



Agro dealer-farmer interactions in Uganda and Tanzania: A policy perspective

M. K. KANSIIME^{1*}, J. WATITI¹, C. ALOKIT¹, D. KIJAZI², R. NJUNGE¹ and H. RWARE¹

¹CAB International, P. O. Box 633-00621, Nairobi, Kenya

²Africa Fertiliser and Agribusiness Partnership (AFAP), P.O. Box 23056 Dar es Salaam, Tanzania

Corresponding Author: m.kansiime@cabi.org

ABSTRACT

Smallholder farmers' access to productivity-enhancing inputs, advisory services and technologies is limited by weak extension services. This study examines agro dealer-farmer interactions, and policy context to understand their potential as infomediaries for farmers. Interviews and focus group discussions were conducted with 102 agro dealers, and 257 farmers (42% female), plus observations at agro dealer point-of-sale. While a majority of farmers relied on public extension, 20% and 10% in Tanzania and Uganda respectively had agro dealers as their primary source of agricultural advice. Agro dealers assumed a diversified role focusing on providing access to products, agricultural advice, and services. Farmers, however, expressed low confidence in agricultural advice provided, owing to the low technical knowledge by the dealers. Policy elements supporting agro dealership were; certification of operators, minimum education requirements, and regulation on input packaging, all aimed at ensuring the quality of products and service provision. However, government enforcement was considered weak leaving room for the sale of poor-quality products and infiltration by fake operators. Supporting agro dealers with farmer-friendly information materials can enhance their advisory role, especially to farmers underserved by extension. Government monitoring efforts can be complemented by strengthened agro dealer associations and harnessing benefits of ICTs to track products.

Keywords: Extension, infomediaries, inputs, point-of-sale

RÉSUMÉ

L'accès des petits exploitants agricoles aux intrants, aux services de conseil et aux technologies qui améliorent la productivité est limité par la faiblesse des services de vulgarisation. Cette étude examine les interactions agro-distributeurs-agriculteurs et le contexte politique pour comprendre leur potentiel en tant qu'infomédiaires pour les agriculteurs. Des entretiens et des discussions de groupe ont été menés avec 102 revendeurs agricoles et 257 agriculteurs (42 % de femmes), ainsi que des observations au point de vente des revendeurs agricoles. Alors qu'une majorité d'agriculteurs s'appuyaient sur la vulgarisation publique, 20 % et 10 % respectivement en Tanzanie et en Ouganda avaient des revendeurs agricoles comme principale source de conseils agricoles. Les concessionnaires agricoles ont assumé un rôle diversifié axé sur l'accès aux produits, aux conseils agricoles et aux services. Les agriculteurs, cependant, ont exprimé une faible confiance dans les conseils agricoles fournis, en raison des faibles connaissances techniques des concessionnaires. Les éléments de politique soutenant l'agro-concessionnaire étaient ; la certification des opérateurs, les exigences minimales en matière d'éducation et la réglementation sur le conditionnement des intrants, tous visant à garantir la qualité des

produits et la prestation de services. Cependant, l'application de la loi par le gouvernement était considérée comme faible, laissant la place à la vente de produits de mauvaise qualité et à l'infiltration par de faux opérateurs. Soutenir les agro-commerçants avec du matériel d'information adapté aux agriculteurs peut renforcer leur rôle de conseil, en particulier auprès des agriculteurs mal desservis par la vulgarisation. Les efforts de surveillance du gouvernement peuvent être complétés par le renforcement des associations de négociants agricoles et l'exploitation des avantages des TIC pour suivre les produits.

Mots-clés : Extension, infomédiaires, intrants, point de vente

BACKGROUND

Agriculture remains the mainstay of Africa's rural livelihoods, particularly where agro-ecological conditions are favorable. To improve productivity, smallholder farmers need access to quality inputs, product information, advisory services, and new technologies. Traditionally, public sector agricultural extension agents have provided the required information and advisory services. But over the past few decades, public sector extension has received much criticism due to limited reach, relevance and high cost of operation (Anderson *et al.*, 2006; Raidimi and Kabit, 2017). Provision of extension and advisory services is limited, partly due to low staffing, poor accessibility, lack of appropriate extension methods, or institutional rigidities (IFPRI – World Bank, 2010). Besides, there have been changes in extension policies in the region that have been marred with a lot of inconsistencies, thus affecting extension service provision. Hella (2013) reported that there were 10,891 extension workers in Tanzania in 2012 with an estimated extension service provider reach of only 10% of farming households. Mabaya *et al.* (2017) reported approximately 7,030 agricultural extension workers in Tanzania, translating to extension worker – farmer ration of 1:831. In Uganda on the other hand, by 2016, only 2000 extension workers had been recruited to serve a farming population of over 5 million households. UBOS (2018), reports that only 5% of farmers had access to extension services in 2016/17 compared to 21%

in 2011/12. This reduction is particularly due to the restructuring of the government extension program, known as the National Agricultural Advisory Services (NAADS), in July 2014.

In the absence of expert advice, farmers tend to seek out agricultural information from alternative sources principally through word of mouth (family, friends or neighbours), generic broadcast programs, or agricultural input dealers (Anderson and Feder, 2007; Saha *et al.*, 2015). Agricultural input dealers (agro dealers) are a cluster of private business operators, providing a range of agricultural inputs from seeds, chemicals, fertilizers and small agricultural equipment such as spray pumps. Agro dealers are more prevalent, particularly reaching remote locations with inputs and sometimes providing agricultural advice. Given their proximity to and routine interaction with farmers, several programmes have assumed a bigger role of agro dealers in providing information and advisory services to farmers. The number of agro dealers in Uganda is estimated at 1,167 in 2015 (Mabaya *et al.*, 2016), while in Tanzania, there are about 100 agro dealer associations with an estimated 3,000 agro dealers. Compared to the number of government extension agents in these countries, agro dealers provide a formidable force in addressing agricultural information challenges. As such, agro dealers have been integrated in agricultural development projects as an alternative information delivery method. Alliance for a Green Revolution in Africa

(AGRA) working in most African countries has spearheaded efforts to build the capacity of agro dealers including to act as service providers. The Africa Soil Health Consortium (ASHC) also engaged agro dealers, providing them training on the use of in-store point of sale information on seed (common bean and soybean), P fertilizer and inoculant. Other regional/continental initiatives include; Africa Fertilizer and Agribusiness Partnership (AFAP), International Fertilizer Development Centre (IFDC) and USAID Feed the Future agro-inputs project. The underlying assumption by these initiatives is that by serving as 'one-stop-shops' for agricultural technologies, services, and advice, agro dealers can compensate for the lack of public extension and reliable input supply systems (Scoones and Thompson, 2011).

This approach, however, presents difficulties due to the fact that agro dealers' primary objective is input sales and not service provision, so they may not be trusted to provide impartial advice, and may not possess the technical capacity or training to support farmers appropriately (Swanson, 2008). Besides, there is growing empirical evidence that farmers' decisions to innovate are based not only on economic and personal considerations but also on social interactions among themselves and with agents that promote change, such as buyers, agro dealers, researchers, farmer associations and farmer groups (Bandiera and Rasul, 2006; Mashavave *et al.*, 2013). Understanding the interactions between agro dealers and farmers is thus justified if they are to be used as an alternative agricultural information delivery channel for farmers, and has implications for what support to provide. This study used descriptive research approaches to portray characteristics of agro dealers and their interactions with farmers in the context of Uganda and Tanzania. Further, existing policy elements and challenges for

agro dealer operations were explored. Results provide useful insights on agro dealer networks and their potential as an alternative information delivery channel for farmers.

METHODS

Study area. The study was conducted in Uganda and Tanzania. In Uganda, the study was conducted in eastern Uganda. The region is characterized by one long rainy season from March to October with a peak in April and secondary peak in August. Rainfall is more than 1400mm per year. Soils are mostly young volcanic and are rich in nutrients. Cultivated land is highly fragmented with small plots covering terraced hillsides. The region was selected for this study because of its higher concentration of rural agro dealers and higher use of agro-inputs compared to other rural areas in Uganda. In Tanzania, the study was undertaken in Morogoro region. The region is characterized by a bimodal rainfall pattern delivering 1000- 2000mm per year. The soils are mainly of volcanic origin and range from sandy loams to clay alluvial soils (ISRIC, 2015). The region is represented by a high concentration of agro dealers including those that were engaged under the Africa soil Health Consortium (ASHC) project.

Data collection and analysis. Data were collected during the period from April-May 2017 (Uganda) and May-June 2017 (Tanzania). Field activities were timed to coincide with the peak of growing seasons in the target countries when it's anticipated that farmers are purchasing inputs. Across the countries, data were collected from 102 agro dealers by administering a semi-structured questionnaire by trained enumerators, and observations at point of sale using an observation checklist. Interviews with agro dealers focused on; products sold, products demanded by farmers, information and services provided to farmers,

farmer queries, perception of their role as infomediaries for farmers, and policy elements that support or challenge their business operations. The observation checklist focused on how farmers were received at the point of sale, questions they asked, products asked about or purchased and general interactions of agro dealers and farmers. In addition, focus group discussions (FGDs) with farmers were held. Local extension workers helped mobilize farmers from existing farmer groups to participate in FGDs. FGDs aimed to understand farmers' agricultural information sources, and their perceptions of the role of agro dealers in providing agricultural information. In total, 24 FGDs were conducted with 257 farmers (o/w 108 were women). Table 1 shows the number of respondents included in the study.

Quantitative data from agro dealers was coded and entered into MS Excel worksheet and exported to Stata 15 statistical package for analysis. Descriptive analysis was done and results presented in tables, proportions and bar charts. Qualitative data (agro dealer checklist and FGDs) were analyzed using content analysis. Data were disaggregated by country for purposes of understanding differences

existing that may be due to country context.

RESULTS

Farmers' information sources. Farmers obtained information from limited sources mostly fellow farmers (Uganda) and extension agents (Uganda and Tanzania) (Table 2). Agro dealers and Non-Government Organisations (NGOs) played a more limited role in extending information and advice to farmers in Uganda, in comparison to Tanzania. Though the study did not specifically establish the NGOs providing agricultural extension, it's generally known that NGOs do not necessarily run parallel extension services but often depend on government personnel to provide these services. There was an observed difference in engagement of extension service providers by crop. In Tanzania, there was a comparatively higher engagement of agro dealers in providing information on sunflower, sorghum, and sesame, while extension workers tended to focus on vegetables and rice (Figure 1). In Uganda, fellow farmers were more important for providing information on Irish potatoes and vegetables, while extension workers and farmer associations focused more on cassava (Figure 2).

Table 1. Study respondents by district

District	Country	Agro dealer interviews				Focus Group Discussions (FGDs)		
		Total	Female	Male	# of FGDs	Total participants	Female	Male
Kapchorwa/Kween	Uganda	26	14	12	6	61	18	43
Mbale/Sironko	Uganda	25	8	17	6	59	25	34
Kilombero	Tanzania	22	14	8	4	43	20	23
Morogoro	Tanzania	19	11	8	4	50	25	25
municipal/rural								
Mvomero	Tanzania	10	4	6	4	44	20	24
Total		102	51	51	24	257	108	149

Table 2. Primary source of agricultural information/advice

Source of advice	Tanzania		Uganda	
	freq.	% of farmers	freq.	% of farmers
Extension Officer	29	30	17	33
NGOs	24	25	5	10
Agro dealers	19	20	5	10
Fellow farmers / household member	13	13	21	40
Farmer association	1	1	4	8
Radio, magazine, print materials	10	10	0	0

Source: Based on responses from FGDs

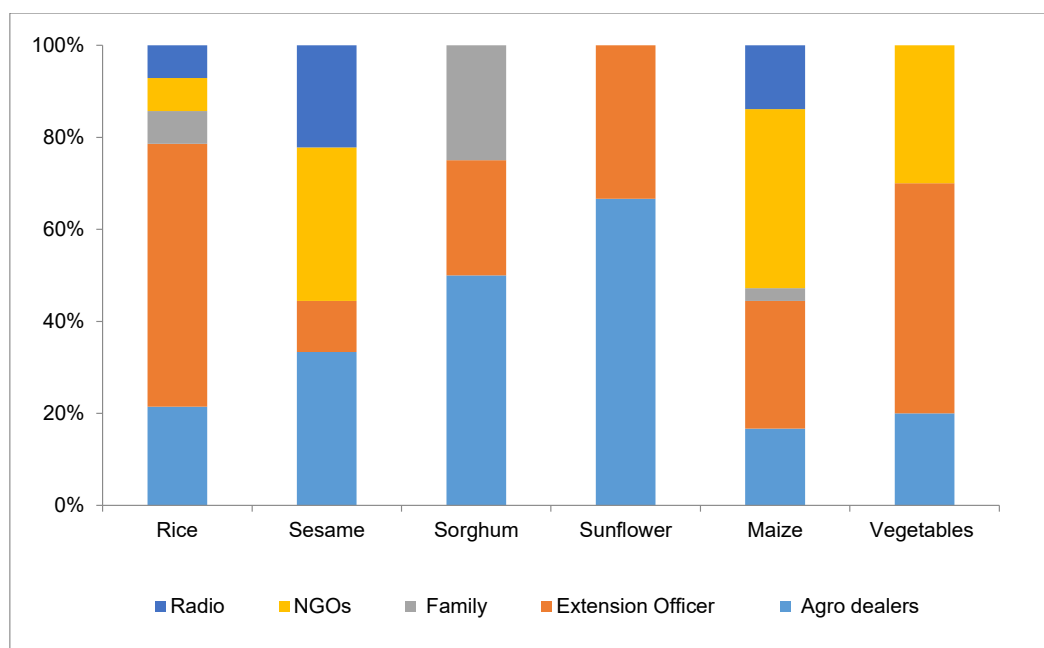


Figure 1. Source of agricultural advice for the most commonly grown crops in Tanzania. Source: Based on responses from FGDs

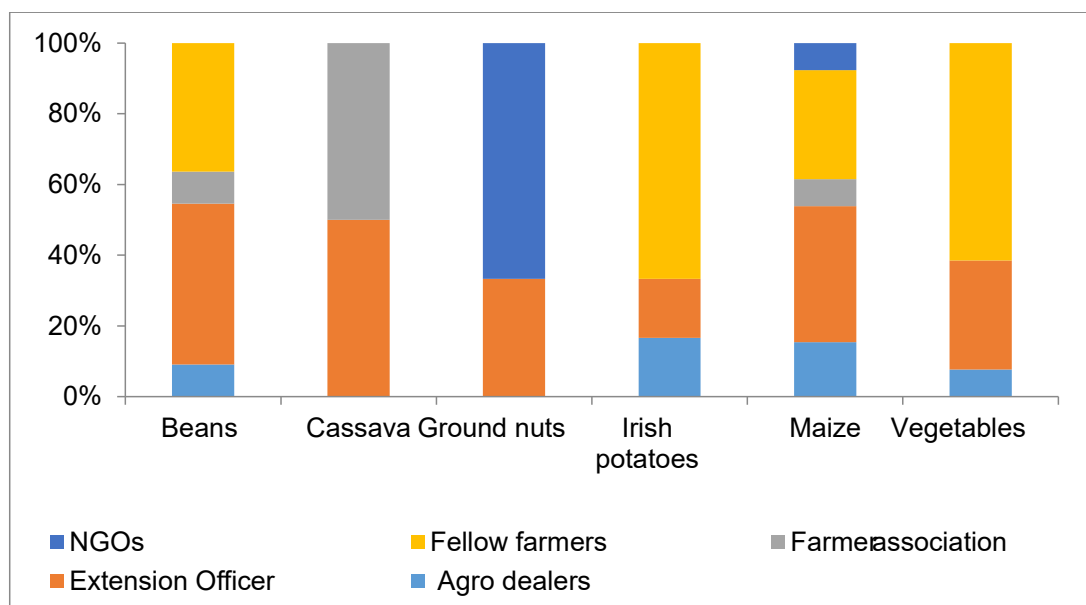


Figure 2. Source of agricultural advice for the most commonly grown crops in Uganda

Source: Based on responses from FGDs

The role of agro dealers. Agro dealers, irrespective of the size of business operation, performed the needed basic functions of determining the products mix, physical distribution, pricing and sales based on their analysis of demand. As this study was undertaken in the middle of the growing season, agro dealers stocked mostly planting inputs (fertilizer and seed), and pest control products. A small proportion of agro dealers included animal feeds, legume seeds (mainly common beans), and agricultural equipment. Agro dealers stocked various inputs based on perceived demand by farmers which they attributed to; increased awareness of benefits of improved inputs, seasonality, changes in biotic and abiotic factors, and changes in farming systems / crops grown (Table 3). For example, high demand for pesticides and fungicides was attributed to increasing pest outbreaks as a result of weather changes. In particular high amounts of precipitation increase the incidence of fungal infections as reported elsewhere (Swinfield *et al.*, 2012), thus farmers tend to demand these products during the rainy season. Agro dealers also mentioned an

increase in the number of farmers producing exotic vegetables such as cabbage that require intensive pest and disease management, as well as effective fertilization regimes. On the other hand, cereals especially maize are key staple crops in the study locations thus most farmers tend to try better seed. In addition, maize has a better-developed seed value chain in the region compared to traditional crops such as millet, whose production is highly dependent on informal seed supply. This result is consistent with observations at agro dealer point of sale, where the most frequently bought inputs were fertilizers, pesticides, and vegetable seed. There was also a high proportion of buyers (23%) asking for animal health products particularly mineral lick, de-wormers, and multivitamins.

In addition to providing access to products, agro dealers also indicated that they provide product information, agricultural advice, and services to farmers. At least 97% and 57% of agro dealers in Uganda and Tanzania respectively provided information on product dosage and application (Figure 3). Other information provided related to new products (new chemicals and new seed

Table 3. Most demanded products by farmers and reasons as perceived by agro dealers in Uganda and Tanzania (n=102)

Input	Freq.*	% of agro dealers	Reasons for high demand
Pesticides	70	69	Pest outbreaks, weather changes, increased farmer awareness and knowledge of products.
Fertilizers	66	65	Poor and depleted soils; farmers achieving better returns from fertilizer application; increased farmer awareness of benefits; adequate product information provided to farmers.
Vegetable seeds	61	60	More farmers engaged in vegetable production due to good market; short maturity of crop and better incomes; farmers demanding for new seed that is high yielding, vegetables are amenable to year-round production.
Herbicides	47	46	Simplify workload especially for land preparation and weeding; reduce labour costs; increased number of weeds including perennial grasses.
Cereal seed	45	44	The main staple in the region, an increase in awareness and demand for improved seed/varieties.
Fungicides	33	32	Changes in weather have led to increasing pest problems e.g. heavy rains leading to a high incidence of fungal diseases; more farmers engaged in crops that require to be sprayed e.g. tomatoes, watermelons; increased farmer awareness of products.
Animal health products	29	28	Weather changes favour more ticks; the high number of cattle keepers coming to the area in search of grazing land (Uganda).
Animal feeds	7	7	More poultry farmers especially in urban and peri-urban areas (Morogoro).

*Respondents were asked to mention up to 5 products, multiple responses possible

varieties) and crops/varieties to grow for specific regions and seasons depending on length of growing season. In terms of services provided, the majority of agro dealers indicated that they provide credit sales to long term clients or those purchasing in bulk, farmer training in groups and outreach activities (Figure 4). There were comparatively more agro dealers in Uganda providing agricultural information and services compared to Tanzania. Reasons for providing

services were varied but mainly to increase sales and achieve business growth. At least 41% of agro dealers provided demonstrations at community level aimed at increasing farmer knowledge of products and benefits.

Observations at the point of sale showed that all agro-dealers had information materials to re-enforce messages given to farmers. The most popular information materials were adverts for

new products (chemicals), new crop varieties, pest and disease management options. However, the information materials were primarily used as display only (79% Uganda, 67% Tanzania). Agro dealers indicated that in some cases, they provided the materials as handouts to farmers visiting their shops or to buyers. Explanation of information on various materials by agro dealers was minimal, particularly in Tanzania. Point of sale information materials may be useful in passing on agricultural advice to farmers provided they are developed in easy-to-use formats for farmers and agro dealers themselves.

Farmers' perceptions about the role of agro dealers. Farmers' general perception of agro dealers is that they are helpful in making inputs accessible even at the local level. Farmers' perceptions of the role of agro dealers in providing agricultural information were however, mixed; 37% of FGDs participants indicated that they did not receive any advice from agro dealers, indicating that they mainly minded about product sales (Table 4). About 24% of farmers acknowledged that agro dealers

would normally try to explain if one did not understand or know how to use the product. In this case, agro dealers provided information on product application/dosage. At least 17% of the farmers indicated that agro dealers always alerted them on new products especially new seed varieties. In a few instances, agro dealers advised on which inputs to use and agronomic practices.

While a large proportion of agro dealers indicated that they provided training, outreach and credit sales, farmers had differing perceptions. Farmers' differing perception on training and outreach by agro dealers may be due to the model used by agro dealers which is group focused, or learning organized around lead farmers in selected communities. Since this does not involve the majority of farmers, they would not easily know whether agro dealers were responsible for the trainings or not. The differing opinion on credit services by agro dealers on the other hand may be due to the informality of the service provided, and possibly farmers did not recognize it as an added service. This service was based on mutual trust.

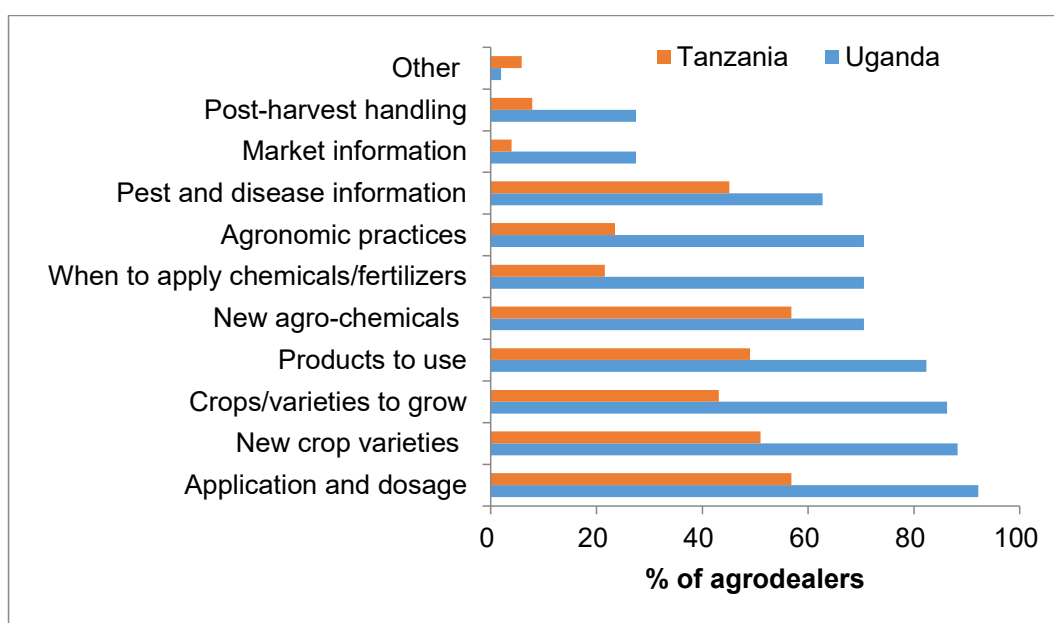


Figure 3. Information provided by agro dealers in Uganda and Tanzania

Source: Based on agro dealer interviews (n=102)

Table 4. Farmers’ perception of the role of agro dealers

Information/services by agro dealers	Freq.	%
Information given		
None	11	37
Application / dosage	10	24
New products	5	17
Type of inputs to use	2	7
Agronomic practices	2	7
Services provided		
None	18	86
Outreach	1	5
Demonstration	1	5
Farmer training	1	5

Source: Based on FGD responses

Farmers expressed concerns with regard to agro dealers’ operations; i) poor quality of inputs supplied with an increase in counterfeits, and ii) low confidence in advice provided by agro dealers as they considered them to be less knowledgeable to provide accurate technical information. This study revealed that agro dealer employees with agricultural training were on average 51%, of which at least 30% had only attained certificate training by national agro dealer associations or trainings by support programs such as Tanzania Agro dealer Strengthening Program (TASP). Much as this type of training was categorized as agricultural, it’s generally focused on the safe handling of inputs for operators. As such, less than 20% of agro dealers had technical agricultural knowledge. It was also not always obvious that the trained personnel were the ones attending to the shop, leaving doubts on the capacity of agro dealer staff to deliver agricultural advice to farmers. As such, farmers mostly went to agro dealers to procure products known to them,

either by experience or through advice by a technical person.

Agro dealer policy environment. Agro dealers were asked about various policy elements that they considered supportive of their business operations and those considered challenging. There were policy elements specific to products and others general to the business environment (Table 5). For general business operations, the supporting policy elements were; minimum qualification for operators, packaging policy, product certification, and government subsidy (Tanzania). In both Uganda and Tanzania, agro dealers are expected to have a minimum qualification of secondary level, and certification in agriculture or agricultural input handling offered by the government or national agro dealer associations. It is anticipated that the training improves product knowledge and advice given to farmers on product use, as well as safe handling of products. The policy on packaging requires all products to be sold in their original

package/container, and subdividing is strictly prohibited. This is aimed at ensuring product quality by protecting them from adulteration. Product registration and certification was also critical. In Tanzania, agro dealers are required to have Tanzania Official Seed Certification Institute (TOSCI) certification if dealing in seed, and Tropical Pesticides Research Institute (TPRI) registration if dealing in chemicals. In Uganda, agro dealers are expected to sell only certified products by Uganda National Agro Dealers Association (UNADA) and products should have the kakasa scratch code – which can be used to verify the product through a short SMS code. The input subsidy in Tanzania was considered a good policy element as it helped agro dealer businesses through the acquisition of products and assured sale of the same.

However, these policies also are not without blemish. While operators of agro input shops had the qualifications or could attain them through government or development agencies training, it was not always possible to get all attendants with required qualifications, particularly in the wake of high business operating costs. Government monitoring and enforcement were also considered to be on the low to ensure regulations are adhered to, which still left room for the sale of fake or poor-quality products and infiltration by unqualified agro dealers. The policy on the packaging was considered less favourable to smallholder farmers who require smaller quantities than the current standard packaging. For example, fertilizers are packaged in 50kg bags while seeds are packaged in 2kg or 5kg bags. Large package sizes could also be an impediment for input adoption by smallholder farmers who are more likely to experiment with small quantities. An attempt to ensure quality products, agro dealers have been required to get certifications issued by various institutions, attracting multiple fees for the dealers. This further increases their costs of managing businesses and affects profits, and sometimes required

compliance is compromised. Other general challenges were on taxes and delayed payments from the government for those participating in the subsidy program in Tanzania.

Table 5 further presents product-specific supporting and challenging policy elements. For fertilizer, the requirements for safe handling, product information on expiry and required licenses for operations were considered important. However, the high tariffs (Uganda) and restrictions on retailers to order for fertilizer directly from producing companies, price fluctuations, and storage requirements (Tanzania) were considered challenging policies. In particular, the restriction on supply was mentioned as a key challenge due to the delays and shortages it causes in the distribution system. For pesticides, policy issues were around registration, certification, and provision of usage instructions in a language understood by users (Tanzania). For seed, certification was key and testing germination of seed before the sale (Uganda).

Challenges faced by agro dealers. Besides policy-related challenges discussed earlier, agro dealers mentioned a myriad of challenges they face in their business operations (Figure 5). The majority of agro dealers in Uganda mentioned limited working capital to adequately stock or expand their businesses as the key challenge. This was somewhat different from the situation in Tanzania, probably due to the input subsidy program in the latter where the majority of interviewed agro dealers had participated. Supplier challenges were mentioned but largely in Tanzania. This again could be due to policy regulation on importation of products into the country and restriction of retailers to order from manufacturers. A few large firms (hubs) have been licensed to handle the importation of products particularly fertilizers and supply to the rest of the agro dealers. This limitation has contributed to delays in supply, failure to meet demand quantities by agro dealers and escalated

Table 5. Supporting and constraining policy elements to agro dealer operations

Product	Supporting policies	Challenging policies	Supporting policies	Constraining policies
Fertilizer	<ul style="list-style-type: none"> • Use of protective wear while measuring fertilizers • No importing fertilizer without a trading license 	<ul style="list-style-type: none"> • High tariffs for imported products 	<ul style="list-style-type: none"> • Manufacture and expiry date of the product must be indicated 	<ul style="list-style-type: none"> • Retailer agro dealers restricted from the direct ordering of fertilizer from producing companies, reserved for licensed hub agro dealers • Price fluctuation and financial support from Africa Fertiliser and Agribusiness Programm (AFAP) have stopped • Storage – one must have enough space for storage
Pesticides / herbicides	<ul style="list-style-type: none"> • Agro dealers must sell only registered drugs 		<ul style="list-style-type: none"> • Registration with Tropical Pesticides Research Institute (TPRI) • Indicate dosage and application, in a language known to users i.e. English or Swahili 	<ul style="list-style-type: none"> • Free market leading to fake products in the market
Seed	<ul style="list-style-type: none"> • Sell only certified seeds • The seed must be tested for germination 	<ul style="list-style-type: none"> • High tariffs on DK and 8031 hybrid maize 	<ul style="list-style-type: none"> • Certification by Tanzania Official Seed Certification Institute (TOSCI) 	<ul style="list-style-type: none"> • Packaged in 2 or 5kg bags does not favour smallholder farmers who usually want less
General	<ul style="list-style-type: none"> • Selling certified products with a kakasa scratch seal • Minimum qualification of secondary level certificate • Sell products from UNADA • Sell all products in the original packaging, subdividing not allowed 	<ul style="list-style-type: none"> • Other attendants may not meet the education requirement 	<ul style="list-style-type: none"> • Agro dealer must have training in agriculture • Government subsidy on fertilizer, seed and agricultural chemicals • All products should be sold in their original package /container 	<ul style="list-style-type: none"> • High income tax • No proper monitoring mechanisms from the government • Delayed payments from the government • Small packages out of manufacturers/suppliers are not allowed, yet large packages don't favour smallholder farmers

product prices. In Uganda on the other hand, any anyone with a trading license was allowed to import products, thus the challenge seemed on the low.

by the government to curb this were mentioned e.g. through product verification codes, laws on non-re-packaging of products, certification of products and monitoring.

As indicated earlier, agro dealers provided credit to farmers and in some cases other retail traders. However, the default rate was recorded as high thus frustrating business operations. Climate variability, high business operating costs, limited farmer knowledge, counterfeit products, and competition were the other challenges mentioned by agro dealers. The high operating costs are mainly associated with transportation and storage, due to the bulky nature of the products especially fertilizers. Limited farmer knowledge contributes to the low demand for the products. Agro dealers went to heights to train farmers, establish demonstrations and outreach programs to enhance farmer knowledge, also aimed at improving demand for products. Counterfeit products were also mentioned as a challenge, though some efforts

Climate variability and change was mentioned as a key challenge in Uganda. Unpredictable weather patterns lead to erratic agricultural input demand. For example, agro dealers expressed that farmers have shifted from growing certain crops, yet they had stocked seed and related inputs. A case in point was farmers in Kapchorwa (Uganda) who have moved away from growing barley to other crops particularly vegetables due to reduced length of the growing season. In addition, climate variability has increased the burden of pests and diseases, and agro dealers don't have the capacity to respond to farmers' demands for new products. Other challenges mentioned included; competition, low demand, seasonality of the businesses, and price fluctuations.

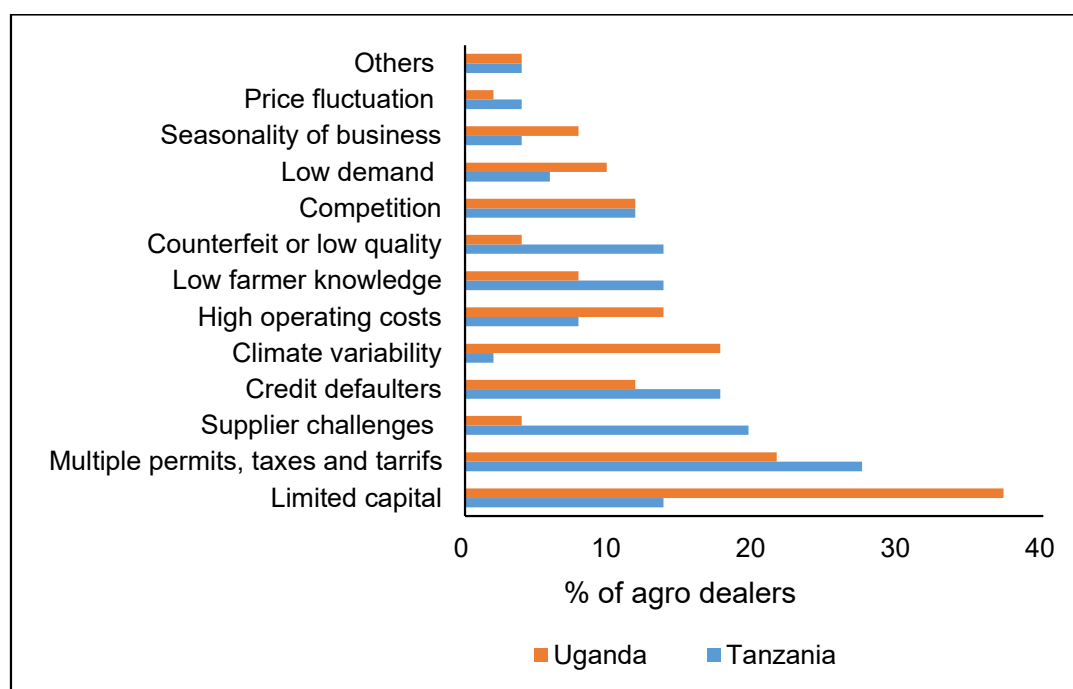


Figure 5. Challenges faced by agro dealers

DISCUSSION

This study has documented operations of agro dealers, their interaction with farmers and the nature of services provided. The study further reviews the extension landscape and policies in the study countries to understand if there are contextual issues that explain the observed agro dealer-farmer interactions, and entry points to support the current role of agro dealers.

Farmers' agricultural information sources.

Agro dealers contributed in the delivery of agricultural information, though farmer to a large extent depended on public extension workers for formal advisory services. Previous studies in Tanzania have shown farmers' reliance on the public sector and prioritized it as their preferred provider of extension (Jensen *et al.*, 2019). This is partly due to the decentralisation policy that devolved farmers' access to agricultural extension services and introduction of village extension officers (VEOs) with the aim of reaching grassroots farmers. This was followed by increased government efforts to recruit more staff, to ensure that every village had at least one extension agent (URT, 2009). Further, the national agricultural policy advocates for improving the quality of agricultural extension services through private sector participation (URT, 2013). Consequently, donor programs and private sector led extension programs have been implemented to overcome conundrums in the public extension services e.g. Africa RISING and FNAKA projects by USAID Feed the Future. The approach of these programs consisted of developing a system of community-based extension services (CES) by training village-based agricultural advisors (VBAs), selected by farmers and village leaders, as well as leaders of Producer Organizations (POs) (Abed *et al.*, 2020). Masanyiwa *et al.* (2019) ascertain that implementation of decentralisation and the village-based extension advisors has contributed to increased availability and distribution of agricultural

extension staff at the ward and village levels, which has enhanced farmers' access to several agricultural extension services. In Uganda, on the other hand, public agricultural extension reforms have not led to expected results of an inclusive and responsive extension delivery system (AfranaaKwapong and Nkonya, 2015). As such, extension coverage remains low, and farmer access to sources of information and advice remains limited (Sseguya *et al.*, 2012). This has left a gap in advisory services, creating room for NGOs, private and farmer-led extension services to step in.

Besides extension workers, farmers also mentioned receiving advice from agro dealers. In fact, 20% and 10% of farmers in Tanzania and Uganda respectively, indicated sole reliance on agro dealers for agricultural advice. The majority of farmers, however, indicated low confidence in agricultural advice provided by agro dealers, owing to low technical knowledge by the dealers. Despite mixed farmers' perceptions about the role of agro dealers, they essentially provided services to farmers including providing information, providing goods, facilitating access to credit, farmer education and training. These elements are consistent with the key functions of extension (Sylla *et al.*, 2019). Other studies report that that farmers preferred input dealers more than the other agents for advice on seeds, chemicals, and fertilizers (inputs), while in agricultural advisory services other sources played a significantly higher role than the agro dealers (Saha *et al.*, 2015). As such, agro dealers remain strategic in supporting farming enterprises as they are able to address the key production constraints, in particular access to inputs and credit, services less provided by the public extension services (Sylla *et al.*, 2019). Building capacity of agro dealers to have adequate product knowledge is key for them to deliver on their core business of providing inputs, and supporting them with farmer-friendly extension materials can achieve

an extra mile of delivering agricultural advice to farmer population not well served by extension services. On the other hand, Raidimi and Kabiti (2017) show that public sector extension work is a necessity for the growth of the industry, despite the limitations in resourcing and but multidimensional work requirements. While agro dealers may not replace formal extension services, building partnerships between public extension services and agro dealer networks or private sector may lead to greater dividends in provision of extension services and access to requisite inputs and services by farmers.

The policy environment for input business operations. Demand-side policy interventions designed to boost input usage, such as subsidy and voucher schemes influenced the way agro dealers interacted with farmers. In Tanzania, various input schemes are being implemented aimed at enhancing farmer access and utilization of improved inputs. The largest is the National Agricultural Input Voucher Scheme (NAIVS), a system of direct resource transfers to farmers which began in 2008. Under the NAIVS, the price of fertilizer is subsidized at an average rate of 50% of the retail cost. The scheme is considered to have had positive effects, such as enhancing the capabilities of agro dealers working at the district level to expand into rural areas (Malhotra, 2013). This capacity development may be considered a facilitating factor to the observed higher reliance of farmers on agro dealers in Tanzania compared to Uganda, though the focus is on products rather than extension advice. In Uganda, the input subsidy introduced in 2005 under the name “Institutional Support to Farmer Groups” was managed under the National Agricultural Advisory Service (NAADS), a government extension program (Rwamigisa *et al.*, 2018). The role of agro dealers was not specified, though the large companies supplied inputs to NAADS. As such, agro dealer-farmer

interactions in Uganda remained primarily demand-driven. This may explain the reasons why agro dealers seemed more engaged with farmers, an attempt to popularise their goods and services.

Operational policies on packaging, certification, and registration have been instituted in both countries, aimed at improving product quality and regulate fake products on the market which has far-reaching effects on farmers. Besides the input value chain actors, a few areas have been pinpointed as entry points for poor quality inputs. In Uganda, the problem is partly fuelled by the government seed distribution program Operation Wealth Creation (OWC), whose procurement system is considered unpredictable, offering insufficient checks on seed quality and seed sources (Mabaya *et al.*, 2018). Some practical steps have been taken in to stamp out fake agro-inputs, in particular, restrictions on re-packaging, and registration/certification of products. The current programme under Feed the Future Uganda known as kakasa has facilitated registration of inputs and assigning of codes which can be verified by farmers through a short SMS code. A similar approach has been proposed in Tanzania to combat counterfeits (Shao and Edward, 2014). The ministry of agriculture also issued tamper-proof labels, particularly for seed. In Tanzania, TOSCI has also tried to place serialized labels on seed packages weighing 2kg or more, including traceable information on crop type, variety, lot number, % purity, % germination and test date (Mabaya *et al.*, 2017). While the idea of traceability is good, most agro dealers expressed concern that the stickers were vulnerable to forgery particularly in the wake of weak monitoring systems by government and authorized agencies. Other studies have also reported below-average scores for government efforts to stamp out fake seed citing slow processes of handling fake seed (Mabaya *et al.*,

2017; Mabaya *et al.*, 2018). On the packaging aspect, agro dealers felt the need to work more with input manufacturers/importers to ensure small packages that are affordable by farmers. Besides, small packs are important to familiarise farmers with new products and develop markets for the products. Experience in East Africa has shown that farmers, having gained experience with small packs, return to their nearest agro dealer to purchase inputs in larger quantities to plant on larger sections of their land (Gerstenmier, 2015).

Challenges of agro dealers. Besides policy-related challenges, agro dealers also mentioned a myriad of other challenges they face in their business operations, notable: limited working capital, supplier delays, credit defaulters, low farmer knowledge and low-quality products. The challenge of limited capital was compounded by credit defaulters further constraining business operations. Lack of capital has been reported in other studies in Kenya (Odame and Muange, 2011) as the most important barrier to entering hybrid maize seed retailing. The low capital means that agro-dealers will order less stock, which increases their operational costs and subsequently the input prices (Ayieko and Tschirley, 2006). While several efforts have been registered in providing agro dealers with advisory skills, it is important for the government and other promoters to support agro dealer businesses with credit and other business advisory services to enhance their operations and help reduce risks and operational stresses.

The challenge of counterfeit, occasioned by weaknesses in the regulatory framework, and does not only affect farmers but also traders as it affects quantity sold, reputation and relationships with farmers. The sale of counterfeit, expired or substandard agro-inputs is common in Africa. Counterfeit agro-inputs

are reported to comprise 15-20% of the agro-inputs market, with Egypt, West Africa, Uganda and Tanzania as the hot spots (Rudolf and Cam, 2013). The implication is that if farmers cannot access quality inputs, they are less likely to invest, leading to low productivity. This challenge is currently being addressed through product registration, certification, and policies on the packaging. Enforcement, however, is key if the status is to change.

Organization and performance of agro dealers. In both country contexts, agro dealers were organized under national umbrella organizations – Tanzania National Agro Dealers Association (TANADA) and Uganda National Agro Dealers Association (UNADA) in Tanzania and Uganda respectively. The role of the umbrella organizations was to act as a voice for policy advocacy, training and enforcing regulations. While UNADA was generally referenced, to a great extent TANADA was classified as non-functional. The organization of agro dealers in the two countries also differed. In Tanzania, agro dealers were classified as Hub agro dealers (turnover of 2500mt of fertilizers per year) and Rural agro dealers. Hub agro dealers purchase from suppliers or could be licensed to import agricultural inputs. They, in turn, supplied networks of rural agro dealers, who then sold directly to smallholder farmers. Most interventions have been targeted at strengthening hub agro dealers not only to improve their operations and indirectly for rural agro dealers they work with, but also drive increased volumes of agricultural inputs sold in the market. In Uganda, on the other hand, irrespective of business size, an agro dealer can purchase from producers or sell to farmers provided they have a trading license. Unlike in the case of Tanzania, this non-controlled and sometimes hard to track the movement of products may open loopholes for adulteration or counterfeiting. However, the controlled

procurement and distribution system as in the case of Tanzania has been blamed for high prices, fluctuation and delayed supply of products, and exploitation of rural agro dealers.

Existing national development strategies also seemed to play a role in the performance of agro dealers as well as their location. For example, the agricultural production zoning policy in Uganda aims to achieve accelerated production of selected strategic enterprises on the basis of specialization and agro-zoning (GOU, 2010). Commodities that are best suited for each zone receive extra public sector support in order to create viable agro-industrial development. This approach increases the role of agro dealers to supply seed of these strategic crops as well as increasing interaction of farmers with agro dealers. In Tanzania, sunflower is highly commercial and private sector promoted, thus agro dealers may pick interest to promote the crop to enhance uptake, also as end market beneficiaries. These crops also have better developed value chains compelling farmers to use improved inputs for better yields.

CONCLUSIONS AND RECOMMENDATIONS

The study aimed to give a portrayal of agro dealer interactions with farmers to better understand their role in disseminating agricultural information and advice to farmers. This comes at the time when several development agencies have assumed a greater role of agro dealers as alternative information delivery channels in the wake of weak public extension services in Africa, changing extension policy environment, and the demand to promote public-private partnerships in development. Many agro dealers stocked a wide range of products including pesticides, seed, animal drugs, feeds and agricultural equipment. The diversity of stock is a risk-coping measure given the noted seasonal and erratic demand for products. While agro dealer's primary role is the provision of inputs, the extension gap, has necessitated their evolution to diversified roles

including providing agricultural advice, training, and outreach, and credit services to farmers, yet, this does not represent a readily profitable activity for them being private sector. Besides, the lack of technical agricultural skills is a glaring challenge to fulfilling the agricultural advisory role by the dealers. There is a need for policy to incentivize initiatives that reach agro dealers to equip them with better farmer/public information skills, given that there appears to be an expressed need by farmers. Capacity building of agro dealers (and their attendants) to ensure they have adequate product knowledge and facilitation with farmer-friendly information materials can enhance the quality of information delivered to farmers, particularly in areas underserved by extension. Support to access business development services (e.g. credit), can enhance business operations and help reduce risks and operational stresses.

On the geographical perspective, proportionately more farmers sought advice or interacted with agro dealers in Tanzania compared to Uganda. This was attributed to differences in farmer information-seeking behaviour, but most importantly agro dealer operating context and policy frameworks. Government-led input subsidy/voucher schemes in Tanzania enhanced interactions of farmers with agro dealers, implying that engagement of government or development organizations in popularising quality inputs would enhance their utilization, as well as pro-active information seeking by farmers. Consequently, partnership building between public extension services and agro dealer networks would lead to greater dividends in provision of extension services and access to requisite inputs and services by farmers.

Lastly, input quality management remains a key challenge in the sector. Various government efforts in input quality management were reported in the study countries, though monitoring and enforcement were considered weak. There is a need for intensified government monitoring, whose

efforts can be complemented by strengthened agro dealer associations and networks. Raising awareness of agro dealers and farmers on fake agro-inputs, and existing feedback and reporting mechanisms is key. There is also a need to harness the benefit of mobile-based approaches and other ICTs in monitoring and combating counterfeits. The instituted policy measures to regulate input trade are input specific, which has led to over-regulation exposing agro dealers to various licenses and fees which affects business performance. There is a need to ensure coordinated effort in input regulations.

Even if the agro dealer role would turn out to be more active in the future than it currently is; and even though agro-dealers could be equipped with proper technical knowledge on agricultural practices, trustworthiness by the farmers would be a key determinant in what practice they would adopt. Similarly, increasing the role of agro dealers in the provision of extension services requires institutional arrangements. There is need for further research to understand farmers' perceptions about the quality of agricultural extension and effective models for public-private partnership in extension delivery.

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STATEMENT OF NO-CONFLICT OF INTEREST

The author declares that there is no conflict of interest in this paper.

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