

## **PERSPECTIVES OF EXITING UNDERGRADUATE AGRICULTURE STUDENTS ON THE STATUS OF AGRICULTURAL EXTENSION IN SELECTED COUNTIES IN KENYA**

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### **ABSTRACT**

*Although agriculture is still a critical driver of Kenya's economic development, extension service is generally invisible and inaccessible to majority of small-scale farmers in rural areas. Consequently, both food insecurity and land degradation have remained key development and environmental challenges. Further, government budgetary allocations to this sector have declined over the years. The situation has been worsened by the devolution of agriculture to the County government level. For purposes of planning, perspectives on the future of extension service were solicited from exiting undergraduate students taking soil and water conservation course at Kenyatta University in 2015. This assessment was also meant to indirectly gauge whether the students understood the importance of extension service in soil and water conservation and development. This paper highlights the views of this clientele and the implications for future planning and policy in extension service. Results show that households still regard extension service as a critical input in soil and water conservation and land use planning, in general. However, its apparent invisibility, particularly in rural areas, contributes to low yields, decline in the number of farming households and increase in land degradation. To reinvigorate extension service thus calls for a paradigm shift in policy that views extension as a right to tax-paying farmers, who are entitled to information held by the State, particularly now that the right to food is a constitutional requirement. Training and visit as a social process is still the most preferred method of outreach. Contrary to popular opinion, majority of respondents indicated a willingness to work in the agriculture sector. Accordingly, annual budgetary allocation to this devolved sector needs to address County-specific agricultural priorities in pursuit of food and nutrition security, youth employment and wealth creation.*

**Keywords:** Extension Service, Future Farmers, Food and Nutrition Security.

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## Introduction

**Background:** The role of agricultural extension in increasing yields, incomes and enhancing other aspects of human well-being is well documented (Muyanga, 2006; Anderson and Feder, 2007 and Waddington et al., 2010). The importance of agricultural extension to farmers, their organisations and other market actors in agribusiness capacity and competence building, particularly for agrarian economies, cannot be overemphasised (Christoplos, 2010). Grounded on the studies directed in seven African countries (Burkina Faso, Cote d'Ivoire, Botswana, Nigeria, Ethiopia, Kenya and Malawi), Evenson (2005) reported that it is useful to picture extension as achieving its crucial economic influence by providing information and educational or training services to induce farmers' wakefulness and awareness through testing and experimenting. Berdegue and Escobar (2001) pointed out that effective provision of agricultural extension has both indirect and direct effects on reducing rural poverty and its negative consequences. Although about 70 per cent of the continent's total population is currently under the age of 30, estimates indicate that enrolment in agricultural training is generally declining (Leavy and Smith, 2010; Estambale et al., 2013 and CUE, 2016). By implication, the number of future extension staff will also decline leading to challenges in land and food production. Declining agricultural capacity building and vocation development has implications for national and international efforts to drive economic growth through investments in agriculture.

Understanding the latent feelings of the youth about agriculture as a profession is thus important in agricultural policy development. One initiative that is attempting to address the declining enrolment of the youth in farming is the "Future Young Farmers program" spearheaded by Beverly School of Kenya (<http://beverlyschoolofkenya.com/future-farmer-schools-program/>). The programme aims at promoting agriculture among the youth, equipping them with financial, business and agricultural skills that can benefit themselves, their families and their communities, and thus increase youth employment in community-based farming. Agriculture remains the biggest employer in Kenya and is among the four pillars earmarked to drive the development agenda of the current government.

## Objectives

The overall objective of this study was to assess the perspectives of finalist agriculture undergraduate students on the status of public extension in selected Counties in Kenya in order to identify critical gaps that need to be addressed for reinvigorating this essential service in pursuit of both food security and increased options for youth employment in agribusinesses and overall land and water management. The specific objectives were:

- i. To assess the perspective of the students who are future agricultural stakeholders on the public extension service.
- ii. To assess the students' views on the importance of extension services in soil

- and water management and hence community development.
- iii. To analyse gaps that may be limiting development in agricultural extension, now that agriculture as a sector has been devolved from the national to county government level.

### **Brief Literature Review**

#### ***Kenya's Extension System: A Historical Overview:***

Shifts in the extension system in Kenya can be pegged on objectives of prevailing governments before and after Independence. The main concern during colonial period was to service the goals of settler commercial farmers. Accordingly, the extension service was heavy on credit and subsidised inputs. For the native Kenyans, who were mainly subsistence farmers and pastoralists, extension entailed coercion towards soil and water conservation, which as expected was not readily accepted. Post-Independence approaches were more persuasive and educational in nature, and were implemented through donor-funded projects and programmes. Traditionally, soil and water conservation in Kenya entailed keeping the soil in situ by preventing soil erosion, maintaining required soil moisture for crop water requirements and maintenance of soil fertility. Today, the Ministry use soil and water management for purposes of putting increasing emphasis on soil moisture and fertility management. Land and water management on the other hand is a much wider concept that goes beyond agriculture to include management of other land-based resources like forests, wetlands,

water towers and resources, and rangelands. As expected, other relevant sectors besides the Ministry of Agriculture take requisite responsibility. Anandajayasekaram et al., (2008) has discussed some of the main approaches as outlined below.

#### ***General Agricultural Extension (1960s and 1970s):***

This approach was based on the false assumption that appropriate technology and knowledge for local people existed but was not being used by them. The approach was generally centralised with the "know it all government" controlling the planning dimension. For being deficient in two-way flow of information, this approach failed to adjust messages for each different locality and instead provided farmers with information on a number of production alternatives from one single source. Consequently, only wealthier large-scale farmers who went to seek for advice benefited. Despite its flaws this extension system was credited for the promotion of hybrid maize seed technology.

***Commodity-Specific Approach:*** This approach thrived around 1970 to early 1980s. It focussed on export commodities in which private companies played big roles. It was characterised by grouping all the functions for increased production (i.e. extension, research, input supply, marketing and prices) under one administration. Extension was fairly centralised and oriented towards one crop, also called commodity. Planning was controlled by a commodity organisation for the purpose of increasing yield of that specific crop. Accordingly, its success depended on employing highly trained

personnel equipped with expensive vehicles and field infrastructure. This approach emphasised that techniques recommended resulted in financial benefits for farmers, and could be demonstrated on farmers' own fields. Such supposedly appropriate technology was distributed in a timely manner because it focused on a narrow range of technical concerns. However for marginalising farmers' interest in favour of commodity production organisations, the performance of this approach among the majority small-scale and subsistence farmers was generally poor.

**Training and Visit (T&V) Approach:** It is acknowledged that the T&V approach introduced in Kenya by the World Bank in 1982 did not yield expected results. Gautam (2000) has documented its impact in terms of institutional development, sustainability, efficacy and efficiency. Essentially, it was strong in providing closer technical advice and logistical support to farmers albeit at a high cost and little flexibility with respect to its tendency for one-way communication. Based on the successes and failures of the above approaches, new and more participatory and demand-driven extension approaches became inevitable quest for the National Agricultural Extension Policy (Republic of Kenya, 2001).

**Farming Systems Participatory Approach:** This method adopted a holistic approach at the local level in order to specifically meet the needs of small-scale farmers. The farm was viewed as a whole, which necessitated involvement of farmers taking into account their priorities and integrated research approaches (Norman, 2002).

Planning evolved slowly and was different for each agro-climatic zone, and was implemented through strategic partnerships with researchers. Focal areas were identified and efforts concentrated there for a period of time before shifting to another locality. This initiative was operational until around 2012, when agriculture, including public extension, was devolved to the County government (Cuellar et al., 2006). The impact of devolving extension service is yet to be understood as no major study on this aspect has been done.

#### **Organisation and Future of Kenya's Extension Service:**

The public extension service was well staffed and its presence was felt in rural farming communities up to the 1980s. Since the last 20 years, staffing and facilitation of public extension agents has been on the decline due to a variety of reasons but mainly the freeze on public employment of extension officers and reduced budgetary allocation to the sector. In the late 2000s, the ratio of extension workers to farmers stood at about 1:1000 against the desired ratio of 1:400 (Speranza et al., 2009). This partly explains the apparent low visibility of extension agents at farm level across the country. As a result this critical service is being offered on a commercial basis by other service providers like NGOs, community and faith-based organisations, and farm inputs companies.

The entry of these other service providers will no doubt introduce other dimensions and challenges to the service. While the private sector is often associated with efficiency in operations, majority small-scale farmers are likely to be left

out due to the cost factor. However due to its logistical superiority, Muyanga and Jayne (2008) rightly observed that government should consider engaging the private sector for purposes of reaching more farmers in remote areas. Only time will tell how things will play out under the current devolved system of agricultural governance.

Public extension staff have not been left behind in this evolving approach as they also seek to provide services at a fee. Unfortunately, the linkages between these multiple actors are weak, which results into duplication of effort and wastage of resources. Further, each service provider is driven by its own motives and interest, some of which are conflicting. There exist policy gaps on how to integrate these service providers under a shared vision for the benefit of farmers (Karembu, 2011). Since the public sector could contract the private sector to deliver this services on its behalf, herein lies an opportunity for establishing more efficient public-private partnerships for delivering extension services at the county level in Kenya.

Innovations in extension services concepts, methodologies and approaches have been instrumental in enhancing agricultural sectors such as dairy herd improvement programme, irrigation, water management, feed management and integrated pest management (Mahmood, 2005). Examples of agricultural dissemination methods and approaches that have yielded positive results include farmer field days, use of mass media, information desks, farmer field schools, common interest groups, and agricultural fairs. However, limited success in

terms of number of farmers reached and successful technology adoption have been observed (Dixon, 2010). As noted earlier, this has been attributed to declining numbers of extension officers and increase in number of farmers coupled with inadequate infrastructural, logistics and financial support, among others. To circumvent these challenges, the Ministry of Agriculture has already been taking advantage of the opportunities offered by the mobile phone technology, whereby up to seven million farmers instead of the conventional about two million may be reached annually (Omondi, 2014).

Through the years, Kenya's public extension emphasised yield maximisation through soil and water conservation. Little regard was attached to value-addition, marketing and other environmental concerns like biodiversity conservation. With agribusiness becoming a major income earner for an increasing number of unemployed youth in Kenya, extension service will need to integrate all stages of the crop and/or animal production value-chains if multiple benefits are to be simultaneously realised. The quest for sustainable commercial production systems will in addition require innovative extension approaches, especially when it comes to financing of the service. This calls for strategic partnerships among multiple stakeholders with the farmer at the centre of attention (Republic of Kenya, 2012).

In terms of regulation for extension service providers, there are no standard guidelines or a code of ethics for extension service providers in Kenya. The tradition has been each service

provider to apply what they regard as appropriate. To be expected under such situations is the risk of loss of quality at various levels of service provision. It can, however, be assumed that some regulation is being given by various advisory and professional bodies engaged in the sector such as the County Agricultural Committees and the Kenya Society of Agricultural Professionals, among others. The ability of the organisations to follow-up, evaluate and monitor the changes is limited due to weak structural, inadequate logistical and limited financing support. Developing an institutional framework that sets and enforces standards for extension service providers at the County level would be a plausible policy agenda.

**Overview of Food Security Status:** The importance of food security, self-sufficiency and sovereignty in human and national development cannot be overemphasised (<http://www.globalagriculture.org/report-topics/food-sovereignty.html>). Food security has remained an important part of global discourse concerning development and poverty reduction (Vink, 2012). Due to the expected increase in global population from seven to nine billion, the amount of food insecure people is also projected to grow to beyond the one billion mark (Rayfuse and Weisfelt, 2012). Governments will need to direct their efforts towards innovative ways of addressing this need (Waithaka, et al., 2013 and Patel, et al., 2012). In Kenya, the need to be food secure will also have to be addressed from the constitutional right to food. According to Kenya's Constitution, Article 43 (1) (c), every person has the right to be free from hunger, and to have

adequate food of acceptable quality (Republic of Kenya, 2010). Unfortunately, the indignity of starvation and famine continues to be experienced in various parts of the world, and in particular Africa. Currently, drought-driven famine is ravaging Somalia. According to the World Food Programme, 3.2 million people are currently at risk. Some 350,000 children are malnourished, including 70,000 severely malnourished (<https://www.voanews.com/a/famine-in-somalia-averted-for-now/3908196.html>). Kenya too continues to incur political and social costs of inadequate food stocks.

Innovative policies, programmes and projects that would help achieve this while at the same time preventing litigations are emerging research themes. Majority of the population in Kenya has low purchasing power and is not able to obtain food, even though it is within their reach (Glopolis, 2013). This state of affairs has been attributed to ignorance on the part of policymakers on the role of agricultural sector in the country's development agenda (Rajaonarison, 2014), which is indicative of deficiencies in agricultural leadership at various levels of governance.

Although the country's economy can enjoy benefits from the export of luxury goods such as flowers, coffee and tea, the risk of chronic food shortages based on the less than 30 per cent available arable land, challenge of land degradation and impacts of climate change should worry policymakers (Langinger, 2011; Olsson et al., 2005 and UNEP, 2012). All these challenges point to the need to reinvigorate a

robust extension service designed to benefit people and the wider environment, and in tandem with sustainable development goals, particularly goals one and two whose gist is zero poverty and zero hunger respectively (<https://sustainabledevelopment.un.org/sdgs>). As recent as July 2016, a countrywide opinion poll indicated that while three out of 10 Kenyans go to bed without eating, another five out of 10 go to bed having not had enough to eat. (<http://www.standardmedia.co.ke/article/2000207776/food-security-vital-to-development>). In essence, about 80 per cent of Kenyans still suffer the indignity of food insecurity.

In the financial year 2016-2017, the State departments of agriculture, livestock and fisheries were allocated in Kenyan Shillings (KES) 21.6 billion, 13.3 billion and 4.2 billion, respectively (Republic of Kenya 2016). This translates into about KES 39 billion against a projected population of 46 million, hence KES 0.8 billion per capita for the next 12 months. This amount is significant and the status of food security will depend on how much goes into results-oriented extension services at the County government levels.

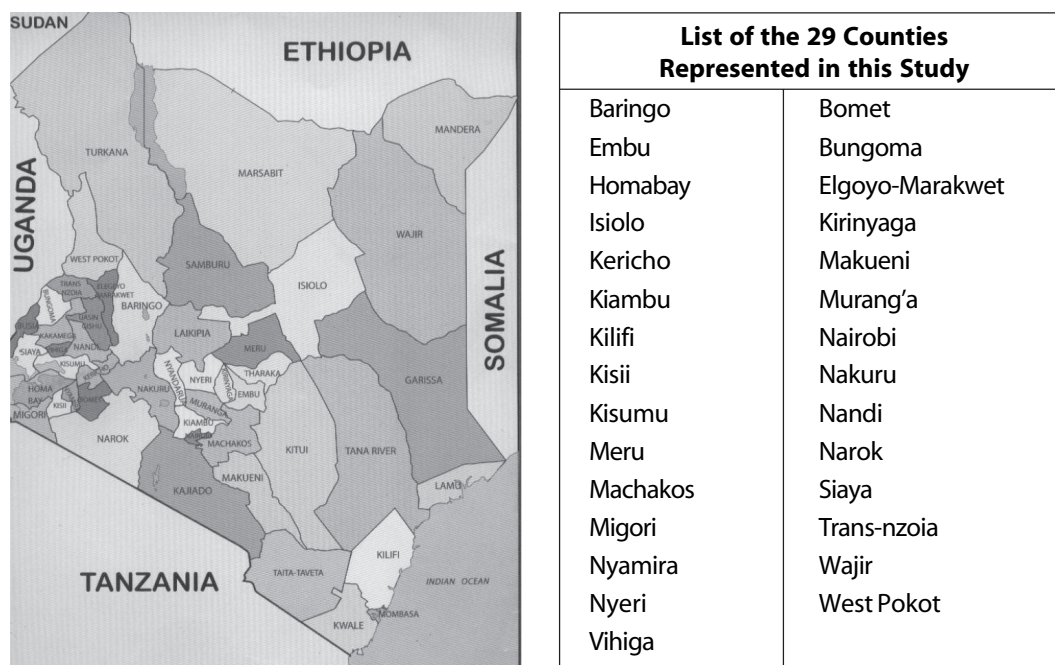
### Methodology

A questionnaire survey was used to collect information from 100 undergraduate students randomly selected from a class of 273 registered for the unit KRM 406: Soil and Water Conservation at Kenyatta University. On an average, 200 students enrol for this course per year. Further, soil and water conservation has

remained a key component of Kenya's extension services before and after Independence in 1963 (Tiffen et al., (1994) and Thomas, 1997). Both open and closed ended questions were formulated to address selected aspects of extension service. Their responses were meant to reflect the general opinion within households in their home areas. This clientele was selected for being finalists undergraduate students who would either add to the pool of jobless youth, seek employment in agricultural sector or attempt to start agribusinesses for self-employment. Further, their responses were to serve as an evaluation of their understanding of extension service as critical for national development. Questionnaire return rate showed that female and male respondents were 30 and 70, respectively. The respondents' age ranged from 20-25 years. In terms of year of study, 26 were in their third year, while 74 were in the final (fourth) year.

Up to 29 Counties out of a total of 47 were represented in this study (Figure 1). These counties vary in multiple variables like climate, soil types, socio-cultural orientations and poverty levels; representing high, medium and low potential zones. Since the goal was to determine general trends, data were descriptively analysed using Statistical Package for the Social Sciences (SPSS), with focus on frequency distribution and correlation analysis for selected variables. Additional insights from emerging responses were captured through content analysis with key respondents currently in the public extension service in Kasarani Division, Nairobi.





**Figure 1: Counties Map in Kenya and a List of 29 that Yielded Respondents**  
(Source: <https://www.google.com/#q=county+boundaries+map+kenya>)

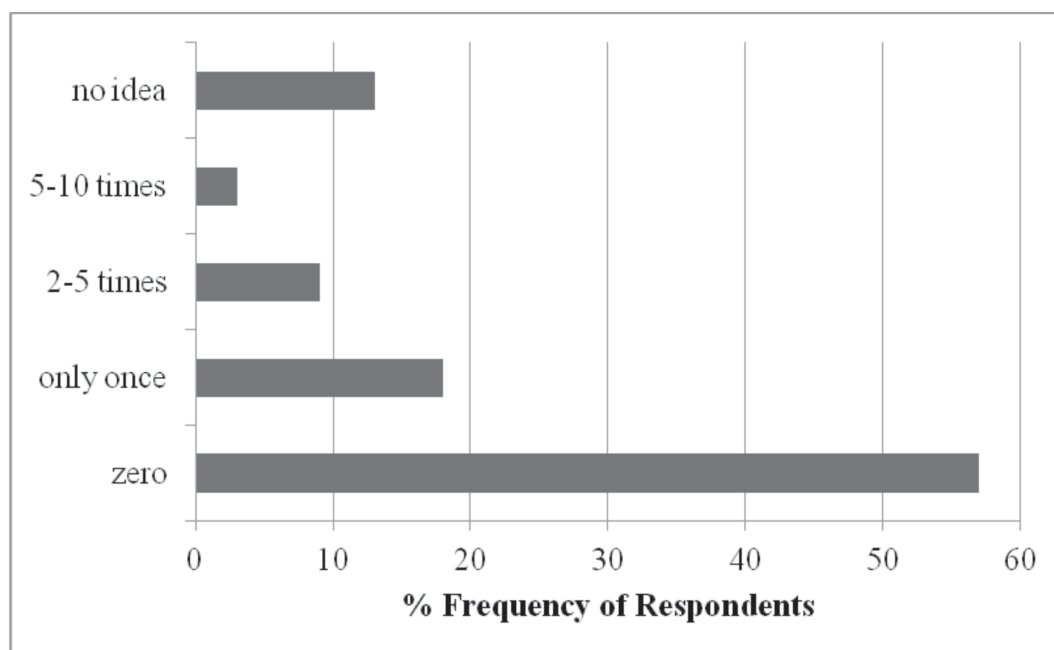
(Source: <https://www.google.com/#q=county+boundaries+map+kenya>)

## Results and Discussion

More than 70 per cent of the respondents indicated that their family farm had been visited either only once or not at all by an extension service agent in the last five years. A paltry three per cent indicated having been visited 5-10 times in the last five years (Figure 2). Accordingly, the public extension service is generally not visible and hence not accessible to farmers in the rural agroecosystems. Agricultural guidance has been left to farmers themselves, who rely on indigenous knowledge that has been passed down through generations. This gap has led to commercialisation of the service by non-State

actors to the disadvantage of majority financially poor farmers. This situation is likely to worsen due to the tendency of County governments to underfund the public extension. Such a shift in budgetary allocations may be indicative of shifting priorities away from soil and water conservation/management and food security to other non-agricultural investments. This shift could also be a message to farmers in the context of liberalised market systems to graduate from subsistence to self-reliant agribusinesses. Either way building farmers' capacities in soil/land and water conservation and management is still very necessary.





**Figure 2: Opinion on the Number of Visits by Extension Officer in the Last Five Years**

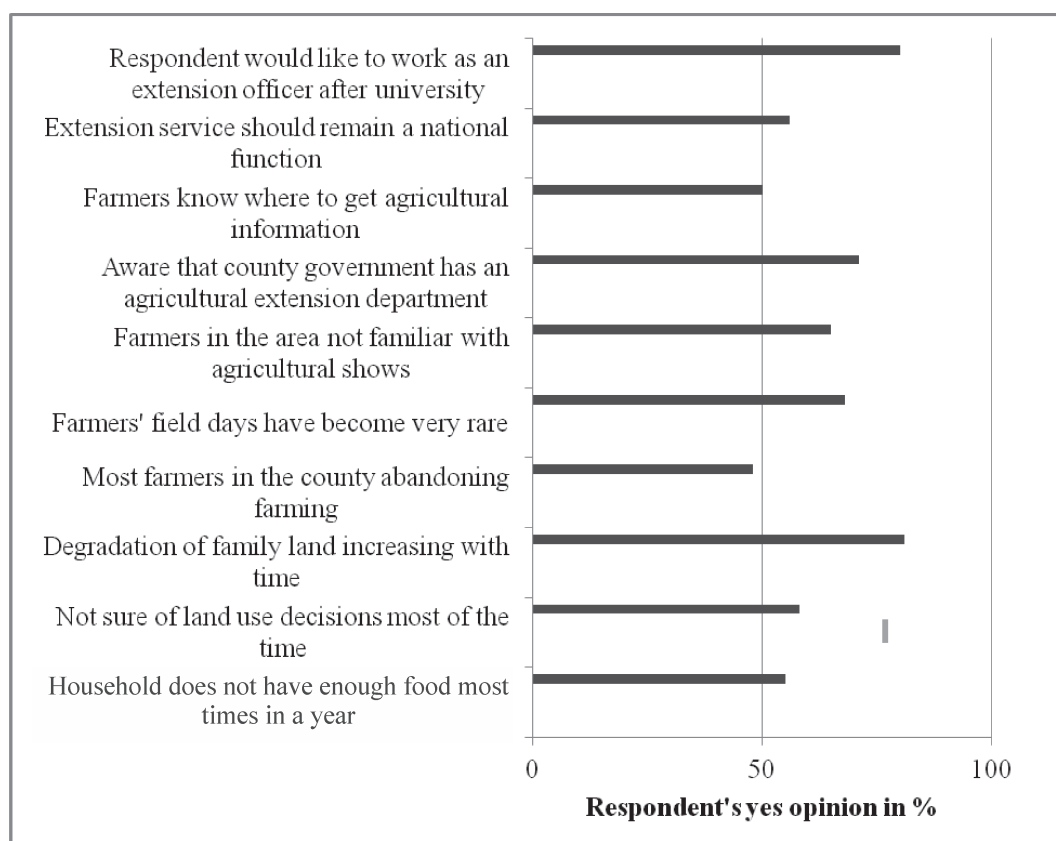
Responses further indicated that more than 50 per cent of households do not have enough food most times in a year (Figure 3). Up to 80 per cent confirmed that degradation of their family land is on the increase, while more than 55 per cent indicated that they were not sure of land use decisions necessary in their circumstances. More than 60 per cent indicated that farmers' field days had become very rare. Although land and food productivity is a function of various factors, the above responses converge on farmers lacking land and crop husbandry guidance due to the invisibility and inaccessibility of public extension service providers. This may explain why respondents thought that extension work should remain a national function since though devolved, County governments have not popularised this essential service and most

farmers remain marginalised from its inherent benefits. Devolving agriculture and hence extension service was to bring the agricultural services closer to farmers. Currently, poor planning and teething problems of devolving agriculture accounts in part to the limited extension services at the farm level. Public policy needs to interrogate this apparent scarcity and adopt more efficient ways of maximising output from the available extension agents.

Although more than 70 per cent of the respondents were aware that the county government has an extension service department, only 50 per cent claimed to know where to get agricultural information, while about 60 per cent were not familiar with agricultural shows. The wealth of agricultural education and

information in agricultural shows seem to benefit more established large-scale and intensive commercial farmers. Due to such challenges, a minority of farmers (about 45 per cent) are abandoning farming as a livelihood activity. Sticking to agriculture by majority of farmers is indicative of its undiminished role in enhancing human well-being and hence the need to support it through well-organised extension services. Further, while institutions of higher learning have been registering decreasing numbers of students pursuing agriculture and veterinary medicine, 80

per cent of the respondents indicated a willingness to work as extension agents on completion of studies. This was expected by virtue of their training as agriculturists. The opposite as earlier indicated in this paper would be true for Grade 8 students wishing to enrol in higher education. As training at universities changes to integrate business into agricultural sciences, extension service curriculum needs to equally change to accommodate this trend in order to prepare farmers for commercialised self-employment.



**Figure 3: Respondents' Yes Opinions on Selected Extension-related Variables**

As expected, correlation analysis showed that not having enough food most times in a year was positively and significantly correlated with not being sure of land use decisions (0.950) and farmers abandoning farming (transferring family labour to other things) (0.949). Conversely, not having enough food most times in a year had an inverse correlation with increasing land degradation (-0.915), which was indicative of increasing pressure on land under conditions of low land use and crop husbandry capacities (Table 1). The negative relationship between not being sure of land use decisions and not having enough food (-0.887) implies that farmers may have learnt other ways of survival that were not land-dependent and thus, did not care much about going for agricultural guidance (-0.921) since such effort did not perhaps translate into any tangible benefits to them.

As expected, not being sure of land use decisions had a positive correlation with some farmers abandoning farming (0.955), which is a logical way of minimising investment risks. Increasing degradation of family land had a positive correlation with reducing field days (0.936) underscoring the importance of land husbandry knowledge acquired from farmer field

days. It is possible that farmers tend to resign to fate when their sources of knowledge get obscured. When no tangible benefits seem to follow a particular action, farmers tend to avoid it or care less about it and try to survive in a different way.

The consequences of land degradation naturally include reduced land productivity and hence uncertainty in food security. Under such circumstances, it is natural for farmers who are not sure of land management decisions to abandon farming and seek livelihoods from other engagements. Abandoning farming had a negative correlation with apparent decline in farmer field days in their area and farmers knowing where to go when they need help with agricultural information (-0.972 and -0.913, respectively). On-farm field days are forums where farmers are exposed to appropriate and or promising techniques in farming. Decline in such field days often deny farmers the opportunity for capacity and competence building in the ever-changing technologies in agriculture. Consequently, some farmers are likely to abandon farming for lack of such critical agricultural information.

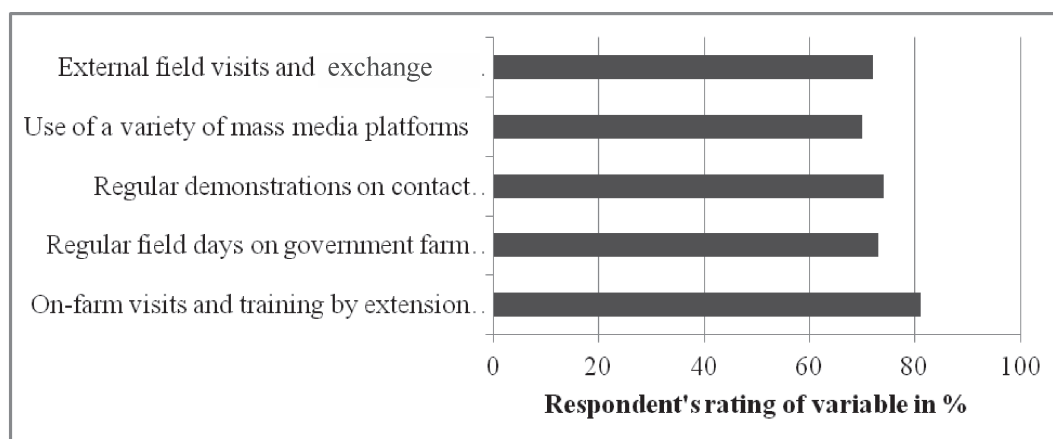
**Table 1: Pearson Correlation of Various Extension-related Items (N=100; Sig. (2-tailed))**

Variables	A	B	C	D	E	F
<b>A</b> : Not having enough food most times in a year	1	<b>.950**</b>	<b>-.915**</b>	<b>.949**</b>	<b>-.953**</b>	<b>-.921**</b>
<b>B</b> : Not sure of land use decisions most of the time	<b>.950**</b>	1	<b>-.887**</b>	<b>.955**</b>	<b>-.949**</b>	<b>-.939**</b>
<b>C</b> : Degradation of family farm seems to be increasing with time	<b>-.915**</b>	<b>-.887**</b>	1	<b>-.920**</b>	<b>.936**</b>	<b>.817**</b>
<b>D</b> : Most farmers in the county abandoning farming	<b>.949**</b>	<b>.955**</b>	<b>-.920**</b>	1	<b>-.972**</b>	<b>-.913**</b>
<b>E</b> : Long since they had a farmers' field day in their area	<b>-.953**</b>	<b>-.949**</b>	<b>.936**</b>	<b>-.972**</b>	1	<b>.886**</b>
<b>F</b> : Farmers know where to go when they need help with agricultural information	<b>-.921**</b>	<b>-.939**</b>	<b>.817**</b>	<b>-.913**</b>	<b>.886**</b>	1

\*\* . Correlation is significant at the 0.01 level (2-tailed)

In terms of methods of communicating extension service, more than 80 per cent of the respondents preferred on-farm visits and training by extension agents. Other methods indicated in Figure 4 were equally important having scored more than 60 per cent . By implication, extension service needs to be strategically packaged to include at least training visits with one or several other approaches. Farmers' unique circumstances should provide the platform for such decisions in the context of public-private partnerships. In Kenya, it is widely acknowledged that non-governmental organisations are better felt at grassroots,

particularly in remote areas than the public extension. Herein is an opportunity for government to partner with civil society in the interest of reaching out to more farmers in remote areas who are often marginalised due to deficiencies in government logistical planning and public service culture of wanting to remain in the office or at the headquarters. To increase their visibility, extension agents should operate in their home areas and report to work without the limitation of motorised transportation. Established NGOs could assist with transport deep into the interior and also appraise performance on behalf of the government.



**Figure 4: Opinion on the Relative Importance of Methods of Communicating Extension Services**

In terms of how to improve Kenya's extension service, consensus from respondents were zeroed in on six five key interventions, thus:

- i. The need to increase the number of public extension officers. This calls for deliberate budgeting for this allocation at both the national and county government levels. Having devolved agriculture, deliberate effort is needed to equally devolve extension staff from national government to County governments.
- ii. The need to monitor and evaluate past extension performance and provide better training to the extension officers in line with changing local and global agricultural development and environmental management concerns. Currently, global focus is on sustainable development goals. In the context of agriculture, there is a need for capacity building in climate-smart agricultural practices in order to make agriculture more environment and people-friendly. In this regard, the scope of soil and water conservation and management should be expanded to include land and water management. Multi-agency partnerships would be required in implementing the expanded extension services.
- iii. Since agriculture is now a devolved function, more training centres at the County levels need to be established and training attuned to County needs by virtue of their differences in the agro-ecological potential and socio-cultural aspects.
- iv. According to Article 43 (1) of Kenya's National Constitution on Economic and Social Rights, every person has the right to be free from hunger, and to have adequate food of acceptable quality. In addition, Article 35 (1) (a) provides that every citizen has the right of access to

information held by the State. Extension knowledge is information held by the State. In order to operationalise the right to food of good quality, farmers need to be trained on how to increase their productivity, while stewarding their land and water resources. This approach would require an invigorated extension service that addresses multiple components of an integrated food security framework such as production, purchases, value-addition and off-farm income generation activities. Improvement of infrastructure, particularly feeder roads, would make it easier to access most rural areas and deliver the much-needed extension services, besides enabling farmers to get their harvest to markets. This is a role government should prioritise in Kenya.

- iv. Implementation of synergistic partnerships with private sector service providers targeting different aspects of extension packages fit for different agro-ecological zones.

Many extension agents are underused due to lack of logistical arrangements to get them into fields away from their homes and work stations. The emerging research gap is how to partner with non-governmental agencies and faith-based groups who have succeeded in penetrating deep into rural areas and often enjoy the goodwill of the communities.

### Conclusion and Recommendations

From around 2010, extension service in Kenya has remained invisible and inaccessible to most farmers in the rural areas where agriculture is the main economic and livelihood activity. This in part explains why more than 50 per cent of households do not have enough food most of the time in a year. Degradation of family land is also on the increase, while most farmers are not sure of land use and management decisions required for their specific circumstances. The gap occasioned by the shortage of public extension is being filled with other non-public service providers like non-governmental organisations, faith-based civil society and the private sector, however, on a commercial basis that disadvantages majority resource-poor rural farmers.

Based on the importance of agriculture in food and nutrition security, youth employment and wealth creation, public extension service needs to be viewed as a strategic national and County priority and a right to tax-paying farmers. Deliberate effort to budget for this sector at both national and County government levels is necessary. Based on lessons from past failures, efficiency in this service can be enhanced through strategic public-private-partnerships. This calls for enterprise assessment through its value-chain with view of identifying the entry points for various service providers. Non-governmental organisations, in particular, can provide the lacking logistical challenges on the part of public extension when it comes to reaching farmers deep into the rural areas. The



private sector can reinvent the commodity-based extension approach and service to commercial farmers.

To increase the critical mass of future extension workers, incentives to raise admissions to agricultural courses at university should be developed. The youth need to be encouraged to view agriculture as the most important vocation

by virtue of its role in food and nutrition security for all cadres of workers.

Further, since self-employment has assumed a critical role in Kenya's economic development, public extension service should be aligned to job creation through capacity and competence development in agribusinesses, that are people and environment-friendly.

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