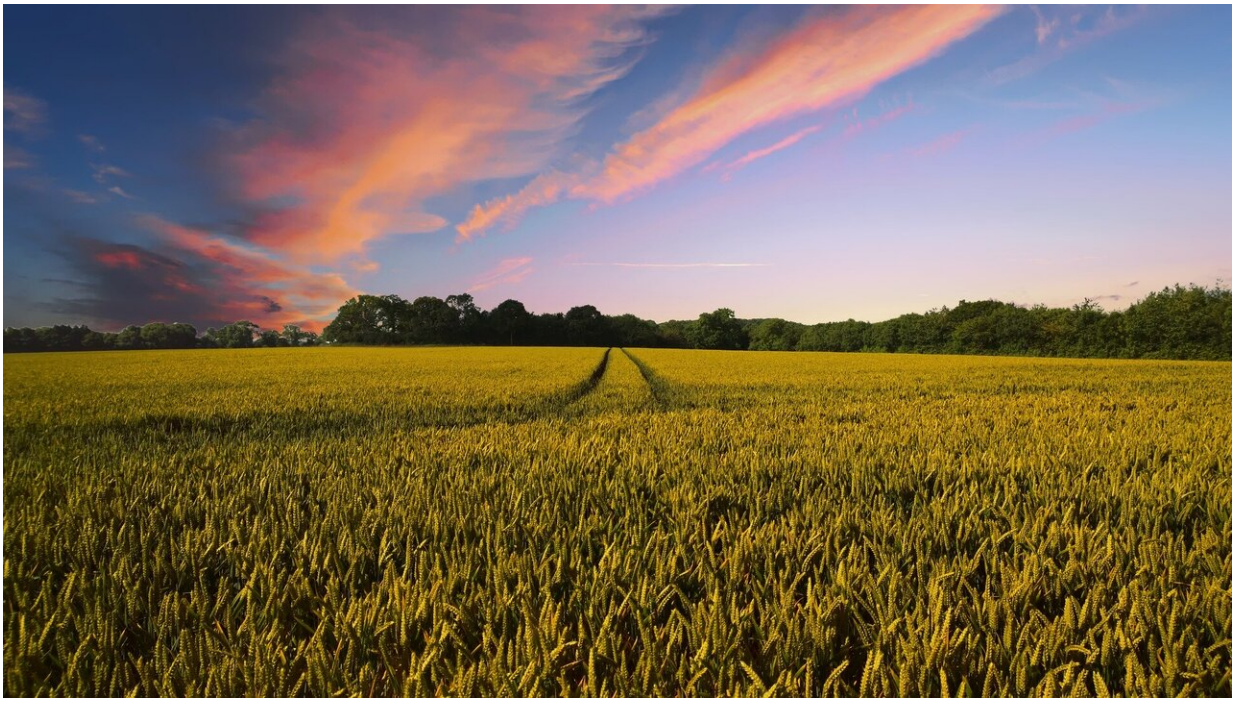
Using mobile technology to understand the impact potential of agricultural interventions

December 12 2019



Credit: CC0 Public Domain

The near ubiquitous penetration of mobile phones among smallholder farmers in developing countries has enabled a powerful new tool for dispensing agricultural advice to farmers. Low acquisition and marginal costs make digital extension scalable at low cost when compared to traditional in person extension practices.

A new paper co-authored by Nobel Prize winner and Precision Agriculture for Development (PAD) co-founder Michael Kremer and his colleagues Raissa Fabregas (University of Texas) and Frank Schilbach (MIT), published today in *Science*, demonstrates that practices recommended through digital extension are adopted at rates that compare well with those adopted through the course of traditional in-person extension practices, and at significantly lower cost.

The paper emphasizes the research utility implicit in digital extension and the potential for research and experimentation to further improve the impact of digital advisory systems and the advice it delivers: "Running these systems at scale allows for testing variations... and feedback loops to improve accuracy and effectiveness of messages over time." The authors posit that realizing the "full promise of digital agriculture... will require sustained cycles of iteration and testing."

Dr. Tomoko Harigaya, PAD's chief economist and director of research, remarked that "Understanding the impact of an agricultural intervention can be challenging because of a large fluctuation in agricultural outcomes across seasons. This paper provides an extremely useful insight on the potential value of digital agricultural extension services by taking stock of the existing experimental evidence and highlighting unexploited opportunities for digital interventions. The impact estimates, with the declining marginal cost of service per farmer PAD has seen, suggest a very high benefit-cost ratio of digital extension. As PAD continues to scale, innovate, and iterate, we see huge opportunities to enhance our impact and the inclusiveness of our services."

Shawn Cole, co-founder of PAD, said, "PAD's mission is to design, evaluate and assist with the scaling of mobile phone based agricultural advice to help smallholder farmers. This paper suggests there is potential for tremendous welfare by delivering mobile phone-based advice to improve farmers' lives, though it also shows there is significantly more

research and development to be done. Two things in particular excite me about the potential: First, trusted, high-quality advice could change behavior in a number of important domains (e.g., health, education, etc.); and second, the unique value of digital delivery—it can reach anywhere, including conflict areas, and at scale, may have close to zero marginal cost."

More information: R. Fabregas at University of Texas at Austin in Austin, TX el al., "Realizing the potential of digital development: The case of agricultural advice," *Science* (2019). science.sciencemag.org/cgi/doi … 1126/science.aay3038

Provided by Precision Agriculture for Development