HArnessing Multi-Stakeholders Involvement in Result Based Aquaculture (HASIRA) Extension Service in Tanzania

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ABSTRACT

The wide spread of mobile phones to many actors of aquaculture value chain have brought a new opportunity for enhancing access to aquaculture advisory and extension service in developing countries. Despite the potential shown by mobile phones in provision of other social economic services to both rural and urban communities, there are few studies presented how these tools facilitate access to aquaculture extension service among aquaculture farmers in the country, Tanzania. This article assesses how mobile phones can facilitate the provision of aquaculture extension service among aquaculture farmers in Tanzania. The article establishes an understanding on how aquaculture extension service is provided to aquaculture farmers through mobile phones using UshauriKilimo. UshauriKilimo is an agro-advisory and extension system which is now in use for more than two years. The article contributes to the existing body of knowledge with respect to ICT mediated aquaculture extension.

KEYWORDS
Advisory, Aquaculture, Extension Service, Mobile Phones, UshauriKilimo Mobile App, UshauriKilimo,

1. INTRODUCTION

Aquaculture is practiced in most African countries (Sobo, 2006). In Tanzania the agriculture sector (which includes aquaculture) is known for employing more than 70% of the total population; contributing about 25% to the Gross Domestic Product (GDP); bringing about 66% of the foreign exchange; and providing raw materials for local industries (URT, 2008). The sector also feeds the nation and is the source of livelihoods to most rural communities in the country. Despite the great potential of agriculture in Tanzania, the sector is characterised by low productivity; under-utilization of the available land, water and human resources; lack of agricultural support services; weak research-extension-farmer linkages among others (URT, 2008; Akinbile & Alabi, 2011). The situation has to a great extent limited the agricultural transformation strategies which have been implemented over the years. This has equally resulted into high poverty levels among rural and farming communities in the country.

1.1. Agricultural Extension and Advisory Services in Tanzania

The history of formal agricultural extension and advisory services can be traced back to the year 1904 when the first crop (tea) was experimented at the Amani Agricultural Research Station in Tanga (Carr et al, 1992). Livestock and food crops research which aimed at improving production started in the year 1905 and 1950s respectively in various agricultural research institutes including Mpwdwpa,

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Lyamungu, Ukiriguru, Ilonga and Naliendele and the Tropical Pesticides Research Institute which were established before 1950 and were involved in developing various research outputs needed for improving agricultural production too. Before the end of the 20th century, Tanzania had a chain of governmental and private agricultural research institutes established throughout the seven agricultural ecological zones. To date, these research institutes generate knowledge, innovations, new technologies and animal and plant husbandry practices which must be disseminated to farmers who use such developments for transforming the agricultural sector thus improving their livelihoods.

For enhancing accessibility of agricultural advisory and extension services in Tanzania, adequate number of agricultural extension staff is needed to link agricultural research and practice. However, studies (Shetto, 2008; Kyaruzi et al., 2010; URT, 2011) mention that agricultural advisory and extension services are inefficient due to a number of factors including the shortage of extension workers. This has limited the accessibility and usage of generated agricultural knowledge needed for transforming the agricultural sector and livelihoods of farmers and others whose who directly rely on agriculture for earning a living.

The current advancements in Information and Communication Technologies (ICTs) have brought a new opportunity for enhancing access to agricultural advisory and extension services. Empirical evidence from India, South Africa and Ghana has shown how such technologies have enhanced access to and usage of agricultural advisory and extension services thus transforming the agricultural sector (World Bank, 2011). However, ICTs are known to differ in terms of interactivity that they are categorized into traditional (less interactive) and modern (more interactive) ICTs. Mtega (2012) mentions the radio, television and the telephony to be the traditional ICTs most used in Tanzania. Traditional ICTs are less interactive and in most cases, they rarely enhance two-way traffic in a communication processes. Also, when feedback is made possible it always delays a lot thus making them not suitable for the provision of agricultural advisory and extension services. Moreover, dissemination of agricultural information to farmers through traditional ICTs is always top-down in nature. Cole and Fernando (2012) describe top-down agricultural information dissemination to result in an inadequate diagnosis of the difficulties being faced by farmers as the channel used does not facilitate a feedback mechanism. Modern ICTs used in Tanzania are mentioned by Sife et al. (2007) to include Internet, mobile phones and computers. Modern ICTs are the more interactive ICTs as they allow more collaboration. Studies (Mtega, 2012; Sife, 2010; Mtega & Malekani, 2009; Sanga et al., 2013a; Sanga et al., 2013b; Sanga et al., 2014a; Sanga et al., 2014b) in Tanzania show that among the modern ICTs mobile phones are the mostly used ones.

According to Tanzania Communication Authority (TCRA) report of 2017, the mobile phone infrastructure and the subscriptions of mobile phone services has grown tremendously over the past ten years. This has created an opportunity to use mobile phone services among most of Tanzanian from both urban and rural areas. Moreover, TCRA (2017) shows that there are more than 40 million mobile phone subscribers thus making mobile phone services more affordable to the majority in the country (TCRA, 2017). Hence, there is need to investigate how mobile phones facilitate access to agricultural advisory and extension services among aquaculture farmers in the country.

According to Ragasa et al. (2016), there are more than 8000 extension agents while the demand is to have more than 20,000 extension agents in Tanzania. Agricultural advisory and extension services in Tanzania are ineffective because most of the generated knowledge and skills aimed to improve agricultural production do not reach to farmers (Mkapa, 2005; URT, 2008). In most cases usage of most agricultural innovations and technologies developed in agriculture universities and research institute is limited due to locations where such developments were piloted, leaving rural areas who are involved in agricultural activities, limited number of agricultural extension staff (URT, 2011a) and the less interactivity of the previously used ICTs has been mentioned to be among the factors limiting the provision of agricultural advisory and extension services to the majority of farmers in Tanzania (Barakabitze et al., 2015).
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