

DAFRE Seminar

MahindiMaster: A Virtual Learning Platform to Enable Maize Farmers to Discover Soil-Optimized Inputs

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Abstract

While temporal variability that stems from stochastic weather events is a defining feature of smallholder agriculture, its effects in practice are shaped by spatial heterogeneity at regional, village and household levels. In Kenya, as elsewhere, significant within village heterogeneity in soil quality can render uniform fertilizer recommendations inappropriate and learning from others challenging. Advances in soil testing and precision agriculture can produce site-specific input recommendations, but these innovations face a distinct “last mile” problem: How can such recommendations be accessible and actionable for smallholder farmers? We build and test a prototype virtual farming app that combines a maize crop model and plot-specific soil tests to gamify the process of learning about the impact of different input combinations (see <http://www.mahindimaster.org/>). We find that farmers quickly understand the marginal productivity of different inputs by experimenting costlessly and risklessly through this app. Specifically, farmers who most need lime to raise the pH of their soils become aware of and respond to this need in this virtual farming environment. We explore potential implications of such active, ICT-based learning tools for input supply chains.

Speaker Bio

Travis J. Lybbert is a Professor at the University of California, Davis in the Agricultural & Resource Economics Department. As an economist, he has published research in applied microeconomics on topics ranging from poverty dynamics, climate change and childhood nutrition to technology adoption, intellectual property and innovation policy. Collaborating with researchers, students, NGOs, governments, and firms, he has lived and worked in India, Haiti, and throughout Sub-Saharan Africa, North Africa and Europe. He has spent time as a visiting researcher in the Intellectual Property Division of the World Trade Organization, in the Economics and Statistics Division of the World Intellectual Property Organization, and in universities in Ghana, Germany and Sweden. He was a Fulbright Scholar in Morocco before earning his M.S. and Ph.D. in Applied Economics from Cornell University in 2004.