



Agricultural Information Sources and their Effect on Farm productivity in Kenya

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Agriculture extension is an important tool for disseminating information to farmers, and has been highlighted as critical agent for transforming subsistence farming to modern and commercial agriculture, thereby improving household food security, incomes, and reducing poverty. Although delivery of extension services was predominantly the government's role, current pluralistic system comprises of multiple sources of information. Despite this, we find that extension services are still limited in most parts of the country, and that farmers' preference for any information source is significantly influenced by various socio-economic factors. Moreover, although the public extension system has overly been criticized for its inefficiency, this is dependent on the enterprise in question. Therefore, increased investment in extension and strengthening the modalities for coordination between public and private extension service providers will improve the efficiency and quality of extension service.

BACKGROUND

The changing climatic conditions coupled with technological development have resulted in a growing demand for agricultural information. Farmers need a wide variety of information on appropriate seeds, crop and animal diseases, input and output prices, weather related information, market information, pre and post-harvest management technologies, among others. If properly utilized, agricultural information can significantly contribute towards overall economic development through improved productivity and incomes. Nevertheless, achieving the desired objective for agricultural information can only be realized if farmers have adequate access and know how to apply these innovations to their potential. Evidence shows that although researchers have developed many technologies, their adoption remains low, due to lack of or inadequate awareness exacerbated by a wide communication gap between farmers and researchers among other factors.

For decades, agricultural extension has been used as a tool for disseminating agricultural information in Kenya. The importance of agricultural extension has further been underscored in the Agriculture Sector Development Strategy (ASDS) as a critical agent needed to transform subsistence farming into a modern and commercial agriculture to promote household food security, improve income and reduce poverty (RoK, 2010). However, prolonged underinvestment in extension services has led to low coverage. To a larger extent this is a result of decline in staffing, and facilitation due to freeze of public employment and reduced funding for operations and maintenance. For instance, the ratio of public frontline extension worker to farmers is about 1:1000 compared to the desired level 1:400 (NASEP, 2012), making it difficult to reach many farmers.

Renewed emphasis on pluralistic extension recognizes the existence of many actors beyond the traditional public extension systems. Despite this, access to extension services is still limited in most parts of the country. Moreover, it is not clear as to whether the new actors are more efficient than the traditional public system

Objectives

The study examined the level at which farmers are accessing extension information from the available sources, factors influencing farmers' preference of particular information sources, and the effect of these choices on farm productivity.

Data and Methods

The study uses a cross-sectional household survey data collected in 2014 by Tegemeo Institute in collaboration with Michigan State University (MSU) under the Tegemeo Agricultural Policy Research and Analysis (TAPRA) II project. A total of 6,512 households, drawn from 38 out of the 47 Counties in Kenya across seven agro-ecological zones (Coastal Lowlands, Lower Highlands, Lower midland 1-2 and 3-6, Upper Highland, Upper Midland 0-1 and 2-6) were interviewed using semi-structured questionnaires. Both descriptive and econometric techniques were used for analysis.

Key findings

Despite the existence of many information sources, a relatively small proportion of farmers (21%) are accessing agricultural information in Kenya. This is a key constraint to

improving production considering a large number of farmers that require extension information.

In terms of information sources, the results show that there are three major sources of agricultural information available for farmers in Kenya. These are public (government agents and public research institutions), private for-profit (private firms, input dealers among others) and private nonprofit (Non-governmental organizations, Farmer based organizations, individual farmers, faith based organizations). However, farmers' preference for any of the sources is significantly influenced by a number of socio-economic characteristics like age, group membership, household size, land size and ownership of a mobile phone.

In addition, public extension service providers (ESPs) still remains the most utilized source of information by majority of smallholder farmers (Figure 1). However, their increasing trend of operation among well-endowed households; a trend that is common with private for-profit service providers, is a great risk to agricultural development since majority of smallholder farmers are low income earners. While private nonprofit extension is slightly well distributed across households in all income groups, their scope is limited and hence they are not able to reach all farmers (Figure 2).

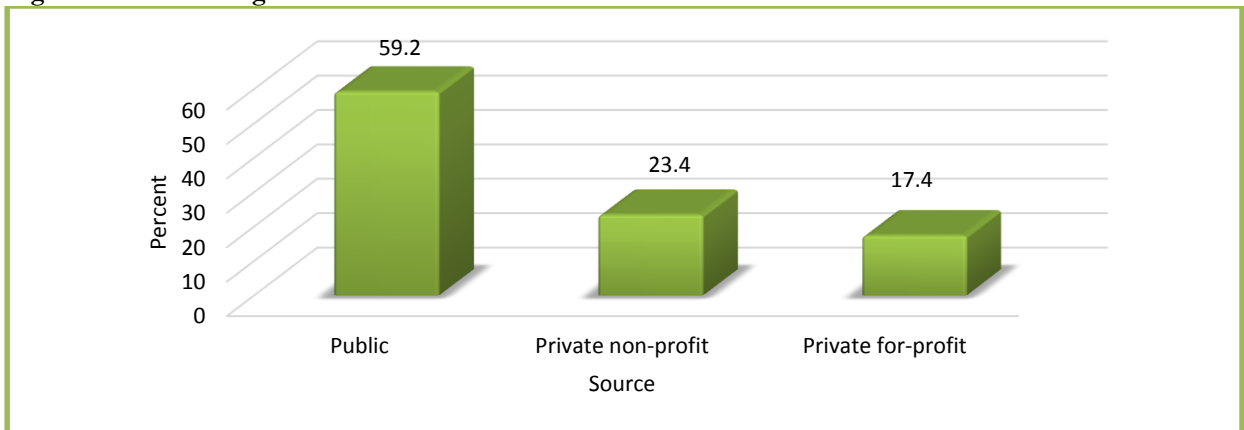
Gender differential in access to agricultural extension is evident, yet

the role of women in agriculture cannot be undermined. In order to increase productivity, it is necessary to disseminate gender sensitive technologies and interventions to enhance adoption.

Although the public extension system has overly been criticized for its inefficiency, this basically depends on the enterprise in question. For instance, while no significant difference is observed in maize productivity among the service providers milk productivity under private for-profit is significantly higher compared to public or private nonprofit ESPs (Figure 3). It is therefore necessary to strengthen coordination between the different ESPs to enhance productivity in all the enterprises.

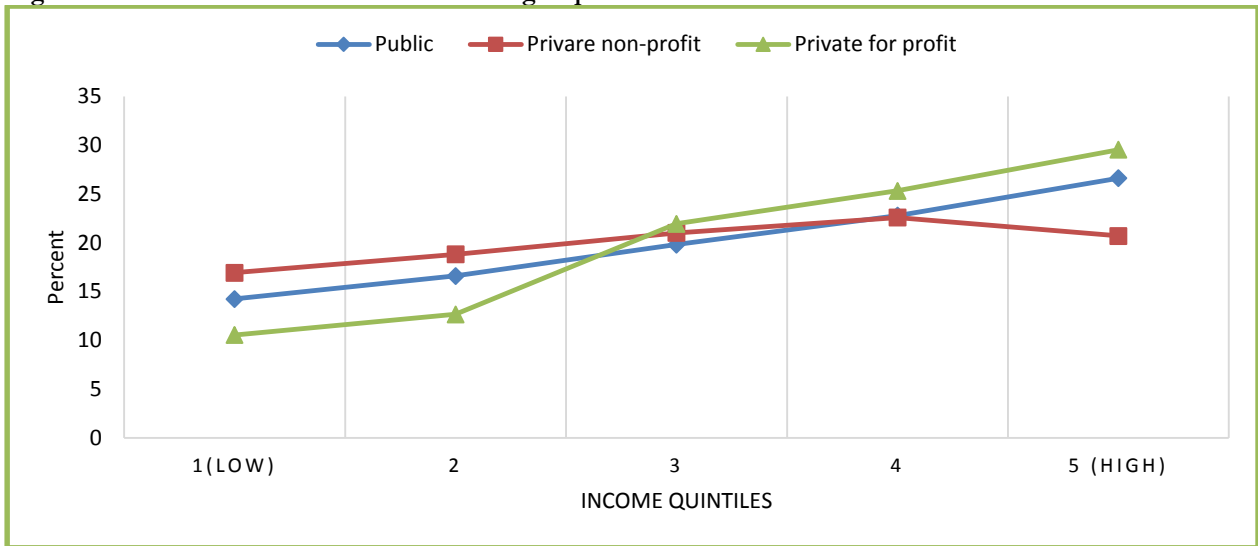
Farm visits are the most common communication pathway used by majority of the public and private for-profit ESPs while private for nonprofit mostly utilizes the group approach. With the low number of extension officers in the public sector, use of group meetings would provide the most efficient platform to disseminate agricultural information. Moreover, use of mobile phones provides a convenient platform for disseminating agricultural information to farmers, considering more than 85% own at least one mobile phone.

Figure 1: Sources of Agricultural Information



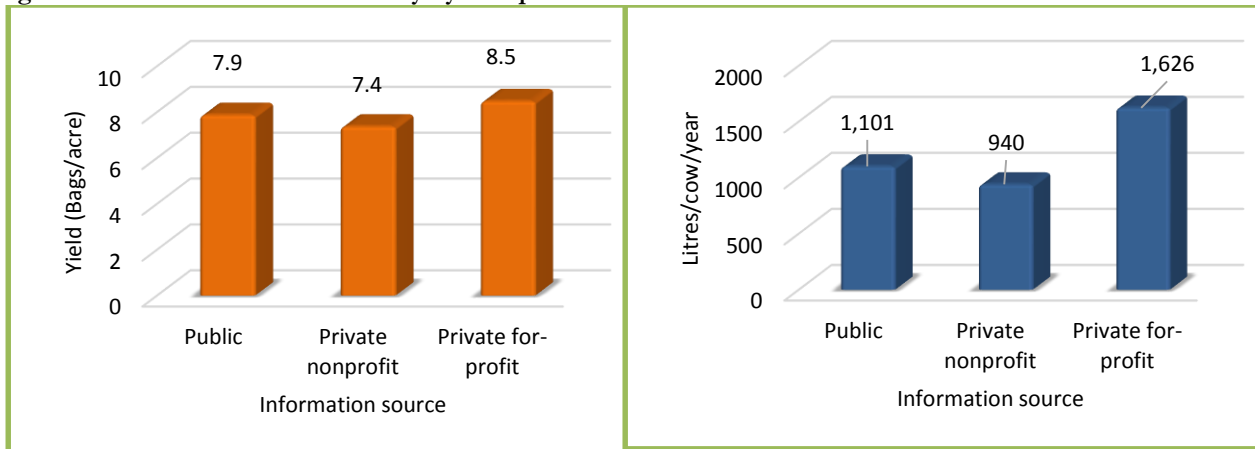
Source: 2014 TAPRA II household survey data

Figure 2: Distribution of ESPs across income groups



Source: 2014 TAPRA II household survey data

Figure 3: Maize and Milk Productivity by receipt of extension service



Source: 2014 TAPRA II household survey data

Policy Implications

Increased investment in extension is necessary to achieve the desired objective of transforming smallholder subsistence farming into a modern commercial agriculture, which will promote household food security, improve income and reduce poverty. For instance, there is need to increase the number of qualified extension officers in both private and public sectors and providing them with the necessary support to increase coverage. It is also important to understand the nature of the target farmers in terms of their socioeconomic characteristics and the specific needs before developing the extension content.

With the existence of many actors, there is need to enforce proper regulation mechanism of the ESPs to ensure all farmers are reached without bias. It is also necessary to strengthen the coordination between public and private ESPs to enhance efficiency in delivery of extension services. Effective dissemination of new and existing technologies requires a combination of various appropriate dissemination channels that are gender sensitive. Integration of ICT, especially the use of mobile phones in extension is a potential disseminating channel which when effectively used, can create a significant impact. Other ICT platforms like internet can also be used to improve delivery of agricultural information. However, adoption of such technologies requires adequate capacity building for both extension staff and the end users (farmers)

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