

# Emerging Issues, Priorities and Commitments in e-Agriculture

*Dr. Anton Mangstl, Director of FAO's Knowledge Exchange and Capacity Building Division, explains that only through the commitment of policy makers can we truly realize the benefits of e-Agriculture for the developing world — and in particular, the rural poor.*

**K**nowledge exchange today is like it has never been before. It is true that throughout history, people have used knowledge from family and friends to grow crops or raise livestock. However, today, new digital systems globally exist with the purpose of sharing information on agricultural innovations and markets. The problem is that most of these systems are inaccessible to poor farmers in developing countries.

In this new century, Information and Communication Technologies (ICT) can and should be a key agent for changing people's lives by improving access to information and sharing of knowledge. The international community agrees that rural livelihoods would be greatly enhanced by improvements in areas such as: access to agricultural markets; improved agricultural practices; and information on weather, including extreme events.

Unfortunately, despite all the advances in how the developed world exchanges knowledge today, there still exists a profound digital dilemma. The divide between those who can and cannot access ICT will continue to widen unless efforts are made to ensure that digital technology and information is accessible — as well as affordable — at a local level. As computer technology becomes more sophisticated and often more expensive, developers should ensure compatibility with older hardware still in use. Furthermore, information on the Internet is often not available in local languages, which seriously constrains rural people's access to otherwise relevant information. Approaches need to be developed to overcome these constraints, and the value of local knowledge emphasized in systems focused on farmers and rural communities.

This focus on the interaction between ICT and agriculture has globally become known as **e-Agriculture**. More precisely, e-Agriculture has been defined as an emerging field for enhancing sustainable agriculture and food security through improved processes for knowledge access and exchange using information and communication technologies (ICT).

e-Agriculture continues to advance at a spectacular rate. The Internet, for example, has many advantages as a medium of information and knowledge exchange, but limited access and poor connectivity continue to constrain many individuals, particularly in rural areas in

developing countries. The most successful use of ICT in agriculture development has proved to be mobile telephony, which has been a major breakthrough in communications and as a means of accessing market prices, weather and other advice. It is currently the most accessible ICT available, allowing access to a broad spectrum of people, including marginalized people in remote rural areas. The technology is adaptable, being capable of handling voice and data, and the cost of advanced features continues to fall. The mobile telephone and the hand-held computer are becoming almost indistinguishable. In Tanzania, fishermen are using mobile phones to communicate among themselves regarding weather forecasts, where to get the best catch, local market information, and to coordinate pick-up of catches.

It is clear that the needs and the services required by rural communities will determine how ICT are used, adapted and thus evolve. To enable and empower these communities to improve their livelihoods is likely to involve a mix of traditional communication channels (neighbors/family, local news, announcement boards, etc.), as well as new ones (Internet, mobile phones, etc.). An example of this mix can be seen in Peru, where, due to the region's dialect preference, radio is the most important information source for farmers in the Cajamarca region. The NGO *Soluciones Prácticas*<sup>1</sup> is using a mixture of old and new technologies to reach these farmers, by disseminating important agricultural information through podcast radio programmes, which are saved in digital format, recorded in discs and distributed to the local radio stations.

The focus of e-Agriculture is a major priority for the development community, and is one of the action lines identified in the declaration and plan of action of the World Summit on the Information Society (WSIS).<sup>2</sup> FAO has been assigned the responsibility of organizing activities related to this action line,<sup>3</sup> and in collaboration with 12 major institutions, launched an international platform in 2007, the e-Agriculture Community of Expertise. This is a global initiative to enhance sustainable agricultural development and food security by improving the use of information, communication, and associated technologies in the sector. The Community is led by its members, currently from over 135 countries, spanning a

diverse range of actors: researchers, extensionists, farmers, international development practitioners, as well as information/knowledge intermediaries. As a global initiative, the *e-agriculture.org* platform enables members to exchange opinions, experiences, good practices and resources related to e-Agriculture, and to ensure that the knowledge created is effectively shared and used.

It is through the input and guidance of these Community members, through various online forums and face-to-face events held in 2007, that the priority requirements for strengthening information and knowledge systems for e-Agriculture emerged. These include:

**Market Chains** – The growth of communication networks among actors in the market chain (farmers, transporters, buyers, traders, etc) needs to be supported in order to ensure more equitable, timely, and collaborative access to markets for smallholders.

**Farming/Production** – Investment is needed to repackage technical information for farmers and make it available in local languages. Existing channels for technical information (e.g. extension services, radio stations) should be integrated with new communication technologies that are accessible to farmers. Financial sustainability must be built into all systems.

**Research & Innovation** – Technical information systems in agriculture need to incorporate local knowledge, be integrated into regional and international systems, and maintain links to policy makers. More investment in infrastructure and skilled human resources is needed for such systems. Researchers and extensionists require continued training in how to interact and share knowledge more effectively using the new digital technologies.

So, how can e-Agriculture really have an impact? Leadership has to be shown by national policy makers, who will need to make some commitments. Firstly, a commitment is needed for *investment* in communication infrastructure, which has to focus on financially viable and socially acceptable approaches that are accessible to the rural poor. Secondly, a commitment is needed to transform the existing one-way information flows from “producer” to “user”, so that a wide range of actors, in communities and institutions, can develop *networks* for sharing information and knowledge. Lastly, a commitment should be made to appropriate *incentives* for information sharing, so that it can be developed at all levels. Only through such commitments by policy makers can we truly realize the benefits of e-agriculture for the developing world – and in particular, the rural poor.

## Notes

1. For more information on *Soluciones Prácticas (Practical Action)*, go to: <http://www.solucionespracticas.org.pe/> (Spanish), or <http://practicalaction.org/?id=home> (English).
2. For more information on the World Summit on the Information Society, go to: <http://www.itu.int/wsis/index.html>
3. For more information, read the FAO Report, *Follow-up to C.7 ICT Applications — e-Agriculture World Summit on the Information Society (WSIS)*, <http://www.itu.int/wsis/implementation/docs/consultations/may2007/report-e-agriculture.doc>.

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