How new technologies can raise farm productivity

The Indian government and public-private partnerships are developing and disseminating a dizzying number of innovative, networked solutions, under the Digital India initiative, to increase safety nets and worker productivity. Yet, there are considerable challenges in turning the power of information and other technologies into a farmer-friendly technological revolution for India’s 156 million rural households.

These challenges include: (1) generating reliable, up-to-date, location-specific message content for a diverse agricultural sector to help stratified households shift to productive, knowledge-intensive agriculture as a business − government, private sector, and civil society have big roles to play; (2) spreading digital literacy, by teaching farmers how to choose and use apps, which are, or soon to be, available in regional languages; and (3) monitoring actual use and impact of interventions on users’ lives by understanding adoption and adaptation processes. All of these call for bottom-up, complementary investments in physical, human, and institutional capital, and farmer-friendly e-platforms, while forging ahead with many top-down policy and institutional reforms, for which progress is real and constraints holding back greater success better understood.

Empowering technologies

The McKinsey Global Institute (2014) identified 12 empowering technologies, in three categories, which could create both economic and social value, to help achieve India’s goals of rapid economic growth, greater social inclusion, and better governance: technologies that ‘digitise’ life and work (mobile Internet, cloud technology, automation of knowledge work, digital payments, verifiable digital identity); smart physical systems (Internet of Things, intelligent transportation and distribution, advanced geographic information systems (GIS), next-generation genomics); and technologies for rethinking energy (advanced oil and gas exploration and recovery, renewable energy, advanced energy storage). Analysing selected sets of applications of these technologies across seven sectors (financial services, education, healthcare, agriculture, energy, infrastructure, and government services) the report estimated their economic impact in 2025 to be US$250-500 billion, or about 45% of the total impact. The projected potential impacts of the 12 technologies by 2025 are about US$1 trillion, or 20-30% of India’s incremental GDP (gross domestic product) from 2012 until 2025, in addition to other benefits in the form of financial inclusion, healthcare, education, yield improvement, and farm and off-farm employment. Read more