

Improving Smallholders' Knowledge with ICT Extension Services

HIGHLIGHTS

- Increasing usage and scale of budget-friendly smartphones facilitates real-time access to information.
- Up-to-date market information on prices of commodities, inputs and consumer trends through Information and communications technology (ICT) can improve farmers' livelihoods and their negotiating position.
- Tailored content and relatable delivery is a key factor for uptake of new techniques, and in a more cost-efficient manner than standard extension services.



Peter Kapuscinski / World Bank

Development Challenge

Limited access to technology, lack of productivity enhancement inputs, low awareness about farming best practices, and weak links across the agricultural value chain are some of the major challenges that smallholder farmers face. Further, severe climatic conditions lead to crop failure when farmers are not able to take preemptive steps due to lack of weather forecast information. Improper planting and harvesting practices result in loss of productivity and lower profit margins for farmers. ICT can facilitate wide dissemination of relevant information at the right time in a cost-effective manner.

Business Model

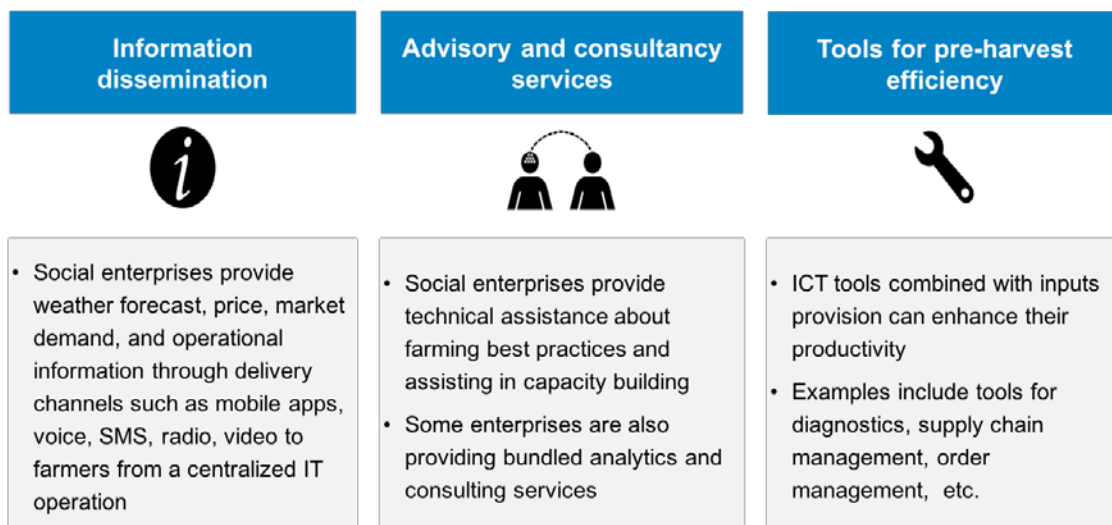
Many social enterprises have introduced ICT applications to enable farmers to access vital pre-harvest information. The diffusion of ICT devices (especially mobile phones) and infrastructure has eased constraints in supply-chain management and farmer aggregation. ICT extension enterprises enable farmers to access information related to agricultural inputs, weather forecast, market prices, and best practices in agriculture being followed by fellow smallholder farmers in general as well as other developing countries or regions. These services connect smallholder farmers at the global level, facilitate cross-learning, and help them increase their agricultural productivity.

Most ICT-based enterprises provide extension services through one or more of the following operational phases: disseminating pre-harvest related information about regional weather

conditions, weather forecasts, agri-related policies, and pest and disease control; imparting advisory and consultancy services that encourage rapid adoption of efficient and modern farm practices; and providing tools for pre-harvest efficiency, such as web-based portals and agricultural management software.

ICT extension service providers do incur high capital expenditure for solution and platform development, and content creation (including research and development costs). Some cover these costs through their partners or local stakeholders, in addition to their revenue streams.

Features of Agriculture ICT Extension Services Business Models



Implementation: Delivering Value to the Poor

Awareness

Some ICT extension service providers such as eKutir find it easier to establish a market for their offerings since its customers are already aware about the need for such services. The enterprise caters to a mature customer base including multinational companies such as Starbucks, Mars and Danone; development banks; financial service providers; and other financial institutions. Enterprises such as Farm Radio International work with established programs and partners to quickly gain access to a wide audience. Their programs are supported by advertising through mobile phone and other media.

Acceptance

Many enterprises use streaming media to make non-text more widely available to illiterate audiences. The integration of ICT in agriculture extension, especially through the use of videos and other visuals depicting stories similar to those of the regional farmers, increases the possibilities of a direct connect with smallholders. Enterprises also leverage interactive applications, such as radio messages, feedback pamphlets, and call-center services to help the enterprises understand the local context and provide requisite consulting services. Digital Green and Shamba Shape Up present stories of some of the role models that help the smallholder farmers grasp the message.

Accessibility

ICT extension service enterprises reach farmers through radio, television, mobile, Internet and videos. Most of the enterprises either have an online mode to reach the farmers or take the support of local community leaders to conduct shows or screen their videos. Community based tele-centers offer a way of providing affordable access to ICT services in rural areas. Bangladesh-based provider mPower has developed an integrated approach that includes mobile and web applications. It addresses the issue of limited access to agri-extension service providers by means of its community based, infomediary-driven approach, in which the community selects an "ICT leader" in each farmer group.

Affordability

Enterprises make their products and services affordable and often free for farmers by cross-subsidizing or charging large corporate partners and other paying customer groups. They also leverage donor and grant money to bridge the gap between costs and revenues. Some enterprises partner with development finance institutions on a cost-sharing basis or receive funding from them. For instance, USAID funded mPower to implement its Ag Extension Project in Bangladesh.

ICT extension service providers earn revenues in two ways: through sale of content that includes provision of advisory services, and management information system solutions; and by charging segment fees per episode of broadcast content. Advisory services are provided to smallholder farmers either free or at nominal rates. The enterprises sell content to government and private extension service providers. Digital Green, for instance, earns revenues from sale of videos and technology to government and private extension service agencies that work directly with farmers.

Some enterprises charge segment fees per episode. For instance, big corporates including Syngenta Foundation pay nearly USD 5,000 for a five-minute slot per episode for TV shows. The corporates use this slot to describe and advertise their products and solutions for smallholder farmers. Other corporates such as Google, Oracle and Cisco sponsor shows by ICT extension providers such Digital Green.

The ICT extension service providers establish partnerships with various stakeholders including government bodies, development organizations, NGOs and input manufacturers for a number of activities. For example, Access Agriculture partners with farmer groups, universities, agriculture colleges, and other extension service providers in the video production and distribution process—the enterprise provides filming equipment to its partners and trains them to produce videos based on different agri-themes.

ICT has led to better information dissemination and access to best practices in agriculture at reduced costs. It has also resulted in mobilization of farmer groups toward increased agricultural production, poverty alleviation and economic development. According to a number of sector studies, ICT intervention has dramatically improved the amount and quality of extension services in agriculture. For instance, an SMS-based intervention that sends advice to smallholder farmers in Kenya increased yields by 11.5 percent relative to a control group who did not receive any such messages.

One immediate benefit of ICT extension solutions to smallholder farmers is a decrease in transportation costs to obtain market information. Farmers can make a voice call to estimate the demand for a product and the price being offered on a particular day. They can then make an informed decision comparing the travel effort and the possibility of making profit.

ICT extension service providers are also expanding their umbrella of services to continue providing incremental benefits to farmers. eKutir has served nearly 61,000 farmers across India, Bangladesh and Cambodia. Digital Green has reached over one million individuals across 13,592 villages through 4,426 videos, which showcase and demonstrate best practices. Nearly 574,222 of the viewers adopted one or more of the best practices promoted.

Results and Effectiveness