network to establish village-based agents in communities where there are no agro-dealers. K2 has taken steps to continue to run promotional events without FTF Inova support to create more brand awareness among farmers of its new hybrid and OPV seed varieties and for K2 to gather data on potential customers for its CRM system.

Luteari's Agro-Dealer-Led Network: Since agro-dealers are "closest" to farmer/consumers, they are best positioned to facilitate shifts in farmer behavior on upgrading farm productivity through the use of better-quality inputs. Yet, the nature of Mozambique's independent agro-dealers—small-scale, undercapitalized businesses—positions them poorly to create commercially viable and expanding networks without a great deal of technical support and financial subsidy. While locally based agro-dealers must be part of a customer-facing input supply and distribution system, it is unclear if they are better off taking the lead in establishing their own networks or instead find ways to position themselves in networks formed by manufacturers and distributors.

3.2.3 LESSONS AND PLANNED RESPONSE

Table 1: Lessons on Input Supply and Distribution Networks presents the FTF Inova team's reflection—during the case study research and in its preparation for the Annual Workplan 2020—on its efforts to shift the inputs market system from supply push to demand pull as evidenced by market player adoption of business models where they go to the customer instead of waiting customer to come to them. Lessons from experience (left column) are organized around the drivers behind what has (or has not) changed: aligned incentives between market players; win-win versus win-lose relationships; and, the capacity of the network to deliver against their promises to each other and to their customers. The table also includes FTF Inova's plans, as found in its Annual Workplan 2020, to respond to these lessons.

[39] Based on an interview with K2's Mozambique representative Charles Jorge Mabaie.

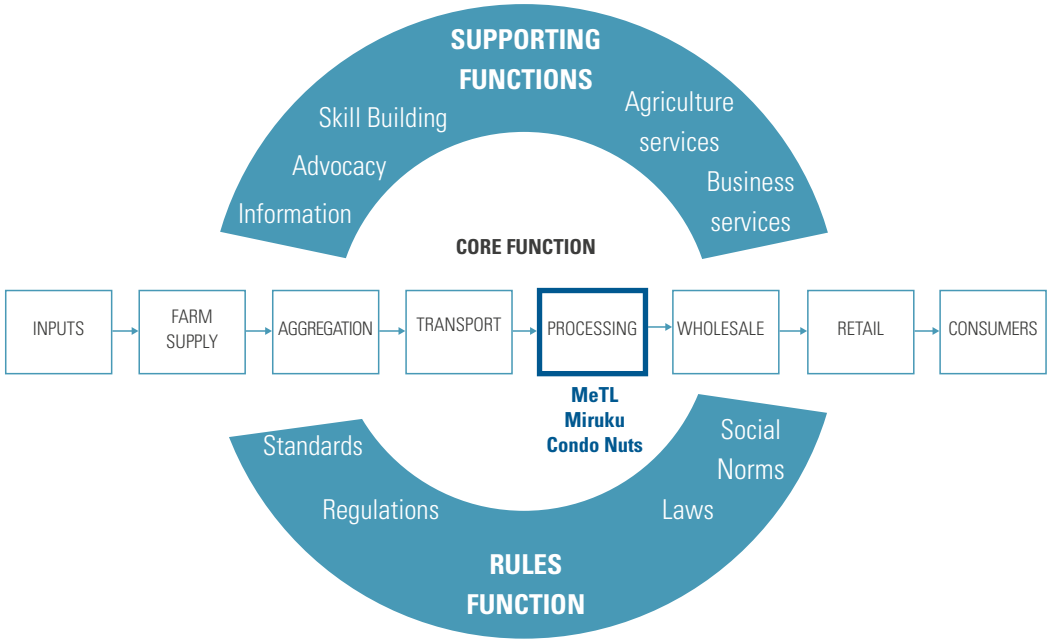
TABLE 1 LESSONS ON INPUT SUPPLY AND DISTRIBUTION NETWORKS

LESSONS FROM EXPERIENCE	PLANNED RESPONSE
Incentives Aligned?	
• Retailers are reticent to shift their business model from low volume/high margin to high volume/low margin, which is required by suppliers and distributors to significantly boost sales. • Distributors holding stock centrally is not yet seen by retailers as a cost-saving incentive. • Retailers want suppliers to change their product offerings to meet smallholder farmer preferences but suppliers view these changes as high-risk costs in the absence of better information on demand.	• Pursue a hybrid model (with both pre-orders and ad hoc sales) for agro-dealers that want to maintain stock but with a commitment to transition to a commission system over time.
Win-Win Relationships?	
• Suppliers/distributors want retailers to sell more whereas retailers are content to sell against pre-orders and inventory access. • Distributors/suppliers want retailers to shift to a commission-based sales model to ensure uniform pricing whereas retailers resist because of revenue lost from their own mark-ups. • Suppliers/distributors could offer retailers performance incentives to boost retailer income but are unsure of the benefits and costs. • Uniform and competitive pricing remains elusive and undermines trust across the network.	• Push all network members to identify pricing and performance management systems that provide a fair price to customers and generate increased sales volumes.
Capacity to deliver customer value?	
• Most retailers continue to equate customer value with price alone without due consideration of the smallholder farmer shopping experience in terms of choice, knowledge, and longer-term relationships.	• Demonstrate to retailers that benefits of increased sales from a loyal customer base will outweigh the costs required to know their customers better (research, feedback mechanisms, promotions/discounts). • Demonstrate to manufacturers that the smallholder farmer market segment would express more demand if their value proposition is improved (affordable price, smaller packages, information, warranties).

3.3 MUTUALLY BENEFICIAL SUPPLY CHAIN MANAGEMENT ARRANGEMENTS

FTF Inova aims to discover the necessary ingredients (e.g., incentives, information, services, skills, and dispute resolution techniques) required to foster mutually beneficial and longer-term supply chain management arrangements between smallholder farmers and their buyers (including processors, retailers, and exporters) for entry into higher-value, premium-priced markets (domestic, regional, and export) for fresh (horticulture) and/or processed (rice, beans, maize) agricultural products. This stocktaking report showcases sourcing innovations by four of FTF Inova's partners in its supply chain management portfolio.[40] As shown in *Figure 15: Functions and Players in the Agricultural Output Market System,* three of these partners are agricultural product processors (MeTL, Miruku, and Condor Nuts) and one is a Maputo-based supermarket (Ka Da Terra).

FIGURE 15 FUNCTIONS/PLAYERS AGRICULTURAL OUTPUT MARKET SYSTEM



Section 3.3.1 describes the different sourcing models of, network member interests in, and FTF Inova support provided to these four firms to overcome the inherent challenges of doing business differently. Sections 3.3.2 examines the early performance of these sourcing innovations, and section 3.3.3 synthesizes lessons from experience and FTF Inova's anticipated response in advancing sourcing networks targeting higher-value markets.

3.3.1 PARTNER-LED NETWORK DEVELOPMENT/FTF INOVA SUPPORT

MeTL Milling and Miruku Agro-Industria: MeTL Milling, the Mozambique operations of the Mohammed Enterprises Tanzania Limited group, has not been able to use its 15,000-ton capacity milling facility to anywhere near full capacity. Miruku Agro-Industria, a subsidiary of Miruku Cooperative, has recently opened a grain mill with a processing capacity of 4,850 tons per year. Although their

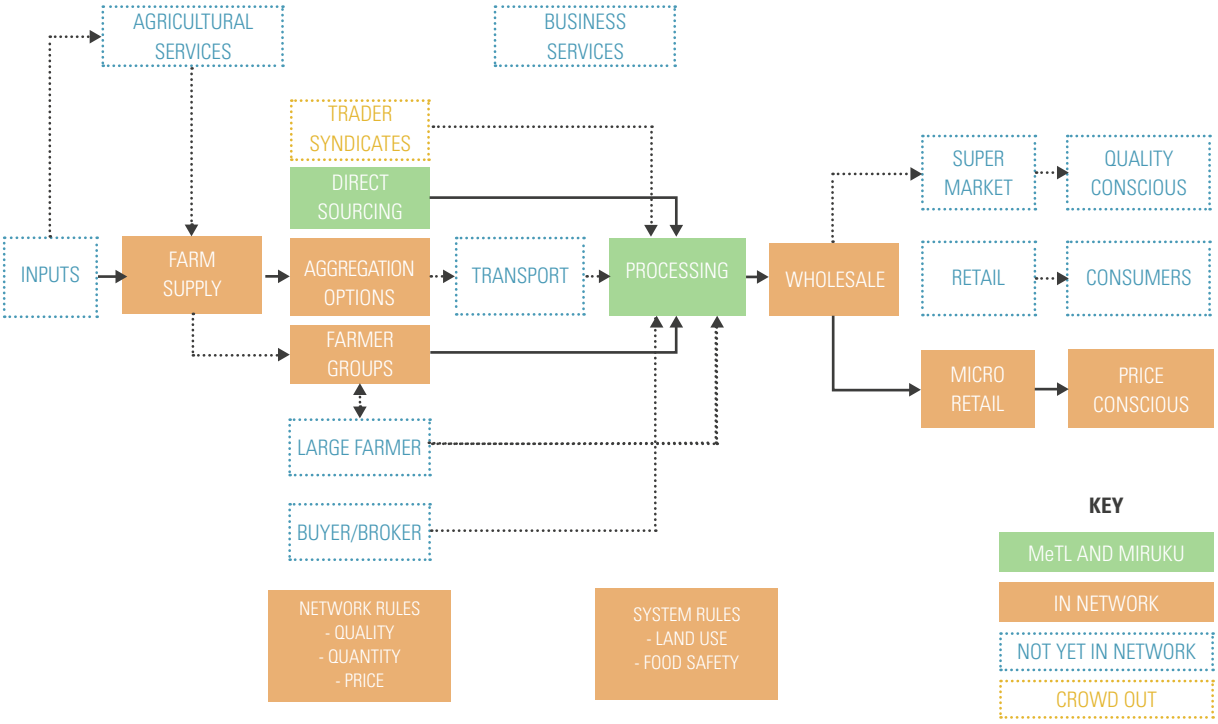
[40] Other FTF Inova supply chain partners pursue variations of the models showcased in this case study.

sourcing requirements and age of operation differ, both companies seek a solution to the shared challenge of sourcing grain in Mozambique[41] (mainly maize and soybean) to utilize milling capacity.

Traditional traders, often organized into buying syndicates, dominate the grain trade. They buy farm supply cheap[42] and hold it to maximize trading margins. Differentiation by grain quality (e.g., degree of moisture content) adds costs and erodes already thin trading margins, so it does not feature in this traditional trading channel. As such, grain mill operators seek viable sourcing alternatives and are willing to pay a premium price to farmers who can meet their specifications of quantity of the right quality (e.g. low moisture content) available on a regular and timely basis.

Figure 16: Processor-Led Network Development shows the sourcing models Miruku and MeTL (shaded boxes) want to develop as alternatives to reliance on traditional traders in order to diversify from price conscious (solid-lined boxes) to value-added markets (dotted-lined boxes) for maize and soybean meal. The model starts with an aggregator that can supply grain at the right moisture content[43] and in sufficient quantities. Beyond direct sourcing (shaded box) or buying from traditional traders (dotted box with dotted lines), a miller has three possible aggregation options: farmer groups (solid-lined box), a buyer/broker (dotted box), or a large nucleus farmer with an outgrower scheme (dotted box). MeTL and Miruku are pilot testing, with FTF Inova's support, a sourcing arrangement with farmers' groups organized either as formal (cooperatives) or informal (associations and suppliers' clubs) groups. Both processors are ready to explore other alternatives—large-sized farmers with out-growers or a buyer/broker (purple-dashed boxes)[44] – should they find suitable partners willing to play this aggregation role.

FIGURE 16 PROCESSOR LED NETWORK DEVELOPMENT (MeTL and Miruku)



41 While neighboring Zambia is a source of good-quality maize fit for milling, the GOM imposes controls on its import for milling in order to stimulate local maize production.
42 Traders have capital, informally set prices, and have almost no competition.
43 Grain with too much moisture makes milling inefficient and so the factory must bear the added costs of sorting and grading.
44 Unlike a trader, a buyer/broker does not take title to the product but is paid a commission for linking suppliers with buyers.

Input suppliers like Bayer or Pannar and their distribution networks have an incentive to join MeTL's and Miruku's networks. Millers offer input suppliers and their customers a reliable buyer of high-quality grains. Input suppliers offer millers and the farmers in their sourcing networks the inputs (seed varieties, chemicals, services) suited to a miller's specifications. Input suppliers and their distribution, sales, and services network were not yet (purple-dashed boxes) but could be part of these emerging processor led sourcing strategies.

FIGURE 17 FTF INOVA SUPPORT TO PROCESSOR LED NETWORKS

	INPUT SUPPLIERS	MeTL/Miruku	Aggregator
NETWORK INTERESTS	Ready buyer of output motivates farmers to source inputs	Better sourcing arrangements to maximize milling operations	Get benefits from off-taker & input supplier for organizing farm supply
CHALLENGES	Allocating resources (product and time) in support of untested farmers groups	High search costs to identify and do deals farmer groups Level of investment required to build capacity of groups to perform aggregation function Manage push back from traditional traders	Satisfy processor requirements for quantity at quality on a reglar and timely basis Manage push back from traditional traders
INOVA SUPPORT	Indirect support through input supply and distribution portfolio	Reduce search costs by cost sharing events with processor to identify farmer coalitions Pilot test the feasibility of aggregating farm supply through organized group of farmers (e.g. supplier clubs) Link aggregators and processors to inputs suppliers and their network of retailers	No direct support

Figure 17 : FTF Inova's Support to Processor-Led Network Development illustrates FTF Inova's support to processors to overcome the inherent challenge of the high transaction costs of finding and doing deals with nontraditional aggregators of farm supply and building their capacity to perform this function effectively. FTF Inova's package of support to both MeTL and Miruku are similar: building the capacity of processor staff to identify farmer groups and help them organize to perform the aggregation function and cost-share the pilot test of sourcing grains through newly formed farmer groups on a limited scale. FTF Inova supports these new sourcing models by linking off-takers and aggregators to input suppliers and their agro-dealer networks.

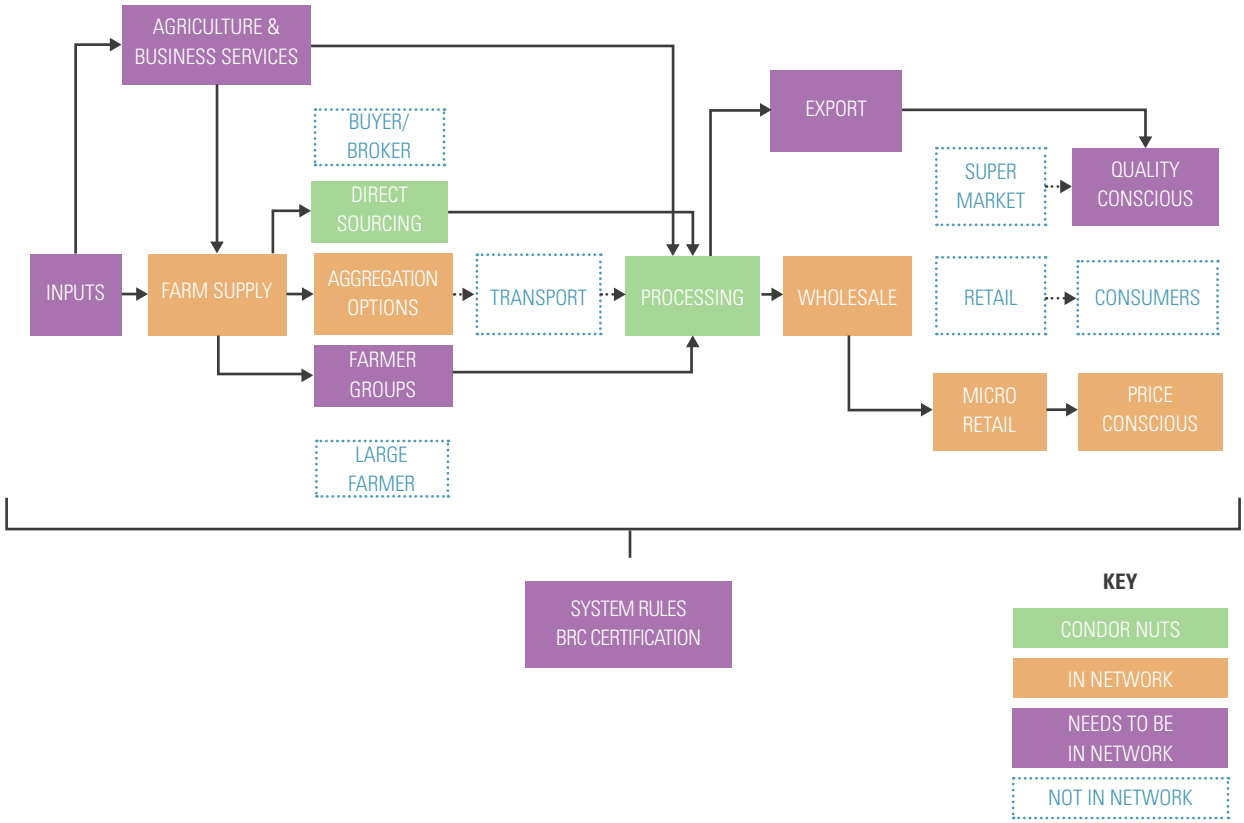
Condor Nuts: This cashew nut processor seeks to create a competitive advantage by being the first of six cashew nut processors in Mozambique to be certified by the British Retail Consortium (BRC), a global standards body that assures customers that processed products are safe, legal, and of high quality. BRC certification would enable Condor Nuts to offer cashew nut farmers a premium price about 8 to 10 percent higher than the market price. This could be a game changer for the Mozambique cashew subsector as it would incentivize farmers to increase volume and yields.[45] BRC certification, and compliance to its standards/rules, will affect Condor Nuts' entire supply chain. *Figure 18 : Rules-Led Network Development* illustrates what additional market

[45] GOM policy has been to significantly increase cashew nut production.

actors need to be included in Condor's network. It will have to put in place a system of traceability from the farm gate to the processing plant.

Farmers will be required to keep records, which will add to sourcing costs. Strict controls will be placed on productivity-enhancing third-party vendors—such as spray service providers—to ensure that they, too, comply with BRC audit standards. Condor Nuts will also require a more scalable system for sourcing cashews beyond its current direct sourcing system, which relies on organizing 300 to 400 agents (in a scarce labor market) for a period of four to six weeks to buy cashews for each buying campaign. Condor will need to integrate an aggregation function into its supply chain and ensure that whomever performs this function is compliant with the BRC standard. Furthermore, Condor Nuts may need to find financing partners to cover the upfront costs of new supply chain management systems and the working capital required for procuring cashews at much higher volumes.

FIGURE 18 RULES-LED NETWORK DEVELOPMENT (CONDOR NUTS)



FTF Inova support to Condor Nuts has focused on the company's ability to satisfy BRC's certification requirements. FTF Inova cost-shared the services of specialized consultants to address the critical areas of non-conformity as identified in BRC's pre-assessment report, conduct a mock audit of BRC certification requirements, and identify traceability solutions compliant with BRC rules. In this instance, FTF Inova's support to Condor Nuts has been firm- versus network-focused. As such, there is no illustration, as with the other processor-led supply chain innovations that shows FTF Inova along the input markets system.

Ka Da Terra: This new and innovative Maputo-based supermarket seeks to expand sales of high-quality locally sourced agricultural products and test wholesale distribution by targeting smaller retailers serving local markets in low-income

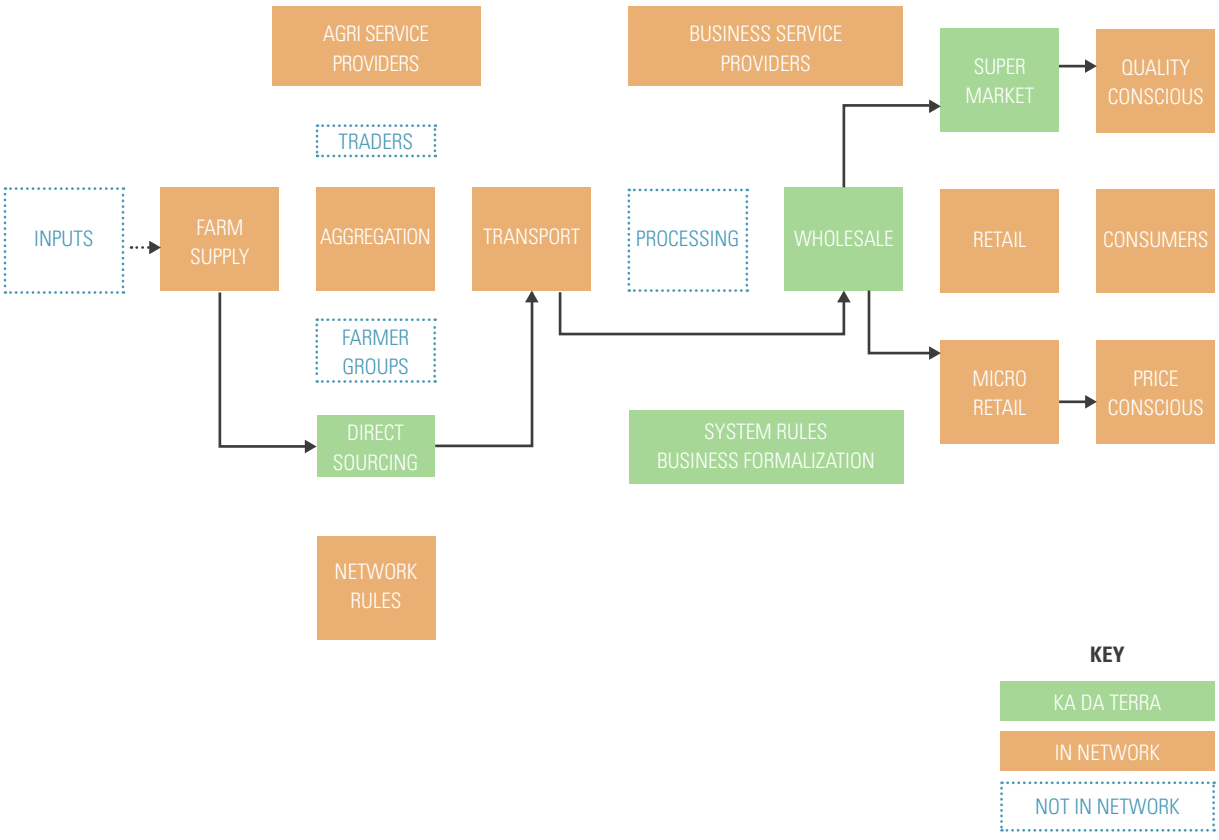
neighborhoods located near Ka Da Terra.[46] Ka DaTerra acknowledges that the Mozambican food retail market is dominated by South African imports and sees a market opportunity to prioritize locally produced agricultural products (rice, beans) preferred over imports by local consumers. Farm supply exists in sufficient quantities to meet Ka Da Terra's forecasts of local demand. A formal customized sourcing system is required to match supply with demand.

The owners of Ka Da Terra acknowledge from experience[47] that supermarkets can displace local retailers and destroy critically needed jobs. Anticipating volumes of farm supply beyond their own needs, Ka Da Terra will create a wholesale function set up to serve large number of micro-retailers that cater to low-income households.

In scoping visits, Ka Da Terra's owner traveled to Mozambique's Central and Northern Regions with FTF Inova staff and identified several sources of high-quality grains (rice, beans, etc.) grown by small- and large-scale farmers. Sample orders were placed, the grains were supplied, and then they were sold at the supermarket with very positive results. During these visits, Ka Da Terra assessed transport options and concluded that it could leverage existing transporters to move goods from the growing areas to Maputo.

Figure 19: Retailer-Led Network Development illustrates the direct sourcing, wholesale, and distribution network Ka Da Terra wants to develop to link farm supply to demand for locally grown agricultural commodities across all income segments.

FIGURE 19 RETAILER-LED NETWORK DEVELOPMENT (KA DA TERRA)



[46] Up to 500,000 residents in Ka Da Terra's area of operations are without access to an affordable basket of goods.
[47] The owner ran a Spar franchise before allowing its license to lapse.

FTF Inova is expected to enter into a formal partnership to advance this innovative retail-led supply chain innovation for a number of reasons:

- This arrangement would provide market access to smallholder farmers in productive but distant areas from Maputo, Mozambique's largest consumer market.
- Low-income consumers would have access to an affordable baskets of locally produced agricultural goods.
- This idea uses a demand pull strategy to facilitate inclusive growth in Mozambique's agricultural market system.
- Success here will position the retail sector to scale up innovations with a proven test of a formal system with transparent rules, trusting relationships, and strengthened capacity.

Ka Da Terra will have to find ways to overcome the challenge of high transaction costs (search, deal making, resolving disputes) when sourcing farm supply from distant locations. The retailer-led innovation will also have to find ways for its network of farmers, aggregators, and transporters to either work around or comply with formal rules of doing business: tax registration and payment, invoice-based ordering systems, and bank account-based payment systems.

3.3.2 NETWORK PERFORMANCE

There has not been enough passage of time to examine FFT Inova's performance in facilitating mutually beneficial supply chain management arrangements inclusive of smallholder farmers and other disadvantaged groups. However, the process of engaging with firms, assessing opportunities, and formulating and negotiating partnership deals has advanced this objective in a number of ways:

- Ka Da Terra's drive to source locally grown Mozambican agricultural products (mainly grains preferred by local consumers) and position them for sale against imports could have a first mover demonstration effect on other Maputo-based supermarkets.
- Condor Nuts' preparation for BRC certification has revealed the importance of two-way information flows between commodity buyers and suppliers required to manage supply chain arrangements to boost productivity and quality.
- MeTL's thinking behind its readiness to push back against trader syndicates and invest in alternative sourcing strategies for better quality maize (e.g., with lower moisture content), a commodity, like others (e.g. cashew, cotton), is susceptible to politics (e.g. keep maize meal prices low in the lead up to elections).

3.3.3 LESSONS AND FTF INOVA'S PLANNED RESPONSE

Table 2: Lessons on Supply Chain Management presents the FTF Inova team's reflection on its efforts to shift supply chain relationships from intense competition on each transaction to cooperating networks built on trust so that these networks can enter into higher-value domestic, regional, and export markets. Lessons from experience (left column) are organized around the drivers behind what has (or has not) changed: aligned incentives between market players; win-win versus win-lose relationships; and the capacity of the network to deliver against their promises to each other and to their customers. The table also includes FTF Inova's plans, as articulated in its Annual Workplan 2020, to respond to these lessons.

One overarching lesson—to present much more in commodity markets than in input or service markets—is the influence of the political economy

(as illustrated by MeTL) to move beyond the status quo and facilitate the systemwide changes required for inclusive growth. FTF Inova will need to better understand the political economy around different crops before making choices on where to place its investments and how best to use its tools (essentially research, linkages, and cost-share funding) to stimulate innovation.

TABLE 2 LESSONS ON SUPPLY CHAIN MANAGEMENT

LESSONS FROM EXPERIENCE	PLANNED RESPONSE
Incentives Aligned?	
• High search costs are a major disincentive for buyers and suppliers to find each other and do deals to serve high-quality markets. • Buyers (processors) reliance on price-based incentives with producers reinforces short-term transactional versus longer-term relationships. • The requirement for all supply chain actors to formalize their business practices may serve as a disincentive to participate in retailer-led networks (Ka Da Terra).	• Strengthen incentives for buyers/suppliers to find each other and make better deals than with traditional traders (price/quality). • Promote alliances between processors and input and service firms to offer right-sized services as an incentive for better performance. • Find cost-effective strategies for all supply chain participants to either work around or comply with formal rules (tax, invoices, bank accounts).
Win-Win Relationships?	
• Win-lose is the norm in supply chain relationships as output buyers (processors) traditionally have used syndicates of seasonal traders to source farm output using hard bargaining practices. • Evidence is emerging of some output buyers who are testing sourcing models with farmer groups, nucleus farms with outgrowers to position themselves in quality markets.	• Assess the relationship dynamics between traders and suppliers to determine how to integrate or work around them in promoting viable sourcing models for quality conscious markets. • Continue to support these emerging networks so they have enough time to work through teething problems.
Capacity to deliver customer value?	
• There is weak agricultural market system capacity to signal quality (certification, branding, traceability) to commodity buyers even though higher-quality products are available for sale (e.g., Ka Da Terra). • Capital is required and firm-level system changes are needed to secure certification for export into higher-value markets. • Farmers may be precluded from higher-value sourcing models unless they become formal and registered businesses.	• Document and disseminate information on the benefits/costs/risks to supply chain actors. • Understand procedures/costs of formalizing farming businesses and formulate strategy to unblock constraints. • Cost-share investments with processors willing to invest in certified, traceable sourcing systems. • Qualify service providers (spray services) to enter participate in these systems by building their capacity to comply with rules.

3.4 VALUE-ADDING SUPPORT SERVICES FOR INCLUSIVE AGRICULTURE GROWTH

All value chain actors in Mozambique's agricultural market system could benefit from a range of specialized services to perform their core functions better, faster, safer and cheaper. In Mozambique's thin agricultural market, most firms in the value chain take on functions outside their core business because they cannot turn to a service provider either for lack of appropriate offers or lack of trust that it can deliver on its promises. Government provision of subsidized services—typically supply-led and poorly targeted to client and sector needs—tends to exacerbate this problem rather than correct it by distorting incentives and crowding out competent service firms. For these reasons, building a value-adding service economy in support of agriculture growth is a challenge. This section of the case study will take stock of FTF Inova's progress in creating incentives for service innovators—marketing companies, logistics firms, spray service providers, equipment leasing firms, community radio, ICT firms—to test their ideas for mutually beneficial service arrangements with all value chain actors.

The story of FTF Inova's push to populate the agricultural market system with value adding services—largely missing from Mozambique's agricultural economy but critical for its improved performance—has been told, in part, in previous sections of this case study.

- *CdA* has drawn on a range of specialized business services (with FTF Inova's support) to increase farmer access to inputs (such as route planning to more distant locations) and create more customer value (such as through a better shopping experience) within its nationwide distribution network. A useful and relevant lesson on building services in thin markets emerged from CdA's experience in matching expertise developed in one sector and applying it effectively to another. Tangerine, a Maputo-based marketing company with expertise in fast moving consumer goods (FMCG) markets, assisted CdA with its marketing and promotion strategies. Each firm had a different take on the experience: Tangerine thought that CdA did not sufficiently appreciate just how sophisticated its farmer/customers were whereas CdA thought that Tangerine's expertise in FMCG's did not translate well into agriculture.

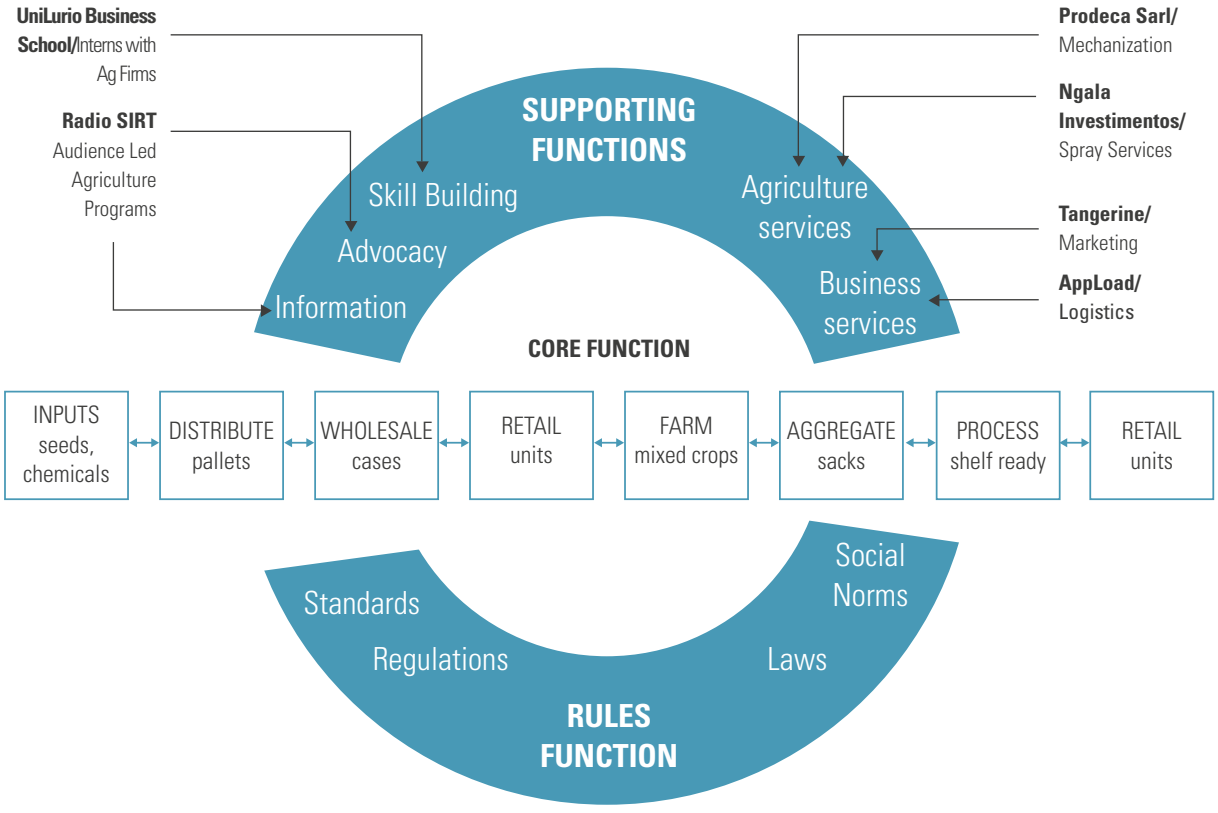
- *Isolmoc* pilot-tested embedding a free spray service to cotton farmers in Olam's outgrower scheme to increase sales of high-quality chemicals at market prices. Isolmoc learned three important lessons from this pilot: cotton farmers can increase yields (and protect farmer health and safety) when

spray services are added to the bundle of high-quality seeds and chemicals; it is cost ineffective for Isolmoc, a Maputo-based firm distant from farmers, to manage a service that depends on local knowledge/networks; and agro-dealers need to be integrated into its distribution network because they are in a better position to cost-effectively manage an embedded spray service with chemical sales.

- *Condor Nuts* required access to highly specialized services to create a traceable cashew nut sourcing system in order to qualify for BRC certification. A BRC certification could be a game changer in creating a demand for specialized agriculture (e.g., spraying and aggregation) and business services (e.g., finance and systems integration) with higher margins (8 to 10 percent) derived from exports into higher-value markets. Two lessons are noteworthy: the criteria FTF Inova will use to assess the incentives and related capacity of other processors/exporters who are interested applying for BRC certification (or other export related certificates); and the higher margins/premium prices paid to suppliers of agricultural products can stimulate growth in local service markets in support of agriculture. This second lesson also applies to FTF Inova partners MeTL, Miruku, and Ka Da Terra, three firms working with innovations to link smallholder farmers to higher-value markets.

The next part of this story is still in the making: when support service firms play a lead role in fostering inclusive growth in the agriculture value chain. *Figure 20: Supporting Services-Led Value Chain Development* shows FTF Inova's investments in critical support functions where its partners—some new to agriculture—could push innovations in agriculture because of the growing recognition by value chain actors that outsourcing specialized services is in their longer-term business interests.

FIGURE 20 SUPPORT SERVICES-LED AGRICULTURAL VALUE CHAIN DEVELOPMENT



The six organizations inserted in the figure were part of FTF Inova's support services portfolio at the time of this stocktaking. These partners were at different stages of engagement with FTF Inova. Community radio station, SIRT,[48] had already developed a track record of creating audience-led programs about agriculture. UniLurio Business School was in the pilot stage of its internship program to place students in FTF Inova partner businesses. While others – such as Prodeca Sarl, Ngala, Tangerine, and Appload -- were still in the feasibility stage of idea development. At the time of this stocktaking, FTF Inova was also in preliminary discussions with potential partners in financial services,[49] a critical yet missing business service in FTF Inova's overall portfolio.[50]

None of FTF Inova's support service partners can now be considered to be leading a change process like those showcased in FTF Inova's input supply and supply chain management portfolios. But, they could become lead firms based on how their innovations can positively influence value chain performance while also mitigating risks and reducing transaction costs. Summaries of their efforts follow.

- *Tangerine:* This marketing company sees an opportunity to diversify its clients beyond Fast-Moving Consumer Goods firms to include agriculture firms that seek to better positioning and want to promote their products to smallholder farmers. Tangerine's optimism is based on three findings from its work with CdA. Distribution networks are growing, helping to overcome past constraints of access to inputs. Smallholder farmers are more sophisticated shoppers than previously believed—yes, price matters but they also value a better shopping experience. Agro-dealers are ready to work smarter (that is, deliver more customer value) provided manufacturers and distributors/wholesalers do a better job of promoting their products and services. Tangerine wishes to develop an offer for agro-dealers and their network partners to improve smallholder farmers' shopping experience (through merchandising, point-of-sale displays, etc.). This would require Tangerine to map agro-dealers by their size and sophistication in order to custom-fit their offers for different agro-dealer segments. An attractive offer could benefit the agricultural market system in a number of ways: 1) it would gather data on agro-dealers useful for Tangerine and all service providers (such as financial service providers); 2) it would demonstrate the commercial potential of business services in agriculture; and 3) it would position Tangerine

[48] The best performer of the six community radio stations supported by FTF Inova.
[49] Potential partners include Hollard Agri (weather index insurance), Banco Comercial e de Investimentos (credit and payment services), and Vodacom/M-Pesa (mobile money).
[50] Financial service providers have not been keen to enter the smallholder farmer markets with products/services.

as a scale agent agricultural input firms could utilize to reach more farmers.

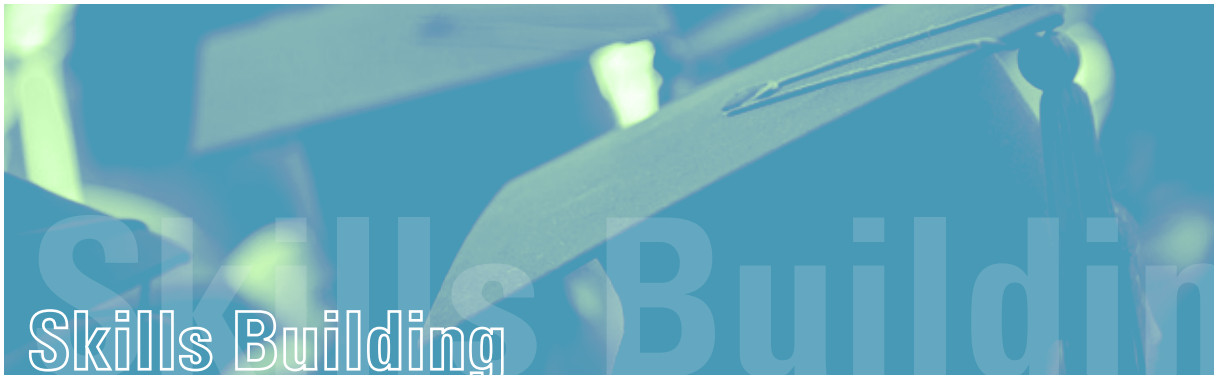
- *AppLoad:* AppLoad is a Mozambican start-up company that has developed an online platform aimed at increasing the efficiency of the transport sector by allowing rapid spot sales of cargo space on existing cargo routes and profiling local service providers so as to increase demand and trust in the market for logistics services. FTF Inova has supported AppLoad to research and test the viability of its platform as a potential solution to greater reliability and efficiency in transporting agricultural inputs from suppliers to their customers. As of this stocktaking, AppLoad had not yet launched its platform. When it does and should it succeed, this logistics management solution could become the coordinating function in matching transport demand with supply in agriculture value chains. Greater transport efficiency, reliability, and trust would enable a more cost-effective input supply and distribution system to the last mile.

- *Ngala Investimentos:* FTF Inova has supported Ngala to expand its professional spray services business across multiple crops (including cashew, cotton, maize, beans, and sesame) and multiple market segments (individual farmers, out-growers, and off-takers) by using high-quality chemicals, safe chemical handling practices, and upgraded management systems (including payment options that are compliant with off-taker rules). As of this stocktaking, Ngala had completed and was close to implementing its business plan for its professional spray service operations. The system-wide benefits already presented in this case study are worth repeating here: 1 access to and proper use of higher-quality agro- chemicals are proven to effectively combat pests at a time when pests are becoming more resistant to generics; and 2) the consolidation of chemical use and handling in the hands of professional service providers can protect the health and safety of farmers and their surrounding communities. Ngala could become a scale agent for a fee-paid agriculture productivity boosting services.

- *Prodeca Sarl:* FTF Inova has supported Prodeca Sarl, an exporter of agricultural products, to explore the feasibility of agriculture services to smallholder farmers beyond its current offers of land preparation and planting. Mechanization in agriculture is at a nascent stage in Mozambique but its utility as a labor saving tool will become increasingly important as production and productivity grows with a better functioning agricultural market system. The partnership could lead to a better understanding on how to position and promote equipment-related products (e.g., tractors, tillers, weeders, planters) and after sale services for smallholder farmers as individuals or grouped together in some way.

Advocacy and Information

- *SIRT:* When community a radio station[51] is able to make the shift from a "pay to play" model to one that is genuinely audience-led,[52] then the agricultural market system can benefit in important ways: 1) it becomes a mechanism for oversight of "bad behavior" and advocacy of "good behavior" of agriculture firms that supply and buy from smallholder farmers;[53] and 2) it becomes a means to amplify the voice of farmer/consumers on their wants and needs to all players in the agricultural market system. The importance of these roles cannot be understated in a thin market where competitive pressures are often too weak to bring about customer-centered shifts in business relationships.



Skills Building

- *UniLurio Business School (UBS)/Nampula:*[54] UBS has embraced its policy of community outreach by putting in place and supporting an internship program to educate itself on the business needs of agro-dealers (FTF Inova staff orients undergraduates at UBS), train interns to use business management modules,[55] and adjust its curricula in light of its interns' experiences. In the short term, the system-wide benefits of a skills building-focused intern program is to help small business owners (e.g., agro-dealers) see the importance of building their own business acumen. this, in turn, should stimulate demand for services in the future. The longer-term benefit is to re-orient higher education institutes to put in place curriculum fit for the purpose of supporting agribusiness appropriate to their size and sophistication.

[51] A community radio station of interest to FTF Inova is one that has signals that reach listeners within a 70 km radius. This range permits targeting to the needs of farming communities within this radius.
[52] Among the community radio stations supported by FTF Inova SIRT made the desired shift from a "pay to play" (e.g. the radio station is paid to deliver the payer's content) to "audience-led" content development.
[53] For instance, it can put on spotlight issues that could include when seeds don't germinate as advertised or concerns about chemical use in the absence of information on health and safety.
[54] FTF Inova is trialing internship programs with 4 Higher Education Institutions. UBS is much further along than the other 3.
[55] Eco Ventures International created modules on shop floor layout, marketing tactics, customer data base management.

4 POSITION IN REACHING SCALE TO ACHIEVE INCLUSIVE, SUSTAINED GROWTH

4.1 PARTNER PROGRESS IN REACHING SCALE

Table 3: Partner Progress in Reaching Scale summarizes the progress of the 13 FTF Inova innovating partners, showcased in Section 3, in reaching scale across the two variables of breadth and depth.

The vignettes that follow show how several partners in different strategic areas of engagement share similar profiles in their positioning for scale:

TABLE 3 PARTNER PROGRESS IN REACHING SCALE
Inova Experience in Discovery Stage of Implementation

STRATEGY	INNOVATION	PARTNER	POSITIONING FOR SCALE
Customer Facing Input Supply & Distribution Networks	One Stop Shop Model	CdA	Expanding model to more qualified users. Adapting model to create a better shopping experience for small holder farmers.
	Embed Spray Service in Chemical Sales	Isolmoc	Expanding (using different channels) to early adopters across different crops/locations. Adapting model for different crops.
	Last Mile Distribution (VBA)	Klein Karoo	Adopting village-based agents as a viable distribution/sales channel to reach small holder farmers.
Mutually Beneficial Supply Chain Management Arrangements	Aggregation for Direct Sourcing	MeTL & Miruku	Adopting different farmer group-based sourcing models to aggregate farm supply in line with milling specifications.
	BRC Certification for Higher Value Export Markets	Condor Nuts	Adapted cashew sourcing systems (traceability) and internal operations (accounting/audit) to comply with BRC rules.
	Direct Farm Sourcing and Wholesaling for Micro-retailers	Ka Da Terra	Adopting a new sourcing/wholesale strategy by searching for farmers with capacity to supply quality grains (beans, rice).
Value Adding Support Services for Agricultural Market System Performance	Strengthen SHF/Consumer Voice	SIRT	Adopted audience-led programs. Adapting a more commercial way of doing business (more private sponsors).
	Improved Shopping Experience	Tangerine	Adopting a commercial offer to improve agro-dealers ability to deliver more customer value to small holder farmers.
	Vetted, Efficient Logistics	AppLoad	Adapting an on-line transport/logistics platform designed for FMCG by researching its application for agriculture.
	Professional Spray Services	Ngala	Adapting a payment scheme from in-kind to cash payments in order to expand its services.
	Tillage/Planting Services	Prodeca Carl	Expanding outreach by adding new services offers for small holder farmers.
	Skills Building through Interns	UBS	Adopting of an internship program model with plans to expand.

- **CdA** expanded its one-stop-shop model to more qualified users in more distant locations through village-based agents, route management surveys, mobile/van sales, and marketing. The model requires more adaptation (attracting more suppliers, forecasting future demand, and better customer management practices) to shift the distribution system norm from "waiting for" to "reaching out" to smallholder farmers. Through its experience with CdA, ***Tangerine*** is adopting an offer of support to agro-dealers to enable this shift to a more customer-facing inputs distribution system.

- **Isolmoc** identified the characteristics of early adopters (cotton farmers) of its innovation to embed free spray services in the sale of quality chemicals. Expanding professional spray services to more smallholder farmers across different crops will require adapting the original innovation to determine the most cost-effective delivery channel(s) (e.g., embedded with input sales like **Bayer or K2**, an agro-dealer like **CdA**, an off-taker like **Olam**, or direct sales by a spray service provider like **Ngala**) and offers (payment mechanism—free, in kind, in cash, or with credit) suited to the specific crop and its location.

- **Condor Nuts** adapted its cashew nuts sourcing system (traceability) and its internal operations (accounting and audit) in order to comply with BRC specifications as conditions for attaining BRC certification (pending as of this stocktaking exercise). Condor Nuts is an early adopter of a rules-led approach to supply chain management improvements. Similarly, **AppLoad** adapted its online logistics platform to explore its utility in addressing logistics issues in agriculture and community radios such as **SIRT** are adapting to a more commercial orientation.

- **MeTL and Miruku** were in the process of adopting different farmer group-based sourcing models to aggregate farm supply in line with milling specifications. This choice was based on assessing sourcing options with FTF Inova support. **Ka Da Terra** was in the process of adopting a new direct sourcing strategy to serve an underserved Maputo market for high-quality, locally grown grains (rice and beans).

4.2 PLOTTING PARTNER INNOVATIONS ON THE AAER MATRIX

Two interrelated figures synthesize FTF Inova's experience positioning for scale in this discovery stage of program implementation. Previously introduced, *Figure 5* provides the definition of scale adopted for this case study. *Figure 21: Plotting Partners on the AAER Matrix* shows the relative positioning of the 13 partners on the matrix while also indicating their direction of travel (dotted arrows)[56] FTF Inova anticipates in reaching scale over time. Circles with more than one named partner shows that they share a similar position in the scaling process. Circles with dotted arrows going in different directions illustrate the importance of advancing simultaneously on both the breadth and depth axis.

[56] The length of the arrows have no meaning in this matrix.

FIGURE 5 REACHING SCALE FOR INCLUSIVE AND SUSTAINED GROWTH

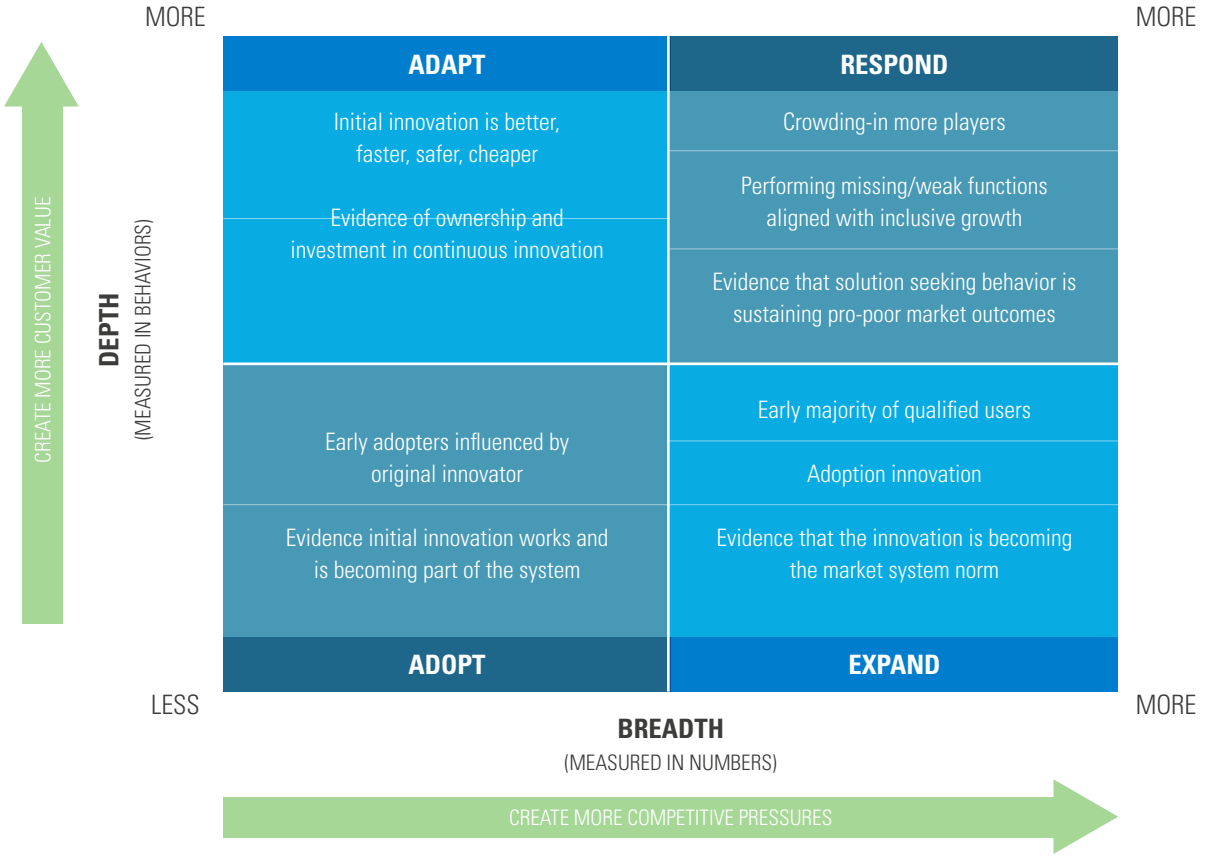
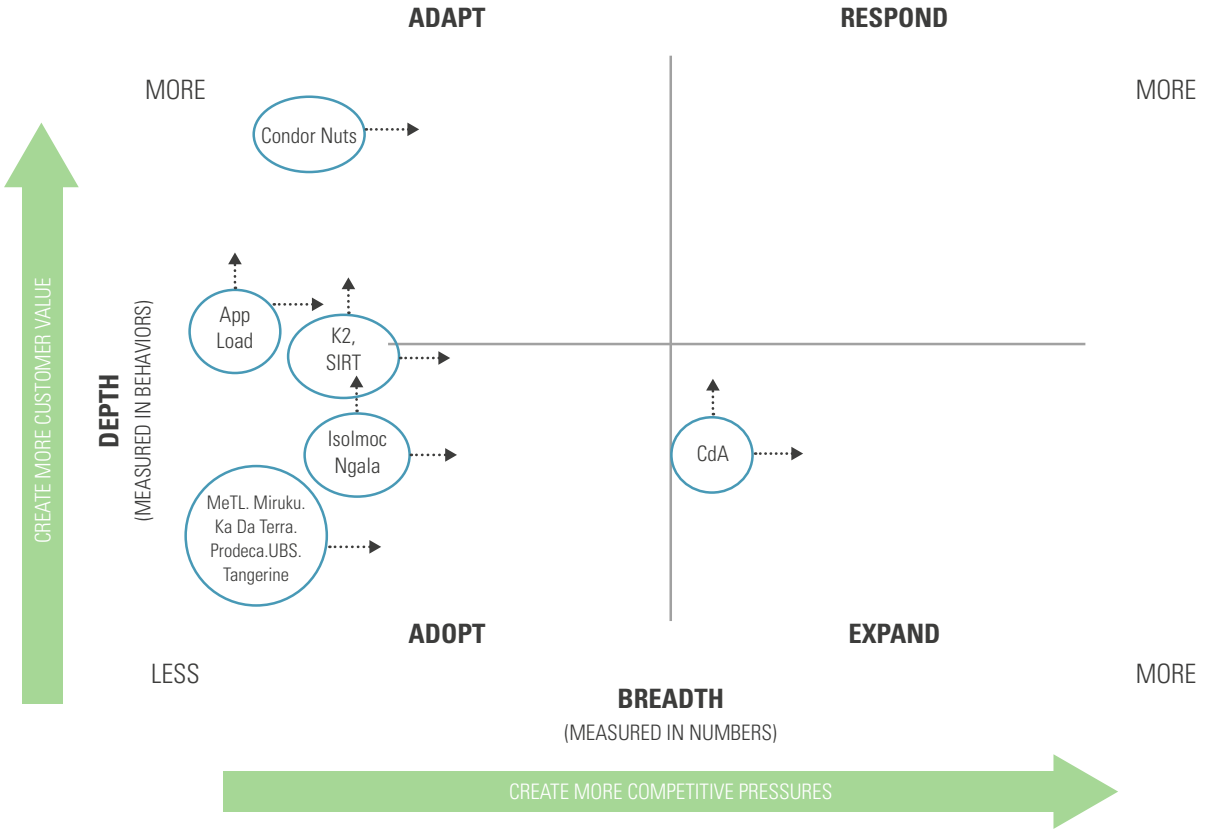


FIGURE 21 PLOTTING FTF INOVA PARTNERS ON THE AAER MATRIX



ADAPT QUADRANT

- Some partners—MeTL, Miruku, Ka Da Terra, Prodeca, UBS, and Tangerine—have demonstrated proof of concept through their own and FTF Inova-supported research and pilot tests. Their innovations await a market test in the next agricultural season to determine the characteristics of early adopters and to assess the pace of adoption. Tangerine has plans to enter the market with an offer of support to agro-dealers based on its experience as an FTF Inova-supported marketing consultant to CdA. As such, these partners are positioned in the lower-left corner in the adopt quadrant. The challenge for these firms – and the justification for continued FTF Inova support – is evidence that the change embedded in their innovations has worked for early adopters—farmers, agro-dealers, millers, service providers, and a supermarket and its customers. Hence, the direction of travel is towards greater adoption.
- Isolmoc and Ngala share a similar profile although their firm size and sophistication are very different. Both firms have gone to the market with a professional spray service offered to farmers either directly or through a third party and, in so doing, discovered the characteristics of early adopters. To expand to more farmers and more crops, both firms will have to adapt their original innovations.

ADAPT QUADRANT

- AppLoad, K2 and SIRT straddle the adopt and adapt quadrants because each firm had to adapt its existing business model to advance its interests in developing markets for its products and services. AppLoad's online logistics management platform awaits a valid test of its application in agriculture with different transport requirements than FMCG. As such, AppLoad is positioned middle left of the matrix. K2 and SIRT are positioned to the right on the breadth axis because they are engaged in valid tests of their innovations with their target groups. It is likely that these firms will have to make improvements in their innovations in order to expand outreach.
- Condor Nuts was required to significantly adapt its cashew nut sourcing and management systems in order to comply with BRC requirements. As such, the firm is positioned in the upper-left corner of the adapt quadrant. Condor Nuts awaits a valid market test of cashew nut farmers' readiness to adopt its new sourcing regime as the growers weigh the benefits and costs of increasing yields and adopting better management practices to get a price premium. Direction of travel in favor of adoption will indicate the scale potential of this innovation could be realized.

EXPAND QUADRANT

- CdA's nationwide, small farm-targeted, input supply and distribution model requires both economies of scale (customers) and scope (diverse offers) for its commercial success. CdA', with the most mature innovation in FTF Inova's portfolio, continues to invest (along with donor support) in expanded outreach while also adapting its model (e.g., in marketing, shop layouts, and print/online catalogues) to attract more network members (e.g., agro-dealers and input supply companies) and to build a bigger customer base. CdA is positioned in the middle-left of the expand quadrant because the pace of small farm adoption of high-quality inputs is moving toward an early majority of adopters. Expanding system breadth is still needed by bridging access gaps in underserved areas. The pace of adoption will be accelerated by further adaptation of the one-stop shop model to integrate agricultural services providers (e.g., spraying, tillage, and planting) and off-takers into its network.

RESPOND QUADRANT

- FTF Inova's portfolio of inclusive growth innovations have not yet stimulated a wider system response by crowding in more functions being performed by market players who exhibit solution-seeking behaviors. The conditions are not yet there: more farmers will need to

embrace the risks and costs of shifting from subsistence agriculture to farming as a business by being part of value creating networks; and more market system players—input suppliers, distributors, farmers, off-takers, and service providers—need to embrace the process of continuous innovation so that solution-seeking becomes the norm of market player behavior.

4.3 CONCLUSIONS

This case study shows that FTF Inova is in a good position to reach scale in its next stage of implementation for several reasons:

FTF Inova's original strategy—simultaneous multiple points of system entry and development—is in place with the recent addition of new partnerships in the supply chain management and supporting service spaces.

- The combination of supply push (input supply and distribution networks, supporting services) and demand pull strategies (off-takers/processors and large volume/niche food retailers) are now active parts of the portfolio.
- A valid assessment of the comparative effects on market system change can be made of one entry point over another and/or from the synergy between the different entry points.
- The importance of closer collaboration between FTF Inova and SPEED+ to identify and address business regulations and rules that could promote or retard more formal supply chain management arrangements is apparent.

Lessons on the opportunities and challenges associated with each market system entry point ensures a more effective FTF Inova response.

- A stronger retail function in input supply networks will likely deliver more behavioral change, especially when integrated in manufacturer- and distributor-led networks.
- Smallholder farmers are more sophisticated consumers than originally thought and want a better shopping experience.
- Finding ways to stimulate more cash (versus in-kind or credit) payments in the system may foster tactics to increase customer value/loyalty.

Because FTF Inova has emphasized learning it is getting answers to key questions that point to the need to focus Stage 2 resources on scale agents best positioned to achieve impact at scale:

Q: What are the firm-level rewards and related behavior change for investing in an innovation?

A. Increased smallholder farmer access to inputs through last-mile distribution networks.

A. A better smallholder farmer "shopping experience" is still a work in progress.

A: Rewards are more difficult to realize by buyers of farm output especially in crops susceptible to political interference.

Q: *How do you form networks and align incentives between cooperating firms?*

A: A great deal of systemwide trial and error is needed to find the right formulas for inter-firm cooperation.

Q: *How do you increase specialization so that all firms in the network can focus on their core business?*

A: An emerging trend among input supply and distribution firms to outsource services.

A: Take a multi-sector view, as business service providers from other sectors are adapting offers to agriculture (e.g., AppLoad and Tangerine).

Q: *Which market player-led networks (manufacturers, distributors, agro-dealers, service providers, aggregators, processors, and retailers) are better positioned to achieve impact at scale?*

A: Market players who can pull demand for farm inputs and outputs through the system.

5 CASE STUDY 2: SCOPE

The second case study will update FTF Inova's progress in reaching scale for inclusive and sustained growth in Mozambique's agricultural market system. While FTF Inova's goals and strategies will remain the same, *the what*—intervention types and related partnerships—will likely change in significant ways as current partners continue or drop their innovations and new partner innovations are added to FTF Inova's portfolio. The report will analyze this progress by plotting FTF Inova's partners on the breadth/depth used drawing from its experience during the period of its Annual Work Plan for 2020.[57]

The primary focus of the second case study, however, will be on how FTF Inova has engaged with the private sector and in doing so offer a relevant illustration on how to translate USAID's Private-Sector Engagement Policy into practice. Case study #2 will take stock of FTF Inova's purpose-built adaptive management system approach—illustrated in *Figure 22: Probe, Measure, Respond*—and how it has been used to co-create with USAID/Mozambique a private sector engagement strategy to achieve lasting pro-poor market outcomes in Mozambique's thin agricultural market. The second case study aims to show the symbiotic relationship between a learning approach to program management and performance.

FIGURE 22 PROBE, MEASURE, RESPOND

[57] October 1, 2019–September 30, 2020.

ANNEX A LIST OF ORGANIZATIONS AND PEOPLE INTERVIEWED

PARTNERS

ORGANIZATION	PERSON
Isolmoc	Diogo Sobral, Manager Pedro Augusto, Field Manager/Nampula
Tangerine	Allan Beaton, Managing Director Nercey Ndlovu, Market Research Manager
Ka Da Terra	Ursala Pais, Owner
Novo Madal	Lauren Wojtyla, Board Member
Ngala Investimentos	António da Silva Dário, General Manager
Miruku	Haje António, General Manager
MeTL	Ajit Kulkarni, CEO Mozambique Operations
Casa do Agricultor	Rui Brandao, CEO Jéssica Laxmane, Route Planner
Klein Karoo (K2)	Charles Jorge Mabaie, Country Representative Julius Mapanga, Operations Manager
Condor Nuts	Daniel Almeida, Manager
AppLoad	Claire Hassoun, Founder and CEO

FTF INOVA/STAFF

POSITION	NAME
Chief of Party	Luca Crudeli
Value Chain Manager	Annah Macharia
Partnerships Manager	Dan Langfitt
Research Director (former)	Rafael Uaiene
M&E Manager	Raul Pitoro
M&E Specialist/Nampula	Mines Miguel
Communication Specialist	Xavier Machiana
Portfolio Manager/Chimoio	Lorena Adam
Portfolio Manager/Nampula	Hirondina Mondlane
Portfolio Manager/Maputo	Nurdine Sale
Portfolio Manager/Nampula	Jahamo Calima

USAID/MOZAMBIQUE

POSITION	PERSON
COR (former)	Todd Flower
Acting COR	Elsa Mapilele