

REVIEW OF AGRICULTURAL EXTENSION AND ADVISORY SERVICES IN SUB-SAHARAN AFRICAN COUNTRIES. PROGRESS WITH PRIVATE SECTOR INVOLVEMENT

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Abstract. Agricultural extension and advisory services in Africa have significant impact on food security as well as economic and social development. Recent moves towards a pluralistic delivery system, facilitated by the emergence of private sector-led initiatives in many countries are the subject of policy and academic discourse. This study used an adapted, fit-for-purpose market systems development framework to review available research in extension and advisory services in selected sub-Saharan African countries. Using a literature survey methodology, we report evidence of multiple actors in extension delivery, findings that point towards evolution towards mixed delivery as well as objectives. While there is significant uptake of cost-recovery approaches among commercially oriented farmers, many smallholder farmers still depended on donor-funded services. We developed and utilized a market systems model for analyzing the performance of private sector agricultural extension and advisory service. Our paper adds to existing knowledge and models, through incorporating a market systems development framework and extends the often-used innovation and willingness to pay approach. The result highlights a need for the merger of both public and private sector objectives in achieving rural development outcomes.

Keywords: approaches, extension services, market systems, pluralistic, rural development, smallholder farmer

INTRODUCTION

Agricultural extension and advisory services aim to increase productivity while simultaneously meeting social and economic development objectives (USAID, 2017). They also address the issue of sustainability in production systems and improved quality of life and rural livelihoods. In many African countries, extension and advisory services have evolved and comprise public, non-profit and private sector players who constitute an important part of the agricultural value chain. While there are many agricultural development initiatives experimenting with various forms of private extension and advisory services, the rationale for private extension service hinges on the overwhelmed public agricultural extension sector, inadequate funding and policy focus. The crucial role of extension advisory services in the growth and development of the agricultural sector is duly recognized (Anaeto et al., 2012), and has remained a key strategy in the rural development efforts in many developing countries. Limited access to extension and advisory services remains a threat to the sustainability of smallholder farmers (Mapiye et al., 2021), who require transformation into viable entities and constitute the majority in rural areas (Chapota, 2020).

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There are inherent challenges within the public extension delivery landscape in Africa, such as the competence of extension agents (Davis and Terblanche, 2016), dominance of male extension workers (Msuya et al., 2017), inadequate resources and bureaucracy (Raidimi and Kabiti, 2017), including poor logistics support and inadequate linkages between research and extension (Amungwa, 2018). Unfortunately, a simple solution or the acclaimed silver bullet does not exist for identified problems within the extension sector (Abdul-Raheem, 2014). Hence, many have opined that there is no single methodology suited for all purposes, which prompted Davis and Terblanche (2016) to advocate for the development of location-specific approaches. This best-fit approach recognizes the difference in models, capacities as well as the various institutional sub-sets within any innovation system. Stakeholders in the system comprise the public, private, development and community groups who are all interested in improving the profitability of agricultural business and increasing output volumes. Additional interests include securing greater market share, achieving objectives such as enhancing the quality of life and agricultural development.

Evidence from many countries show that agricultural extension delivery was long considered a pro-poor public investment, necessary for rural development and economic growth, including large-scale poverty alleviation. However, in terms of current approaches and functions, different studies including Abdul-Raheem and Worth (2016) have found that public sector extension in sub-Sahara Africa is generally undergoing transformation. This includes decentralization and direct outsourcing of extension services in the context of adopting a pluralistic system of extension delivery. Sanga et al. (2014) identified six extension models commonly applied in the region, though pluralism was the main context which encompassed public, private and NGO-based services, while many of the clientele were small and medium-scale farmers. Considering that smallholder farmers comprise an overwhelming majority in the farming sector, Raidimi and Kabiti (2017) averred that there are potential benefits to be gained by combining the strength and synergies of a pluralistic multi-agency system.

Various factors are responsible for the change of approach in extension delivery and include economic liberalization, privatization and decentralization. Liberalization of the sector has bred different actors in

extension delivery such as the public agencies, private service providers, producer organizations and non-governmental organizations. Pluralistic and demand-driven extension service is growing in Africa (Masangano and Mthinda, 2012), and an urgent need was identified by national governments to encourage the participation of the private sector in agricultural extension and advisory service delivery. Though different national authorities applied various strategies to address multi-faceted poverty and food insecurity, many of these strategies did not yield positive results.

In many African countries, private sector players had over the years invested large funds in the agriculture sector. Service provision was no longer determined by government agencies but by the demands of individual users. Heemskerk et al. (2008) described this as a reversal in the demand chain, from originating in the public sector to becoming client or user-driven. With increasing investments from private players, the demand for client-responsive and market-oriented advisory services grew exponentially. This growth in demand was perceived as an opportunity for improving on the quality and efficacy in provision of agricultural advisory services. Private sector involvement therefore followed an increased recognition that private sector agricultural service providers, and other stakeholders had a role to play in the publicly supported agricultural advisory services system.

The effective utilization of extension and advisory services for agricultural development undoubtedly required a change of approach from the public models which were widely acknowledged as outmoded (Bitzer et al., 2016; Nambiro et al., 2010). These public sector models were often used as a sole strategy and failed to achieve effective or competitive agricultural development. This became more difficult when the goal shifted to connecting farmers with local and international markets, and also be a component of an inclusive rural growth strategy. Therein lay the rationale for the introduction and subsequent growth of private sector-driven extension and advisory services in many African countries.

A market approach to extension and advisory services requires different funding modes, as well as the appraisal of its impact. Following the growing number of private sector-led agricultural extension and advisory services in Africa, it has become imperative to embrace a market system perspective in the review of

such services. Earlier reviews used the agricultural innovation system (AIS) perspective which Touzard et al. (2014) averred to be limited in focus.

Our paper addresses this gap by reviewing agricultural extension and advisory services in selected African countries using a market system approach. This perspective is important due to the increasing participation of private sector players, and the sparse information available from the review of existing pluralistic systems of extension utilizing a market systems view. The aim of this research therefore was to develop an improved market system framework, which could be applied to ascertain how the mix of public and private sector agricultural extension and advisory services has performed in sub-Saharan Africa. The paper explored the growth of private sector-led extension and advisory services in Africa, analyzed how the institutional mix of service providers has altered the extension landscape, and appraised possible means for the private sector extension and advisory service to contribute towards improving access to smallholder farmers.

The rest of the paper is structured into five sections as follows: a section providing additional context, followed by an outline of the methodology adopted for this study. Section 3 provides findings from different African countries. These findings are then discussed in the next section, and the implications of the findings with some recommendations are presented in the concluding section.

Existing models of extension delivery and extension policy framework

In the literature, models of extension services are defined by the approach of delivery (supply or demand, top-down or participatory), the providers (public or private) and the funding sources (public, private or development agency). A combination of extension models is common in many countries, with different models changing as a result of both emerging opportunities and new realities. Nkonya (2009) admitted that the private provision of extension services is poorly regulated, and also limited to specific areas while remaining unaffordable to poor farmers. Notwithstanding this constraint, the growth of the private extension model is facilitated by a drive to promote high-value crops and the vacuum created by a weak traditional public service model.

Many challenges affect agriculture on both global and local scales which include climate change effects,

issues related to market liberalization and access. Improving extension delivery as pointed out in the World-wide Extension Study (cited in Abdul-Raheem and Worth, 2016) will fast-track agricultural development for rural growth, and the Food and Agriculture Organization (FAO, 1998) of the United Nations published a framework to guide extension policy formulation. The framework provides guidance and criteria for estimating how the relevant approach may be adopted within a particular context. It shows specific pathways through which an identified objective for extension delivery may be achieved and applied in any number of settings. Adoption of this framework also enables comparison among various approaches applied by both the public and private sector players. It also assists with designing appropriate extension approaches which could be beneficial to the smallholder sector, among the millions of rural smallholder farmers who constitute the bedrock of agriculture in sub-Saharan African countries. The long-term solution to poverty reduction requires involving a greater part of the rural poor in economic activities generating sufficient income. Sustained growth in agriculture has been consistently shown to be more beneficial to the poor than growth in other sectors (African Development Bank, 2017), and not just because of the increase in the number of persons and area of land under cultivation but thanks to increased productivity (UNESCAP, 2016). It is on this basis that a market systems framework for extension and advisory service becomes increasingly useful.

A market systems approach in extension and advisory services

The application of market-driven principles found in key economic sectors has gained traction within the development environment, witnessing significant growth both in academic interest and practical application. This is evident through increased donor discourse, growing adoption by international organizations, expansion of resources and activities related to market development, application in additional sectors such as health and education, as well as a growing body of knowledge generating evidence to guide practice. The progress achieved with market-based approaches come with challenges as it contests conventional thinking around the provision of assistance to disadvantaged groups such as smallholder farmers and others trapped in poverty (Springfield Centre, 2014).

There is a need to explore the applicability of market systems approach in this context while adding to the knowledge base for increasing the effectiveness and inclusivity of the approach for a myriad of poor producers, especially in low-income and developing countries. Though market systems approach is a continual work in progress, the rationale for the development of this system stems from an appreciation of its poverty-reduction characteristics. Market systems development aims to improve the lives of the poor through transforming how the exchange mechanism works around them. It provides a rigorous approach to understanding and intervening in markets for improved performance that significantly and sustainably benefits the poor. Interventions in market systems generally leverage the actions of key market players which support comprehensive and far-reaching system changes.

The proposed market system intervention may be examined using a market systems development framework, which highlights the goal, intended outcomes and applicable strategy in which the intervention is rooted (Springfield Centre, 2014). The strategic framework enables proposed interventions to analyze market systems where; there is potential to benefit a significant number of the target group—usually smallholder farmers, significant prospects for beneficial changes that favor the group, and creating lasting positive change is very feasible. Regarding implementation, the framework identifies key steps necessary to meet the requirements, and includes a definition of the poverty objective, identification of opportunities to benefit the target group, assessing the feasibility of inducing systems-level changes and establishment of the main parameters of the proposed program. Delivery of extension services by private contractors is an established practice, used to achieve project objectives (Ngugi et al., 2014), and the expected outputs are normally captured against indicator benchmarks negotiated and agreed upon between the service providers and participating farmers.

Extension services are evolving towards a pluralistic system based on multiple delivery mechanisms as well as different sources of funding, both public and private (Davis and Frantzel, 2018). The changes in content and delivery models are clear signs of the evolving nature of agricultural extension that is driven by evidence of the obsolescent nature of existing models, with the emergence of novel paradigms supported by improved knowledge and tools (Norton and Alwang,

2020). In many developing countries, NGOs and private agribusiness input and information suppliers have added to the financial support for private extension and to the types of extension methods employed. Donor-funded projects in developing countries have clearly helped to fund public extension efforts for decades. Bitzer et al. (2016) outlined that the degree and institutionalization of pluralistic extension systems vary greatly by country, with most developing countries moving in this direction.

Need for the review and a guiding framework

The approach and funding for extension delivery as well as its impact on socio-economic development in Africa remain the subject of periodic reviews. These reviews have either explored the methods used by facilitators as well as their source of funding (Saliu et al., 2009), or their impact notwithstanding the difficulties in establishing a clear relationship between the supply of extension services and socio-economic development (Mgalama, 2014). Many impact evaluations of agricultural extension have reported positive outcomes (Taye, 2013), which are not in line with estimated productivity growth. However, Kidane and Worth (2017) opined that the review and evaluation of both planned and implemented extension systems are necessary to identify their strengths and weaknesses. Many reviews of extant pluralistic extension systems found in the literature have not utilized a market systems approach. A few have based their reviews on specific defining approaches in extension development such as the extension objective, approach, scale of reach, scope of services or cost to farmers (Ijatuyi and Mokone, 2018; Wellard et al., 2013). Others have examined the role of institutions and partnerships (Davis and Terblanche, 2016; Raidimi and Kabiti, 2017). There is, therefore, a gap in the extension and advisory review literature, and this study fills that gap by utilizing an adaptation combining the Strategic Framework for Market Systems Development (Springfield Centre, 2014) and the Approaches and Function Framework (FAO, 1998). Through merging these frameworks, this study provides a guide for the analysis of relevant issues related to the development of a pluralistic agricultural extension and advisory service. The adapted framework guiding this review is shown in Table 1 and can be utilized for other potential reviews of pluralistic extension and advisory services.

Based on the guiding framework, a description of the existing situation is followed by an identification of the

Table 1. Review framework for pluralistic extension and advisory services

A: Initial step	B: Does the extension and advisory service apply to any, some, or all of these?	C: Do the following specifically relate to the system?	D: Final analysis
Provide a general description of the existing extension and advisory service	<ul style="list-style-type: none"> • Is commodity specific or targets the whole farm system • It targets a specific category of farmers or all households • It enforces a pre-determined solution or assists in general problem-solving • Is tailored towards technology transfer or human resource development • It covers a large area targeting individuals or identified groups • It provides information only or material inputs also • It requires clients to pay or provides a free service • Is Top-down or Bottom-up 	<ul style="list-style-type: none"> • It improves the way market systems function for poor women and men, so they benefit from economic growth or the use of basic services • It works more efficiently and inclusively while being responsive to the needs of poor women and men • It catalyzes positive and sustained changes in the behavior of key market players 	Collate all the information and discuss the findings in relation to current developments in the agricultural extension and advisory services sector
Context	Approaches and functions	Market system	Review

Source: researcher's adaptation from FAO (1998) and Springfield Centre (2014).

relevant approaches and functions, leading to an analysis of the market system. An in-depth analysis of the market system elucidates the potential of the service to meet the needs of diverse groups of agricultural producers, especially the millions of poor smallholder farmers who constitute the majority in many countries of sub-Sahara Africa. These analyses and other information are then used to compile a comprehensive review of the extension and advisory services sector in a particular context.

METHODOLOGY

The study adopted a literature review methodology, by collecting and synthesizing qualitative data from previous research in extension and advisory services in African countries. Information from existing publications such as journals, books and reports from government or non-governmental agencies which reported on private sector provision of agricultural extension service in African countries were compiled. The following countries, South Africa, Zimbabwe, Kenya, Ethiopia, Uganda, Nigeria, Burkina Faso, Cameroon and DR Congo, were purposively selected and drawn from different regions in sub-Sahara Africa based on the size of their economies and population dynamics. The regions were Southern Africa, East Africa, West Africa and Central Africa. By integrating the findings and perspectives from various empirical studies, the study addressed key issues

using the combined knowledge generated from existing literature. Snyder (2019) considered this as an excellent way of synthesizing research findings to show evidence.

The required information was collected through a search of various online databases using Google, Google Scholar, EBSCO-Host, African Journals Online, university repositories as well as reports from research institutions and projects (including USAID, DFID, AfDB, IFPRI). The findings from the literature review were drawn from various country reports based on the conclusions reached from these studies. In developing the market systems framework, key themes in the Approaches in Agricultural Extension Development (FAO, 1998) and Market Systems Development (Springfield Centre, 2014) models were used to develop an analytic framework, which was then utilized to scrutinize and discuss the findings.

FINDINGS

South Africa

Liebenberg (2015) and Zwane (2016) outlined that the evidence of the success of private extension services sector among commercial farmers has sparked debate around the feasibility of private extension services in a country where the majority of farmers are smallholders. They contended that private or pluralistic forms of extension and advisory services are not yet popular,

especially among the poorer smallholders. This is because private extension services are only provided to farmers based on their willingness to pay and / or participation in specific value chains or commodities. Raidimi and Kabiti (2017) reported that public extension is limited by inadequate resources and many more constraints, hence the need to encourage the participation of the private sector. Following the recent policy of land redistribution in South Africa, many formerly displaced groups have been supported to access agricultural land. According to Loki et al. (2019) who conducted a study across seven districts in two provinces, they found that 64% of land reform beneficiaries were in favor of a privatized extension service and were willing to pay for private extension services.

Many of the current private-sector extension and advisory services in South Africa for smallholder farmers show the involvement of donor agencies in funded agricultural projects. Baiyegunhi et al. (2019) assessed the impact of a private sector extension service within a local community in Msinga. Their finding suggests that the net farm incomes of participants were positively impacted. The program run by a non-profit organization was however funded by donor agencies which hardly qualifies as market-driven service. Lyne et al. (2018) also evaluated a donor-funded private extension service. Their results show that the outsourced extension service made a significant and substantial contribution to household crop income and net income. Their analyses of the financial cost and benefit of the extension service at a district level suggested an annual net incremental benefit of R5 million (US\$0.4 million), and a 95% probability that returns to the service exceeded 20%. These results suggest that there is good reason for donors to continue funding effective extension services to small farmers in areas where high agricultural potential exists.

Kenya

Birch (2018) noted that the proportion of Kenyan farmers who received extension advice was low. In a survey conducted across 38 of the 47 counties, only 21 percent of sampled households accessed extension services. Out of this number, 81 percent of the beneficiaries of extension and advisory services were in male-headed households while 19 percent were from female-headed households. Their finding suggests a skewed service in favor of male farmers in the country. Most farmers (approximately 59 percent) used the public extension

system and these extension and advisory services, whether from the public or private sector, tended to favor the wealthy farmers as reported by Wanyama et al. (2016). Agricultural extension and advisory services in Kenya are characterized by a multiplicity of players according to Chimoita (2014), while the linkages among these actors were found to be weak with each actor driven by own motives and interests, some of which are conflicting. Bebe et al. (2016) reported that extension and advisory services have moved towards a pluralistic system that is increasingly market-driven. This, in their view, was characterized by public extension and advisory services at county level being provided by a diversity of private sector actors. These discrepancies show how the demands of medium-scale farms were different from those of smallholder farmers (Kathoya and van der Lee, 2016). Furthermore, these commercial farmers are assumed to have the necessary resources and were willing to more readily adopt innovations. Jayne et al. (2016) outlined that the emerging and rapidly growing medium-scale farmers were generating new demands, and Veldhuizen et al. (2018) reported that medium to large commercial farmers were mostly targeted by agribusiness as they were relevant to their business case. As a result of this, the Ministry of Agriculture, Livestock and Fisheries (MALF-RoK, 2017) while providing guidelines for extension and advisory services, criticized the uncoordinated pluralistic extension delivery as a constraint. Despite the advantages of a pluralistic extension system, the wide mix of extension initiatives presented real challenges that could only be addressed through the adoption of common guidelines and standards on service delivery. The adoption of these common guidelines and standards, was expected to also improve accountability for the services provided. Kilelu et al. (2018) averred, however, that willingness to pay for services, unclear outcomes and impacts of private services, undemonstrated business case, and lack of quality assurance for delivered services due to regulatory vacuum were bottlenecks with private sector extension and advisory services.

Nigeria

The Global Forum for Rural Advisory Services (DLEC/GFRAS, 2017) noted the impressive infrastructure for agricultural extension, including dedicated extension offices across Nigeria. Most of these structures were earlier established with World Bank funding but have since

suffered from a severe lack of funding and coordination. There is a growing involvement of the private sector in extension and advisory service provision. Proponents of a privatized agricultural extension and advisory service opine that public-financed agricultural extension is constrained by the many weaknesses associated with government bureaucracies. Contrarily, supporters of the existing public-funded agricultural extension system maintain that most extension work is performed by government departments, and that a privatized extension is not feasible due to a vast majority of farmers operating at a subsistence level, too poor to pay for extension services, and needed to be serviced for free as a matter of policy. Adegbola and Bamishayie (2013) identified the weaknesses and inherent inconsistencies of privately funded agricultural extension and advisory service and posited that this model was impractical in Nigeria. However, pluralism involving private sector actors in agricultural extension and advisory services has been growing (GRFRAS/DLEC, 2017), with significant policy conditions that could be leveraged for effective, efficient and sustainable services. Ladele (2011) earlier provided the impetus for this thinking, suggesting that the commodity alliance model (or out-grower) is an effective framework for private extension work in Nigeria. While various initiatives across public, private and development actors point to increased pluralism within the extension and advisory services, coordination among actors continues to be a challenge. The existing infrastructure and private sector activity including renewed interest from government provides an opportune moment to revitalize extension and advisory services in Nigeria.

Ogbonna et al. (2016) assessed a private sector extension and advisory service and reported that the program had an effect on beneficiaries' access to credit, education of wards and poverty reduction. They also noted that the observed changes may not be solely attributed to the initiative, given that there could be many other intervening factors either positively or negatively affecting the outcome. Serious implementation constraints, hindering effective performance including organizational, input and sustainability issues, were identified. Amurtiya et al. (2018) hence advocated for the establishment of adequate synergy between all collaborating agencies in the provision of suitable support services to farmers. In their view, the success of effective agricultural extension and advisory service delivery depends on effective partnerships and complementary actions. This aligns

with the stated position of Gwary et al. (2016) that pluralism has the potential to make agricultural extension and advisory services less burdensome to government and more relevant to farmers.

Additional findings in Burkina Faso, Ethiopia, Zimbabwe, DR Congo and Cameroon

In Burkina Faso, Sylla et al. (2019) assessed services offered by both the public and private extension providers, rating the services based on four criteria including, facilitation of access to credit, facilitation of input provision, technical support and facilitation of access to markets. They reported that farmers under private extension system rated the quality of services they received better than farmers under public extension did.

Berhanu and Poulton (2014) provided an overview of how the extension and advisory service in Ethiopia constitutes a tool for achieving both political control and rural development. The public extension program in Ethiopia considered as one of the largest and fastest-growing in the continent, was reported to be central to the government's strategy of stimulating agricultural growth and winning elections.

The government of Uganda meanwhile has experimented with the privatization of extension through the creation of a pool of private extension specialists out of its existing public extension service. Using this pool, registered farmers' associations could select service providers related to specific enterprises and pay for the services from the funds given to them by external donors through decentralized government units. Mubangizi et al. (2014) considered this as a bold trial but expressed doubts about its sustainability at the end of the donor-funded project. According to Rwamigisa et al. (2018), the National Agricultural Advisory Services (NAADS) programme in Uganda was considered a role model for a demand-driven, decentralized and market-oriented agricultural extension reform. However, they reported a strong resistance to the complete overhaul of the existing agricultural extension and advisory service, leading to the limited success of the program.

Machila et al. (2015) reported on a donor-funded project which provided extension advisory services using a private agricultural firm. Participants in the study were drawn from the Mutasa district of Zimbabwe's Manicaland Province. Their results showed that the private sector extension and advisory service

contributed significantly to household crop income, net crop incomes and expenditure on farm inputs and services. Analysis of the financial cost and returns of the extension service suggested an annual net incremental benefit of US\$11,587, representing a 30% return on the investment made by the donor to finance the service. This estimate did not include other socio-economic benefits attributed to the extension service.

In the Democratic Republic of Congo, Ragasa et al. (2016) reported that despite having one of the highest extension agent-to-farmer ratio and a pluralistic extension system, the DRC failed to deliver agricultural knowledge and technologies to rural areas due to lack of coordination. They found enabling conditions that were missing and significant for improved delivery of agricultural extension and advisory services to include funding, enforcement of performance targets, as well as systems of rewards and sanctions for officials.

Amungwa (2018) indicated that in Cameroon, recent trends show increased channeling of extension services through commercialized farmers' organizations, which tend to be less inclusive of smallholder farmers. NGOs and community-based organizations also supported farmer extension and advisory services. Fa (2018) argued the need for innovative extension approaches to improve the impact of extension services on agriculture and rural development. This therefore implied a need to combine the potentials of both private and public sectors for overcoming the failures of past extension models.

DISCUSSION

Crucial issues across the findings

The involvement of multiple actors in the agricultural and advisory services sector in many African countries is evident. Most of the country findings show how private sector players, especially donor-funded actors, have become a visible landmark in the provision of agricultural extension and advisory services. It aligns with the claimed evolution or paradigm shift of the extension service in Africa towards pluralistic systems which are reliant on diverse players, funding sources and mechanisms (Bitzer et al., 2016; Davis and Frantzel, 2018; Norton and Alwang, 2020). The growth of private sector players is, however, not uniform in most of the countries in Africa. Ethiopia and Uganda specifically, with large public-funded extension services are reference cases showing the dominance of inefficient public extension services.

In many of the countries reported in this study, the objective of the extension and advisory service was mixed with some targeting technology transfer, human resource development or both. For instance, the Ugandan extension program shows specifically how extension officials were positioned to improve their skills in the delivery of agricultural advisory services. On the other hand, expenditure on farm inputs and increased farm incomes from the use of improved inputs were a major consideration for extension services in South Africa and Zimbabwe. National governments consider the objectives of an extension and advisory service differently, and these may vary from overt political intentions, economic targets through promotion of specific commodities, as well as social and development objectives of poverty reduction.

Also, the target category or the clientele show some clear configurations. Private sector providers of extension and advisory services in Nigeria, Kenya and Cameroon tended to concentrate on specific commodities. Contrarily, the effort of public extension and advisory service providers in Ethiopia, DR Congo, Uganda and South Africa were not specific to a particular crop or commodity. According to Mangheni (2016), private-sector responses have emerged in the absence of public-funded options, to take up market opportunities where farmers show willingness to invest, such as out-growers or contract farmers supplying specific commodities. In line with this, private and profit-oriented extension and advisory services are well-suited for commercial high-value or cash crop producers (DLEC, 2019), and are better positioned in assisting farmers with access to guaranteed markets (Ladele, 2011).

A defining approach to the agricultural extension and advisory services offered in African countries involve payment for services rendered. The low uptake of private services or other cost-recovery approaches reported in South Africa, Nigeria and Ethiopia, as well as in Uganda, especially among majority of smallholder farmers has been ascribed to their inability to pay for such services (Swanson and Rajalahti, 2010). Though the services of private sector providers were reportedly in demand in Kenya, Burkina Faso and Zimbabwe; the targeted clientele were mostly wealthy or large-scale farmers involved in contract farming for export. Other beneficiary farmers in this group were participants in donor-funded interventions. Generally, the costs of agricultural extension and advisory services in Africa are borne either by the state,

farmer organizations or external donors. Donor agencies or non-governmental organizations (NGOs) and large agri-businesses have traditionally provided financial support for private agricultural extension and advisory services in Africa, while donor-funded projects and national governments have supported public extension for a long time (Bitzer et al., 2016). Undoubtedly, the sustained financing of both private and public agricultural extension and advisory services remain a challenge, especially without inherent cost-recovery elements. To complicate matters, many policy makers, development practitioners and scholars have considered the provision of agricultural extension and advisory services as a public good. Kilelu et al. (2018) hence declared that the diverse group of farmers require different types of extension and advisory services, which will ultimately necessitate varied funding mechanisms.

Establishing a market-based service

While private-sector agricultural extension and advisory services are multiplying in different countries across the region, the core purpose for their establishment is to meet specific commodity or value chain opportunities, support the outreach program of agribusinesses or assist commercial (medium and large scale) farmers to meet market or contract obligations. Most of these private sector services are consequently out of reach to poorer smallholder farmers. The only exception to this as found in the review, involves the funding of extension and advisory service by specific external donors as part of a project. However, using various approaches such as the Lead Farmer or Farmer Field School in some countries, the experience of the commercial farmers benefitting from private advisory services support onward learning for poorer smallholder farmers. However, the private sector service as currently constituted functions to serve the needs of better-placed farmers. An inherent contradiction to this is the acclaimed success of the public sector extension and advisory services in growing the commercial agriculture sector in South Africa. This achievement has been difficult to replicate among the majority of small-scale farmers. In Uganda, the requirement for farmer organizations to pay for the services of public-sector extension agents also favor the better-resourced farmers.

With regards to donor-funded interventions in the agricultural extension and advisory service sector, the reach or scale of interventions are normally limited to specific areas. Though these projects incorporate small-scale

farmers in the area where the interventions are located and provide them with access to basic extension services; it remains to be seen how the projects improve the way market systems function for poor men and women in the country. While project evaluations consistently indicate good financial returns on investments, these scant interventions on their own make negligible contributions to economic growth and poverty reduction, especially among the poor. Notwithstanding the participation of NGOs and community organizations in providing services to poor farmers, the funding of these services has been considered to be unsustainable. It must be mentioned however, that by participating in the provision of private extension and advisory services, these community-based organizations and NGOs such as reported in South Africa and Cameroon, help ensure a bottom-up approach that is inclusive and responds to the needs and aspirations of poor farmers -women and men. They also enhance the participation of disadvantaged groups (women, disabled, youth etc.) in rewarding agricultural production activities, through access to markets, improved inputs, financing and other basic services.

Considering the apparent inability of poor farmers to afford payment for services rendered by private-sector agricultural extension and advisory services providers, it is pertinent to ask if market approaches can be targeted at the poor. Any attempts to target poor farmers in African countries with private fee-paying extension and advisory services, will likely be a difficult effort. Exceptions may be possible for those engaged in livestock production or the production of high-value cash and specialty crops, organized in groups and their payments deducted from proceeds of sale. However, market players in the private extension and advisory services industry such as large agribusinesses, commercial farmer associations and input suppliers, as well as governments and donors will have to target disadvantaged groups with specific interventions as part of a well-coordinated effort to promote community development, social innovation, gender equality, rural livelihoods and determined environmental objectives. These interventions will need to promote positive changes in the interaction and behavior of actors in the agricultural extension and advisory service sector. Through opening up the space for multiple actors (institutional pluralism) and supported by various incentives and funding mechanisms, including public and private sources; access to private sector agricultural extension and advisory services for millions of small-scale and poor farmers could be guaranteed.

CONCLUSION AND RECOMMENDATION

The research identified the scanty review of agricultural extension and advisory services in Africa utilizing a market systems-based approach. It provided an applicable review framework which combined the defining functions with the market systems development approaches, to enable integration of different approaches in reviewing the emerging pluralistic extension services in Africa. Furthermore, we explored changes in delivery of extension and advisory services in different countries based on findings reported from various studies.

From our review of these studies, we noted the gradual advancements made in providing agricultural extension and advisory services in African countries through a mix of public and private sector actors. While public sector extension services continued to dominate, many private sector-led agricultural extension interventions were reported. In many of the countries, there were indications of NGO and private companies providing both cost-recovery and donor-supported services. Worthy of note, was the increasing numbers of fee-paying services targeted at farmers who were willing to pay for such services, mainly medium to large-scale commercial farmers in cash and specialty crop value chains. In some of these countries, the public sector extension service is gradually transforming towards cost-recovery through charging for services, whereas in other countries there were renewed efforts to boost public sector extension delivery.

Private sector extension delivery was common across many countries and worked mainly with specific commodity growers, in both the crop and livestock sector. The private sector fee-paying or cost-recovery model provides most of the expected growth in extension service delivery. Our review found that private sector actors have taken advantage of market opportunities that exists in these countries to provide required services, in tandem with large agri-businesses. NGOs and community-based extension and advisory services were also active especially among small-scale farmers in rural areas. The services provided by these organizations were supported by external funding and mostly provided services to poorer rural smallholder farmers. Policy recommendations include utilizing private-sector service providers in public funded interventions, where the expected impact for poverty alleviation is high. Also, increasing the proportion of donor funds directed at skills development for existing public-sector extension providers is

recommended. We propose that public sector funds be directed to support private-sector-led agricultural extension and advisory services for high impact poverty alleviation projects, while improving the skills of existing public-sector extension and advisory agents.

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