



## SCALING IMPACT THROUGH AGRICULTURAL INPUT AND OUTPUT MARKETS: A SYNTHESIS AND TROUBLESHOOTING GUIDE

### I. INTRODUCTION

Over the course of three years, the Leveraging Economic Opportunities (LEO) activity<sup>1</sup> conducted secondary and primary research on scaling impact through agricultural input and output markets. This research looked at successful approaches in scaling smallholders’ access to [input](#) and [output](#) markets across dozens of cases, as well as ex-post assessments of two agricultural projects that used a market systems development approach in [Cambodia](#) and [Zambia](#)<sup>2</sup>.

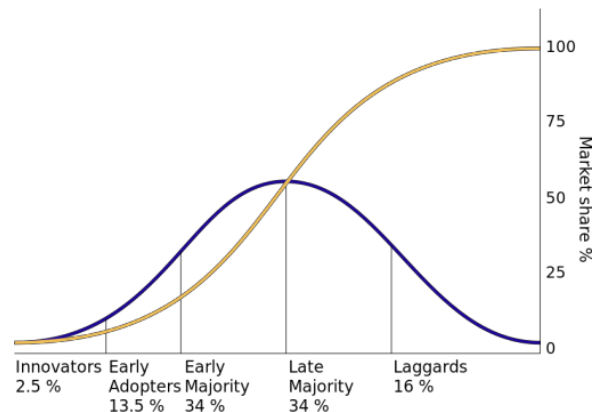
Building on this, this paper is designed to provide two key features:

- a summary of empirical learning, drawing from across this body of work on scaling impact
- a series of practical recommendations and references to outside resources to help guide projects focused on achieving impact through technology<sup>3</sup> and behavior adoption via agricultural input and output markets.

The content is oriented toward those applying a market systems facilitation approach, though also relevant to those working on more traditional, subsidy-based projects as well.

**Scaling Impact:** reaching “scale” in the context of this brief refers to durably benefitting a large number of a target group (such as smallholder farmers). What constitutes a ‘large’ number is context-specific, but typically means having reached at least the late majority in the technology adoption S-curve<sup>4</sup> (see Figure 1). The inclusion of the word ‘durable’ in the definition of scale is critical, given that this paper examines scale through the application of a market systems development approach and is explicitly excluding traditional project activities that directly reach many beneficiaries but with no focus on establishing mechanisms for continuing effect after project end. “**Scaling up**” references the strategies and approaches used to reach scale.

**Figure 1: Technology Adoption Curve**



Source: *Diffusion of Innovations* (2003)

<sup>1</sup> More information on the LEO project can be found at [www.acdivoca.org/leo](http://www.acdivoca.org/leo).

<sup>2</sup> The reports on input markets and output markets, along with the ex-post assessments of Cambodia and Zambia, are available at [www.microlinks.org/leo](http://www.microlinks.org/leo) in the resources section.

<sup>3</sup> Technology is defined broadly in this report to include both physical technologies and social technologies (e.g., business practices).

<sup>4</sup> The technology adoption S-curve was developed by Everett Rogers in the 1960s and articulated in *Diffusion of Innovations* (2003). For a brief overview of the concept and categorizations of adopters, see <http://www.ondigitalmarketing.com/learn/odm/foundations/5-customer-segments-technology-adoption/>

Critically, this paper does not suggest that scale is the only ultimate result that a market systems development project should focus on. Indeed, an overarching focus on scale – if defined traditionally as the number of people who have engaged with a project – risks subverting a project’s ability to create long-term sustainable change within a sector for reasons discussed further below. Thus this paper views scaling impact as necessarily linked to achieving systemic change.<sup>5</sup>

## II. HOW TO USE THIS GUIDE

This guide is designed to be a practical reference that is quick to peruse, but with links to other materials that provide further information on each of the main topics. **Section III, ‘What We Found,’** provides a brief summary of takeaways from the body of Scaling Impact work previously published (see footnote 2), including methodological challenges, and what universal (or at least generalizable) learning can be extrapolated from the individual cases. **Section IV, ‘Implications for Programming,’** provides more ‘actionable’ recommendations, divided by stages in the project<sup>6</sup> cycle: designing the project, selecting sectors and value chains, designing interventions, and determining how to intervene. For each stage, the guide outlines the most common problems we found that prevent projects from reaching scale, solutions to address them, and additional reference materials. As such, it should be treated more as a reference guide than a manual—there are several better and detailed manuals, listed in the reference sections, to guide each phase of implementation overall. Instead, our hope is that, as projects run into these very common problems, this guide will facilitate brainstorming to overcome them, and provide references to more detailed guides as necessary.

## III. WHAT WE FOUND: A SYNTHESIS OF LEARNING

This section covers seven major learning points that emerged from the Scaling Impact research.

**No market system studied was purely engaged through facilitation:** Whether as part of the same project, or through other programs, there are very few market systems we found that were engaged through a purely facilitation-based approach. In countries with large donor profiles, most beneficiary sets are engaged by multiple programs deploying a range of subsidy and facilitation approaches. Without a set of natural facilitation experiments, this limited our ability to definitively isolate the effects of the studied interventions from other project and non-project (political, economic, social) dynamics in the market system.

**There is no universal approach, but there are universal conditions necessary to enable scale:** Using a project as the unit of analysis led to tradeoffs: while it ensured that we would capture the project’s perspective and most relevant recommendations for other practitioners, it also meant that our total sample size was too small, and each project’s objectives too diverse, to enable us to see any universal pattern of successful approaches. The most successful cases, however, did operate within certain universal conditions:

- a. *Stable medium- to long-term end-market growth for target value chains:* a clear necessary condition for any scaling of technology adoption for smallholders is the perception throughout the value chain that the product end-market has shown growth, and will continue to grow moving forward. Particularly for smallholders with high opportunity costs for all additional investments in their production systems, end-market demand needs to be strong and growing.

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<sup>5</sup> For further discussion of what constitutes systemic change and how to measure it, see LEO’s *A Framework and Domains for Measuring Systemic Change*, forthcoming in 2016., and *Case Studies on Systemic Change in Feed the Future*, forthcoming in 2016. [www.microlinks.org/leo](http://www.microlinks.org/leo)

<sup>6</sup> Throughout this paper ‘project’ refers to any donor-funded set of activities implemented under a unified contract or agreement mechanism (currently defined by USAID as ‘activities’), not the broader portfolio definition currently in use by USAID.

- b. *Political and macroeconomic stability*: Several cases studied began in promising contexts, but political, economic, environmental, or health shocks de-stabilized the market and led to a collapse in demand, input supply, and/or production. While it is impossible for project designers or implementers to forecast with complete accuracy, we did not find a successful case of technology adoption reaching scale in the midst of political and macroeconomic instability.

**Working through larger firms with stronger capacity increases the potential for long-term sustainability and self-perpetuating exponential growth of the model:** Several of the cases studied, including the Zambia PROFIT model and the India Sunhara model, worked through lead firms to manage and grow the outreach model after the project activities ended. Larger firms that may be ‘further’ from project beneficiaries (large input suppliers on one end of the value chain, end-market processors on the other) tend to have the greatest potential for ensuring long-term sustainability and continued growth of outreach after the project end. They have deeper financial pockets and stronger managerial capacity to anticipate and respond to changes in the market, weather downturns, and build out moving forward.

**Working through smaller firms closer to beneficiaries (i.e. microentrepreneur owner/operators with at most a handful of additional employees) tends to ensure services are appropriate, and localizes effect, though holds limited potential for exponential growth without a larger coordinating actor:** Working through microentrepreneurs ‘closer’ to smallholders (small-scale input supply agents or retailers, or agent-level output aggregators, for example) ensures that the project’s activities are operating within and responding to the needs of rural beneficiaries, increasing the probability that increases in service and goods access are inclusive in their reach. However, these actors lack the financial and managerial capacity of actors further away in the value chain (geographically and in number of transaction points between the actor and the smallholder), limiting their ability to endure downturns or continue to grow their business beyond an initial market catchment.

**Models should be reduced to only essentials, and emphasize adaptive capacity over static technical knowledge:** Scale requires durability and maximizing the relevance of an approach across as wide a set of firms and/or individuals as possible. Across all successful cases, the approaches that showed the greatest potential and actual scale were those that created a.) the capacity to assess risk and opportunities among firms, and b.) adapt a given business model in response to them. For example, microenterprise models that are not tied to specific value chains, but encourage entrepreneurs to cast a wide net and adapt to new opportunities as they arise, proved far more durable than those with a narrow focus on a specific crop.

**Infrastructure constraints provide hard limits to profitability and scale:** Interviews with input suppliers in Zambia showed that a large part of the costs involved with scaling supply to smallholders were infrastructure-driven costs that are beyond the control of companies or projects: trucking and transportation on poor roads, and intensive follow-up with retailers because ICT and electricity limit alternative forms of communication. These costs are both immutable by project activities, and fairly easy to discern up front. Assessing them up front can filter less feasible models from more promising ones.

**What the project is scaling affects what opportunities need to be present for it to scale:** Scaling adoption of cash-intensive improved inputs requires strength and stability in crop demand down market. Scaling adoption of labor-intensive technologies and practices will tend to have different enabling conditions—for practices such as drought managing zai pits, bunds, ridge ties, etc., a weather shock can provide a window in which farmers are more open to adoption of the new technology.

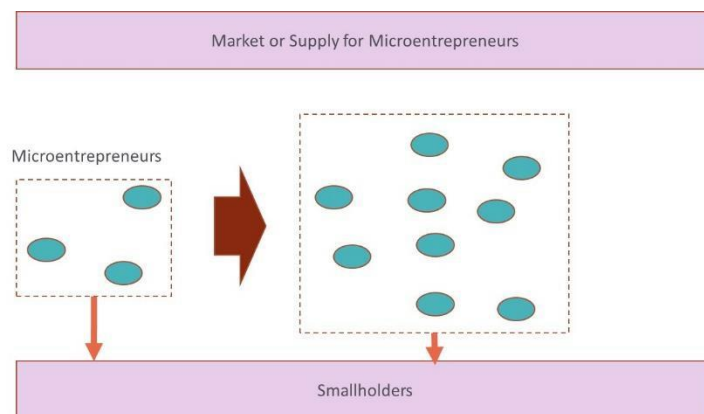
## IV. IMPLICATIONS FOR PROGRAMMING

### A. SCALING PATHWAYS

Out of this summary evidence, we found that the most successful cases of scaling adoption tended to follow one of three pathways, listed below. Each of these paths was built around creating, changing, or expanding an individual firm's business model, then seeking expansion either through internal firm growth, peer firm imitation, or both. The pathways and a rough assessment of their strengths and weaknesses in achieving internal firm growth through continued investment and expansion or imitation are discussed.

#### Pathway 1: Horizontal expansion through imitation

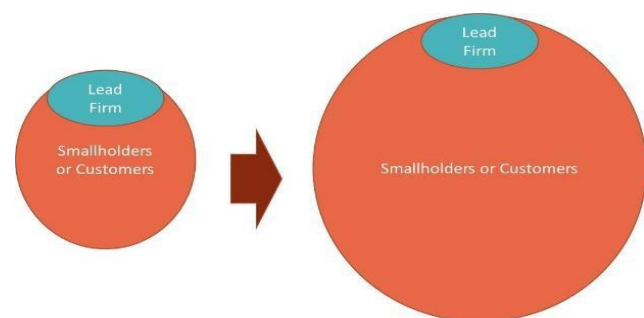
This pathway focuses on scaling through two steps: first, working with a group of individual firms, and developing successful business models. Second, disseminating these models through demonstration and promotion to current or potential imitator firms. While imitation was a component of multiple models, the 'imitation only' approach was most common with microenterprise models for input supply. Projects worked with a small set of initial microenterprises to demonstrate viability, then scale was pursued through encouraging imitation amongst other potential microentrepreneurs.



This model tends to have high potential for scale, but only to the extent that basic entrepreneurial capacity is present in target market systems. Additionally, scale through growth of individual microentrepreneurs tends to be limited by their own low financial and managerial capacity. Firm-level growth instead is likely to occur as sets of microentrepreneurs transition into one of the other pathways listed below, aggregating into larger firms that pool capital and management.

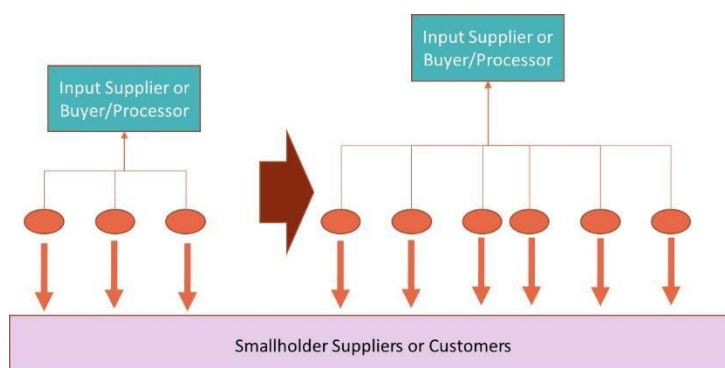
#### Pathway 2: Lead firm growth

The second most common pathway was a lead firm internal expansion approach. These models worked with an individual firm to establish vertical coordination mechanisms with smallholders directly. Most often seen as outgrower schemes, and were largely governed by the nature of the crop grown, end-market demand growth and volatility, and the potential for side-selling risk. These models hold strong potential for continued growth through firm level expansion, but in contexts where outgrower schemes have led to significant imitation, sideselling pressures can often increase and lead to a breakdown in the schemes.



### Pathway 3: Vertical integration and multiplication

The other most successful model was a combination of vertical and horizontal expansion, in which a lead firm (input suppliers or end-market buyers) recruited, trained, and managed a network of agents or semi-autonomous retail operations. The scaling pathway was a hybrid model, seeking both other firms to imitate the initial firm's model, and expanding the number of agent or retail 'nodes' being managed by the lead firm. Firms, once committed to this model, showed high tolerance for investment and growth in their networks, but seemed mostly limited by the depth of potential entrepreneur capacity embedded in the system.



**Table 1: Comparative Expansion Potential by Pathway**

Pathway	Potential for expansion through firm-level buy-in and growth	Potential for expansion through competitive imitation
<b>Horizontal expansion through imitation</b> (standalone microentrepreneurs)	Low—microentrepreneurs tend to have a lower 'natural' limit to firm size, due to managerial and financial capacity constraints. Most likely buy-in expansion is through graduation to one of other two pathways below.	High—if structured correctly, basic microentrepreneurship models can hold significant potential for scale through adaptation to other business segments. Additionally, there is significant 'depth' in the competitive space for small level businesses to enter and exit the market in response to growth or shrinkage in customer demand.
<b>Lead firm vertical integration with smallholders</b> (e.g. outgrower schemes)	High—If tied to a stable end-market, outgrower schemes can leverage economies of scale in input purchasing, in costs of credit, and logistics.	Medium—optimum mix seems to be transparent oligopsony—enough buyers in the market to encourage competitive pricing and give farmers a choice, but few enough to establish and enforce norms that would discourage poaching each other's commodity through encouraging farmers to side-sell.
<b>Vertical integration and multiplication</b> (input supply franchises)	Medium-- individual firms can see exponentially greater reach to end-customers through more intensive management of retail intermediaries, though all models showed that intensive management of dispersed rural networks is expensive, and companies face challenges in identifying trustworthy, high capacity intermediaries in greenfield market areas with which they are unfamiliar.	Medium—In only one of the cases studied did a franchise model seem to encourage peer firm imitation, though further research behind why it was not more commonly replicated in other cases would be needed to understand why.

## B. DESIGNING THE PROJECT

This section highlights common problems uncovered by the Scaling Impact research and solutions, all associated with the design phase, as well as additional resources.

### Facilitate change by private actors to support sustainability and ownership

Because costs for a project working directly with large numbers of geographically dispersed farmers is so high, projects that have adopted this traditional ‘direct delivery’ approach have struggled to reach scale. Many have reached fewer than 5,000 or 10,000 farmers.

In choosing how to design the project, our research found that using a facilitation approach that works through other market actors can enable a project to reach exponentially larger numbers of target beneficiaries. This has included at least two of the 19 projects covered by this research (MSME I and II and PrOpCom), which reached over 800,000 beneficiaries (see figure 2, below).

### Critically question the role of technology adoption in reaching scale in market systems

Instead of thinking first of technologies, it is critical to first identify the systemic constraints that are impeding the performance of the market systems. In some cases the absence of technologies will play a critical role, but they should be pursued only as they support the resolution of identified constraints and in combination with addressing the systemic factors that invariably mediate technology’s availability and uptake. The Sunhara project in India, for example, focused not just on increasing the number of retail outlets for agro-inputs close to smallholders, but ensured that this increase in access was paired with a guaranteed market for the specific potato varieties only available through those outlets. This solved the legitimate fear smallholder producers felt of increased risk exposure from adopting expensive new inputs without knowing if the commercial returns on their crop would justify it.

### Avoid scale indicators and short-term scale targets that impede supporting durable long-term impact at scale

Projects have varying ability to propose or influence the indicators by which they will be judged. Regardless, choosing appropriate project indicators is critical to aligning incentives towards creating durable change. A common challenge is that **strong pressure to hit ‘scale’ (i.e. targets for numbers of farmers reached or benefited) can impede a project from fostering systemic change.**<sup>7</sup> The need to demonstrate significant impact within the first two years of the project tends to discourage innovation and lock implementers into strategies with lower potential for sustainability and durable scale. There is a direct trade-off between the potential for sustainability and projects’ ability to achieve significant impacts within their first two or three years. Reaching beneficiaries in early years requires significant investment in developing and implementing large scale training programs. In addition to diverting managerial attention and resources from more sustainable activities, this can often create a direct training and beneficiary interaction mentality amongst project staff that can be difficult to change in later years of the project. Direct project training in technology adoption and practices has limited potential to lead to durable change after the project ends. Our ex-post assessments in Zambia and Cambodia reinforced that gains from basic sensitization and training activities will tend to recede and revert to the pre-project baseline without a change in the way embedded members of the market system interact with smallholders. Additionally, direct disbursement subsidies can actually undermine durable change, by circumventing commercial demand through giveaways.

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<sup>7</sup> Fowler, Ben et al. [Reconsidering the Concept of Scale in Market Systems Development](#). USAID, 2016. [www.microlinksorg/leo](http://www.microlinksorg/leo)

In this context, durable change that can both consolidate project gains and move them forward requires multi-year investment in staff capacities, managerial expertise, and activities aside from direct training. Particularly in agricultural systems based around a single primary production season per year, it can take at least two years of implementation to simply establish trust with market actors, pilot new models for their engagement with smallholders, and gain proven results before those models can be scaled through private sector buy-in and imitation. Our research into supporting smallholder farmer access to input markets demonstrated that among the analyzed cases, the minimum time typically required to reach significant numbers of smallholder farmers using a facilitative approach was three or four years, and in some cases it required as many as eight.<sup>8</sup>

This can be addressed by explicitly including indicators that track whether a project is influencing the systems in which it is working (see bullet one in the resource section below). This is the surest sign that a project is creating durable changes of the type that will ultimately result in impact for its target beneficiaries at scale. If included in a logframe, these should be left broad so as to not overly constrain the implementer's flexibility. Moreover, indicators of scale should be oriented at the highest level possible. Therefore, rather than reporting on the number of people who have been reached by or participated in a specific project-funded initiative, indicators should rather focus on the number who have benefited (e.g., the number of farmers who have earned additional income as a result of project activities and – critically – on what systemic changes have occurred.

### **Incorporate pilot phases to test models before planning for scale**

Accurately forecasting the effect of project activities on complex market systems is nearly impossible without a pilot phase. Explicitly incorporating a pilot phase would relieve the pressure on innovative models to immediately reach large numbers, and instead focus on testing their assumptions and adapting the model to the market system's feedback responses. Once models have demonstrated proof of concept, projects can then focus on shifting the nature of their support to facilitating broader uptake of the models and tracking widespread adoption.

### **Formative assessments should explicitly include other donor-funded projects**

The ex-post assessments in Zambia and Cambodia reinforced the fact that donor-funded projects are a consistent part of market systems in developing countries. Project scoping assessments should include a comprehensive understanding of other project scopes and geographic coverage. Additionally, several USAID missions have developed coordination meetings on regular basis between funders and implementers to keep each other up to date on project activities, encourage coordination, and avoid overlap.

### **Resources:**

- Fowler, Ben; Tim Sparkman and Mike Field. [Reconsidering the Concept of Scale in Market Systems Development](#). 2016. This paper suggests that the shift to a systemic perspective calls into question the utility of using scale – in its current usage – as a key measure of project success. It assesses the implications of shifting the definition of scale towards a more useful concept for systems program design and measure of program impact.

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<sup>8</sup> Fowler, Ben and Daniel White. [Scaling Impact: Extending Input Delivery to Smallholder Farmers at Scale](#). 2015. [www.microlinks.org/leo](http://www.microlinks.org/leo).

- Fowler, Ben and Tim Sparkman. **A Framework and Domains for Measuring Systemic Change**. Forthcoming, 2016. This paper is designed to help project implementers understand whether their programming is creating systemic change. It outlines key types (domains) of systemic change and provides practical examples of how to capture them.
- MarketShare Associates. **Testing Tools for Systemic Change: Synthesis Paper**. USAID. Forthcoming, 2016. Facilitating systemic change can greatly deepen the scale of the change that a project can achieve. This paper summarizes four different tools that projects can use to understand the extent to which their target systems are changing.
- Sparkman, Tim; Eric Derks and Mike Field. [Practical Tools to Monitor Market System Dynamics](#). This paper and presentation outlines a set of tools that project implementers can use to monitor the dynamics of their target market systems and test their evolution over time.
- Brand, Margie; Caroline Fowler and Ruth Campbell. [Applying A Market Systems Lens to Technology Scale Up: A Brief Literature Review](#). LEO Report #13. 2015. This paper reviews the existing literature related to technology uptake. It presents several existing frameworks, and strategies for facilitating scale-up.
- Campbell, Ruth. [A Framework for Inclusive Market Systems Development](#). 2014.
- Markel, Erin and Lindsey Jones. [Women’s Economic Empowerment: Pushing the Frontiers of Inclusive Market Development](#). 2014.

All of the above resources are available at [www.microlinks.org/leo](http://www.microlinks.org/leo).

### C. SELECTING SECTORS AND VALUE CHAINS

Selecting sectors and value chains is hugely influential on a project’s ability to achieve impact at scale.

#### **Take a systems perspective that considers the full household economic system**

A narrow value chain focus limits understanding of the full range of current livelihood opportunities and potential opportunities for improvement at both the beneficiary and value chain actor level. Expanding to look at the full household system will maximize the horizontal scale potential of any designed interventions.

The value chain framework evolved out of a recognition that a narrow focus on production was insufficient to transform beneficiary livelihoods: working with input suppliers, off-takers, processors, and retailers to improve their operations and solve inefficiencies was also required. But several case studies from our research have demonstrated that even a broader ‘value chain’ lens has its blind spots, by **missing important other livelihood strategies<sup>9</sup> that farmers and their families engage in**. For example, some maize farmers in Tanzania may have their own plot of production, but will actually spend most of their time as piecework laborers for neighboring farmers. This can have significant effects on understanding how they prioritize their resources and time. A project that only sees them as maize producers on their own land does not understand that any technologies and practices they will promote for adoption (fertilizer or hybrid seed, for example) will require greater investment in money and time on their own fields, which they would be evaluating relative to the other livelihood strategies they deploy. Without knowing what these strategies are, it is impossible to evaluate proposed technologies for their adoption risk and return on investment relative to other demands on the producer’s time. Further, it leads programs to miss potential opportunities for livelihood improvement

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<sup>9</sup> For further analysis of labor-based alternatives to agricultural production and sale, see Mueller, Bernd and Man-Kwun Chan. [Wage Labor, Agriculture-based Economics, and Pathways out of Poverty](#). 2015.



beyond just the selected crop. Crop diversification and rotation, for example, have significant agronomic benefits for soil health, reducing fertilizer needs and improving water retention capacity. Economically, it diversifies the producer's market and agronomic risk profile. Projects with overly restrictive crop foci can unintentionally bias producers against diversification through incentivizing intensification of single crops. Projects should pay much greater attention to piecework and formal and informal labor dynamics in building a composite livelihood snapshot, rather than simply examining single crop yields and market returns. USAID has done this by broadening the value chain approach to concentrate on market systems, with recognition that households are systems in themselves.<sup>10</sup>

Similar breadth should be applied to analyzing potential opportunities for expanding market access at the village level: if the financials to reach target households for agrodealers alone are still too high, projects should engage with any currently successful retailers to expand their current offerings to include agroinputs. For example, dry good stores selling salt, sugar, and other daily essentials may be open to carrying select agroinputs as well; mechanics and vehicle supply nodes may be open to carrying agricultural equipment like hoes and ploughs. Feeding these goods into existing successful retail operations is far more likely to succeed than developing new retailers from scratch. Further, look to partnering with non-agricultural suppliers, such as beverage manufacturers, to partner in basic business skills development to help the overall operation succeed. There are several relatively rapid tools, including rapid rural appraisal (RRA) and participatory rural appraisal (PRA) available to formulate a more holistic snapshot of the household and village-level economy, outlined under references below.

### **Understand whether industry conditions support or impede systemic change**

Projects sometimes select sectors in which there are no drivers that would push market actors towards making behavior changes that would transform the sector. By limiting their analysis to understanding win-win opportunities – but not the will of existing actors to pursue them – some initiatives predictably falter once project funding is removed. Market facilitators who are selecting what sectors to target should deliberately consider where the conditions are most likely to support systemic change. Drawing from LEO's research in Cambodia, Zambia, Bangladesh and elsewhere, some important conditions include:

- **The degree to which incentives exist for market actors to innovate, and provide and access information.** Each context will have factors that influence this. Often, two important factors are the pace of new knowledge generation in the sector (i.e., how quickly new research and information is being created) and the duration of information validity (i.e., how long technical information remains valid for before new diseases / discoveries invalidate it). In the Cambodian swine sector the former is high and the latter is low, given the pace at which diseases evolve and new treatments are developed and eclipsed. This creates strong pressure within the sector for product innovation and to invest in customers' product knowledge.
- **High levels of competition and low barriers to firm entry.** These factors create ideal conditions for knowledge spillovers via human capital diffusion (employees leaving to start new firms and imitating their former firm's strategies) and imitation. Sectors where the fundamentals don't change quickly or conditions are less competitive are less likely to foster systemic changes.
- **Sudden market disruptions.** Absent a shock, when conditions are relatively good, firms and sectors often have little impetus to change established ways of working. This is as true in the Zambian input supply sector as in the Canadian wine industry. Businesses often prefer to pursue growth in existing

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<sup>10</sup> See, for example, Campbell, Ruth. [A Framework for Inclusive Market Development](#). 2014.

markets rather than make speculative investments elsewhere. However, disruptions to markets (e.g., international price fluctuations, loss of large-scale customers) can motivate firms to explore new opportunities.

### Resources:

- The Springfield Centre. [The Operational Guide for the Making Markets Work for the Poor \(M4P\) Approach: 2<sup>nd</sup> Edition](#). 2015. Funded by SDC & DFID. This guide offers a practical framework for selecting sectors and value chains to focus on.
- CARE. [Identifying Market Opportunities for Rural Smallholders](#). In-depth guide on identifying discrete down-market opportunities for beneficiary farmers, critical for estimating revenue scenarios.
- Henning, Rob; Neal A. Donahue and Margie Brand. [End Market Research Toolkit: Upgrading Value Chain Competitiveness with Informed Choice](#). 2009. This guide provides in-depth guidance on how to conduct research on end markets.
- Campbell, Ruth. [A Framework for Inclusive Market Development](#). 2014. A framework that builds on the value chain framework but specifically incorporates a focus on household-level dynamics.
- Mueller, Bernd and Man Kwun-Chan. [Wage Labor, Agriculture Based Economies, and Pathways out of Poverty](#). 2015. Summary of current evidence on rural wage labor in developing economies, and practical recommendations for implementers.

**Rapid Rural Appraisal/Participatory Rural Appraisal:** These approaches, developed by Robert Chambers, provide targeted, rapid methods for mapping livelihoods and local economies, and giving beneficiaries agency in describing their lives and aspirations and designing activities that address their priorities. These tools are particularly useful as guides to ensure projects have a comprehensive overview of household and village level economies, as recommended above.

- FAO. Chapter 8: [Rapid Rural Appraisal](#). Chapter 8 of the FAO Marketing Research and Information Systems Manual. Guidelines on formulating and conducting rapid rural appraisals.
- FAO. [Participatory Rural Appraisal \(PRA\) Toolbox](#). Collection of learning exercises and tools for the participatory rural appraisal approach.
- CRS. [Rapid Rural Appraisal \(RRA\) and Participatory Rural Appraisal \(PRA\): A Manual for CRS Field Workers and Partners](#). Comprehensive manual on RRA and PRA methods and approaches.

## D. DESIGNING INTERVENTION STRATEGIES

The design of project interventions has a critical influence on whether a project can scale or not. Two important phases are highlighted in intervention design: conducting targeted analysis and designing partnerships.

### a. Conducting analysis to inform the design

Most projects conduct upfront analysis to not only select sectors and value chains, but also to inform their intervention design.

## Look for existing but nascent business models with the potential for scaling-up

A major mistake made by many projects is **inadequate analysis of existing business models already introduced and in the market**. Consequently, projects frequently attempt to recreate solutions that have already failed, without at least understanding and trying to avoid the contributing factors. Market facilitators should include a thorough analysis of existing business models in focal markets at the outset, or in the early stages, of programming. This allows the identification of nascent but viable models that may already exist but have yet to scale throughout the industry. Such existing models often have the advantage of having already been tested and found to be effective in the target sector, thus not requiring the extensive testing and iterating that introducing a new model would require. For example, the MSME project in Cambodia identified a nascent embedded training model used by wholesalers to create customer awareness and drive input sales. The project focused on encouraging other companies to replicate this model, which contributed to widespread and enduring adoption.

## Analyze the viability of coordinating mechanisms & aggregation points

A key point of failure is that **the cost of reaching smallholder farmers from the nearest distribution point is too high to make it economically viable at a price farmers will accept**. The volumes of inputs that smallholders purchase and of outputs that they sell are sufficiently small that efficient aggregation and distribution is essential to adequate economies of scale. Projects seeking to support better access often do not carefully consider what coordination points and mechanisms can work, meaning that solutions are not economically viable and scale will not happen.

To address this, projects need to assess the viability of facilitating new coordination mechanisms (e.g., outgrower schemes or contract growing, retail franchises, etc.) to reach farmers with inputs or to purchase from them. Reaching smallholders to purchase their products or sell inputs typically requires coordination so that adequate volumes can be transported simultaneously at a lower per unit cost. Facilitating such coordination where it does not already exist requires supportive conditions. Increased coordination adds costs (e.g., labor, infrastructure) for buyers and suppliers. For these additional costs to be justified, there must be demand for product at a price that incorporates this coordination mechanism. Box 1 explores this more.

### BOX 1: SMALLHOLDERS AS A CUSTOMER BASE

Smallholders are typically the most expensive customers and suppliers, meaning any increase in larger firm demand can derail investment in the smallholder market, at least in the short-term.

Even when input suppliers are actively competing for smallholders, this focus can very rapidly be derailed by external events (e.g., if the large-scale commercial sector or government procurement contracts were to revitalize or the NGO sector were to take on an active buyer/distributor role). There is a time lag intrinsic to seed multiplication and supply—seed suppliers have to multiply next season's seed this season. Thus, by the time the marketing window for this season hits, suppliers tend to have a finite supply of seed. Since the basic production costs are already sunk at this point, a seed suppliers' profitability becomes a function of the marketing and sales cost per bag sold.

This means that in any given season, a supplier is always going to prefer to sell more volume to fewer buyers, because it will be more profitable. If a larger institutional buyer, whether public or private, enters the market unexpectedly, the seed intended for smallholder sales will be diverted to supply the lower transaction-cost buyer. It is critical for continued smallholder growth that future programs respect this dynamic and avoid direct transactions with input suppliers, or taking on their logistical or marketing functions focused on smallholders.

Where supportive conditions exist, projects should work with partners to determine viable coordination mechanisms that best reduce procurement costs. These mechanisms will vary by sector and context, based on factors including logistical capacity, geographic dispersion of farmers, and the economics of the commodity. For horticultural crops, high perishability and finite demand from processors or markets can require heavy coordination among producers to supply necessary volumes. This, combined with often demanding buyer specifications, implies that the coordination mechanism should often be vertically embedded in the buyer firm through models such as outgrower schemes. Outgrower schemes tied to large and growing down-market demand for niche commodities (such as the Malawi birds eye chili pepper scheme analyzed in our output market paper) with strict variety and quality requirements unavailable otherwise in the market have significant potential for outward growth and scale, as long as end-market growth is strong. At the same time, unless the outgrower firm is a large company servicing international markets for processing (such as the chili firm in Malawi), horticultural yields per unit of land are high enough that a relatively small number of producers can supply even larger contract volumes for single buyers, limiting the magnitude of reach in terms of numbers of farmers participating in the scheme.<sup>11</sup>

For staples crops, given the high numbers of farmers required to meet buyers' volume requirements, setting up aggregation points close to producers may be more appropriate. In the end, the choice of coordination point should be made by project partners (both buyers and suppliers), not by project staff, and is likely to emerge as a result of a process of trial and error where multiple arrangements are tested to find the best fit for the context. Our research on output markets found that for maize and rice for basic milling and consumption, the lack of specific varietal or quality requirements (beyond basic moisture and kernel quality) reduces the need for coordination during the growing season, but can increase the need for building social capital with growers in markets with high side-selling risk.

### **Move beyond 'inadequate market linkages' in diagnosing root constraints to smallholders' output market access**

Projects often have not identified the underlying constraints to improving access to output markets at scale, with the assumption that 'market linkages' are the solution. This means that their interventions don't target critical constraints and infrequently reach scale. Rarely is the issue simply the lack of relationships between buyers and sellers; problems are usually more deep-seated.

Given that there are a myriad of issues that constrain smallholders' beneficial access to markets, projects must carefully determine which issues are the most binding factors. Based on our assessment of 10 projects seeking to support market access, the following were identified as common issues:

- Low production quantity or poor quality
- High procurement costs for buyers
- Negative attitudes of market actors' towards commercial engagement with smallholders
- Restrictive institutional structures and formal rules that impede transparency and predictability in output markets
- Lack of knowledge of or access to high-potential output markets

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<sup>11</sup> This same producer/volume ratio in horticulture tends to limit the scale of premium market channels, such as supermarkets, though this was beyond the ambit of our research stream.

Each of the above causes requires different approaches. The following table presents a series of potential solutions that can be considered to address each of the above.

Root Constraints	Strategic Approaches
Low production quantity or poor quality	<ol style="list-style-type: none"> <li>1. Facilitate private sector grading standards</li> <li>2. Facilitate standardized production packages for smallholders</li> <li>3. Support formal and informal contracts or market signals to decrease perceived risk</li> <li>4. Support increased access to credit for smallholders</li> </ol>
High procurement costs	<ol style="list-style-type: none"> <li>1. Encourage supply aggregation through producer collectives</li> <li>2. Facilitate aggregation through buyers</li> </ol>
Negative attitudes of market actors towards commercial engagement with smallholders	<ol style="list-style-type: none"> <li>1. Introduce technologies to increase transparency and trust in commercial transactions</li> <li>2. Identify and build on the incentives that matter most for commercial relationships</li> <li>3. Encourage models that enable repeat interactions</li> <li>4. Introduce models that reduce “transactional frictions”</li> <li>5. Introduce more collaborative, service-based business models</li> </ol>
Restrictive institutional structures and formal rules that impede transparency and predictability in output markets	<ol style="list-style-type: none"> <li>1. Create a supportive environment for advocacy through private-public dialogues</li> <li>2. Support better access to new markets through influencing trade regulations</li> </ol>
Lack of knowledge of or access to high-potential output markets	<ol style="list-style-type: none"> <li>1. Build farmers’ capacity to find and evaluate profitable market opportunities:</li> <li>2. Support movements into higher value market niches (e.g., certification schemes):</li> <li>3. Upgrade the capacity of buyers and processors:</li> </ol>

### Resources:

- MarketShare Associates. [Utility of Market Analyses: A Landscape Review](#), 2016. This paper synthesizes findings from 15 projects that have conducted market assessments to inform their programming. It provides guidance on how to structure analysis to be most helpful to inform project programming, including what level of up-front investment is most appropriate and what elements such analysis should include.
- Fowler, Ben and Daniel White. [Scaling Impact: Improving Smallholder Farmers’ Beneficial Access to Output Markets](#), USAID, 2015. This paper draws from an in-depth look at 10 projects to synthesize lessons in good practices for facilitating farmers’ access to output markets. The paper identifies five broad strategies for doing so and related approaches. It provides lessons learned and guidance for facilitating partner behavior change and selecting project tactics for design and implementation.
- Miehlsbradt, Alexandra and Linda Jones. [Market Research for Value Chain Initiatives. Information to Action: A Toolkit Series for Market Development Practitioners](#). This toolkit,

which uses a value chain development approach, is a practical guide to assist in collecting the information needed to identify opportunities and design interventions.

#### **b. Maximizing the likelihood that partnerships will work**

The cultivation of partnerships is arguably the most important aspect of market development programming, given their essential role in working directly with farmers and achieving scale.

#### **Realistically assess the capacity, vision and potential for sustainability of potential partners up-front, considering the track record of various partner types:**

There is significant variance in the performance of different types of project partners in successfully sustainably reaching farmers at scale. Context, of course, is paramount, and under the right conditions anyone could prove a successful partner, but in general our research has found that some generally perform better than others. The following highlights critical factors to consider in selecting partners:

- **Village-based microentrepreneurs** have a poor track record of surviving as businesses. As the Bayer Greenworld model showed, partnering directly with small-scale, village-based businesses presents significant risks for long-term sustainability. A review of a variety of market development projects indicates that these village-based entities have typically failed to maintain their engagement with farmers following project exit. Even if they have continued providing services, they have not significantly grown their operations to reach greater numbers of farmers.

Moreover, many projects have difficulty working with such a large number of small-scale partners given their very low capacity and geographical dispersion. Some of the key reasons for their inability to scale include limited access to new information, low levels of professionalism and education, limited access to capital, prioritization of non-agricultural businesses with higher profit margins, balancing of their agricultural businesses with other business and family activities, and lack of a succession plan in the case that the founder is unable to continue operations.

- **Producer collectives** very commonly fail to continue operating more than one or two seasons following a project's withdrawal, even if they demonstrate strong performance during the project. Key contributing factors include a lack of managerial capacity, conflict between the desires of the leadership or members and the collective's commercial objectives, and an inability to handle managerial turnover. Developing information management systems, attracting professional management, having regular activities throughout the year and generating a return that allows the collective to make necessary investments all seem to contribute to collective performance.
- For **large-scale private sector companies**, consider the vision, managerial priorities and logistical capacity of the senior management team. Although partnering with large-scale firms offers strong potential for sustainability given their organizational capacity, experience demonstrates a risk that such firms will stray from their focus on serving smallholder farmers following project exit. Supporting multiple companies is an important risk-reduction mechanism, given the consequences for scale if a single project partner drops out. For example, the PrOpCom project in Nigeria struggled to attract other input suppliers to develop and sell small fertilizer packs targeting the smallholder farmer market.

Consequently, when its major partner Notore faced difficulties and withdrew from providing small packs, the entire market for the product collapsed, despite having reached significant scale up to that point.<sup>12</sup>

- **Partnerships between village-based microentrepreneurs and large-scale private sector companies**, such as village agent models, have a somewhat better track record, as large companies can address some of the weaknesses of the microentrepreneurs. For such partnerships to work, consider whether telecommunications permit easy communication and whether the microentrepreneurs have adequate capacity for the companies to support. In such cases, pay attention to how companies view the microentrepreneurs: as merely an additional sales network, a tool for customer acquisition or as a new approach to business? If seen as simply an additional sales force, the long-term prospects for the partnership are weaker. Ongoing investment by both parties in their relationships is another important metric.
- **Crop buyers** have a strong track record in working with farmers to coordinate access to product when the nature of the product and buyer requirements require significant coordination and do not permit obtaining product on spot markets. Where those factors do not hold, however, their commitment to sourcing from and supplying inputs to smallholder farmers is typically less consistent and often influenced by prevailing market conditions and their ability to satisfy their sourcing requirements from their own production or other sources.

#### **Facilitate partnerships that foster trust**

Lack of trust is a key reason that new partnerships fail and a major contributor to the reason that they are not already in place. Farmers fear being cheated by their suppliers and buyers, while buyers fear that farmers will not honor their commitments. The following strategies have been found to increase the likelihood that partnerships will function effectively and reach scale:

- Screen large-scale private sector companies for their perceived trustworthiness and behavior in previous partnerships
- Build the complexity of commercial relationships gradually, starting with simple business models that all parties understand
- Give farmers the flexibility to sell some portion of their produce elsewhere when signing forward purchase contracts. This reduces resentment if prices subsequently rise.
- Support repeat engagement by buyers and sellers
- Ensure market commitments are in-line with realistic changes in farmer production systems in a single season
- Don't overemphasize contracts or MOUs as mechanisms to build trust. Trust and communication among buyers and sellers are considerably more important than formal contracts. Contracts or MOUs are only weak proxies for trust
- Don't hasten the creation of cooperatives or associations as mechanisms to facilitate trust and collaboration between farmers. Such structures can support collective action when the necessary elements are in place, but are too often set-up early and create an unnecessarily burdensome and over-formalized platform

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<sup>12</sup> Fowler, Ben and Daniel White. [Scaling Impact: Extending Input Delivery to Smallholder Farmers at Scale](#). 2015.

## Determine if commercial incentives facilitate or threaten agricultural partnerships

It is essential to understand the commercial incentives (as opposed to incentives to benefit from project resources) of prospective project partners. In the absence of strong commercial incentives, firms will never scale their operations to reach large numbers of farmers beyond their initial pilot activities. Many firms avoid growth as a way to manage risk, or reduce visibility in the face of public or private forces that could seek rents or collect taxes. And, of course, business owners simply do not want to grow out of personal preference for a manageable business size. An important consideration is the extent to which a company sees a potential role for the partnership as part of their core business model. Whereas input suppliers' core business is selling inputs, few crop buyers see input supply as part of their model. Consequently, when faced with conflicting priorities or challenging conditions, input supply will frequently be dropped or deprioritized by crop buyers.

Farmers in Senegal found that rice processors were distracted with their key business and so would deliver inputs to farmers late or not at all. Farmers ultimately decided they could not rely on buyers and coordinated their own association to procure inputs. Similarly, in Peru MEDA found that despite years of support, a multi-year input supply scheme run by asparagus and artichoke processors was quickly discontinued when world prices dropped and the company decided to scale back its purchases. Therefore, projects should only promote crop buyers as suppliers of inputs when the following conditions apply:

- The crop is difficult to obtain on spot markets because it is very specialized, quality requirements are high, it requires special inputs, it is a nascent crop, or there are very few buyers
- Provisions or sanctions exist to prevent rampant side-selling or there are few incentives for farmers to side-sell
- Buyers have adequate capital to finance inputs or links to financial institutions
- Farmers deeply value their relationship with buyers and do not want to risk it. Where such relationships are weak, consider other options. For example, in the Senegalese context, PCE found that smallholder rice farmers had relatively little interest in entering into sales contracts with buyers prior to harvest, given that there are multiple market outlets. That created less pressure to comply with the terms of those agreements. Conversely, they greatly valued their relationships with banks from whom they obtained working capital. Therefore, bank-led input financing would be more likely to succeed.

Similarly, firms that are customer-facing have a greater incentive to ensure that their supply chains are generating benefits for producers and supplying a quality product since they ultimately are responsible to their customers.<sup>13</sup> Thus partnerships with these actors can be critical for driving changes at scale. The following table<sup>14</sup> summarizes some of the key incentives driving various potential input providers.

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<sup>13</sup> Abdulsamad et al. [Public-Private Partnerships in Global Value Chains: Can They Actually Benefit the Poor?](#) 2015.

<sup>14</sup> Fowler, Ben and Daniel White. [Scaling Impact: Extending Input Delivery to Smallholder Farmers at Scale.](#) 2015.



Actor	Primary Observed Incentives
Input supplier	Increasing input sales
Microentrepreneur	Generating income from input and service sales
Lender	Increasing loan portfolio
Producer collective	Improving services to members Generating income
Buyer	Increasing quantity and/or quality of crop sales

### Take an expansive view of potential partners

A frequent mistake is not considering partners other than the firms already operating in the sector and selected areas, including particularly outside of the country in which the project is operating. One project in Kenya, for example, neglected to work with the international retailers that largely govern the relevant horticultural export value chains. This greatly limited its ability to drive change.<sup>15</sup>

Non-traditional entities may actually have very strong incentives that would make them strong partners. In Cambodia, international suppliers of pig vaccines and medicines have a strong incentive to inform consumers on their products and are willing to invest in this by sending their experts to Cambodia to meet with pig raisers.

### Support collaborations that are mindful of farmers' power vis-à-vis other suppliers

Given the small scale of their operations, smallholder farmers frequently face power imbalances in their relationships with suppliers and buyers. This can threaten even initially successful partnerships, as partners slowly or quickly leverage this to their advantage in the terms of their partnerships.

To reduce the likelihood that partnerships will maintain or reinforce smallholders' weak power relationships with their buyers and suppliers, look for ways to empower them through project structures. Strategies for doing so can include working with multiple buyers/suppliers to increase competition, increasing information transparency and supporting vehicles for farmers' collective action. Industry-level platforms are one approach; their use in Rwanda's coffee sector "strengthened mutual trust and commercial interests between local industry and global buyers. In general, such platforms can facilitate co-evolution of the role of public and private actors and mainstreaming of industry level quality standards."<sup>16</sup>

### Engage partners to so that they will sustainably reach and benefit women

Agribusinesses are frequently hesitant to test business models that target non-traditional customers. This is the case for smallholder farmers, and particularly those who are women or poorer.

Recent research on women's economic empowerment found that for interventions to sustainably reach and benefit women, they need to focus not only on improving women's *access* to skills and markets, but also their *agency* to benefit from those changes.<sup>17</sup> While this language may seem foreign to both market development

<sup>15</sup> Abdulsamad et al. [Public-Private Partnerships in Global Value Chains: Can They Actually Benefit the Poor?](#) 2015.

<sup>16</sup> *ibid.*

<sup>17</sup> Markel, Erin and Linsey Jones. *Women's Economic Empowerment: Pushing the Frontiers of Inclusive Market Development*. 2014.

practitioners and companies, there are actually a number of key arguments that can be used to make the business case to partners for adopting business models that are inclusive of women. These arguments include:

- Improving supply chain reliability;
- Reaching female customers;
- Opening new distribution channels;
- Enhancing business brand and reputation; and
- Furthering social impact

#### Resources:

- Abdulsamad et al. [Public-Private Partnerships in Global Value Chains: Can They Actually Benefit the Poor?](#) 2015. This paper and presentation draw from three case studies to examine how partnerships between aid-funded projects and private firms can best support development outcomes. It presents several critical lessons and recommendations for how to design these partnerships for maximum impact.
- Fowler, Ben and Dan White. [Scaling Impact: Extending Input Delivery to Smallholder Farmers at Scale](#). 2015. Through an in-depth examination of nine projects seeking to improve farmers' access to agricultural inputs, this paper identifies five potential drivers of supply models: input suppliers, microentrepreneurs, lenders, producer collectives, and buyers. For each type of partner, the paper reviews the conditions required for success, evidence of scale and performance, risks and lessons.
- Markel, Erin; Rachel Hess and Helen Loftin. [Making the Business Case: Women's Economic Empowerment in Market Systems Development](#). 2015. This resource presents a number of arguments that can be used to make the business case to private companies for including and targeting women as part of their business strategy, the risks that need to be considered, and tactics for communicating the business case.

## E. DETERMINING HOW TO INTERVENE

### Take an adaptive approach to programming that adjusts based on learning and experimentation

**Inflexibility during project implementation commonly reduces the likelihood of success and sustainability.** With increased recognition that the systems in which market systems development projects are intervening are complex and continually evolving, the impossibility of designing a successful intervention approach up-front becomes clearer. Projects that are unable or unwilling to adjust their approach during implementation will inevitably fail to address the underlying systemic constraints that impede reaching impact at scale. Several strategies for project adaptation should be adopted:

- **Intentionally test project strategies and adapt them as necessary.** Once you have completed a market systems analysis and developed clear objectives, you can implement several different approaches to achieving those objectives, and have a clear reference point to compare the performance of different models. This will allow you to shift partners and pilots easily, ensuring promising approaches were identified quickly and with enough resources available to take them to scale. Evidence-based adaptive management can only occur when there are clear objectives that activities are continuously measured against.

- **Adjust the project’s focus based on what is learned on the ground.** Be clear on project objectives, but flexible enough to pilot, jettison, and adapt before finding something worth scaling. The Zambia PROFIT project pivoted its value chain approach in out-years as they learned more about the market systems constraints. While input supply systems were not a priority value chain to begin with, over time it became clear to them that improvements in the target value chains would require investments upstream in input supply systems. Conversely, the cotton value chain was put on hiatus when it became clear that the large cotton processors saw no pressing reason to adjust their business strategies.
- **Don’t anticipate that business models will look identical.** Resist over-designing solutions, allowing partners to adapt models to the context. Anticipate that business models will differ between companies. Competitors are unlikely to copy business models exactly as they are practiced by early adopters. This implies that projects should focus primarily on demonstrating the purpose and principles of a given business model, rather than overly dictating specific features.

### Consider and support multiple avenues for business model imitation

Practitioners’ expectations of how innovation spreads in a sector are often overly narrow. Practitioners commonly anticipate that the success of a business model for one firm in a sector will incentivize other firms to observe and replicate that model. While that was the pathway for some firms, in several cases innovation spread via staff turnover or the influence of parent companies. Each of these pathways – and others – should be considered by market facilitators seeking to facilitate the imitation of certain business models. For example, international suppliers are critical to technical information flows in the Cambodian input supply sector. Through their regular visits and periodic seminars, these suppliers help to pass cutting-edge research directly down to Cambodian swine raisers. In designing their interventions and identifying leverage points, market facilitators should consider what role these international input suppliers do and could play in supporting sector upgrading.

### Resources:

- MarketShare Associates. Getting There from Here: Knowledge, Leadership, Culture, and Rules toward Adaptive Management in Market Systems Programmes. BEAM Exchange. 2016. Forthcoming.
- Elizabeth Dunn. [Facilitation Contact Groups Brief](#). USAID. 2014. This paper outlines a greater set of beneficiaries from market systems development activities beyond the target beneficiary of the farmer.
- ACDI/VOCA and MarketShare Associates. Case Studies on Facilitating Systemic Change in Feed the Future. 2016. Forthcoming, available at [www.microlinks.org/leo](http://www.microlinks.org/leo). These studies tested a practical approach to capture systemic changes across four Feed the Future-funded agricultural projects. They provide a practical framework for capturing aspects of systemic change.
- Stewart, Tim; Sanju Joshi and Alexandra Miehlsbradt. [Using Information on Results in Program Management – The case of Samarth-NMDP in Nepal](#). 2015. This paper provides practical examples from a project in Nepal of how to effectively incorporate information gathered during implementation to inform project implementation.

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