Chapter 13
An Agricultural Knowledge Management System for Ethiopia

Dejen Alemu
Addis Ababa University, Ethiopia

Murray Eugene Jennex
https://orcid.org/0000-0003-4332-1886
San Diego State University, USA

Temtim Assfea
Addis Ababa University, Ethiopia

ABSTRACT

Agricultural KMS development involves various participants from different communities of practice (CoPs) who possess their own knowledge. However, the current development of technology neglected the local communities who possess indigenous knowledge, which is the key success factor for agricultural development. This chapter discusses how to integrate scientific and IK in agricultural KMS development and use. An interpretive analysis of primary qualitative data acquired through in-depth, semi-structured interviews and participant observations was carried out following system development action research approach. The research result yields concepts for understanding the process conceptual framework in KMS development and use for knowledge sharing and integration.

INTRODUCTION

Literature is rich with the potential of ICTs as enabler for sustainable socio-economic development (Puri, 2007). The applied technological advancements and developed tools are potentially capable of supporting the agricultural sector and smallholder farmers (Masinde, 2013). However, their use and relevance are still alien to the local rural communities (Masinde, 2013). Agricultural knowledge management systems are, therefore, unsuccessful to provide the full promised potential of ICTs in developing countries (Puri, 2007; Masinde, 2013). Knowledge has also been recently receiving much attention as the basic enabler for the sustainable development and innovation (Sarkhel, 2016). Consequently, the notion of knowledge creation, capturing, and sharing has been repetitively raised by research and development organizations in their efforts to transform the Ethiopian and other developing countries agricultural sector. However, most of the current knowledge management (KM) and KMS development approaches focuses only on scientific knowledge, while overlooking the roles of indigenous knowledge (IK) contained by local communities.

The weak linkages between the scientific and indigenous knowledge are compounded by the historically marginalization of IK from the modern scientific community (World Bank, 2005; UNDP, 2012). Such approaches, thus, correspond and respond poorly to farmers' needs and expectations (UNDP, 2012). Hence, it is arguable that following such approaches of knowledge trend can led to solutions that do not fit the realities in the content. This circumstance has led to growing interest in the importance of IK and incorporation of it with scientific knowledge in KMS development and use in order to fit IT systems to users' needs (Puri, 2007; Masinde, 2013).

It is generally accepted that IK plays a crucial role in the developing countries agricultural production systems. However, IK is no longer reliable on its own which necessitates its integration with scientific knowledge and techniques for the enhancement of the agricultural sector (Masinde, 2013; Songok et al., 2011). In agricultural KMS development, integration of indigenous knowledge with scientific knowledge is a critical success factor (Puri, 2007; Masinde, 2013). This research, thus, focuses on understanding the sharing and construction of integrated diversity of knowledge as their integration would achieve more than either in their separation, whereby the full promised potential of ICTs in agricultural KMS development can be provided. Despite the fact that the integration of scientific and IK can be expected to improve agricultural productivity, yet there is no clearly developed framework demonstrating how the two can be integrated in a KMS development process. Thus, the study aims at contributing in the discourse on how to best integrate scientific and IK in agricultural KMS development and use. Besides to the theoretical understanding, this research also addresses the design tasks faced by practitioners. The solution of

Related Content

Using Grounded Theory to Acquire Knowledge About Critical Success Factors for Conducting Software Process Improvement Implementation Initiatives

Mariano Angel Montoniand Ana Regina Cavalcanti da Rocha (2011). *International Journal of Knowledge Management (pp. 43-60).*

www.irma-international.org/article/using-grounded-theory-acquire-knowledge/56364

How Transformational Leadership Influences the Knowledge-Sharing Process: Mediating the Role of Trust

Ayesha Naeem, Rab Nawaz Lodhiand Aman Ullah (2021). *International Journal of Knowledge Management (pp. 1-22).*

www.irma-international.org/article/how-transformational-leadership-influences-the-knowledge-sharing-process/273188

Intranet and Organizational Learning

Kees Boersmaand Sytze Kingma (2006). *Encyclopedia of Knowledge Management (pp. 305-310).*

www.irma-international.org/chapter/intranet-organizational-learning/16965

Avatars-Based Decision Support System Using Blockchain and Knowledge Sharing for Processes Simulation: A Natural Intelligence Implementation of the Multi-Chain Open Source Platform

Vardan Mkrttchian (2021). *International Journal of Knowledge Management (pp. 1-21).*

www.irma-international.org/article/avatars-based-decision-support-system-using-blockchain-and-knowledge-sharing-for-processes-simulation/269384

ICT in the UAE Educational Setting: The Case in the Schools of Abu Dhabi Emirate

Ahmed Ibrahim (2013). *Information Systems Applications in the Arab Education Sector (pp. 52-62).*

www.irma-international.org/chapter/ict-uae-educational-setting/68669