



Food and Agriculture Organization
of the United Nations

Agricultural services and digital inclusion



SENEGAL

Participants of the Human Centered Design Workshop on "Agricultural Services and Digital Inclusion in Africa", held in Tambacounda in March 2018.
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Digital services and Information and Communication Technologies (ICTs) are revolutionizing agriculture and food production. Providing real-time information and localized content to farmers through ICTs is improving yields and livelihoods, contributing to ending poverty and hunger.

Today remote sensors collect data on soil moisture, temperature, crop growth and livestock feed levels, helping farmers optimize crop management and resource use. ICTs are also used to provide services to farmers and help them engage in food value chains. All this can be achieved through common affordable devices and Internet access.

However, the use of ICTs to end poverty and hunger requires addressing the digital divide between rich and poor people. Just over 20 percent of households in least developed countries have a mobile-broadband subscription, four times less than in developed countries (ITU, 2017). While making up 35 percent of the Internet users, youth in LDCs are less connected than those in developed countries, and women lag further behind than men.

Addressing the digital divide requires extending broadband coverage to rural areas of the developing world by adapting the costs of accessing ICTs for people who live in poverty.

QUICK FACTS

- Over 3.6 billion individuals use the Internet, and even among the poorest 20 percent of the population, 7 out of 10 households have a mobile phone (World Bank, 2016).
- Only 15 percent of households in least developed countries have Internet access at home. Just over 20 percent have a mobile-broadband subscription, four times less than in developed countries (ITU, 2017).
- In Africa, only 22 percent of people use the Internet, compared with 48 percent globally (ITU, 2017).
- ICTs can play a crucial role in bridging this critical information and advisory gap (FAO and ITU, 2017).

What we do

FAO is working to improve digital inclusion and access to information and agricultural services for rural people around the world. The Organization has developed four mobile applications that provide small farmers with up-to-date and high quality information to improve their capacities to take informed decisions about their agricultural activities and food systems. The apps provide relevant content in local languages and allow users to choose preferred formats, including text, video and voice services, to overcome barriers such as illiteracy and reach users with both smartphones and older phones supporting only SMS or MMS functions. FAO is also working to strengthen human capacity, providing ICTs and mobile technologies to deliver information and advisory services in the field, and is partnering with other international organizations, including ITU, to improve infrastructure for better connectivity. FAO is also working with local mobile service providers to ensure that farmers can access these services free of charge.

FAO APPS

Cure and feed your livestock: this app provides real time information on animal diseases control and animal feeding best practices. It helps reduce losses in assets and optimize productivity using locally available resources. The app also allows for the creation of groups of farmers, facilitating exchange of information, good practices and mutual learning on animal feeding, hygiene and disease prevention.

Weather and crop calendar: by combining information on weather forecasts, crop calendars and alert systems, this application helps increase farmers' preparedness to face climate events, providing early warning services and highlighting potential risks.

AgriMarketplace: this app provides the farmers with real time information about the prices of their crops in the nearest or most relevant markets to facilitate trade and access to inputs.

e-Nutrifood: this application provides information on production, conservation and consumption of nutritious foods with the aim of reducing food loss in the very early stages of the supply chain, therefore maximizing the chances to sell the products at good prices.

Benefits of digital inclusion for the rural poor

Digital services and ICTs, in particular mobile apps, can have big impact on reducing poverty and hunger. By increasing rural people's access to a wide range of information, including rural advisory and financial services, market and weather information, they can:

- **Stimulate knowledge exchange and improve access to education.** ICTs increase smallholder access to timely information while reducing the cost of extension visits, enabling more frequent two-way communication between farmers and agents. They can also facilitate dialogue and mutual learning among farmers and the creation of networks of farmers and extension providers.
- **Facilitate risk management in agriculture.** ICTs are used to collect, disseminate and analyse agro-meteorological and climate information. The provision of timely updates on local meteorological conditions and early warning messages on droughts or floods, animal and plant diseases through digital services can help smallholders be ready to face extreme weather events and shocks.
- **Improve access to financial services.** ICTs can help improve rural communities' access to transfers and payments services, credit, savings and insurance by providing financial institutions the means to enter rural markets without the need for setting up high-cost branches, such as mobile banking and mobile payments.

- **Empower rural people,** especially women and youth, and increase their knowledge and capacity to participate in the development of their communities and in decision making processes.
- **Improve access to markets.** Information on prices reflects changing consumption patterns and can be used by farmers to decide what and how much to produce. Easy-to-access information on prices through ICTs helps producers and consumers identify the right moments to sell supplies and buy inputs. ICTs also facilitate e-commerce, an increasingly important mechanism that allows farmers to sell their products and purchase inputs for production across markets.
- **Increase the scale and outreach of social protection programmes.** By digitalizing processes and improving the efficiency of payment mechanisms, ICTs help enhance social services by increasing effectiveness and reducing fragmentation and duplication. ICTs are also making social services closer to the needs of the poor, allowing to better identify and target the beneficiaries.
- **Facilitate linkages among policies and interventions.** ICTs and digital services can improve the delivery of public services, and the implementation of coordinated poverty reduction programmes in marginalized areas. For example, ICTs can be a powerful tool to link early warning systems and social protection management information systems, in to help smallholders deliver a response before potential crises arise.

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