Redefining the Role of Information Brokers: The Case of Ghana’s Agricultural Innovation System and Information Communication Technologies (ICTs)

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SYNOPSIS

The new information and communication technologies (ICTs) are rapidly evolving and continue to transform the modes and patterns of communication by enabling handling of information, facilitating forms of communication among human actors and electronic systems. This has resulted in increasing potentials of intermediary institutions (information brokers) such as libraries, information centers, the traditional agricultural extension services and other development organizations in keeping with their missions to collect, preserve, link, and make available information to those who need it. This intermediary role is critical considering the importance of knowledge and knowledge management approaches in agricultural innovation systems. According to USAID (2003), understanding the place of ICTs in a developing country agriculture depends on four key concepts: i) that knowledge is an increasingly significant factor of production; ii) that all actors in the agricultural sector are part of an evolving Agricultural Knowledge System (AKS); iii) that ICTs accelerate agricultural development by facilitating knowledge management for AKS members; and iv) that ICTs are essential coordinating mechanisms in global trade.

The study used a multi case study approach in three agricultural districts of Ghana to understand the current modes and patterns of communication that exist between and among local farmers’, agricultural researchers, agricultural extension agents and other intermediary organizations (information brokers). The study is driven by one main research question - what is the current state of communication between and among local farmers, agricultural researchers, agricultural extension officers and other intermediary organizations in Ghana?

The preliminary findings reveal that; i) there is a high production of local knowledge and innovations by farmers from the three study sites; ii) a number of research institutes and universities located within the study sites are also involved in a wide range of global/scientific research relating to agricultural production, processing and marketing; iii) even though the awareness of the potentials of the local innovations by farmers in scientific research and agricultural production is very high among all the actors, very little is being done to take advantage of these; iv) very little has changed over the years in terms of tools and modes of communication being used between and among the actors despite the increasing potentials of the new ICTs; v) a wide range of intermediary organizations (information brokers) have been identified within the system but there is an absence of any formal collaboration among them for effective delivery of services; vi) there is a very weak (if not total absent) linkage between the local knowledge and global/scientific knowledge sources; and vii) there is a maximum
use of local knowledge by the farmers with relatively very high demand for global/scientific information and innovations for improved agricultural production.

**PROBLEM STATEMENT**

The importance of knowledge *generation, exchange and use* in any agricultural innovation system cannot be overemphasized. Key institutions responsible for these processes include agricultural researchers, farmers, agricultural extension services, and other intermediary organizations. Unfortunately, agricultural knowledge generation has predominantly been the responsibility of agricultural research institutes with little attention to the role of local farmers in knowledge generation. On the other hand, agricultural extension service has also been solely responsible for the transfer of technologies from researchers to farmers in most developing countries. While science and technology has heavily influenced Ghana’s agricultural production system for decades now, there is also a huge body of literature on the value of farmers’ local knowledge and innovations in Ghana’s agriculture (Amanor, 1994). Several studies have revealed that the emphasis is being shifted onto sharing of knowledge between technical experts and local people (Coldevin, 2003) instead of the conventional approach of ‘knowledge transfer’. This is being recognized considering the special characteristics of the new ICTs to take knowledge generated from one location to another (Stiglitz, 1999; Colle and Roman, 2003).

Taking into account the rich professional and scientific work that has been going on in these three areas - i) scientific knowledge in agricultural production; ii) local knowledge and farmer innovations; and iii) ICTs for development, one would have expected a synergy for employing ICTs to tap farmers’ local knowledge and innovative activities back into scientific research. Empirically, however, little is known (if any) of how access to ICTs in Ghana has influenced the functions of intermediary organizations that act as the main link between the two sources of knowledge – local and global/scientific.

**GOAL**

The preliminary results of the study being presented through this poster argue that, for a stable and vibrant agricultural innovation system in Ghana, actors need to reconsider ways by which farmers’ local knowledge and innovative activities could be incorporated into scientific research for further innovations – a situation that calls for redefining the role of the intermediary organizations. The main goal of the study therefore was to first understand the current situation, and then explore the role of the new ICTs, and how these technologies could facilitate the functions of agricultural research and extension.
CONCEPTUAL FRAMEWORK

The study draws and builds upon knowledge from the following interrelated concepts and fields;

a) The significant contribution of scientific knowledge and innovations to agriculture (Agrawal, 1995; Andersen, 2007) through transfer of technology model (Rogers, 1962); training and visit model (Tanaka, 2007); and farmer field school model (Simpson and Owen, 2002);

b) The value of farmers’ local knowledge and innovations in agriculture in developing nations (Amanor, 1994; Kamangira, 1997; Bellon, 2001);

c) The unique characteristics of the new ICTs as invaluable resources for agricultural research (ISNAR, 2003), and the driver of knowledge and information society (Okpaku, 2003; Dahlman and Aubert, 2002); and

d) The process of identifying, documenting, and incorporating farmers’ local innovations into scientific research for repackaging for farmers’ use. The theory of absorptive capacity - the capability of any system to acquire, assimilate and exploit external knowledge was proposed by Cohen and Levinthal, (1990) and reconceptualized by Zahra and George (2002). Even though the theory has been successfully explored in firms (Cohen and Levinthal, 1990; Zahra and George, 2002); inter-firm collaborations (Stuart, 1998); and within nations (Liu and White, 1997) to understand the outcome, very little is known of the actual process of absorptive capacity.

Therefore using this theory, the process by which intermediary organizations could facilitate the recognition of the value of varied knowledge sources, their acquisition, repackaging and exchange could be understood.

METHODOLOGY

The study is designed as a qualitative multi-case study using semi-structured interviews and focus group discussions for data collection. Three cases were used based on an existing project, and the types of crops being grown at the three study sites. The sites are also known for i) presence of agricultural research institutes, ii) history of agricultural extension work, and iii) extensive farming activities. Respondents included agricultural researchers from universities and research institutes mandated to work on the crops being produced at the study sites, local farmers, staff of Ministry of Food and Agriculture working at the study sites, and other intermediary institutions mentioned by the above three key stakeholders. The full research process was carried out at the first site and then repeated at the other two sites with minor changes to the instruments depending on the situation on the ground. All the interviews and the focus group discussions were digitally recorded and the audio files transcribed. Secondary documents such as policy documents, institutional websites, newsletters and pamphlets mentioned during the interviews were also included in the data gathering and analysis. Content analysis of the transcripts is being done using content analysis software – Atlas.ti.
References


