

Finding Fertile Ground for Tech on the Farm

A Spotlight on Charles Steinfield, Michigan State University

Innovators Connecting to Accelerate Global Development

The Story

Charles Steinfield's career had not offered him many occasions to visit a farm. A professor of telecommunication, information studies and media, and an expert on how communication technology changes organizations, Steinfield had been researching the effects of social media on businesses when he got the phone call.

Colleagues across campus at Michigan State University were planning a new lab called the Global Center for Food Systems Innovation with funding from USAID and its Higher Education Solutions Network. The center would examine pressures on the world's food supply, look for solutions, then help refine, promote and expand them. They wanted Steinfield to lead a team that would look at solutions that use information and communications technology (ICT).

"They realized that ICTs were becoming increasingly important in food systems," Steinfield said. "If you're looking at different types of strategies to enhance the food system, some of that is going to involve strategies that target farmers and the production of food, and that's going to involve education and training. You can't go out and have a person who physically teaches farmers one on one. There aren't enough extension agents out there to visit every farm. You're going to have to use some scalable technique. And that's where technology comes into play."

Steinfield agreed to lead the Center's work in ICT for development, ICT4D for short. As the center launched, Steinfield found himself flying to East Africa to visit farmers. His team started with Kenya, where inventive uses of ICT were finding good results.

Non-governmental organizations such as the One Acre Fund provide farmers with time-sensitive information by SMS text message about crops, pesticides and prices. An electronic payment system called M-Pesa allows farmers to take loans, crucial during the low-income period before harvest, via mobile phone without the costs and corruption of in-person transactions.



Susan Wyche and Charles Steinfield visited Kenya for Michigan State University's Global Center for Food Systems Innovation to learn how farmers use mobile technology.

Photo courtesy of Charles Steinfield.



And Kenyans have created a reality TV show that's actually applicable to reality: each episode of "Shamba Shape-Up" gives a "makeover" to a family farm, with experts demonstrating how to improve production. Viewers can receive the advice by SMS and Facebook. Steinfield's team met with the show's producers and suggested they provide advice about using mobile phones for smarter farming.

Steinfeld and his colleague Susan Wyche are spreading the word about these successful tactics via conferences and publications. After East Africa, USAID has asked the team to analyze successful ICT tactics in Southeast Asia.

Technology alone is not a blanket solution, Steinfield said: "If you don't take into account the social and cultural and overall economic context, you will make naive assumptions about what you can do and what can't you do." For example, Americans generally use their cell phones as needed and pay their bill later. In many developing countries, users with low income usually buy credit in advance, in small increments. When Steinfield talked with farmers in Kenya, they often had no more than a cent of credit on their phone. "What this means is, if you're designing all of these sophisticated services for rural farmers who are almost at a subsistence level, they'd have to be a free service or really low in cost," he said. "You have to do it in a way that's sensitive to the reality on the ground."

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