Chapter 32
Making Agricultural Learning Accessible:
Examining Gender in the Use of Animations via Mobile Phones

Julia Bello
University of Illinois at Urbana-Champaign, USA

Anne Namatsi Lutomia
University of Illinois at Urbana-Champaign, USA

Eric Abbott
Iowa State University, USA

Robert Mazur
Iowa State University, USA

Sostino Mocumbe
Iowa State University, USA

Barry R. Pittendrigh
Michigan State University, USA

ABSTRACT

Worldwide women play an important role in agriculture but they still are marginalized in extension education programs. Traditionally, male-dominated extension services may contribute to gender bias in terms of access to information, participation, implementation and innovation. Limitations women face in accessing extension programs are related to social and cultural constructions. Recently, mobile phone technology has facilitated the work of extension agents and has provided participants new resources to improve their yields; nevertheless, farmer productivity in Mozambique varies between genders. This paper illustrates how agricultural messages designed as animations, and delivered via smartphones result in learning for farmers better than traditional extension presentations. This chapter focuses on the creation of educational materials by Scientific Animations Without Borders (SAWBO), and then illuminates the gaps and solutions related to gender agricultural learning. Lastly, a case study of Mozambican gender agricultural learning using animations is presented.

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BACKGROUND

The International Telecommunications Union (ITU) estimates Africa leads the world in the growth of mobile subscribers with a growth rate of over 40%, which is twice as high as the global average (ITU, 2015). Mobile phones have impacted various aspects of progress in developing countries; mobile phones allow people to communicate with others, access information, make decisions about buying and selling, and improve learning for those in rural areas. Sanya (2013) in her study of Kenyan rural women discovered that mobile phones empower women and democratize technology. Yet in most cases simply introducing mobile phones does not reduce the digital gap between men and women. This chapter focuses on one specific experiment designed to test whether rural Mozambican women could learn effectively using animations provided via smartphones.

This chapter is important because it attempts to discuss the following issues that face Mozambican agricultural learning: First, in the African agricultural sector there is a shortage of extension agents supporting local farmers linked to the Structural Adjustment Programs of the 1980s. Davis (2008; 2009) observed that only 13% of farmers in Mozambique were reached by extension agents in 1980. The Mozambican Ministry of Agriculture and Food Security (MASA, 2015) confirms that only 8.3% of farmers were reached by extension agents in 2014.

Mobile phones may provide option for reaching more farmers to increase these numbers. In agriculture learning, mobile phones and other new portable devices can provide a solution linking farmers to extension agents and providing other forms of support because mobile technologies are accessible in rural areas, can upload and store both audio and video materials asynchronously when farmers wish, and allow multiple plays in sharing agricultural information. Because of these advantages, mobile phones offer exciting delivery options. Mobile phones may particularly support women in agriculture who are more constrained than their male counterparts from attending trainings, meetings and other activities that involve agriculture learning.

Second, in addition to the shortage of extension agents, there is limited research on the specific extension needs of women farmers (FAO, 2006). Research shows female extension agents as central in reducing problems for female farmers in accessing agricultural extension services (Kondylis, Mueller, Sheriff & Zhu, 2015). Specifically, Kondylis and colleagues explore the impact a female messenger has in dissemination of information and whether this effect accrues to female farmers. Their results demonstrated how adding a female messenger addresses a gender bias in dissemination of sustainable land management (SLM) techniques in Mozambique. The reasons for this were listed as:

1. Increases in access to female farmers results through increases in the supply of extension services;
2. Inclusion of female messengers to the already existing male ones improves outreach farmers;
3. Adding female instructors encourages women to seek advice;
4. Female messengers help provide more relevant information to female farming practices; and
5. In male-headed households female messengers reinforce practices learned by female farmers from their husbands.

Third, the needs of women farmers are not yet fully understood (Trauger, Sachs, Barbercheck, Kiernan, Brasier & Findeis, 2008). Trauger, et al., found that women farmers require specialized kinds of knowledge and information within certain context and through certain means of communication. Additionally, extension models rely on teaching models where farmers' participation is limited. Instead the