Chapter 37
Information Societies to Interactive Societies:
ICT Adoptions in the Agriculture Sector in Sri Lanka

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ABSTRACT

Information is crucial for the development of any sector, including agriculture where information needs to be exchanged with farmers and other stakeholders quickly. Thus, efficient linkages for information sharing are essential. ICT innovations enable the shaping and reshaping of communication and interaction. Many of the technology driven information dissemination methods have been initiated by government, private, non-profit making bodies and independent research groups. This chapter explains the integration of ICT within Sri Lankan agriculture communities and how the focus is changing from information dissemination towards facilitating interactions among the stakeholders. The present status of agriculture information dissemination, including the ICT interventions is given. Prevailing issues and limitations in these ICT-based information dissemination approaches initiated by the different entities is explained, giving due recognition to various factors that have contributed to the adoption of ICT initiatives. The chapter ends outlining the possibilities for future focus on ICT activities in an agriculture information society.

AGRICULTURE INFORMATION SOCIETY

Agriculture plays an important role in the Sri Lankan economy. Agriculture provides a direct source of income for around 31% of the population (Central Bank of Sri Lanka, 2013b). The rural population in Sri Lanka is around 85% (World Bank, 2014), and agriculture is both a direct and indirect source of living for about 65% of the population who live in these rural areas. The contribution of agriculture to the country's gross domestic production is about 10.8% (Central Bank of Sri Lanka, 2013a).

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Right information delivered at the right time is vital for successful farming. Farmers need information regarding crop growth, pest and disease problems, and marketing. A study conducted by De Silva and Ratnadiwakara (2008) reports that information search cost accounts for 11% of the total cost, and nearly 70% of the transaction cost. Information search costs arises from the need to obtain information related to decisions such as the crops to plant, agronomic practices, pest and disease identification and management, harvesting, storage and post-harvest practices. Information systems which provide the required information are described in Table 1. Transaction costs are incurred in transactions related to the purchase of inputs such as seed, fertilizer, and pesticides, and also in the sale of produce. Additional transaction costs are seen when farmers deal with external agents indirectly through Farmer Organizations. In such instances transaction costs arise between farmers and the Farmer Organizations, and also between the Farmer Organizations and the external agencies such as input suppliers or buyers. Appropriate information systems can reduce the transaction costs incurred in such situations.

At present most of the information obtained, and transactions conducted are through traditional mechanisms. Generally in Sri Lanka farmers have been obtaining information through the farm visits of, or the office visits to, extension agents. Thus, if the time spent by the farmers for this activity is taken also into account appropriately the information cost is bound to increase. Furthermore, it is noted that this cost analysis is from the perspective of the farmer. When the time and other associated cost, such as the transport cost, of the extension agent is also taken into account the actual cost of such information would vastly increase. Hence mechanisms which obviate the need for such meetings could reduce the associated information costs. ICT mechanisms are very well positioned for this, thus being able to reduce this information costs. It is not argued that ICT mechanisms are appropriate for all situations. Rather, that it would be appropriate in many situations. The reasons for such an assertion are as follows. Unlike in mass communication, or even group communication methods adopted in agricultural extension, the information provided through ICT mechanisms could be tailored to the particular requirements of the specific farmer, as in the traditional individual extension methods. For example, the requirements for a particular crop, or variety, could be provided. The needed information could be obtained irrespective of the location of the farmer. Transport and time costs too would be almost eliminated. Interactivity, which is not generally used or possible through many other information providing channels, could also be used. For example, Smartphones could be used to take photographs of field problems such as pests or diseases which are sent for possible identification, after which requests for further information, or recommendations for the management of such problems, or the links to the appropriate information which is already available could be sent back to the farmer. The added advantage of this mechanism lies in the fact that if the first level of personnel handling such requests are unable to provide the information that they can channel it to increasingly higher levels of experts, according to the nature of the question, and then respond to the information seeker. Access to such higher levels of expertise would not normally be possible for most information seekers. Even in instances where such access may be possible, the time taken for access to personnel and awaiting their response could possibly lead to a situation where the response is of lesser value due to the associated delays. For example, measures against a pest or disease attack should be taken as quickly as possible. Even a delay of a few days could lead to substantial losses. A further advantage lies in the fact that the proficiency of the limited experts could be more widely utilized to service a larger group of people. Thus, the expertise of officers based in central stations could be utilized from almost any area of the country.

There are many traditional sources of agricultural information as seen in Table 1. Technical advice was traditionally provided by extension agents, including subject matter specialists, attached to various