

USAID FTF Agricultural Inputs Activity: A Modular M&E Scheme

I. Overview

The USAID Feed the Future Agricultural Inputs Activity, implemented by Tetra Tech ARD in Uganda, is a five-year (2012-2017), \$10 million contract. The Activity's¹ aim is to increase farmers' use of good quality agro-inputs by fostering more inclusive systemic changes in the agro-inputs industry. As of late 2014, the Activity developed and began utilizing an M&E scheme that is expected to:

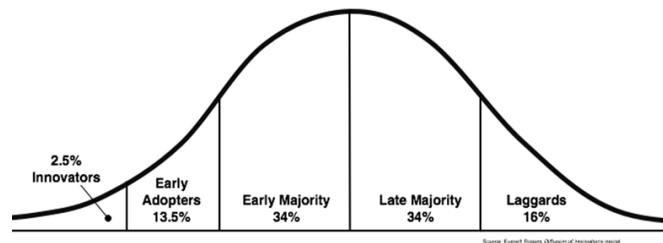
- Track near, short and medium-term responses by actors in the agro-inputs sector to Activity interventions and provide Activity teams with timely information to improve strategy and activity design and selection
- Gauge systemic change—shifts in predominant patterns of behavior and business practices—in the agro-inputs industry and explore correlations with the scope and nature of impacts on smallholder farmers
- Allow the Activity to identify the limits of reasonable attribution to interventions, yet plausibly determine its contribution

The team is circulating this white-paper in order to share its thinking and learn from others with more experience. The paper starts with a very brief overview of the Activity and its intervention scheme; how it portrays the causal connections between the activities it implements and the change process and results it seeks to bring about. The paper then outlines how the various components of the M&E scheme fit with the intervention scheme. It then takes a closer look at several of the M&E components and how they are expected to fit together.

Theory of Change

To achieve sustainable results that do not require reinvestment by USAID or other donors, the Activity's theory of change is based on the following premises:

- Better agro-input use by smallholder farmers is constrained by pervasive, systemic patterns of behavior (e.g., adversarial inter-relationships in the distribution chain, poor customer service strategies, etc.). Achieving sustainable (or *durable*) change requires shifting performance practices across the system; otherwise practices will revert to the status quo.
- Shifting performance practices or behaviors of businesses involves changing the simple-trading practices that businesses largely exhibit at present to more customer-oriented growth strategies focused on providing services, solutions and genuine products to customers and farmers in an effort to grow the business by attracting and retaining customers.
- Shifts in performance practices are expected to occur first among businesses who are innovators and early adopters, which is typically 14 to 16% of any given population, followed by the early majority and late majority.²



¹ The project is officially referred to as an Activity by USAID and is referred to as such through this document, capitalized to minimize confusion.

² Rogers, Everett M. (1962). *Diffusion of Innovations*. Glencoe: Free Press. ISBN 0-612-62843-4.

Strategic Approach

Operationally, the Activity takes an adaptive management approach. Activities and strategies are revised and refined based on continuous learning about, for example, the effectiveness of specific interventions, changes in the system, and unexpected outcomes and occurrences.

The Activity's intervention strategy for achieving systemic change is three-fold:

1. The Role Model Team identifies and supports agro-inputs suppliers along the distribution chain who are innovators and early adopters and who can be role models of customer-oriented growth strategies. The team also showcases them to others in the agro-inputs industry to create competitive pressure for other firms to adopt and adapt similar practices. Key areas of focus currently include customer management systems, preferred distributor programs, human resource management and expansion of products and services.
2. The Support Systems Team strengthens the provision of technical, political and operational support from financial institutions, local and national government, educational institutions, the ICT sector and business service providers to all agro-input businesses. Increased support is expected to accelerate the trajectory of improved practices of role models and clear a pathway for all agro-input firms to adopt and adapt customer oriented growth strategies. Key areas of focus currently include: local government support and regulation of agro-input firms, university internship programs, ICT and business management services and mobile money transaction support.
3. The Networks & Noise Team fosters systemic pressure that all businesses in the agro-inputs system to adopt, adapt and expand customer-oriented growth strategies. Key areas of focus for generating systemic pressure currently include an anti-counterfeit hotline, networking of customer-oriented businesses and consumers across multiple business sectors and journalistic advocacy for consumer protection and farmers' interests.

Facilitation Tactics

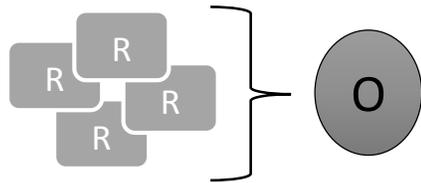
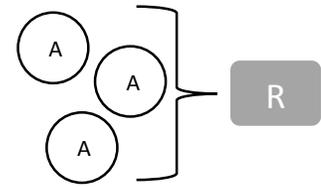
Facilitation principles guide the selection, design and implementation of activities. These include:

- Ownership: Implementers ensure that system actors own the process of ongoing change to improve business performance and do not depend on continued support from implementers.
- Intensity: Implementers intervene with the lightest touch possible to achieve the desired result or reaction by actors.
- Relationships: Implementers ensure that system actors retain and enhance their relationships with other actors in the system to compete or cooperate more effectively.

2. Intervention Scheme

The M&E scheme is best understood in connection to the Activity's intervention scheme. The two are, in essence, integral, and together underpin the Activity's adaptive management approach. The following outlines the causal connections between the Activity's interventions and expected results, illustrated with examples.

Sets of **activities** generate a specific, intended **reaction** or reactions by an actor or actors in the system. For example, with an agro-input firm, a combination of activities—cost-sharing, coaching and linking with service providers—results in the adoption by the firm of a new practice of communicating with customers via SMS texts.

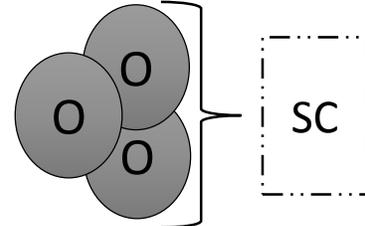


An accumulation or sequence of **reactions** by actors leads to an expected, broader **outcome**, which is still attributable to Activity support. For example, a series of targeted agro-inputs firms provide better customer service through not just SMS communications but a variety of practices involving increased communication to respond to customer needs. This is the expected **outcome** of numerous **reactions** elicited through Activity support.

All three intervention teams – role models, support systems, and network & noise – pursue various outcomes that together aim to create the right environment for systems change to emerge.

Systemic change, the pervasive, durable new patterns of behavior that create a more inclusive market for smallholders, are difficult to attribute to Activity interventions directly yet are the aim of the Activity. The Activity’s strategic assumption is that the **outcomes** it pursues will create sufficient pressure for new patterns to emerge and predominate. As an example, but by no means thorough illustration, the pressure created by achieving the following **outcomes**³ has the potential to trigger and reinforce a shift in behaviors among agro-input firms toward greater customer-oriented growth strategies:

- Influential role models among agro-input retailers successfully grow their businesses through customer-oriented growth practices because farmers are increasingly loyal to such firms.
- Agro-input importers and suppliers provide retailers, who demonstrate customer-oriented growth practices, with opportunities for joint marketing, technical training of staff and farmers and preferential trading terms.
- Local radio stations broadcast listener preferences for agro-input firms who engage with them to tailor products and services to solve their problems and recognize top performing agro-input firms.

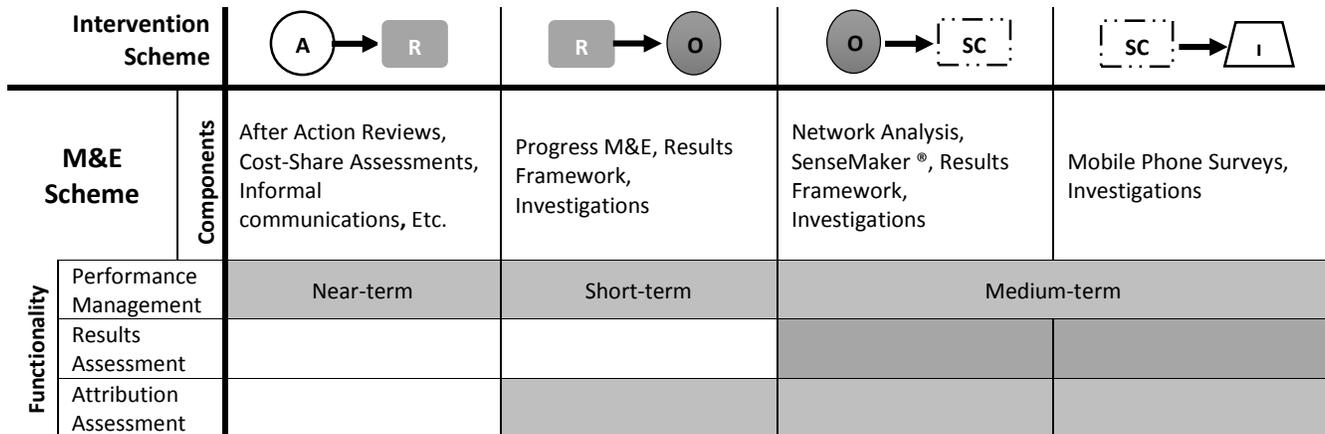


The intervention scheme concludes with the assumption that the emerging patterns of **systemic change** outlined above generate beneficial **impacts** for smallholder farmers. Because of the focus on attracting and retaining customers through better services and the availability of genuine quality products, farmers have better access to agro-inputs and greater confidence in the agro-input dealers and the products they are selling and, as a result, use more agro-inputs.

³ Of course, the firm-level changes of particular outcomes also have the potential to generate impacts with smallholder farmers. For example, an agro-input retailer who, because of Activity support, adopts a village-agent retail practice will likely increase agro-input use by farmers in its market base. These impacts are important to measure in order to verify the potential for positive impacts to result from the new performance practices picked up by market actors. These impacts also invariably get reported to the donor, but they are merely emblematic of the much broader scale of impact brought about by wider, systemic changes sought by the Activity.

3. M&E Scheme

The diagram below illustrates the inter-connection between the intervention scheme, outlined above, and the components and functionality of the M&E scheme. Together the two schemes form an integral part of the adaptive management framework and approach of the Activity.



The scheme’s three functions are, of course, inseparable. For example, impact and attribution assessment findings are essential for informing and adjusting performance. They are broken out here for further explication and (see below) for a better understanding of how the scheme’s components combine to fulfill these functions.

Performance management

Scheme components generate information for, at least, three performance management aims:

1. Enhance staff ability to improve performance (i.e. strategic approach and activity design, selection and implementation) with feedback loops regarding Activity effectiveness in the near, short and medium terms (see diagram above): The scheme’s components also capture unintended results or unexpected occurrences and information on new opportunities for generating change. The labels near, short and medium term refer more to the presumed causal distance between Activity actions and expected results and not to a timeframe for utilizing respective M&E components. Ideally, all three feedback loops should generate information as soon as appropriate metrics and data collection approaches can be devised. Long-term effects are outside the timeframe of the Activity but M&E data should be useful for this analysis.
2. Foster an organizational culture of flexibility, creativity and experimentation by placing the focus of performance management on results or outcomes of activities and not on how many activities are implemented;
3. Provide the funder (USAID) with an evidence-based framework for gauging Activity competence and performance that allows for strategic shifts and flexibility in activity selection.

Results assessment

Given the nature of the Activity’s systemic theory of change and facilitative approach, the scope, scale and benefits of impacts, or expected results—changes among smallholder farmers in agro-input use and the

availability genuine products—are not linearly connected to Activity interventions. As such, the M&E scheme aims to determine i) the changes (if any) among smallholders with regard to agro-input use and the availability of genuine products, ii) whether and how the changes are beneficial to farmers iii) the trends and pervasiveness of these changes in discrete communities and across the country and iv) any unexpected results.

Attribution (or Contribution) assessment

With data from its multiple components, the M&E scheme is expected to enable Activity staff to generate insights and construct plausible causal connections between observable impacts, shifts in systemic patterns of behavior, outcomes of Activity interventions and/or external events and occurrences. Over the short and medium-terms, some counterfactual cases or locations can be used as part of this assessment, but, if the theory of change bears out, then the presence of counterfactuals will become rarer as the entire industry will be transformed across the country with systemic changes becoming the norm.

4. Components

This section outlines the utility and methodology of several components.

Near-term components

The Activity employs an assemblage of tools to answer questions and quickly learn about the immediate effectiveness of its activities. Tools like After-Action Reviews and achievement reports are completed routinely. Cost-share assessments are done when there is ambiguity about a particular activity. Underpinning these tools is a host of informal communication channels and a nurtured learning culture, which is critical for rapid learning cycles.

Progress M&E

The main purpose of the Progress M&E component is to track and inform the Activity about the effectiveness of its interventions on those actors directly receiving support from the Activity or actors whose performance or behavior change can be directly attributed to Activity interventions. Spill-over or crowding-in effects are not generally measured here.

In its first year, the Activity pursued over 15 discrete outcomes. One example includes:

Outcome 2: Customer Management Systems (CMS) for Better Customer Service

Thirty wholesale-distributors become role models showcasing customer management systems (CMS) and support retailers in their network to develop their own CMS. Role models and network retailers leverage their CMS for targeted marketing and promotion efforts.

To track progress toward outcomes like the one above, Activity staff select quantitative and qualitative indicators. To illustrate the simplicity of these indicators, the following table outlines the three quantitative indicators used in Year-1 and shows actual and target results, further broken down by region of the country overseen by an individual staff person.

	Actual	Target	Kla	Iga	Lira	Mka	Mas	Mbl	Mbr	Mub
# Wholesalers utilizing customer management systems.	42	30		4	3	3	8	4	9	11
# Wholesalers supporting retailers in their network to develop and utilize their own CMS	15			3	1	3	1	0	4	3
# Retailers utilizing their CMS (in network of wholesalers)	38	34		7	8	10	2	0	7	4

For many outcomes, the Activity wishes to capture more about the practice or service adopted by a target firm. The Activity has been measuring changes in the quality of targeted performance improvements, but with significant challenges in ensuring consistency and accuracy of the data. The Activity is currently in a process of revising these quality measures, and input is welcome on alternative methods. Up until now, the Activity has assessed quality across three parameters:

- *Innovation*: The firm’s level of experimentation, learning and adaptation with regard to the particular practice or service
- *Capacity*: The firm’s ability to perform the particular practice or deliver the service
- *Importance*: The importance of the particular practice or service to the target firm

Each quality parameter is assessed on a five-point scale from basic to advanced levels as outlined in the following table.

Innovation	Capacity	Importance
1. Adopts basic practice or service	1. Uses existing skills	1. Can live without
2. Scales-up basic practice/service	2. Builds basic skills	2. Matches basic needs
3. Adapts practice/service to needs	3. Engages additional resources	3. Complementary to other practices/ services
4. Occasionally seeks /tries new ideas to improve practice/service	4. Integrates new skills and business processes	4. Critical component of operation
5. Frequently innovates and experiments	5. Functions extremely well	5. Core to business

In the example regarding Outcome 2, above, the end-of-year results for the qualitative measures are as follows:

	Level	Basic			Advanced	
Quality of CMS utilization by wholesalers	Innovation	26%	33%	29%	10%	2%
	Capacity	10%	36%	48%	7%	0%
	Importance	2%	24%	29%	40%	5%
Quality of CMS support by wholesalers to retailers	Innovation	13%	20%	53%	13%	0%
	Capacity	0%	47%	33%	20%	0%
	Importance	0%	13%	60%	20%	7%

Data Collection Process

For Year 1 and Year 2, data have been collected quarterly by implementing staff who work closest with the direct recipients of Activity support (i.e. target firms). In Year 3, the M&E Unit conducts regular data verification exercises or “audits” to evaluate and “cross-check” the data collected by implementing staff.

Network Analysis

Briefly, network analysis looks at the structure of relationships in a group of interconnected things. Network analysis can describe patterns of how individuals, firms, or other entities regularly interact over time. It can

look at changing patterns of connection, trust, satisfaction, investment in relationships, frequency of interaction, etc.

Part of the utility of network analysis lies in the ability to quantify this network structure and, in doing so, quantify behavioral patterns. These can then be analyzed according to parameters such as location or attributes of the individual/firm, which can be tracked across an entire system over time.

Data Collection Process

For the initial round of data collection, the Activity visited 21 districts in Uganda, including the districts where field staff actively operate, plus four “inactive” districts, where the Activity is not currently working. In each district, staff visited the largest town in the district, and interviewed as close to 100% of the agro-input wholesalers⁴ as possible.

During interviews, wholesalers provided information about:

- Gross revenue (in revenue bands)
- Whether the firm received direct support from the Activity
- Age, gender, management structure and predominance of retail or wholesale customer segments
- All suppliers in the past six months: which ones they had the strongest relationships with and which ones were consulted for technical information (e.g., product knowledge, business operations, etc.)
- All wholesale customers (retail shops) in the past six months: which ones bought the most and which ones asked for technical information

In all, the Activity interviewed 200 wholesalers and generated a transactional network map of over 800 agro-input suppliers, wholesalers and retailers with over 2000 connections among them.

Although the Activity has only completed one data collection cycle, the intention is to collect these same data twice yearly, roughly once after each season, to provide information on changes over time. While the first round of data is useful and interesting as a snapshot of the industry, the utility of the network analysis will increase immensely with multiple datasets and provide guidance as to questions to investigate through other means (see Investigations below).

Structural Network Analysis: Examples

There are a number of possible ways to analyze transactional networks to shed light on the agro-inputs system and systemic change. Activity staff are currently exploring a number of possibilities. The following are two examples, which represent present thinking about how to use this component.

Example #1: Average number of suppliers per wholesaler, over the past six months: 7.2

The Activity sees the current agro-inputs market system as having an over-abundance of actors that engage in a high number of relatively weak transactional relationships, resulting in many inefficiencies and a slow pace of innovation or change. The Activity assumes that a reduction in the number of suppliers that each wholesaler purchases from would represent consolidation and improved efficiency of the scattered network. It may also indicate that wholesalers are making purchasing decisions not just based on who has the cheapest price at the moment, but on which suppliers offer the best overall service for their distributors—a behavior that indicates a shift towards customer-oriented growth strategies versus simple trading practices.

⁴ Agro-inputs dealers in town centres are referred to as “wholesalers” for shorthand, even though in reality some of them conduct more than 50% retail operations

The expectation is therefore that this number will go down over time. Any changes in this number would, of course, need to be investigated to test these assumptions.

Example #2: Number of suppliers per wholesaler that are consulted for technical information: 2.1

This number tells us that, of the average 7.2 suppliers that each wholesaler buys from, the wholesaler only consults 2.1 of those for technical information. This can also be expressed as a percentage, which works out to 33.6% of the wholesaler's suppliers. The assumption is that the *percentage* will increase over time. An increase here would suggest that wholesalers and suppliers are engaging in deeper, more cooperative relationships, and possibly dropping those relationships that are not strongly cooperative. This would again be consistent with a shift towards customer-oriented growth strategies.

SenseMaker®

SenseMaker is a proprietary software package and research methodology developed by complexity scientists at Cognitive Edge. It uses participants' narratives to uncover foundational attitudes that inform and influence behavior. SenseMaker roots participants' responses in a particular experience by asking them questions based on real behaviors exhibited in a story that they tell. When these responses are taken together, SenseMaker provides a way to quantify shifts in attitudes and behaviors that represent the new ways of doing business in agro-inputs that the Activity intends to bring about.

Data Collection Process

SenseMaker data collection is conducted with all wholesalers who report more than 5 million Ugandan shillings in sales per season (approximately \$1700). Like network analysis, the SenseMaker interview is divided into two major parts: relationships with suppliers, and relationships with retailers. First, wholesalers tell a story about their most memorable interaction with one of their suppliers in the past six months. From there, the wholesaler answers a series of questions about the story and the relationship, a process called "self-signification," as the wholesaler is able to give meaning to the story without the interviewer applying their own interpretation. This is then repeated with a story about an interaction with a retailer, providing two sets of stories and their significations.

SenseMaker has three basic question types in the self-signification that follows the storytelling. First is a simple multiple choice. Examples that the Activity uses include asking participants to assign emotions to the story, and also to classify the story type (e.g. a sales visit, a promotional event, a product purchase, etc.). Second is a "dyad," which is similar to a spectrum where one end is an overabundance of particular quality (e.g., unyielding trust no matter what) and on the other is the total absence of that quality (e.g. no trust under any circumstances). Participants place a dot somewhere on the spectrum to indicate where their answer lies in between these extremes. Third is a "triad," where instead of having two "polarities" like a dyad, the triad has three gravities, one in each corner of a triangle. Participants place a dot in the triangle to express the relative importance, or weight, of each of the three ideas or aspects in their response. The closer the dot is to a triangle's corner, the stronger that idea is for the participant. (see examples below for more detail).

Examples of SenseMaker Results

Triad Example

What I like most about this retailer is....



Wholesalers responded to a question about their retailer story, which asked “what the wholesalers liked best about that retailer?”. The closer the dot is to each corner, the stronger or more important that idea is for the wholesaler.

The idea in each corner corresponds to a certain mentality, attitude, or behavior towards doing business in agro-inputs. The idea in the top corner, “they always pay on time,” is associated with a simple trading mentality, where price and payment are the paramount concern. The ideas in the bottom two corners, “they buy only from me,” and “I move out of my shop and we do work together,” suggest a more active, invested relationship with the retailer. Over time, the expectation is that responses will gravitate away from the top corner, towards the other two corners.

In the picture below, each dot in the triangle represents an answer that a wholesaler provided to this triad. For example, the dots near the middle indicate that all three answers were equally important to those wholesalers. A dot very close to a corner indicates that that answer was of sole importance to the wholesaler. From a visual scan of the triad, it is clear that the answer at the top, “they always pay on time,” is the most important for most wholesalers.

SenseMaker also puts numbers to this visual representation: each dot generates three numbers, which add up to 100. The numbers represent how close the dot is to a particular answer. The closer to 100, the stronger that answer is; for example, the dots right next to the corner labeled “they always pay on time” will have a score of about 95 for that answer, while the scores for “they only buy from me” and “I move out of my shop...” will score about 2 or 3 each.

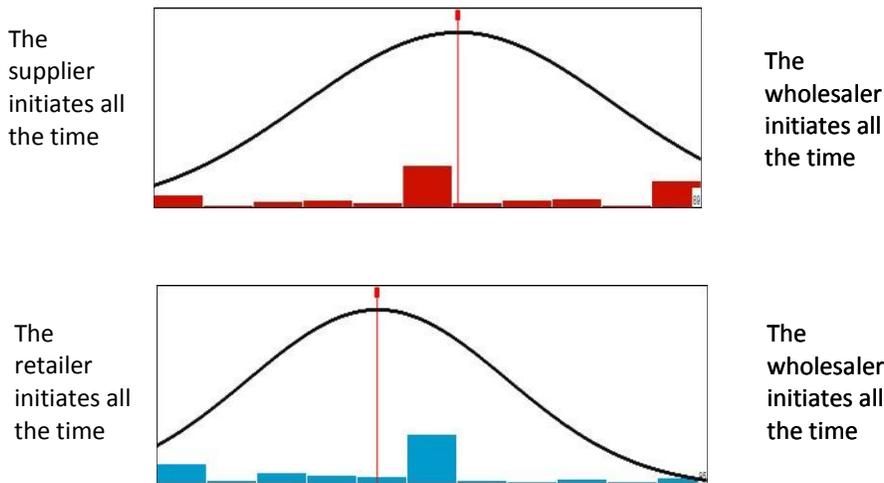
Comparative strengths of....		
	All firms	Target firms
“Pay on time”	60.3	49.4
“Buy from me”	24.9	31.2
“Work together”	14.7	19.4

The table above takes the average of all the dots for how close they are to each answer. Here, it is again clear that “they always pay on time” carries the greatest strength, with an overall average of 60.3. “They buy only from me” is a close second at 24.9, and “I move out of my shop and we do work together,” perhaps the answer that most strongly corresponds to customer-oriented growth strategies, is only 14.7. The Activity’s target firms (those firms benefiting from direct support from the

Activity) score slightly lower for “Pay on time” and slightly higher on the other two answers, suggesting that they are in fact early adopters or role models for the sector. Ideally, all firms will begin to shift towards the bottom two corners over time, as customer-oriented growth strategies become the new norm, rather than an approach used only by target firms.

Dyad Example

Dyads can be similarly summarized with one number that averages all participants’ answers together. As wholesalers answer the same dyads regarding both their retailers and their suppliers, we can draw comparisons between these two relationships. In this example, participants were asked to indicate, in stories such as the one they told, who initiates the interaction. On one extreme of the dyad, the wholesaler initiates 100% of the time; on the other extreme, the other business initiates all the time. Answers in the middle indicate about a 50-50 split in terms of who approaches who in the relationship. The height of the bars on the graph below correspond to how many respondents placed their answers in that location on the dyad. The red line marks the mean response.



In these graphs, we can see that wholesalers initiate interactions more often when dealing with suppliers than when dealing with retailers. The calculations show that supplier stories have a mean of 55.6, while retailer stories have a mean of 40.1. This again corresponds with how the Activity characterizes the current state of the industry and the predominance of simple-trading business models. When dealing with suppliers, the onus is on the wholesaler to reach out; when dealing with retailers, the onus is on the retailer to reach out. The seller simply sits in the shop and waits for customers to come. Movement towards customer-oriented growth strategies might see these numbers shift, where suppliers are proactively working with wholesalers, and wholesalers are proactively working with retailers.

Mobile Phone Surveys

For the Activity, systemic change is a means to an end. The ultimate goal is to bring about impact at the farmer level through changes in the agro-inputs industry. Thus, when assessing impact, the key question is: are systemic changes in the agro-inputs distribution chain creating positive, or negative, impacts for

smallholder farmers? As smallholders are not a direct intervention area for the Activity, the challenge is to assess this impact while using resources efficiently.

The Activity is currently experimenting with a low-cost, voice-based mobile phone survey platform. Respondents hear voice recordings and press buttons on their phones to indicate answers, with a choice of six local languages.

There are three key areas of questions:

- If farmers used agro inputs that season
- If farmers perceived more, fewer, or the same level of counterfeits on the market that season
- If farmers experienced unavailability of any key products that season

The Activity continues to work through challenges with poor connectivity in rural areas. As tests are ongoing, survey results are not available at this time. If and when connectivity issues are reasonably resolved, the Activity will administer the surveys at the end of each season, such that the data will be comparable with the components that assess systemic change (i.e. SenseMaker and network analysis). Once operational, survey results will allow for triangulation of the systemic change findings.

Investigations

Investigations are a complementary tool across three components of the M&E scheme: assessment of outcomes, systemic change, and impacts. Investigations are a way to qualitatively round out the data collected under those components by diving deeper into the significance of findings. Instead of operating as a standalone component, investigations are triggered by a question that comes up in the data from other components. This is especially important for making sense of the systemic change data, which naturally raises many “why” and “how” questions. Investigations can also help to verify data by bringing in information from other market actors.

Data Collection Process

There is no single defined process for conducting investigations. Investigations start by formulating a question, and then deciding what method best gets at that question, and who in the market system is best suited to provide information on it. However, common tools for conducting investigations include focus group discussions, key informant interviews, and short one-on-one survey interviews. Investigations can be conducted with a range of market actors, with the most common being agro-inputs retailers and suppliers. Rather than attempt to speak to all retailers or suppliers, an investigation chooses a sub-set of market actors based on the combination of breadth and depth required to answer the question. Data collection can be designed to generate a report, briefing, or an additional subset of data that complements what was collected by another component.

Example: Getting the Retailers’ Perspective

Following the first round of data collection, the team conducted an investigation with a selection of rural retailers who were customers of wholesalers. The team intended to get insights on:

- Whether the network data provided by wholesalers matched with how retailers described those same relationships; whether rural retailers tended to buy exclusively from upcountry wholesalers, or if they also bought from suppliers directly in Kampala

- Additional measures on the quality of relationships between wholesalers and retailers, in light of a trend where wholesalers reported providing a significant amount of support to retailers

The M&E team administered one-on-one surveys with retailers that included questions such as:

- Which businesses they purchased agro-inputs from last season, and of those businesses, which ones they had the strongest relationships with and which ones they regularly looked to for product information. (i.e. the same question administered to wholesalers)
- What common challenges they face in their business, and what they do/who they turn to when addressing those challenges (to assess if retailers regularly look to wholesalers for support)

The investigations found that the network data provided by wholesalers was generally correct, but with some differences in perception of quality of relationships. For example, a small number of retailers reported relying on certain wholesalers for product information, yet those wholesalers had not described the relationships in the same way. Retailers consistently reported buying from suppliers in Kampala, in addition to purchasing from wholesalers in their region.

Retailers named a variety of challenges in doing business in agro-inputs, but very rarely referenced wholesalers when discussing how they go about solving those challenges.

Taken together, the investigation results suggest that wholesalers have low expectations of what constitutes “support” to retailers, and that conceptualizations of “support” do not match what would be expected from a business pursuing a customer-oriented growth strategy. The team plans to follow up with similar interviews in more areas to get a wider sample size. This will allow the team to estimate an “error rate” with the network data, and also get more robust insights into what agro-inputs businesses perceive to be strong or supportive relationships.

5. Fitting Components Together

Each component of the M&E scheme is designed to reveal patterns of behavior and change over time and between locations. As staff collect more and more data, it will be exciting to test the functionality of the various components by fitting them together to answer critical questions, some of which include:

1. Do patterns of progress toward outcomes correlate to changes or differences in network structure and/or attitudes as captured in SenseMaker?
2. Do distinct network patterns correlate to distinct behaviors or business practices?
3. Do different network patterns correlate to changes in how smallholder farmers access and use agro-inputs? Is this change beneficial or detrimental? Can such impacts on smallholder farmers be reliably extrapolated across recurring, similar network structure patterns?
4. Are there unexpected changes in patterns revealed by any one component? Do these patterns correlate to other changes?

The Activity expects the components of this M&E scheme to provide guidance on answering many questions. As mentioned at the beginning, part of the reason for putting this paper out now is to bring other interested parties into the discussion so this Activity can learn from and be a contributor to the community of practitioners at large.