Purpose

This guide is a companion piece to the publication titled, *Success Factors for Commercializing Agricultural Research: Lessons Learned from Feed the Future Partnering for Innovation*. One of the success factors identified was “view the smallholder as a customer.” This guide further elaborates on this idea, discussing the shift in perspective that needs to take place during the commercialization process from seeing the farmer as a beneficiary of public research to viewing the farmer as a potential purchaser of a product or service. It explains how businesses typically conduct initial marketing activities, and shows why and how research institutions can build market research into their processes.

This guide and the report from which it is drawn are designed for use by research institutions, and is intended to introduce concepts for improving pathways for commercializing publicly-funded research. For further detail, the Partnering for Innovation website includes a number of studies and tools on identifying smallholder customers and marketing to them. These publications include: “Last Mile Marketing,” “Who and Where is your Customer?,” “Defining and Communicating Your Value Proposition,” “Enabling Smallholder Uptake of Products and Services,” and “Untapped Markets: Reaching Women Smallholder Customers.”

Feed the Future Partnering for Innovation is a United States Agency for International Development (USAID)-funded program that provides incentive-based grants to de-risk the upfront investments that are necessary to scale and market agricultural innovations for smallholder farmers. The program works toward this goal through partnerships with the private sector, which to date number 50 in total.

Understanding the Context: Commercialization Processes

Commercialization of publicly-funded agricultural research to benefit smallholder farmers has much in common with the commercialization of any product, service, or technology for the mass market. While the specific details vary based on individual circumstances, the research to commercialization process generally includes the following stages: research, development, and distribution.

During the first stage, the research institution (and its collaborators, if applicable) **conduct research** that ultimately leads to an innovative product, service, or technology that the researchers believe has the potential to be commercialized. This research may or may not have been conducted with the goal of

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1 For more information on the research process, see the [US Government’s Global Food Security Research Strategy](#).
commercialization in mind, depending on the requirements of the funder, mission of the research institution, and interests of the individual researcher.

The next stage is the development process. This is normally led by the commercializing entity (usually a business), but the research institution may play a role. Development includes a wide range of activities including conducting market research (assessing demand, market potential, etc.); designing and establishing mass production processes and facilities; building a supply chain; determining distribution channels and related logistics; designing and implementing a marketing strategy (including customer segmentation and pricing strategy); and complying with regulations. If successful, this process ultimately results in a commercially viable product, service or technology that is readily available in the marketplace. A product, service or technology is said to be commercially viable, from the business’s perspective, when it competes effectively and is profitable. This process is not always linear and necessitates a fair amount of trial and error. This guide focuses specifically on the development process.

Diagram 1: The details of the commercialization process vary on a case-by-case basis. However, in the experience of Partnering for Innovation, where research and commercial entities partner after research and some phases of product development have already taken place, the process has generally proceeded as illustrated in this simplified diagram. The blue boxes denote major phases of the process. The white boxes are an illustrative list of activities undertaken by the commercializing entity. See Appendix 1 of the full report for more details.

Shifting Perspectives

Understanding the smallholder farmer as a customer for a product is different from interacting with the smallholder farmer as a participant in a research study or beneficiary of a project. When researchers work with farmers to conduct research and test innovations, they are focused primarily on proving the concept and testing if the idea works. The focus of the study is generally on assessing the product and its ability to address a particular issue, not the farmers’ view of the product, cost effectiveness compared to existing options, and additional factors impacting the farmers’ willingness to pay to use the product.
For example, a research study on a new fertilizer would likely focus on assessing the fertilizer’s ability to increase crop yields. It would not necessarily examine its cost effectiveness as compared to other products, if the potential yield increase is sufficient to justify the expense of fertilizer given current market prices for the crop, or if farmers are willing to buy different crop-specific fertilizers. While the researcher may incorporate some of these elements in to his/her research, it is generally not the main focus.

**During the commercialization process, a shift in thinking takes place.** The business views the smallholder farmer as a potential customer who has particular needs and wants. For the product to sell, the business needs to understand those needs and wants, and convince the customer that the product addresses them better than the alternatives. The customer will not buy the product simply because it is available or because the researcher or business believes that they should buy it. The business needs to understand the issue from the farmer’s perspective and make a business case to the farmer for its product.

**Understanding the Customer: How Research Institutions Can Help**

Research institutions and development practitioners that work directly with farmers often have valuable insights that can assist businesses in understanding their customers and developing their marketing strategies. For example, researchers likely have data on the extent of the particular disease or pest problem they are studying, or how many farmers are growing a particular crop. They may also have information on marketing challenges that the business is likely to face, such as alternative products already available on the market. The following examples illustrate how this works in practice:

- **Insights on customer response and alternative uses.** Purdue University originally developed PICS bags as a means for farmers to store their cowpea crop and prevent insect infestation. Their initial field demonstrations of the bags focused on that purpose. However, they noticed that farmers participating in the demonstrations also used the bags to store other crops. Sharing this observation with businesses interested in commercializing the technology helped to demonstrate the broader potential customer base for the product - it would not be limited to cowpea farmers.

- **Information on the scope of the problem.** The African Agricultural Technology Foundation (AATF) worked with the International Maize and Wheat Improvement Center (CIMMYT) to facilitate commercialization of StrigAway, an herbicide-resistant hybrid maize seed that is coated in herbicide to prevent infestation of the parasitic weed striga. When pitching the concept to businesses in Kenya, Uganda, and Tanzania, AATF presented information on the extent of the striga problem in terms of estimated land area and number of farmers affected. Some businesses noted declining sales of conventional hybrid maize seed as farmers abandoned attempts to grow the crop in the face of the striga problem. AATF was able to demonstrate that StrigAway would create the potential for businesses to regain these customers.

**Marketing to Smallholder Farmers**

A business’s marketing strategy generally includes customer profiles, market research, and information on agricultural cycles.² It looks at potential sales growth areas and opportunities to aggregate demand. However, businesses often require a certain amount of trial and error to arrive at an effective approach

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for their particular market. To market to smallholder farmers, businesses normally have to use more hands-on marketing strategies with greater interpersonal contact, demo plots, and training in order to demonstrate the value of the product. On the surface, this work can look very similar to the types of activities that would be included in an agricultural development program, but when implemented by a business for marketing purposes, they will tend to be more narrowly focused. This does, however, create opportunities for linking businesses with broader development projects.

It is common for businesses to offer free samples or discounts as a way of persuading potential customers to try the product. This is a widely-used marketing technique and can be seen in both developed and developing markets for a variety of products. Sometimes businesses also have to address other issues specific to smallholder farmer markets, such as farmers’ access to finance, to gain customers. As a result of these needs for greater interpersonal interaction, customer and education, marketing to smallholder farmers is generally more expensive with longer time horizons than marketing to larger-scale commercial farm customers.

Business Experiences with Marketing to Smallholder Farmers

- **Leverage the work of other programs.** Good Nature, a seed business in Zambia, often links with donor-funded agricultural development programs to reach potential smallholder customers for the improved soybean and cowpea seeds it sells under license from the Zambian Agricultural Research Institution. Farmers participating in the programs are receiving training and other forms of technical assistance. The programs provide a platform for reaching a large number of potential customers who are already informed about the benefits of using improved seed. The business can then focus its marketing efforts on convincing farmers to buy seed from Good Nature, rather than also having to sell the concept of buying improved seed in general.

- **Understand that smallholder customers are different from larger-scale customers.** Chi Farms, a Nigerian business, originally developed its fish feed for larger-scale aquaculture operations. These customers normally base their purchasing decisions on price and availability, and will frequently change suppliers based on those criteria. Chi Farms chose to diversify its customer base by entering into the smallholder market. Past experience from its poultry farm supply business showed Chi Farms that while smallholders are more challenging to reach initially, they are generally a more loyal customer base. Although price is an important factor in their decision-making, smallholder farmers also value the relationship with Chi and rely on the business for technical assistance and training. They are not likely to change suppliers based on minor differences in price. Before buying inputs, farmers need to see the benefits of the product in action; Chi Farms addresses this through opportunities to tour its own large-scale aquaculture facility. To incentivize trying the product, Chi Farms is temporarily offering smallholders the opportunity to buy fish feed and juvenile catfish at wholesale prices. Those farmers that remain part of group purchasing arrangements, will be able to continue to receive wholesale prices longer term. The business is also addressing financing needs and has a buy-back program to guarantee the farmers a market for their catfish.

- **Educate the customer on safe and effective use.** MEA is a Kenyan fertilizer business that is producing BIOFIX under license from the University of Nairobi. The British Council provided initial funding for the development of a marketing strategy. The strategy includes use of field days...
and demonstration plots to educate customers about the product. BIOFIX is a biologically-active product that is used to naturally enhance legumes’ nitrogen fixing capabilities. At first, farmers were not familiar with the concept and they were concerned that the bacteria would pose a health risk. Therefore, marketing efforts include demonstration of the product’s effectiveness, favorable cost comparison to fertilizers, and product safety. MEA has worked with its distributors and other agricultural development projects to expand its reach.

The marketing plan for StrigAway also includes a customer education component. The customer must use the product correctly in order to achieve the desired results, and this requires a change from farmers’ normal practices. Farmers need to keep to the herbicide-treated StrigAway seed separate from the seeds for their other crops, and in a place where they will not be accidently consumed by people or animals. When planting StrigAway, they need to wear protective gloves, and wash their hands, and be careful of touching other seeds immediately after. The treated seeds have an expiration date and farmers must purchase new seeds rather than saving them from the previous crop.

**Incorporating Customer Feedback**

Customer feedback is an important part of the development process. Partly for this reason, businesses will sometimes choose to test market at least some of the product directly (rather through a distributor) in order to have greater direct contact with customers. Businesses often make adjustments to the product based on customer feedback. For example, MEA changed the packaging design for BIOFIX after customers noted that the packaging for two different products was too similar; Chi Farms started selling slightly larger juvenile catfish to farmers to improve survival rates; and businesses producing StrigAway changed their production techniques after farmers noted low germination rates.

It is important to note that with agriculture, there are often multiple “layers” of customers. Unless the farmer is producing solely for his/her own consumption, the farmer also has a customer whose preferences need to be taken into account.

- The International Potato Center (CIP) originally developed improved orange-fleshed sweet potato varieties with rural household consumption in mind. The idea was that farmers would grow these varieties, which are high in Vitamin A, for their own use or possibly sale in local, community markets. As such, they were bred with this purpose in mind - with the farmer as both the customer for the planting material and the consumer of the final product. Later, Universal Industries, a Malawian food business, showed interest in developing processed food products based on orange-fleshed sweet potato. Although the farmer was still the customer for the planting material, he/she now had Universal as a customer for the sweet potatoes. Universal had additional needs, and further work was necessary to identify a subset of the varieties that worked best with the manufacturing process. For the business, traits such as fiber and moisture content are important as they impact food processing and the ability to achieve a consistent, high-quality product. In turn, Universal also has customers and must make sure that its products are appealing to the final consumer who is considering aspects such as taste, texture, visual appeal, and price point. The business incorporates these aspects into the product development process and provides feedback to CIP on which sweet potato varieties to promote to farmers in its supply chain.
• Good Nature uses a network of smallholder outgrowers to produce its soybean and cowpea seeds. As smallholder farmers are also its target customer demographic, this provides a built-in opportunity for feedback on what varieties are most appealing to smallholder preferences. As a means of distributing and promoting its seeds, Good Nature also seeks to partner with the businesses that buy its customers’ crop. This serves a dual purpose of helping Good Nature to reach more smallholder customers while also ensuring that these farmers are producing what their customer (the business) wants to buy.

While these examples relate to breeding and planting material, incorporating customer feedback is relevant for other products as well. For example, if farmers are producing a crop primarily for export, it is important to understand the requirements of that market; the importing country may have different regulations on pesticide residues than the farmers’ home country or there may be a preference for organic agriculture.

A Long Time Horizon

Marketing to smallholder farmers is generally more expensive and takes longer than marketing to larger-scale customers. Once a product is on the market in the US or Europe, it typically takes about six years to take off with a significant uptick in sales.³ In middle income countries, such as Brazil and India, it takes about nine and 12 years, respectively.⁴ It takes just as long, if not longer, in developing country contexts. Achieving an initial uptick in sales requires long-term dedication, creativity, and a willingness to seek out partnerships that expand the reach and impact of marketing efforts. Donors, research institutions and other agricultural development programs can play an important role in this process by directly supporting businesses’ marketing strategies and helping fill gaps in farmers’ understanding of the benefits of improved agricultural products.

⁴ Ibid.