Within the Feed the Future (FTF) initiative, there is a lot of interest in achieving strong, positive results at scale. So, the presentation today will look at the role of markets in achieving scale. To narrow the context even more, the focus will be on a specific approach to intervening in agricultural markets—what is usually called the value chain (VC) approach or sometimes called the market systems facilitation approach. In the UK and parts of Europe, a similar approach is called M4P, which stands for "Making Markets Work for the Poor".

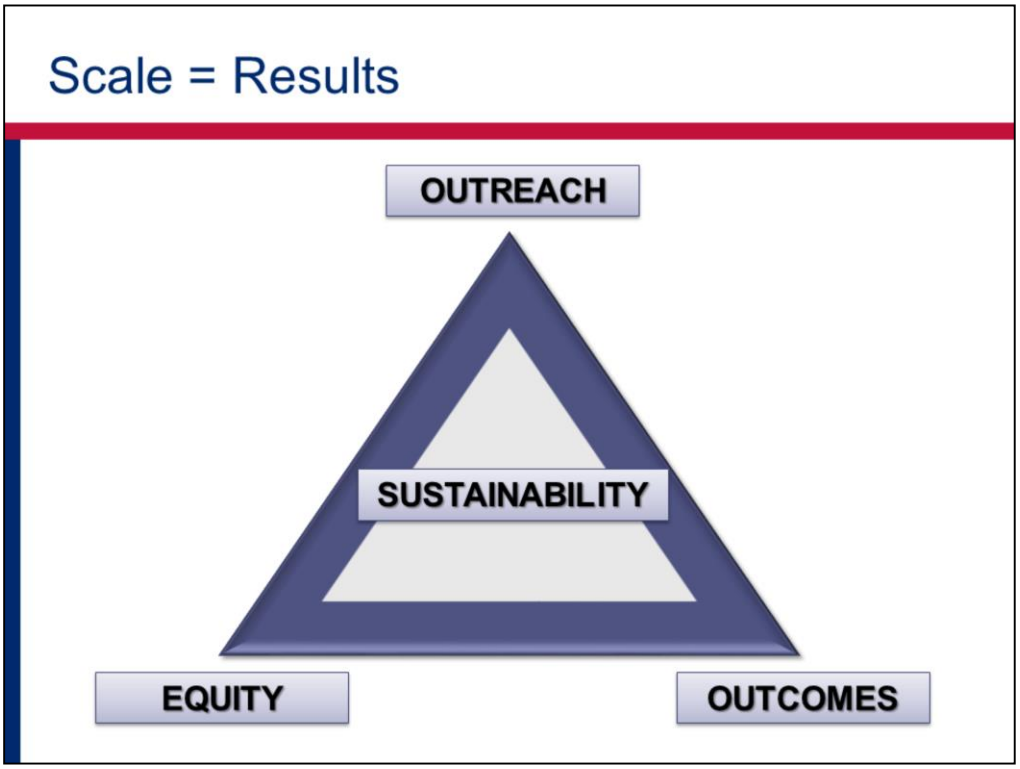
These terms—facilitation, VC approach, M4P—are not strictly interchangeable, but they all can be associated with situations in which a donor supports an intervention in a market system in order to benefit a certain target group but—instead of working directly with that target group—the implementer follows a strategy of collaborating with market actors who are linked to the target beneficiaries through their commercial relationships in the VC.

In many of FTF's VC activities, of course, the target beneficiaries are smallholder farmers and the intervention strategy is to reach smallholders by collaborating with firms operating at other functional levels of the VC. For example, the implementer might collaborate with agricultural input suppliers as a strategy for reaching smallholder farmers and providing smallholders with access to improved agricultural technologies that boost productivity. Alternatively, project implementers might collaborate with firms that buy smallholders' products—such as product traders or processing plants—or implementers might collaborate with firms that provide supporting services, such as credit providers or firms that provide ICT services, certification services, transportation, cold chain storage and so on.

In this session, there are two main questions to think about:

- What is the role of market systems in driving innovation to scale? and
- How can facilitation strategies become drivers of scale?

In order to look at these questions, it is important to look at "scale" in terms of the desired results achieved.



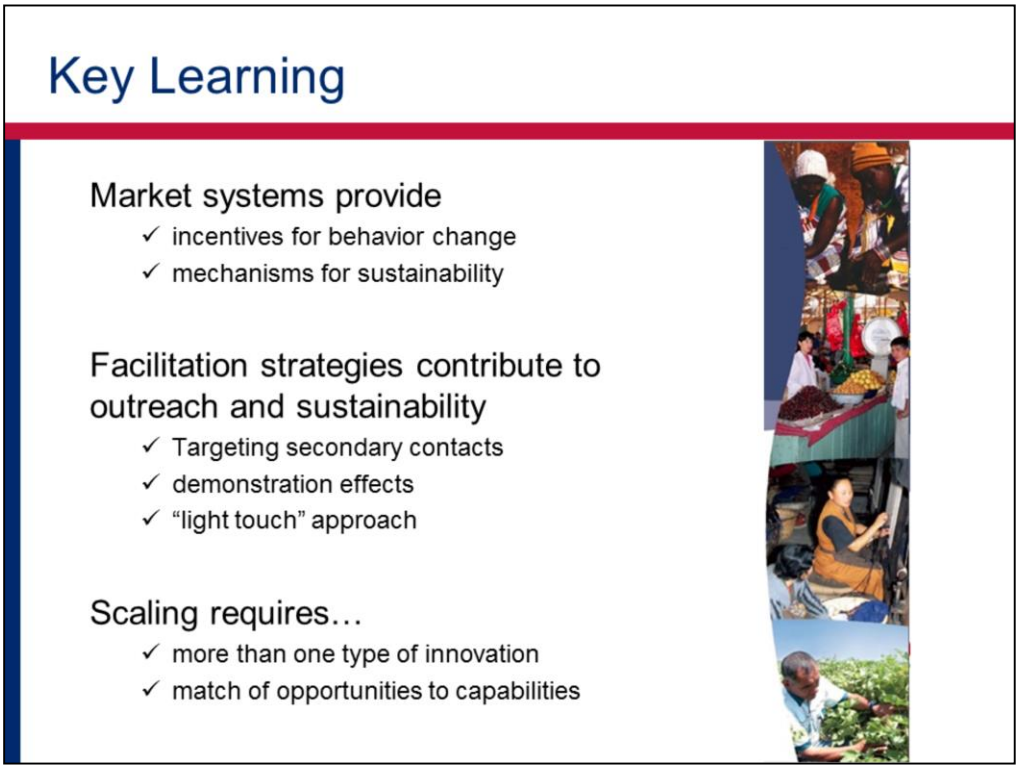
When thinking about the components of scale, the first concept that comes to mind is outreach.

1. **Outreach** is a measure of the number of people or firms that receive benefits from an intervention. Typically, outreach indicators tend to cluster around what is called the "outputs" of the intervention, such as the number of farmers trained or the number of farmers who visit field demonstration sites maintained through donor funds. But outreach is also sometimes measured in terms of early behavior changes, such as the number of farmers using improved production technologies or the number of hectares planted with these improved technologies.

2. **Outcomes**, on the other hand, refer to the beneficial changes that are the objectives of the intervention. The outcomes which will be looked at today relate to agricultural productivity and efficiency, enterprise and farm profits and household incomes. It's not enough to have large outreach, there is a need to know if beneficial outcomes are occurring—and at what level of intensity (magnitude)!

3. **Sustainability** here simply refers to having beneficial outcomes continue at a comparable level and at a comparable scale of outreach over time. So sustainability is relevant to both outreach and outcomes. It is also relevant to the fourth component of results, which is equity.

4. **Equity** relates to how the benefits of the intervention are distributed and the contribution that the intervention makes to expanding economic opportunities for previously excluded groups. It is referring to the "inclusive" part of inclusive growth, and thinking about the distribution of benefits to smallholder farmers, women farmers, low-income households and others.



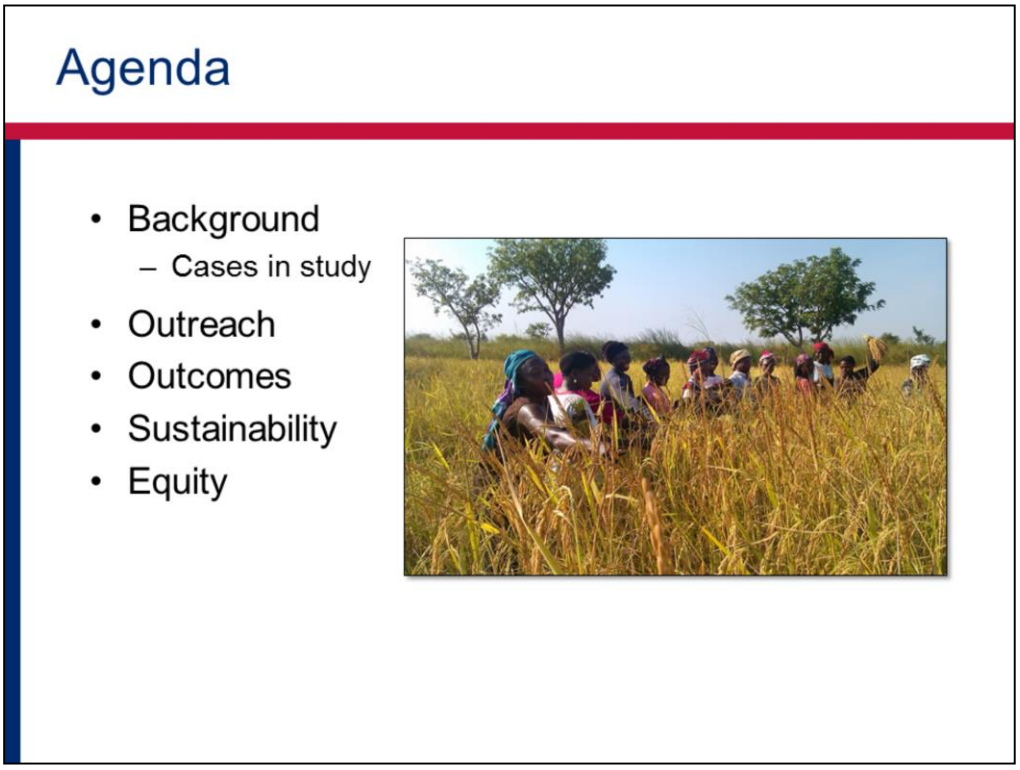
These are the main conclusions of the presentation.

The great advantage of market systems is that they can provide a built-in driver for scale, through the profit motive. The profit motive can be a very effective incentive for behavior change, since the expectation of future profits is what encourages firms to invest in innovations. Profit is just one of several objectives that smallholders have to balance. Once innovations have demonstrated their value, it is the market itself that will provide the mechanism for sustainability.

Beyond the influence of the market, some of the facilitation strategies that are used in VC activities also contribute to achieving scale. This will be discussed through how secondary targeting and demonstration effects contribute to outreach. The "light touch" approach, on the other hand, contributes to sustainability in that it is the least likely to damage an already functioning market system.

The third set of points stress that scaling requires innovations at multiple levels. Often, when talking about "scaling up innovation," there is a focus on new agricultural technologies, but scaling also requires a second kind of innovation: it requires new business models that promote inclusive growth.

Under equity, it is important to talk about matching market opportunities to household capabilities and, how failure to do so can derail successful scaling.



Here is the outline for the presentation. This presentation will look at each of the four components of scale, spending relatively more time on outreach and outcomes, since most of the empirical evidence relates to these first two components. But the presentation will also address sustainability and equity, in order to consider how markets and facilitation help to support these two results.

Before discussing the findings, the presentation will start with some brief background information on the agricultural VC cases that provided the evidence used in the study.

Most of the empirical information presented here today can be found in a FIELD report that was published on the Microlinks website last December (2013). There were 12 agricultural value chains included in the study. Of these 10 were related to donor activities, while 2 were value chains without current donor interventions. Four donors were represented: USAID, MCC, DFID and the Gates Foundation.

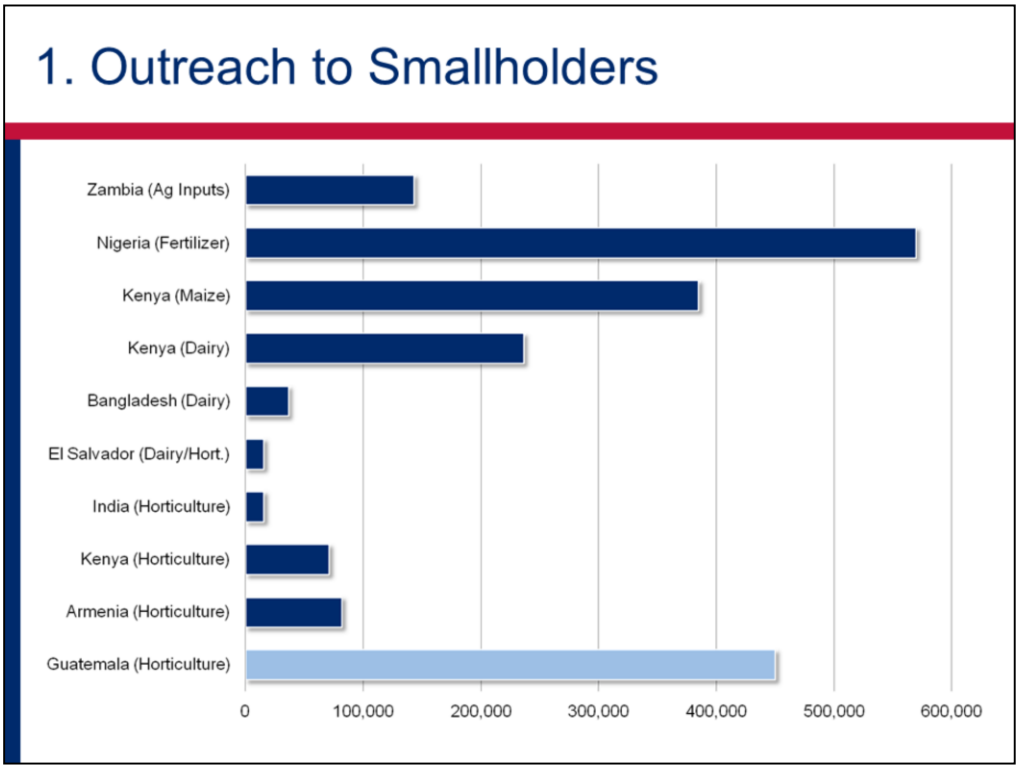
The projects themselves were different in a number of other ways:

- Project lengths ranged from 3 to 8 years, while project budgets ranged from US $5 million to $62 million.
- Some projects were designed to target smallholders using a facilitation approach, while others worked more directly with smallholders.

The cases cover several types of VCs, including maize, smallholder dairy, different types of high-value horticultural crops, and agricultural inputs.

It is important to notice that the study was based on several different types of evidence, including monitoring data, impact evaluations and research studies:

- Monitoring data were used for all of the cases with donor-funded projects.
- There were 7 longitudinal impact evaluations, including both experimental (3) and quasi-experimental (4) designs.
- Evidence for the rest of the cases came from several different types of research studies.



This figure shows scale of smallholder outreach for nine agricultural value chain projects. The light blue bar at the very bottom does not represent project outreach. Instead, the light blue bar is an estimate of the total number of smallholder farmers producing high value vegetables in Guatemala, included here as a point of reference. All of the dark blue bars represent scale of project outreach.

So what does this chart show?
One thing this chart shows is that it is possible to reach tens of thousands of smallholders through agricultural VC projects.

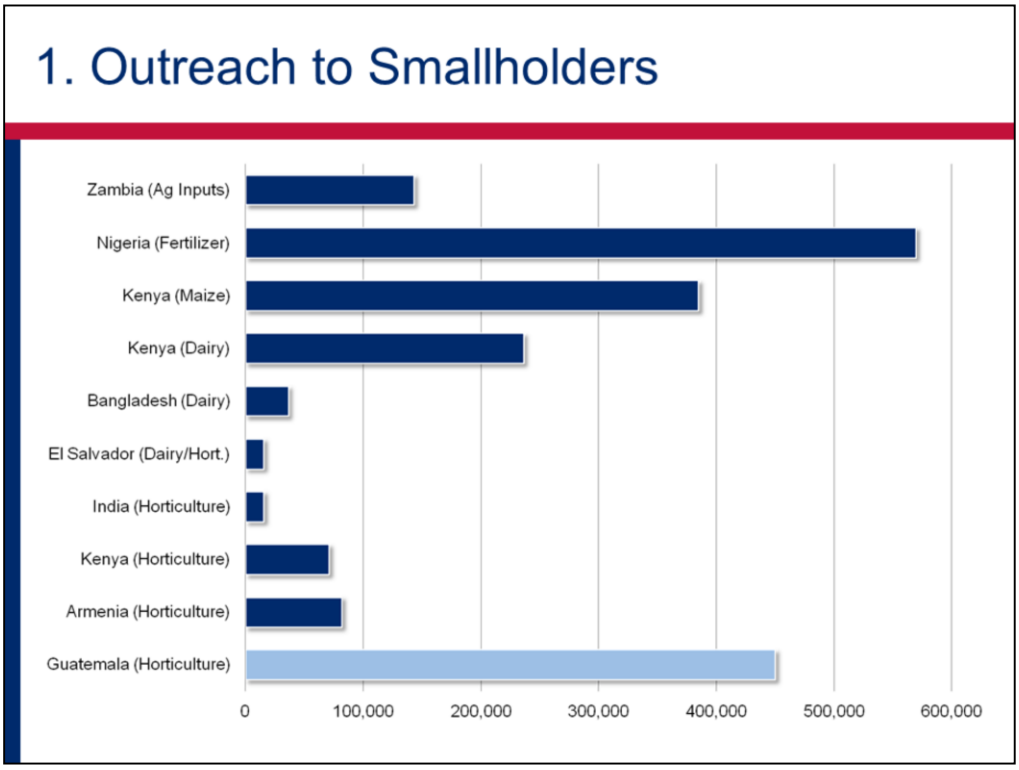
It is also important to ask…

What does the chart not show?
While it might be tempting to compare these projects on outreach, there are several reasons why this would not be helpful:

This chart represents outreach only and does not include outcomes. In some cases, a project with smaller total outreach might deliver much higher levels of benefits to each of the smallholders who are reached. (Consider Nigeria fertilizer and Bangladesh dairy.)

Some of the variations in outreach can be understood in terms of differences in project budgets or project length. During this presentation an example relating outreach to project length will be discussed.

In some cases, smaller outreach might also be due to exogenous shocks that placed unexpected limitations on results.



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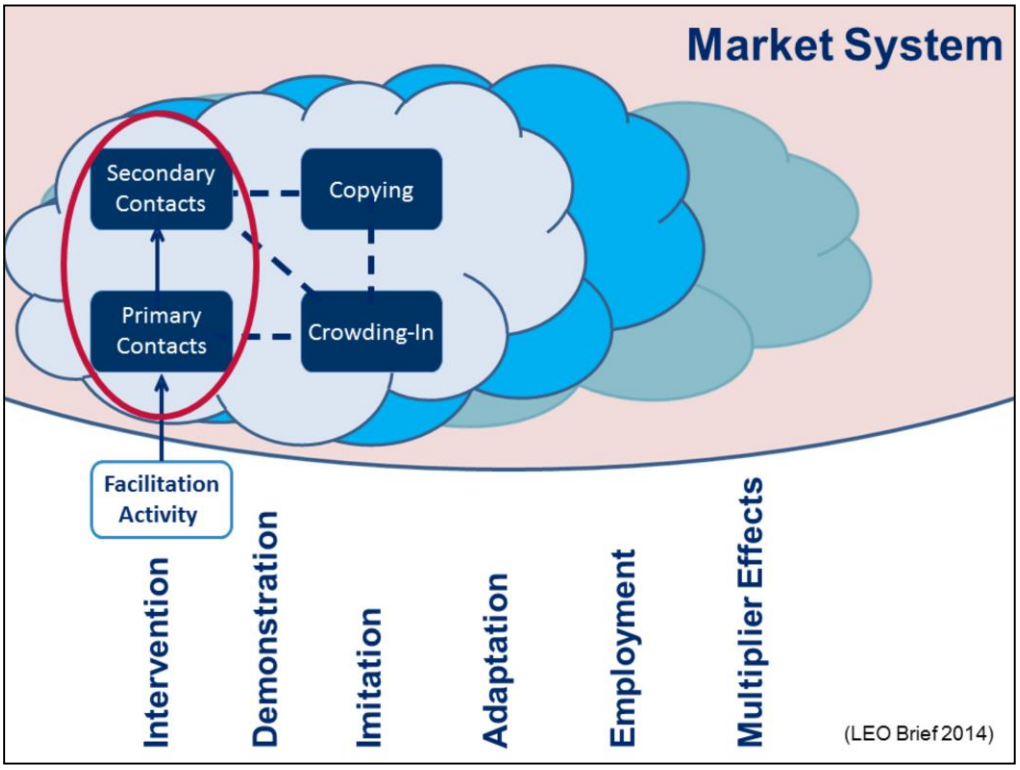
Last, but not least, some of the differences in outreach can be related to the intervention approach. A facilitation approach that works indirectly with farmers through other market actors has the potential to reach a relatively large number of farmers. The four bars at the top—the ones showing the highest level of outreach—are all from projects that used primarily a facilitation approach.

In fact, some of the differences between the cases may be due to nothing more than basic inconsistencies in the way outreach was measured. When talking about facilitation and market systems, there can be a range of levels and types of outreach. To understand how these inconsistencies can arise, there is a need to step back from the empirical evidence and ask ourselves

"What is the full potential outreach from VC facilitation?"

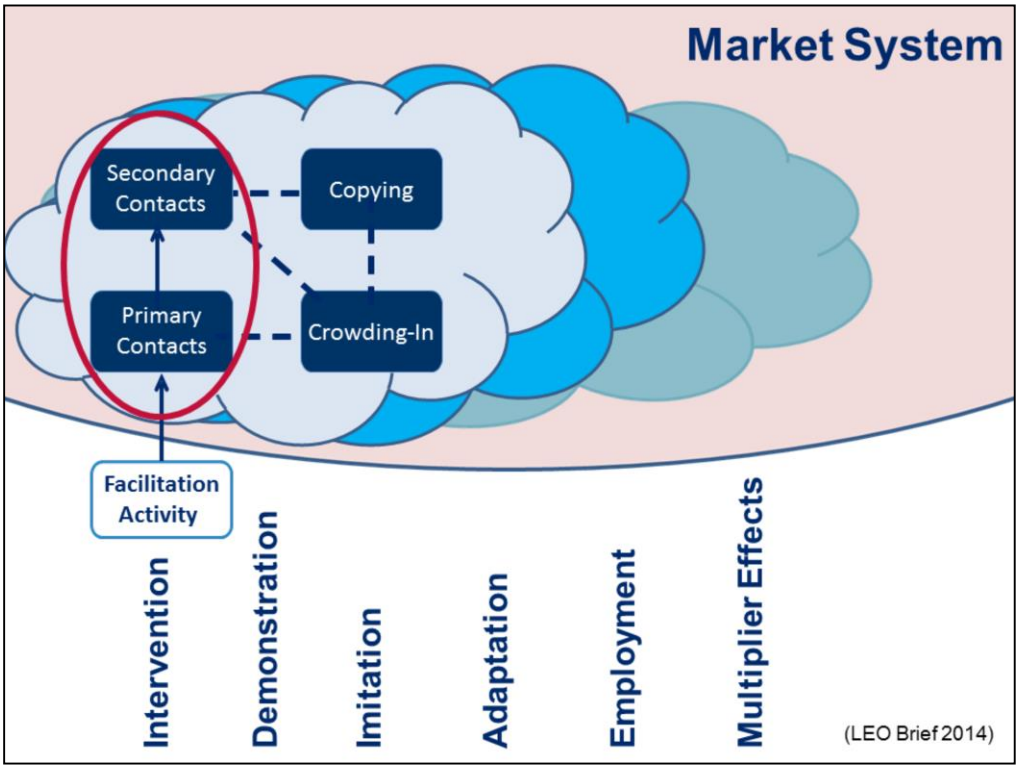


To understand these different levels of contact and different types of outreach a bit better, there is a need to look at the "cloud figure", which was recently developed under LEO.

In this figure, the market system is represented as the area above the blue line and extending well beyond what is seen here. The idea that is being illustrated is that the donor-supported intervention—shown in the lower LHS—operates in a relatively small area of the market system—in what is called here the "intervention space".

In this figure, the intervention is using the facilitation strategy of "targeting secondary contacts" mentioned earlier. So for example, while smallholder farmers are the target beneficiaries, smallholders are reached through other firms in the value chain such as product buyers, suppliers of supporting services or input suppliers. These other firms are the primary contacts. Consider the example of a VC activity that works with agricultural input suppliers in order to reach smallholders and encourage smallholders to adopt new production technologies. In this example, the input suppliers are the primary contacts and smallholder farmers are the secondary contacts.

There is no global consensus about whether to include secondary contacts when reporting on project outreach. Of course, one problem with this is that it can reduce the comparability of data from different projects. More importantly, though, if secondary contacts are not counted, then one of the core strategies of facilitation is being overlooked. The FTF indicator guidelines were revised about a year ago to include what is called here the "secondary contacts"—that is, the target beneficiaries who are reached as part of a deliberate facilitation strategy.



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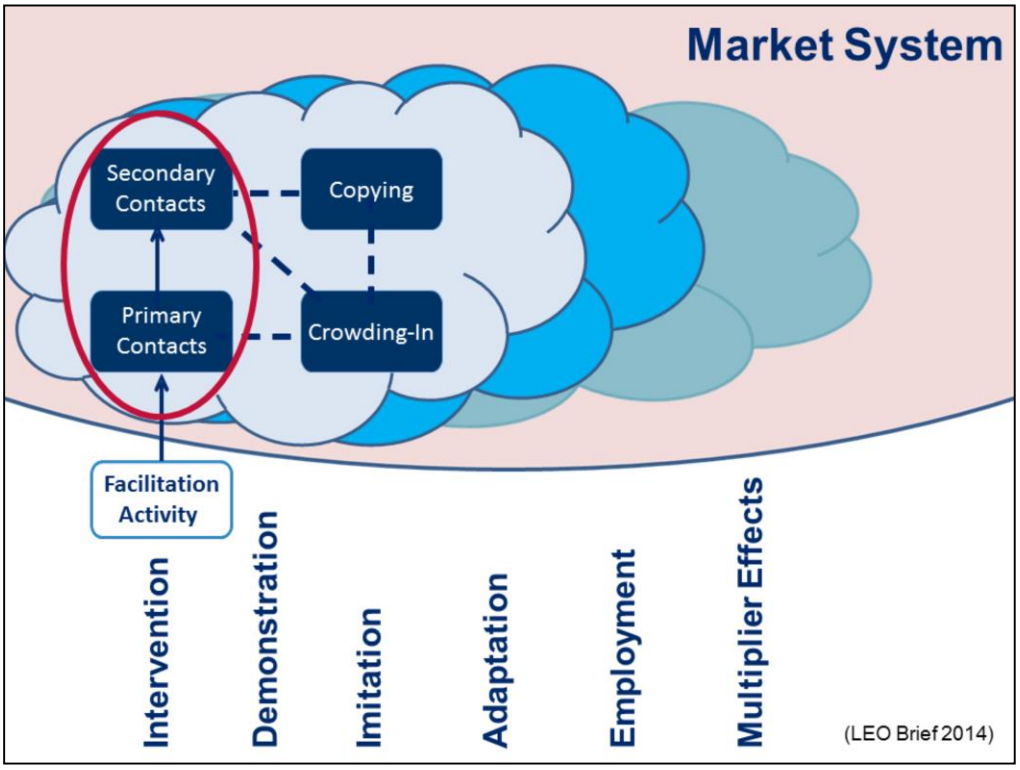
The red circle includes both the primary and secondary contacts of a facilitation intervention and it corresponds to the way that FTF and the DCED evaluation standard both define "direct beneficiaries." So, if everyone inside the red circle is a direct beneficiary, then everyone outside the circle—would be considered "indirect beneficiaries."

In addition to targeting of secondary contacts, another strategy in the VC approach is to amplify the demonstration effects as much as possible, in order to draw attention to the benefits of adopting new practices and in that way attract large numbers of other firms to adopt the same new practices. This can be thought of as a kind of "demonstration space."

If the demonstration effects are strong enough, there is an expectation to see two distinct types of imitators in the "imitation space":

- At the target beneficiary level—along the top row—smallholder farmers in the imitation space copy the new production technologies being used by farmers in the intervention space.
- In the second category of imitators are firms that "crowd in" by copying the new, more inclusive business models that are being demonstrated by the primary contacts. In the example, the "crowding-in" firms are other agricultural input suppliers.



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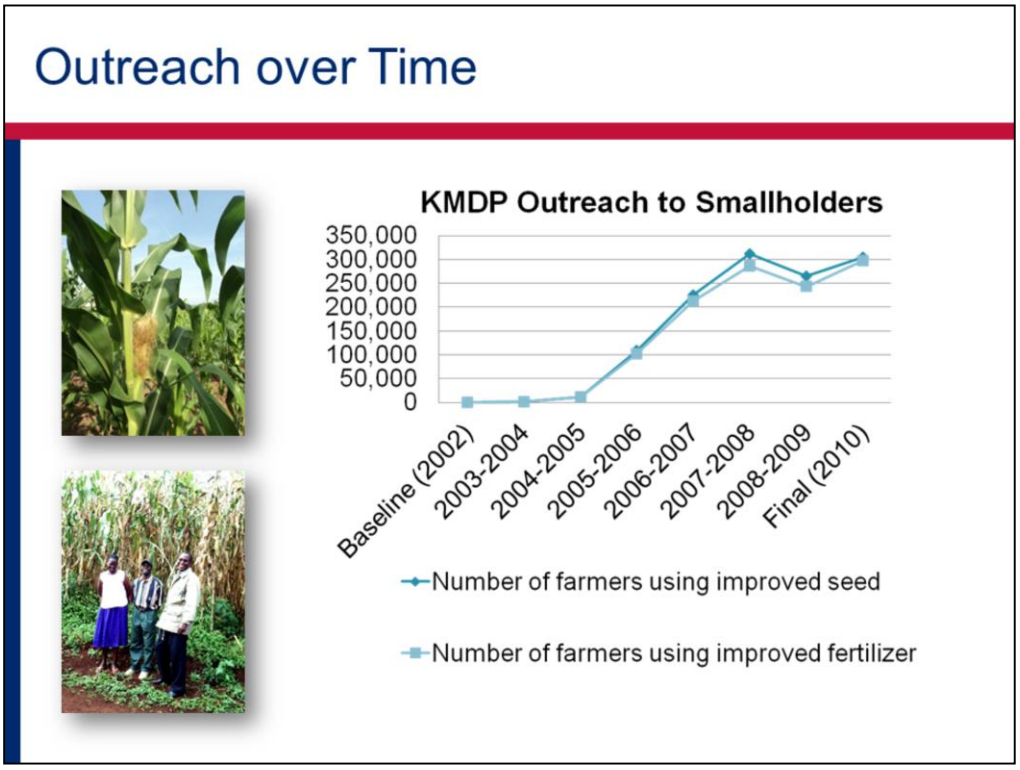
There is an important distinction between the types of innovations being imitated at the two levels. In the top row, farmers are copying the productivity enhancing agricultural technologies that have been promoted through the intervention. At the level of the primary contacts—in the bottom row—firms are imitating the new, more inclusive business models that turn smallholder farmers into more profitable, and therefore more attractive, commercial partners.

In addition, there is a need to include an "Adaptation Space" that encloses the four types of firms. This acknowledges the reality that there is no expectation that firms will follow exactly the same practices that are demonstrated or follow the same practices year after year. More likely, the expectation is that firms innovate and adapt the original practices. In addition, this space includes other types of firms, especially firms in supporting markets, that enter in response to new economic opportunities that have been created.

So far, farms, firms and entrepreneurs have been discussed. This next cloud shows that another potential beneficiary group consists of the individuals who are employed by these firms.

Finally, the last cloud is a reminder to consider the multiplier effects that occur when all these firms, farms, households and individuals begin to have additional income that they spend in the local economy. The size of the multiplier effect depends on several factors, but it often turns out to be about 1.5 times the amount of new income generated in the value chain.

There is not enough time to discuss all of these contact groups, so the focus of this presentation is on smallholder farmers, who are secondary contacts and imitators under a facilitation approach. One of the implicit assumptions in this model is that it takes time for the full extent of this outreach to occur. This next slide takes an explicit look at the dynamics of outreach to smallholder farmers.

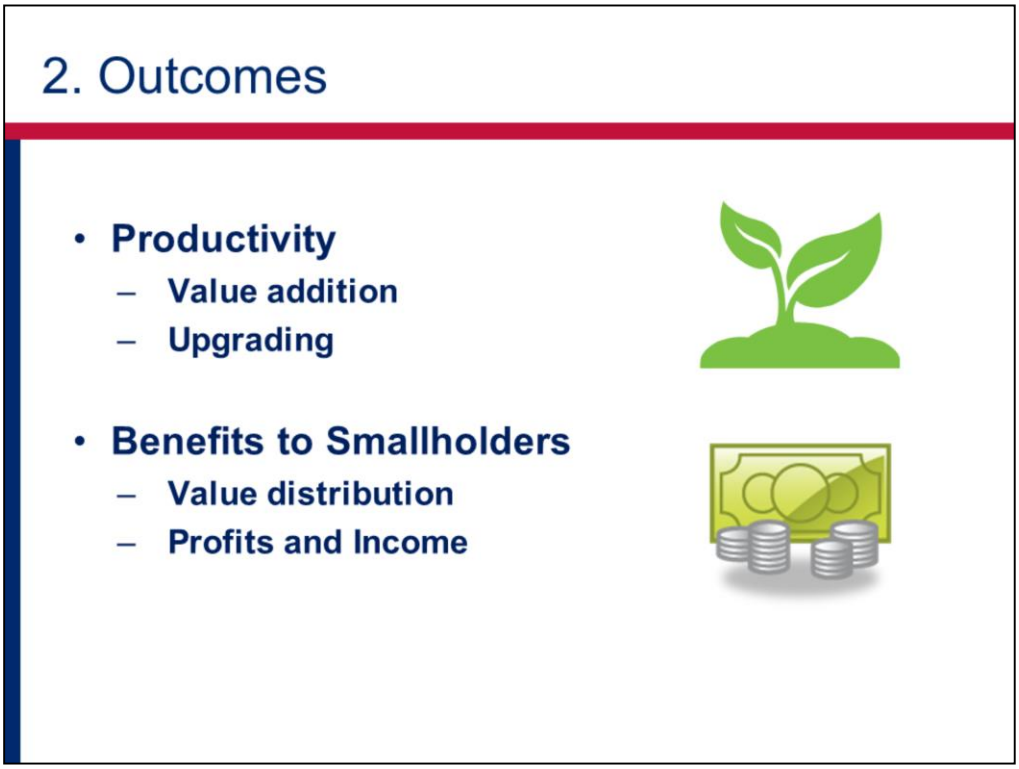


This figure comes from the Kenya maize case and it illustrates the pace of outreach to smallholders over time—in this case those using improved seeds and fertilizer in maize production. As can be seen from the graph, outreach results were initially slow. This is because the initial focus of VC activities is on identifying what is needed, and finding and trying entry points into the market.

It takes time to identify primary contacts and even more time before these primary contacts may be willing to adopt more inclusive business practices. After this initial period, though, outreach results begin to increase steeply as a tipping point is reached. This pattern is considered typical for outreach to smallholders under facilitation.

If this figure is representative, then one of the important implications is that there should not be an expectation of extensive outreach to target beneficiaries in the early years of a VC project.

Next, the presentation will look at the second component of scale, which is called "outcomes."



In comparing outcomes across the 10 projects, the paper considers two distinct types of outcomes: productivity gains and benefits for smallholders. These two outcomes are linked in the sense that productivity gains are thought of as contributing to value added while additional profits and income represent the distribution of at least some of that added value to smallholders.

In the VC literature, upgrading is defined as "investment that increases value added" and it is these upgrading investments—these upgrading decisions made by smallholders—that are the foundation for productivity growth in agriculture.

There are two types of upgrading that are relevant. The type of upgrading that improves efficiency is called *process upgrading* and it can result in higher yields, lower costs, or both. The type of upgrading that improves product quality is called *product upgrading*. Common examples of smallholder upgrading include cultivating new crop varieties, using new production technologies and achieving new levels of food safety.

It is important to remember here that upgrading is an investment decision made by smallholders. Therefore, to improve productivity in smallholder agriculture then it is important to understand what will motivate or discourage smallholders from making these investments.

The evidence shows that smallholders are capable of significant productivity gains and that they will change their technical practices in order to boost yields, lower costs and improve quality.

Here are three examples of productivity growth:

- In the case of Kenya dairy, roughly 90,000 smallholder dairy farmers received new genetic strains through artificial insemination, which resulted in milk yields that increased by 19% and unit costs that fell 16%.
- In Zambia, agrochemical and seed suppliers worked through networks of sales agents to increase the use of improved inputs by smallholders, resulting in 70-80% increases in maize production.
- In Nigeria, fertilizer was sold in small packets through a rural sales network, resulting in increased fertilizer use by smallholders and increased yields in maize, sorghum and rice, with an overall increase in productivity of 15%.

These and the other examples included in the study provide insights about the conditions that promote or hinder smallholder upgrading.

2. Outcomes: SH Benefits

Benefits are defined as farm profits and HH income

- Some evidence of higher farm profits
  - 5 of 10 cases
- Little or no evidence for higher HH income
  - Cross-country study found impacts on poverty rates
  - Impact evaluations show higher profits but not income
  - Consistent with MCC findings
- Findings raise issues
  - Evaluation methods
  - Impact pathways

The second type of outcome included in the study is smallholder benefits, where benefits are defined in terms of farm profits and household (HH) income. These variables are located near the end of the impact pathway that links project activities to outputs, outcomes and higher development objectives related to reducing the incidence of poverty and hunger.

What was found is that, while 5 of the 10 cases show evidence of positive impacts on farm profits, there is little or no evidence showing positive impacts on household income.

There are some important exceptions, including the findings from a longitudinal, cross-country study that overlapped with the three cases from Kenya. The results of this study showed that poverty rates for smallholders reached directly and indirectly fell significantly more than did poverty rates for the control groups.

Another exception was the case of Nigeria fertilizer, where crop income for participating households increased 30-40% and HH net income increased 32% over the baseline period.

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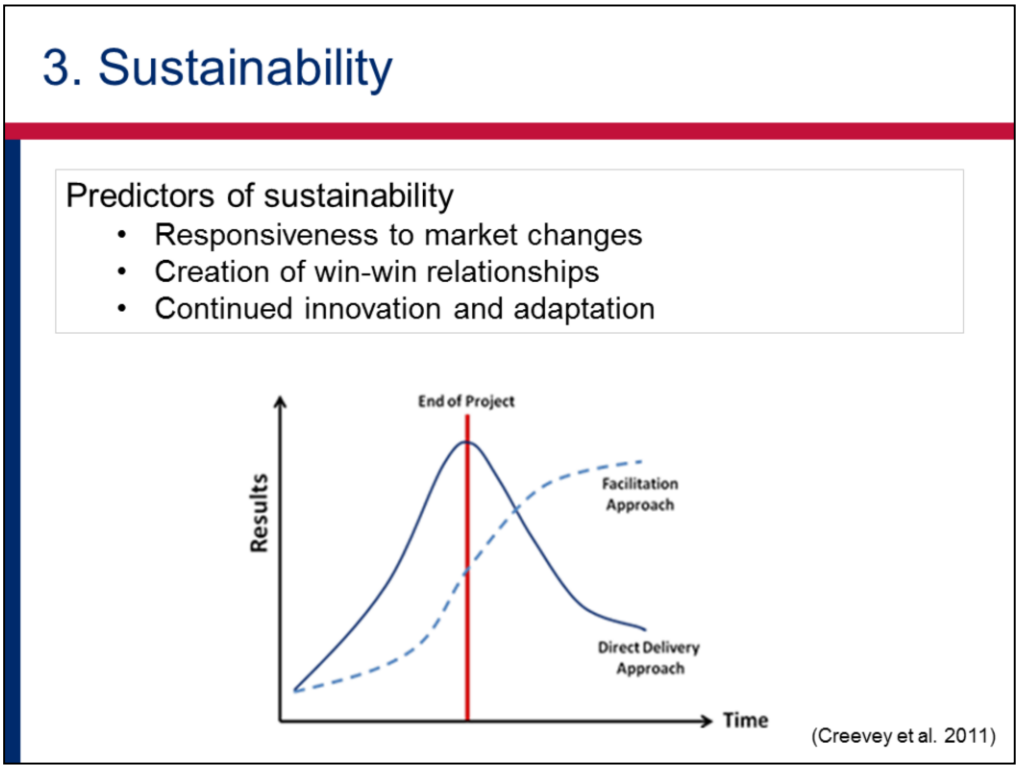
In general, the impact evaluations found evidence of higher profits but not higher incomes. These findings are consistent with early results published by the Millennium Challenge Corporation, based on five randomized control trials showing significant gains in enterprise income but not in household income.

There are several possible explanations for these seemingly contradictory findings on household income. One set of explanations focuses on problems with evaluation methods—such as evaluation time horizons that are too short, or evaluation designs that are not flexible enough for the dynamic context. There are also a number of challenges with collecting household income data.

A second set of explanations revolves around understanding the impact pathways that connect participation, behavior changes to boost productivity, higher farm profits and higher household income. These changes occur in a sequence of events that plays out over time. Knowing that these links can break down at any step of the way guides us to pause and question the assumption that productivity increases will always lead to higher HH incomes. While these two outcomes—productivity and income—are certainly related, these findings remind us that they are not the same. In other words, there can be a difference between the level of additional value that the smallholder creates and the level of additional value that he or she receives.

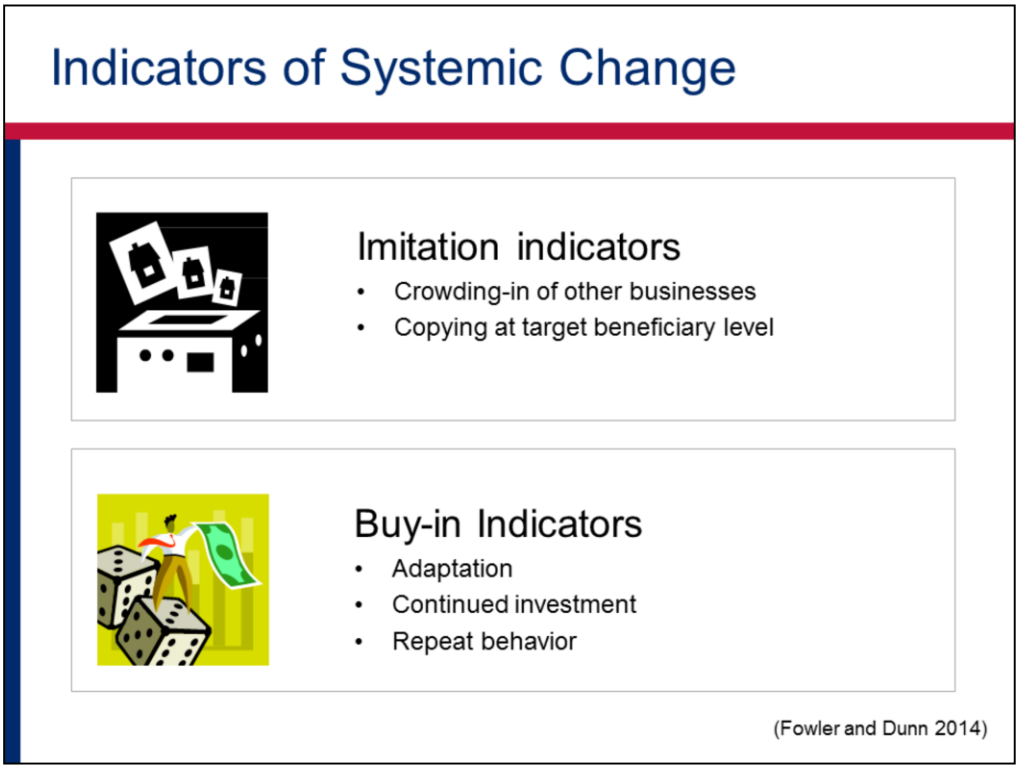


Sustainability is one of the primary motivations for using a VC approach.

While sustainability was not a topic in the FIELD report, sustainability of results from VC projects was addressed in an earlier paper that was published by the AMAP project in 2011. In that paper the topic of how VC projects lead to sustainability by relying on market-based forces to perpetuate mutually beneficial relationships between VC actors was discussed. These newly established or strengthened business relationships—when based on market incentives—have the potential to become self-perpetuating and continue beyond the life of the project.

Since sustainability, by definition, can only be observed after a project has ended, data on VC projects were looked at and try to determine which ones exhibited certain predictors of sustainability. In the paper it was argued that the results of VC projects will be sustainable to the extent that firms in the VC exhibit these three characteristics by the time a project ends:

- Firms exhibit changes in their commercial behavior, becoming more responsive to market forces and end market demands.
- Firms in new or modified vertical or horizontal relationships have experienced win-win outcomes that lead to greater trust and continued incentives to cooperate.
- Firms exhibit a pattern of learning and upgrading that seems to extend, and even go beyond, project-promoted innovations.

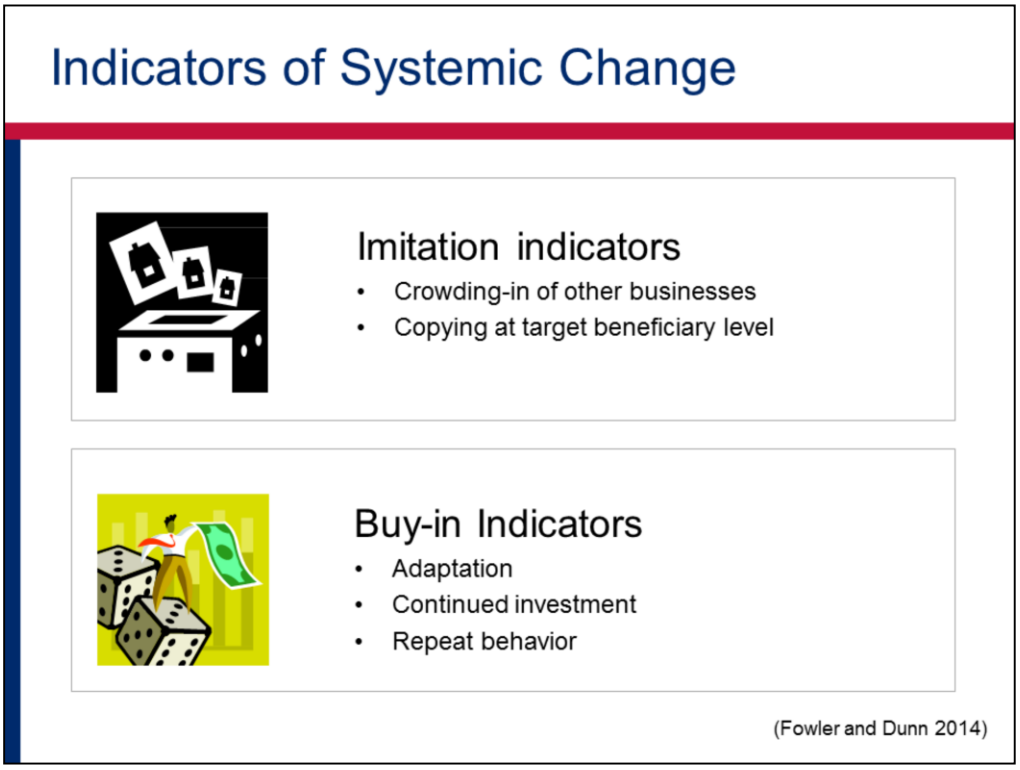


More recently, under the LEO project, a literature review was completed related to systems and systems change. In this literature, sustainability of results was linked to the ability of an intervention to promote systemic change.

While it was found that a variety of interpretations as to what constitutes systemic change, two generally recognized categories were identified:

1. **Imitation** occurs when other market actors change their behavior to adopt the new business models and production technologies that were introduced by the intervention. As seen in the cloud figure, there are two prominent examples of imitation indicators:

    - Crowding-in by other businesses that imitate program-sponsored business models originally adopted and demonstrated by business(es) that collaborate with the implementer
    - Copying refers to imitation at the target beneficiary level by market actors (firms, farms, households or individuals) that imitate the new practices originally adopted and demonstrated by the target beneficiaries of the intervention



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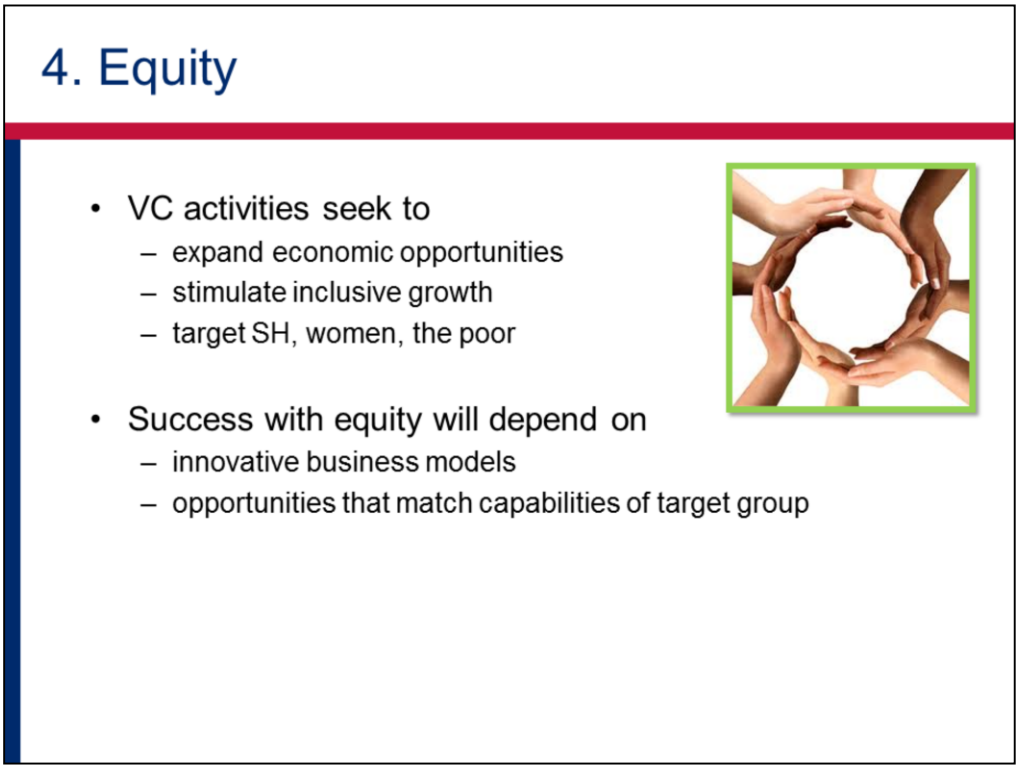
2. **Buy-in** indicators measure the degree to which market actors have taken ownership over the new business models, technologies, practices and behavior changes that were supported by the intervention. Some types of buy-in indicators are listed on the slide.

An important indicator of buy-in relates to continued, independent investment after program sponsorship ends. When market actors continue to invest their own money, in the absence of any subsidy, then that would be an indicator that systemic change is occurring.

Another important indicator of buy-in relates to adaptation or innovation that departs from the original practices or models that were introduced through the program-sponsored intervention. This corresponds to there being lots going on in the "adaptation space" from the figure showing the full potential outreach of VC activities.

Other buy-in indicators focus on
- Repeat behavior, and
- Satisfaction with program-facilitated changes.

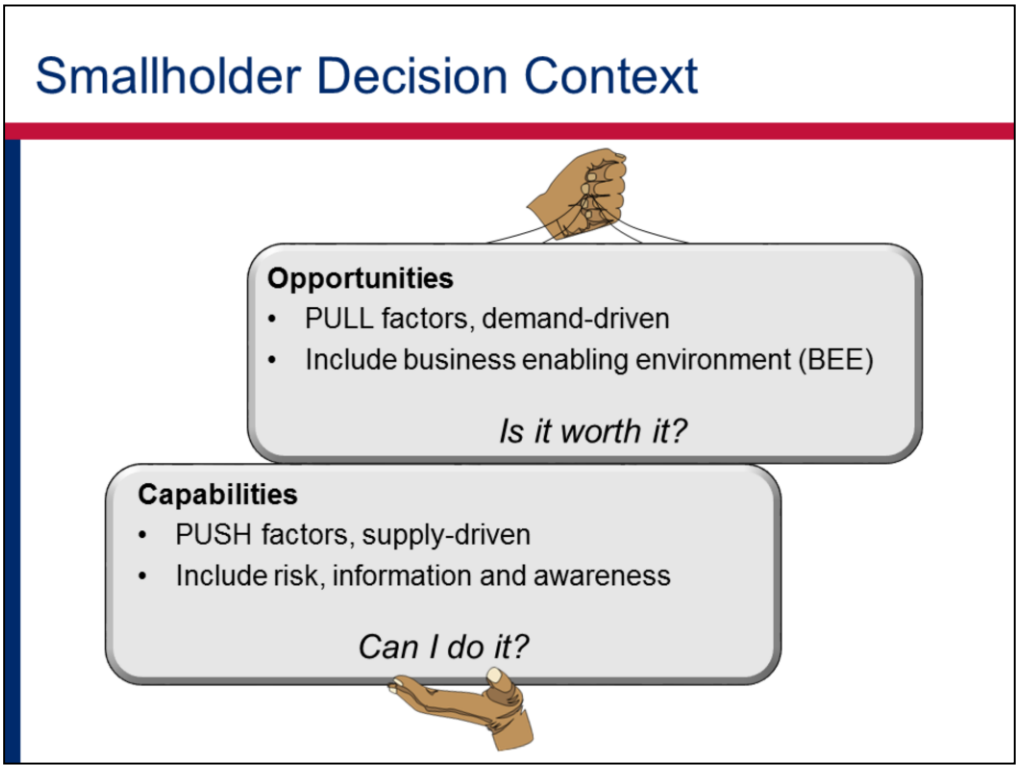


Equity is the last component of scale that will be discussed. Earlier it was mentioned that equity relates to how benefits are distributed and whether the intervention results in a market system that is more inclusive and does a better job of providing economic opportunities for disadvantaged groups.

Like sustainability, equity is one of the primary motivations behind the popularity of VC and M4P approaches. VC activities seek to stimulate inclusive growth by targeting the poor and working to expand their economic opportunities. If smallholders are missing some of the capabilities they need to participate in the market, then VC activities can combine push and pull elements to increase equity.

In order for a VC activity to succeed in promoting equity, appropriate innovations must be identified at multiple levels. New agricultural production technologies are not enough—equity also requires the development of new business models and new networks of relationships that link smallholders to attractive opportunities.

New technologies will only be adopted by smallholders if they are embedded in economic opportunities that match the capabilities of the smallholder household. This is such an important point it is important to explain what is meant by "opportunities" and "capabilities."

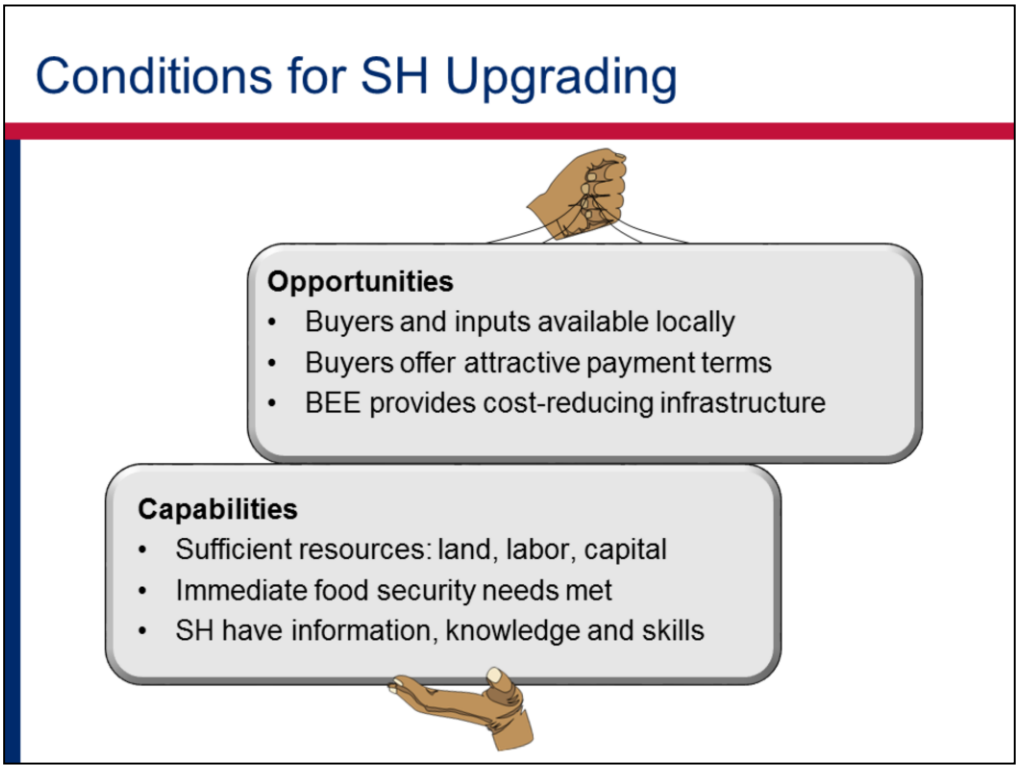


Earlier the statement was made that productivity gains depend on upgrading and upgrading is an investment decision made by smallholders? This slide provides a framework for understanding the context within which smallholders make these kinds of decisions. In this framework, the factors that influence smallholder decision making are separated into two categories: opportunities and capabilities.

Opportunities reflect the characteristics of the market and the business enabling environment (BEE). These are the market opportunities that provide the incentives to invest—the "PULL" factors that motivate behavior change. The primary question that a smallholder would ask himself or herself about market opportunities is this: "Is this opportunity worth it?" and "Is it better than my next best alternative?"

Capabilities reflect the resources, skills and characteristics of the farm and household. These are the "PUSH" factors and correspond to the smallholder asking him or herself the following questions: "Am I able to do it?" and "Do I have sufficient knowledge, resources and skills?"

While opportunities relate to entire markets or geographic regions, capabilities are individualized and unevenly distributed over the smallholder population—meaning smallholders are heterogeneous with respect to conditions such as the size and quality of their land, their relative food security, risk tolerances and their levels of knowledge, skills and awareness.



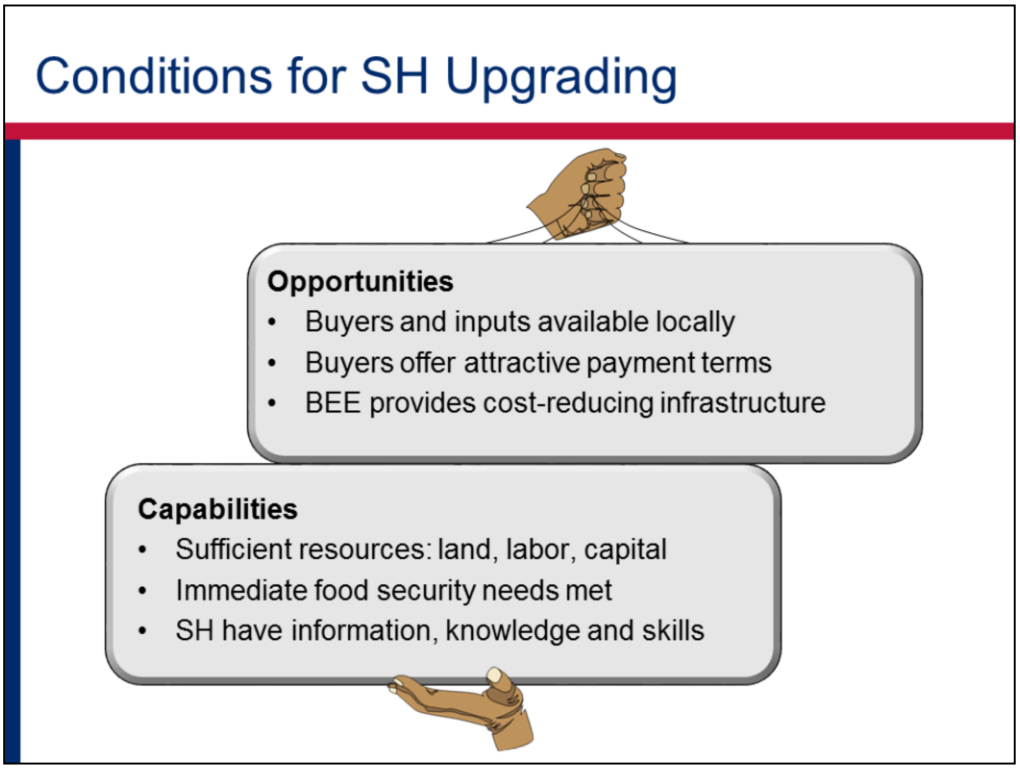
Here are a few of the conditions that need to be in place for smallholders to invest in new technologies and new practices that boost productivity.

Under "capabilities", the first bullet relates to the resources of the farm and household. For example, it is known that many smallholders in Africa have landholdings that are just too tiny to be economically viable. Or their land may not be well suited to the new crop or practice.

The lack of capital can be a critical constraint, since upgrading requires investment. The needed capital might come from a variety of sources, including savings, credit or existing income streams. In agricultural market systems, in-kind credit offered through a buyer or input supplier can also be an important source of capital for productivity-enhancing investments.

The second bullet under capabilities highlights that food security needs take top priority and must be met before smallholders are willing to allocate resources to new ventures. Too many times, people assume that profit is the smallholder's only objective. In fact, smallholders have other objectives including not only food security, but also risk reduction, cash flow management, social obligations, keeping kids enrolled in school and arranging for urgent medical care. All of these competing objectives play out over the growing season.

The third bullet refers to awareness, information and skills, and that these vary across households.



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Under "opportunities", the first bullet refers to the presence of buyers and the availability of appropriately scaled inputs in the local area.

The second bullet emphasizes the importance of attractive payment terms. The incentive to invest in producing higher quality products will be much higher if it is rewarded with a price premium. If products aren't graded by quality and no premium is paid for higher quality, then smallholders' have less incentive for product upgrading. Similarly, timely and dependable payments can play a big role in motivating smallholders.

Examples of infrastructure investments that lower costs include farm-to-market roads, utilities, ICT and investments that lower the costs of meeting SPS requirements. A great example of lowering the cost of meeting SPS standards comes from Kenya, where a USAID-funded project facilitated the creation of KenyaGAP, a lower cost way of meeting European food safety standards.

At this point the presentation has looked at results related to outreach, outcomes, equity and sustainability. Now it is time to discuss the key takeaways that were previewed at the beginning of the session.

Market systems drive behavior change through the profit motive. While profit is not a smallholder's only objective, it is still extremely important—not only for smallholders but also for firms at other levels of the VC. In addition, since market systems exist independently of the intervention, they represent an enduring mechanism that supports sustainability after the intervention has ended.

Some of the facilitation strategies in the VC approach also contribute to scaling up. Indirect targeting and demonstration effects serve to multiply outreach, while the "light touch" approach improves the possibility that the market system will be capable of sustaining outreach and outcomes after the intervention ends.

There is a need for innovation at more than one level. In addition to innovations in production technologies, there is also a need for innovative business models that create networks of commercial relationships to reach the target population.

In conclusion, it is important to reiterate that under equity, in order to realize the full potential of smallholder-led agricultural growth, it's critical to understand the behavioral piece—to understand that smallholders make their decisions in response to market opportunities, based on their own capabilities. In order to identify the smallholders most likely to contribute to agricultural growth, then it is important to consider both the "pull" of opportunities and the "push" of capabilities. Knowledge about the distribution of capabilities across the target population can generate more realistic expectations for scale and provide a more nuanced understanding of factors that need to be in place to drive innovation to scale.


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