



FEED THE FUTURE

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

Partnering for Innovation

Success Factors for Commercializing Agricultural Research

Lessons from Feed the Future Partnering for Innovation

- A Companion Guide for the Private Sector -



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ABOUT FEED THE FUTURE PARTNERING FOR INNOVATION

Feed the Future Partnering for Innovation is a USAID-funded program that helps the private sector to scale and market agricultural technologies for smallholder farmers through investing in technology commercialization and knowledge exchange. The program also facilitates partnerships between USAID Missions and the private sector and provides business acceleration tools and services.

DISCLAIMER

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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*](#). It is intended to provide related insight and advice specifically for the private sector to better enable companies to work with research institutions to commercialize publicly funded agricultural research to benefit smallholder farmers. This work is relevant to the US government's Global Food Security Research Strategy, which identifies commercialization as an important pathway for technology transfer. Although this guide will have the most impact when read alongside the full report, this companion piece can be read as a standalone document.

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.

Introduction

This companion guide identifies points from *Success Factors for Commercializing Agricultural Research: Lessons Learned from Feed the Future Partnering for Innovation* that are particularly relevant for private-sector stakeholders who work with research institutions to commercialize publicly funded agricultural research. The guide begins with a brief overview of the **business case** for engaging with public research institutions, then notes some **points to consider** in regard to each of the eight success factors identified in the full report, and concludes with **key takeaways** for the private sector. For a more complete explanation of the success factors, refer to the full report.

A Brief Summary of the Full Report

Purpose and Methodology

The report is the result of a qualitative study across eight Partnering for Innovation private-sector partners that are commercializing publicly funded agricultural research to benefit smallholder farmers in emerging markets. Interviews were conducted with 19 researchers, company representatives, and others involved in the eight partnerships, as well as with five external experts. Public agricultural research institutions interviewed include the Consultative Group on International Agricultural Research (CGIAR) Centers and public universities. The focus of the report is on the “hand-off” and interaction between research institutions and companies during the commercialization process, and starts at the point at which a research institution has completed the research and they or a company have decided to commercialize it. The purpose of the report is to share lessons learned and spark further discussion and research about commercializing innovative agriculture products, services, or technologies.

The Eight Success Factors

Based primarily on lessons learned across the eight Partnering for Innovation partners, the report lays out, in no particular order, eight success factors for commercializing publicly funded research to benefit smallholder farmers:

1. Clearly define the role and funding of research institutions.
2. Address intellectual property from the beginning.
3. Ensure quality control.
4. Recognize that research is just one part of research and development (R&D). The development aspect also takes considerable time and resources.
5. View the smallholder farmer as a customer.
6. Appreciate the motivation of the researcher.
7. Value relationships and networking.
8. Involve the private sector in research early on.

The report concludes with a discussion of cross-cutting lessons learned around the common challenges the eight partners face, the role that donors and host governments play, and recommendations for donors and leaders of research institutions.

The Business Case for Engaging with Public Research Institutions

From a business perspective, there are many reasons to engage with public research institutions. This engagement can be formal or informal and may or may not involve an exchange of financial resources.

Working with public research institutions creates the opportunity to leverage the company's R&D resources and focus on its core capabilities.

- **Some types of research can be expensive to establish and time-consuming to conduct** (such as plant-breeding programs that require significant land, laboratory equipment, and staff). Working with public breeding programs can be more cost effective.
- **Public research institutions can take more risks than companies in exploring new research questions or ideas.** Their focus on knowledge creation and learning gives them the freedom to try new approaches that could be transformative or could result in failure. Companies can then focus their resources on adapting successful innovations into marketable products. Alternatively, public research institutions can share risks and financial resources through collaborative or contract research.
- **Public research institutions engage in basic or foundational research**, without immediate commercial return, that can later inform future product development. For example, research to better understand what causes a plant disease can lead to the development of more effective control methods that could then be further developed into a commercial product.
- **Researchers at public institutions complement a company's own human resources.** These researchers add new perspectives and areas of expertise that are not available in house. Working with universities or other academic institutions can also be used as a recruitment tool. It gives a company an opportunity to work with graduate students or other researchers prior to making hiring decisions.

- **The company can benefit from the research institution's reputation and influence.** Public research institutions are already well known to government, other companies, and potential customers. Association with the research institution can help to elevate the company's profile and broaden the company's professional network. These institutions may bring prestige or recognition for developing a quality product to the commercialization process.
- Research institutions also apply for and are awarded grants to implement development programs. In these cases, the institute most likely worked directly with smallholder farmers, e.g., for training them on how to use an improved seed or how to apply good agricultural practices. This direct experience with smallholder farmers gives the institute valuable knowledge and understanding of smallholders as customers, which may be helpful for a company when creating sales and marketing strategies.

Points to Consider for Commercializing Agricultural Research

This section offers points to consider for each of the eight success factors for commercializing agricultural research (see the [full report](#) for more information).

Success Factor #1: Clearly define the role and funding of research institutions.

It is important to determine the role the research institution will play in the commercialization process (licensor, consultant, supplier/service provider, etc.) and the financial support for that role (project funding, fee-for-service, royalties, etc.).

Points to consider:

- Public research institutions are generally more accustomed to working with donors, not with companies, on commercialization. In this context, they receive funding to work on a project and generally have some degree of flexibility on how and when the work is done. They may have difficulty operating strictly as a supplier/service provider if that is the role the company envisions.
- The company needs to be clear and upfront about the role of the research institution, expectations, funding arrangements etc. Keep in mind that some research institutions are decentralized with research, administrative, and finance staff working separately. It is important to ensure clearly communicated expectations across the board and that all are in agreement.
- Appoint the right person as the company's point person with the research institution. To facilitate communications and avoid being seen as a donor, it can be helpful to appoint someone they will see as a peer (i.e., another scientist). If the company does not have an in-house research team, it may wish to engage a consultant with this background, at least initially, to assist in this process.

Success Factor #2: Address intellectual property from the beginning.

There are three aspects to consider in regard to intellectual property: a) ownership of the research itself (public domain or owned by the research institution); b) protecting the company's own proprietary information; and c) implications for further research or development work.

Points to Consider

- Be upfront in addressing intellectual property, and do not make assumptions. Intellectual property policies can vary across institutions and within them (depending on funding source or type of innovation). Who owns the research? Will a licensing agreement be exclusive?
- Speak with the right person. Researchers are not always familiar with the policies of their institutions. Most research institutions will have an office that is responsible for intellectual property, legal agreements, and/or technology transfer.
- Protect the company's intellectual property if the research institution is to have more substantial involvement in the commercialization process. Be clear about what can/cannot be published or shared externally. Ask about ownership of improvements on the original concept when made by the company or the research institution.

Success Factor #3: Ensure quality control.

During the technology transfer process, companies may need technical assistance with quality control and/or regulatory compliance. Research institutions may also incorporate quality requirements as a condition of licensing agreements.

Points to Consider:

- Think about the company's existing internal capacity and needs. What kind of assistance (if any) does the research institution need?
- Talk with the research institution to develop realistic expectations for quality when producing at scale, and address any concerns they may have.
- Discuss regulatory approval issues – what approvals does the technology require? What has the research institution done already to seek those approvals? Whose responsibility is it to seek approvals? Is any assistance needed?

Success Factor #4: Recognize that research is just one part of R&D. The development aspect also takes considerable time and resources.

Research institutions often have limited awareness of the work a company does to bring a product to market, e.g., building a facility, designing and setting up the production process, building a supply chain, establishing distribution/logistics channels, marketing, and regulatory compliance.

Points to Consider:

- To manage expectations, it can be helpful to explain, at least in general terms, the additional work needed to bring a product to market.
- Think about how the research institution can help in the process (if needed) – providing technical assistance in the product design or manufacturing process? Training farmers in the supply chain? Training customers?
- Given the significant investment in financial resources and the long time horizon, it is important to have management buy-in and a champion within the company who will remain positive in the face of setbacks and seek solutions.

Success Factor #5: View the smallholder farmer as a customer.

During the commercialization process, there is a shift in thinking from viewing the farmer as a participant/beneficiary to viewing the farmer as a customer. Marketing to smallholder farmers often requires more hands-on approaches.

Points to Consider:

- If the innovation is the result of participatory research or a broader agricultural development program, the researchers may have insights on the potential customer base, competing products, alternatives, etc.
- Linking with relevant broader agricultural development programs can be helpful in aggregating larger numbers of potential customers who already know about the benefits of using improved technologies.

Success Factor #6: Appreciate the motivation of the researcher.

Most researchers cited the personal satisfaction they feel in seeing their work used and benefiting others as the primary motivating factor for engaging in commercialization. Most also felt that the bulk of responsibility for managing the relationship with the company fell on them. This responsibility can be challenging when trying to balance this work with the main tasks of their job.

Points to Consider:

- Recognize that the work with the company is not likely to be the main focus of the researcher's work and that although the researcher may have support staff, he or she often ends up being responsible for additional administrative work in support of commercialization. In view of these competing responsibilities, reminders and follow-up actions may help ensure that the researcher provides all of the requested services.
- When possible, share information with the researcher that illustrates how customers are using their work. This act helps to maintain a dialogue and can lead to sharing other innovations and ideas.

Success Factor #7: Value relationships and networking.

In most cases, companies found out about research with commercialization potential through interpersonal communication. During the commercialization process, the relationship can be tested; clearly defining the relationship at the beginning can prevent problems later.

Points to Consider:

- Identify research institutions that are active in relevant fields and engage them through networking and other opportunities. For practical reasons with smaller companies, it can be easier to engage with institutions that are physically located nearby.
- Understand that research institutions and companies have differences in perspective and ways of operating.
- Having a researcher from the company side as the main contact point can help mitigate communication issues. Working with an intermediary such as a business accelerator, nongovernmental organization (NGO), or donor agency can also facilitate the process.
- Defining the relationship clearly from the beginning is important to avoid conflict later over issues such as the role of the research institution, intellectual property, quality, and so on. Having a good working relationship and clear communication channels can also help to resolve issues as they arise.

Success Factor #8: Involve the private sector in research early on.

Research benefits from early input and involvement from the private sector, as companies bring different perspectives and ideas. This approach also better facilitates commercialization, since companies are familiar with the research throughout the process and have the opportunity to ensure that the research will be relevant to their needs.

Points to Consider:

- Think about company objectives in engaging with research institutions — general knowledge exchange, commercial opportunities, addressing broader issues in the industry, and so on. Design an engagement strategy accordingly.
- Identify research institutions with the capacity and expertise to complete the required research. Working with research institutions that are influential in their field can bring additional benefits, as others look to them as thought leaders and follow what they are doing. Some resources to help identify the research institutions with which to build relationships include R&D staff (e.g., the university they attended); conferences (e.g., where they are presenting ideas and papers); and published papers (e.g., what institutions the authors are from).

- Opportunities to engage with research institutions can include:
 - General influencing, learning, and input on strategic priorities – through informal communication, membership in trade associations, participation on advisory boards of research institutions, and/or creating a research advisory group to inform the company. This last option is likely to be practical only for larger companies.
 - Collaborative research – projects with the research institution wholly or partly funded by the company (or a group of companies) in which researchers from the research institution and company work together. Such work often has broader research objectives.
 - Contract research – research funded solely by the company with a specific objective. The intellectual property may be owned only by the company or jointly with the research institution, depending on the negotiated agreement. In this way, the research institution acts as an extension of the company's R&D department.

Key Takeaways for the Private Sector

- Engage with public agricultural research institutions, because they are most likely very familiar with the end users for the commercialized product itself. Research institutes often bring direct experience working with smallholder farmers to overcome their production and post-productions challenges, and their insight will help design a better product and add value to the company's sales and marketing strategies.
- Engage with public agricultural research institutions to leverage public-sector resources and use company R&D resources more effectively and efficiently. Public research institutions move the research pipeline forward and bring unique technical expertise so that companies can focus on core capacities in product development.
- Build strong interpersonal relationships and well-defined business relationships with research institutions to facilitate successful commercialization. This includes clear communication and a willingness to understand different perspectives.
- Think strategically about engagement with research institutions. Look for opportunities to be active throughout the research process, from influencing priorities to providing technical input and ultimately commercializing.

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