Application of Telecommunications Technologies to Agricultural Market Information Systems: A Comparative Analysis of Malawi and Ghana

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ABSTRACT
This review presents a comparison of the potential of offering agricultural market information services that incorporate information and communications technology (ICT) in Ghana and Malawi. A comprehensive analysis was done involving data on economic indicators related to telecommunications services provided by the statistics division of the United Nations, and the current initiatives on agricultural market information systems in the two countries. The review reveals that Malawi needs more work to be done to improve service delivery of its ICT-based market information system projects than Ghana. Main areas for improvement are mobile phone subscriptions by low-income smallholder farmers, Internet access by the same category of farmers, and sustainability of offering the services in question without heavy reliance on governments and international donor agencies. The recommendations drawn from this review do not only apply to Malawi and Ghana but also to other Sub-Saharan African countries.

KEYWORDS
Agricultural Value Chain, Esoko, Information and Communications Technology, Market Liberalisation, Smallholder Farmers, Sub-Saharan Africa, Telecommunications Access, Traders

INTRODUCTION
The agricultural sector of the economy of many developing countries has exploited the recent advances in telecommunications technologies by applying them to market information systems. A Market Information System (MIS) is herein understood as any organised way of collecting, analysing, and distributing marketing information such as prices to stakeholders in a particular type of trade with the intention of helping them to make informed decisions. In the agriculture-related trade, a MIS provides information to stakeholders, such as farmers and traders, in the agricultural value chain. Popular MIS platforms include the radio, newspapers, television, Internet websites, e-mail, and the short message service (SMS) of mobile telephony. Even though these MIS platforms appear to have a great potential of enabling marketing of agricultural goods to be more transparent for more fair trade to all the stakeholders involved, developing countries such as Malawi and Ghana have not yet fully exploited the potential of such platforms due to a myriad of challenges.

This paper reports on the outcome of a review of the current status of the application of telecommunications technologies to agricultural market information systems in Ghana and Malawi on a comparative basis. The focus of the review is on market information systems for domestic agricultural trade; however, some of the reviewed market information systems also involve international agricultural trade.
From the time of political independence up to 1970s, most of the Sub-Saharan African governments had direct control, through state-owned enterprises, over the marketing of agricultural commodities and trading of farm inputs. Economic reforms of between 1980s and 1990s promoted by the World Bank, International Monetary Fund and donor agencies compelled most of the Sub-Saharan African countries to adopt agricultural market liberalisation policies as part of the economic reforms (Kherallah, et al., 2000; Magesa, et al. 2014).

The introduction of the agricultural market liberalisation policies came with a concern that the market environment would become less transparent to poor smallholder farmers and other stakeholders in the agricultural value chain (Tollens, 2006). This lack of market transparency meant that poor farmers were more likely to be exploited by traders due to lack of informed decisions in the bargaining processes. As a result, agricultural market information systems were introduced, initially by donor agencies and later by governments and the private sector, to give smallholder farmers access to current information on commodity prices (USAID, 2013). Such market information gave farmers more bargaining power when selling their commodities.

Ghana is one of the countries in Sub-Saharan Africa where agricultural market information systems were first introduced. One of the first agricultural market information systems established in Ghana is called Esoko, which was initially called TradeNet. Esoko began its operation in 2006 as a donor financed project, but in 2008 it became an independent commercial company (David-West, 2010). Today, Esoko (or Ghana-Esoko) is a large international commercial enterprise operating in many Sub-Saharan African countries such as Malawi, Mozambique and Kenya. Besides Ghana-Esoko, there are other donor-initiated MIS projects in Ghana which are currently operational.

Malawi is another Sub-Saharan African country where the establishment of agricultural market information systems was promoted by international donor agencies. One of such agricultural MIS initiatives in Malawi is a radio-based agricultural MIS funded by Agriculture Commodity Exchange (ACE) for Africa (DAES, 2013). Another agricultural MIS project in Malawi is financed by Agribusiness Systems International and is based on the short message service (SMS) of mobile telephony (ASI, 2015; DAES, 2013). Malawi has many other donor-supported agricultural MIS initiatives that are currently in operation.

A comparison of the potential of incorporating ICT in agricultural MIS initiatives in Ghana and Malawi done in this review indicates that both Ghana and Malawi still do not have adequate ICT facilities for them to fully utilise the benefits which come with ICT-based MIS initiatives. However, Ghana has a higher potential of providing such services than Malawi due to having higher mobile phone subscription rates and Internet user rates. The review made use of the data on economic indicators related to telecommunications services provided by the statistics division of the United Nations (UNSD, 2015). Recommendations are presented at the end of this paper as the final product of the review; and these focus mainly on the need to provide more ICT facilities to support MIS initiatives, and increase private sector participation for provision of self-financing agricultural MIS projects which are economically sustainable.
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