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

24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/an-agricultural-knowledge-management-system-for-ethiopia/250980

Related Content

Building Customer Communities of Practice for Business Value: Success Factors Profiled from Saba Software and Other Case Studies
Brook Manville (2004). *Knowledge Networks: Innovation Through Communities of Practice (pp. 106-124).*
www.irma-international.org/chapter/building-customer-communities-practice-business/25427

Design and Development of a Parallel Lexical Analyzer for C Language
Swagat Kumar Jena, Satyabrata Dasand Satya Prakash Sahoo (2018). *International Journal of Knowledge-Based Organizations (pp. 68-82).*
www.irma-international.org/article/design-and-development-of-a-parallel-lexical-analyzer-for-c-language/190603

Problem of Plenty: Managing Employee Surplus
Shrihari S. Sohaniand Sunil Maheshwari (2016). *International Journal of Knowledge-Based Organizations (pp. 38-48).*
www.irma-international.org/article/problem-of-plenty/143219

Future of Smart Cities in the Knowledge-based Urban Development and the Role of Award Competitions
Amin A. Shaqrah (2016). *International Journal of Knowledge-Based Organizations (pp. 49-59).*
www.irma-international.org/article/future-of-smart-cities-in-the-knowledge-based-urban-development-and-the-role-of-award-competitions/143220

Intelligent Data Encryption Classifying Complex Security Breaches Using Machine Learning Technique
Somendra Tripathi, Hari Om Sharanand C. S. Raghuvanshi (2023). *Effective AI, Blockchain, and E-Governance Applications for Knowledge Discovery and Management (pp. 143-157).*
www.irma-international.org/chapter/intelligent-data-encryption-classifying-complex-security-breaches-using-machine-learning-technique/331235