



# **Feed the Future Partnering for Innovation Program Launch**

**Smallholder Technologies**

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Good morning, and thanks for taking the time to come out and see us, and thank you Jada for that excellent summary of Feed the Future and how technology plays a role in what we're all trying to do here. I also wanted to thank all of the people as well behind the development of this project on the AID side, Margaret Innes, Laura Chismo, our agreement representative, Steve Fondrist, Mark Heising, and Katie Garcia, and others in the Bureau of Food Security, and I want to thank my team as well at Fintrac, and my boss is at Fintrac for supporting this effort, which we're really thrilled to be taking on.

So as a company that's working day-to-day in the trenches of agriculture development, we cannot over emphasize the importance of the work that Feed the Future Partnering for Innovation is undertaking. In the 21st century with the agricultural knowledge and technology we have at our disposal, we should be outraged at the statistics concerning food security in the developing world. Their population is growing rapidly. More than 870 million people are food insecure. Thank you for that update, and the gap between food production and demand continues to increase.

However, the challenge of improved food security is not that natural resources and appropriate technologies don't exist, but that in many parts of the world, the agriculture sector is ill equipped to farm. Farmers, most who are women in these countries, are still using technologies that are centuries old. And the commercial sector does not see this as a viable market, so they don't supply to it. The outcome of this situation is predictable. Very low yield for smallholders, who as a result are subsisting on \$1.00 or \$2.00 a day, living with the high level of food security, one bad crop away from losing their productive assets, high malnutrition, high infant mortality, inadequate education in healthcare, and high unemployment.

A vicious cycle of poverty that seems to have no end. But it doesn't have to be this way. We can do so much better. Smallholder farmers are not exposed to nor trained in using improved technologies. These technologies are not available in their local shops. And therefore, they don't have access to the tools that are currently available to improve productivity. And businesses integral to the sustained delivery of technologies and services are reluctant to enter these new high-risk markets. We can transform subsistence farmers into successful commercial farmers, improving their livelihoods and that of their community, increasing food availability, food access, and food sustainability. Technology availability and adoption is the key to turning this around.

We know this because we've done it. There isn't one seed, one type of fertilizer, one machine, one product or market that will be the silver bullet here. Instead, we must ensure that integrated packages of technologies and training are available to meet this challenge. Soil fertility, which we'll learn a little bit about later on today, is crucial to sustaining growth but is more difficult to maintain in the tropics because of high rainfall and temperatures. Low yields brought on by rapid nutrient depletion results in shifting agriculture and deforestation. Effective low-cost soil testing is unavailable throughout the developing world. As a consequence, fertilizer use is at a fraction of what it needs to be to bring yields up.

Understanding the costs and benefits of fertilizer use in promoting strategies to improve soil fertility will dramatically increase yields and improve overall land management. Modern seed

breeding results in significant productivity gains, and can also enhance pest resistance, drought tolerance, and even improve nutritional value of foods. Hybrids aren't available in many developing markets because smallholders are not buying them. Smallholders, for the most part, don't buy them because they have not been shown the profitability against the cost of using them.

Unemployment is high throughout the developing world, except during production seasons when labor deficits delay plowing, seeding, and harvesting contributing to suboptimal yields. Reasonably priced and appropriately scaled farm implements increase labor efficiency by saving time, reducing drudgery, improving plant densities, and enhancing productivity. And there's no more limiting factor to agriculture productivity than water. The simple fact is if rains fail in the developing world, people starve. Because it allows for year-round cultivation, interests in using irrigation technology is high, but so are the upfront costs.

Other technologies, such as water harvesting and storage, more appropriate pumps, and longer lasting tubing need to be made available to this market. Advanced pest management practices and products, both inorganic and biological, and weed control tools and herbicides are not the norm. Pest products are poorly understood and often misused. However, these products can save massive amounts of labor in addition to boosting yields.

Pest control techniques, such as integrated pest management coupled with improved pest products marketed in volumes more appropriate to the smallholder will be commercially viable. Biological products are increasingly in demand due in part to their low cost, effectiveness, and safety. In most cases, these can be manufactured locally. Low cost greenhouses enable intensive crop production, pest control, and protection from heavy rains and hail common in the tropics. These structures are particularly appropriate for peri-urban areas where per unit land productivity is an important factor in productivity.

Now this is my favorite slide. As incomes continue to rise in the developing world, demand for meat, eggs, dairy products is also rapidly increasing. Improved animal genetics, feed systems, veterinary products, and new breeds that bring better feed conversion and reproductive rates are needed to feed this rapidly growing demand. Feed production systems are also an important part of this puzzle. In post-harvest technology, such as dryers, baggers, crates, food processing, mills, and storage capacity such as refrigeration, ice making, and grain silos are essential investments needed to reduce losses that exceed 30 percent from field to fork.

Local businesses must be shown the economics of these investments as a necessary first step in promoting adoption. In mobile devices that offer market information, advisory services, technical information and reminders and cash transfer services reduce transaction cost and improve profitability, particularly in this rural areas that are under served by these service sector enterprises. And all technologies must address women's access, ownership, and drudgery. If women can't use it, can't finance it, and can't own it, we won't promote it. Sustainably scaling up technologies will require that we as a program develop strong partnerships with the commercial sector and help to create incentives so that they can take investment risk and promote game changing technologies to these large emerging markets.

So what are the results that we expect? Dramatically increased productivity in food security is one. Farming income – farming becomes profitable for smallholders and businesses that provide these products gain a profitable toe hold in new and rapidly growing markets. And food is more available. Prices will come down so consumers have better access, and with private sector linkages developed, these gains will be sustainable. As I said, there's no silver bullet, but efforts such as Feed the Future Partnering for Innovation will work closely with innovators and businesses to bridge the technology gap that exists on the road to food security. Next, I'd like to invite my colleague, Charity Hanif, to explain the main components of the program. Thank you very much.

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