

How social networks can boost smallholder agriculture

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Mohammed Azzimani (left) compares the irrigation guidance he receives from the U.S. Agency for International Development's Morocco Economic Competitiveness program, which uses text messages to relay information about temperatures, rainfall and other data in Morocco. Can social networks and crowdsourced information help improve rural agriculture? Photo by: [Oussama Benbila / USAID / CC BY-NC](#)

The idea that transparent information and open communication make for better business has upended industries of all sorts, from hotels to restaurants and entertainment. Can those same principles be applied to one of the world's oldest and most important livelihoods?

Just as information disseminated through social networks has made it easier to decide which flat to rent or movie to watch, rural agriculture stands to gain from a culture of crowdsourcing.

If a core pillar of social networks is the sharing of best practices and practical experience to better inform a community's decision-making, rural agriculture and smallholder farming certainly have no shortage of information to contribute.

The life of a farmer relies on an array of inputs and variables, from harvesting techniques to pest control and buyers willing to pay premium prices for crops. Having reliable, crowdsourced information on those, and a number of other factors, could dramatically change the way farmers go about their business.

"The potential for digital platforms and farmer empowerment is huge."

— Jenny Costelloe, director of country partnerships for Grow Asia

"If farmers can make informed economic decisions, their incomes should improve and markets should become more efficient, resulting in more stable, lower prices," Todd Goldman, vice president of global solutions for [Premise](#), a San Francisco-based company that crowdsources economic data from a global network of contributors, told Devex.

Most crowdsourcing among smallholder farmers is still done the old fashion way — by word of mouth, informally in the fields or through local cooperatives. But supplanting that with real time digital communications could lead to major breakthroughs in agricultural practices. And if farmers themselves are the ones contributing critical information on extension services, their collective voice could improve many of the weak market linkages that characterize agriculture in developing countries.

“The potential for digital platforms and farmer empowerment is huge,” said Jenny Costelloe, director of country partnerships for Grow Asia, a multistakeholder platform for sustainable agriculture in Southeast Asia.

Using SMS

Rural agriculture, however, is not quite at the stage of having a universal platform on par with Twitter or Yelp, a popular business review website. Indeed, many businesses are trying. But reaching that kind of scale is often hindered by limitations to infrastructure and challenges that go beyond the benefits of information dissemination.

SMS communication — text alerts on first generation feature phones — remains one of the most widely adopted methods for agribusiness collaboration. Interventions typically involve information blasts on anything from weather patterns to fertilizer techniques that allow farmers to more efficiently manage their crops.

Firms of all sizes have been putting it into practice.

Consumer goods giant Unilever is one of the largest and latest to do so through a mobile agriculture program that it is piloting with U.K. telecommunications firm [Vodafone](#). The initiative equips smallholder tea farmers in Tanzania and coconut planters in Indonesia with feature phones to receive targeted SMS updates on weather, crop quality and agricultural trainings. The program is also rolling out a mobile money feature so farmers can digitally receive payments for their crops.

Also in Indonesia, 8Villages, a local tech startup, operates a similar mobile phone-based information sharing platform for smallholder farmers that is modeled after Twitter. Farmers use feature phones to communicate one-on-one with research and agricultural experts from local universities in text messages of 160 characters or less. Farmers with smartphones can access a web-based app that facilitates larger group dialogues between agricultural experts and network participants. Discussions about pest control and crop disease are typically the most popular topics, said Sanny Gaddafi, founder and chief executive of 8Villages.

8Villages' platform is used by around 115,000 farmers across Indonesia, roughly 8,000 of whom access it via smartphone.

WeFarm, a U.K. social enterprise, has developed a similar peer-to-peer SMS-based service for smallholder farmers in East Africa and Peru.

There are many more examples, all rooted in some way to the idea that open information can breed greater transparency, efficiency and productivity.

The most democratic form of communication

Scaling those networks up to more universal participation is the next challenge, but inhibited by several factors. Infrastructure and connectivity can still be an issue, though increasingly less as cellular hookups become more ubiquitous, even in remote regions.

Where cell connectivity is limited, radio can play a similar role.

Radio Lifeline, a U.S.-based nongovernmental organization, broadcasts programs in East Africa on a variety of agribusiness issues for smallholder farmers.

“Radio is the least expensive, most widely disseminated and most democratic form of communication in the developing world,” said Peter Kettler, the organization’s founder. “It has the lowest barriers to participation and transcends common obstacles of geography, education, infrastructure and literacy.

Another challenge facing crowdsourced agribusiness platforms is the issues of financial sustainability. The data platforms themselves have a costly overhead and rely on different strategies than Twitter, Yelp or other crowdsourcing sites to generate revenue. 8Villages, a self-described social enterprise, avoids charging farmers SMS fees. Instead, the company sells its service as a business-to-business solution to NGOs or companies who then use it as part of their intervention strategy with farmers.

That arrangement, however, can lead to multiple segmented information platforms rather than fewer, more universal ones. [Unilever](#), for instance, has deep pockets to pay for its mobile agriculture platform. But its network serves the proprietary interests of its supply chain.

Some tech experts are critical of how companies can approach this type of service — a “we want to help our farmers, not necessarily our competitor’s farmers” attitude, the head of one information platform said. “That could be why some communication technologies targeting specific farmers and specific communities are gaining popularity — because companies want to increase the knowledge base of their supply chain, not necessarily of their competitors.”

Reaching out to farmers

Farmers are also generally risk averse and their uptake of new technologies can be slow. Training farmers to understand and accept the digital platform is still the biggest obstacle for 8Villages, Gaddafi said. “Seventy-five percent of our farmers are still hesitant to use it.”

Of course, the provision of information alone not a panacea.

“The ability to act on that information is a key limitation,” said Matt Lowes, an agriculture research manager with [One Acre Fund](#). Learning that a certain type of fertilizer produces the best yields is one thing. Heeding the advice is another. “To take full advantage of this sort of SMS service, it has to be coupled with increased access to many of the goods that farmers need to act on that information.”

In a developing country context, a lack retail distribution channels, poor quality of inputs and shoddy roads and infrastructure can all render crowdsourced platforms obsolete, he said.

More broadly, while the benefits of crowdsourced, collaborative information are understood in principle, proving their exact efficacy at the smallholder level is still unclear. Pinpointing the extent to which new or crowdsourced information influences a farmer’s decision is still an inexact science, since any number of variables can spur a farmer to action.

“Measuring the impact of rural farmers’ increased access to information is where the rubber will really meet the road,” Goldman said. “What are the actions people are taking on the information and what is the impact on the broader ecosystem? Are these decisions materially improving the lives of farmers, and if so, how? What’s the market impact and how does that affect the broader food system, including consumers?”

Infrastructure, sustainable revenue models, cultural acceptance and market linkages are indeed high hurdles to overcome if social networking is to become the norm in rural agriculture.

Ultimately, the success of any development initiative is determined by how closely the intervention addresses the needs of the people most affected. Despite the obstacles to scale them, social networks are designed to give a voice to its members and may prove sustainable for long-term development practices.

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