Information and communication technologies (ICTs) to provide agricultural advice to smallholder farmers: Experimental evidence from Uganda

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Abstract

Agricultural advisory services generally rely on interpersonal knowledge transfer in which agricultural extension agents visit farmers individually or in groups to provide information and advice. This approach is not always effective and has often proved hard to bring to scale, particularly in highly dispersed smallholder farming systems. Information and communication technologies (ICTs) have been advanced as a promising way to overcome many of the problems associated with conventional agricultural extension. We evaluate the effectiveness of an ICT-mediated approach to deliver agricultural information in a field experiment conducted among small-scale maize farmers in eastern Uganda. However, different ICTs have different characteristics and farmers may also differ in their information needs. Our approach therefor consists of three complementary technologies: First, we investigate the effectiveness of audiovisual messages as a means of delivering

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information to farmers. Second, we quantify the additional impact of augmenting video with interactive voice response (IVR) technology—a more demand-driven approach to information provision. Third, we estimate the incremental effect of time-sensitive short message services (SMS) messages that remind farmers about key agronomic practices. We find that ICT-mediated audiovisual content is effective in delivering information, with households that were shown short videos on how to become a better maize farmer performing significantly better on a knowledge test, more likely to apply recommended practices, and using inputs more efficiently than households that did not see this video. These same households also reported maize yields about 10 percent higher than those that did not see the video. Incremental effects of IVR and SMS technologies are limited.

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