



AGRODEALER BASELINE STUDY

Final Report

Prepared by



Bayesian Consulting Group Limited

Info@bayesianconsultinggroup.org

November 2016

TABLE OF CONTENTS

TABLE OF CONTENTS	ii
LIST OF TABLES AND FIGURES	iv
List of Tables	iv
List of Figures.....	v
EXECUTIVE SUMMARY	ix
1.0 INTRODUCTION	1
1.1 Background	1
1.2 Objectives of the baseline study.....	3
1.3 Scope of the survey	3
2.0 METHODOLOGY	5
2.1 Introduction	5
2.2 Sampling Design.....	5
2.3 Data collection.....	8
2.4 Data analysis and presentation of results.....	8
3.0 RESULTS AND DISCUSSIONS.....	9
3.1 General characteristics of the interviewed agro dealers.....	9
3.2 An overview of types of crop seed stocked	16
3.3 Crop seed sales	20
3.4 Cost of Business in Agro-dealership	22
3.5 Crop seed supply systems	26
3.6 Application of ICT in agro-dealership business	32
3.7 Group participation and networking	36
3.8 Sources of external funding to the business.....	38
3.9 Agro-dealership business challenges	39
4.0 SUMMARY CONCLUSIONS AND RECOMMENDATIONS	41
4.1 Summary and conclusions.....	41
4.2 Recommendations	42
5.0 REFERENCES	44
6.0 ANNEXES	46
6.1. County maps showing location of interviewed agro-dealers.....	46

6.2 Survey questionnaire	54
6.3 Key Informant Checklist	65
6.4 Focus Group Discussion Checklist	66
6.5 List of Key Informants.....	68
6.6 Annex Tables.....	68

LIST OF TABLES AND FIGURES

List of Tables

Table 3.1: Distribution of sampled agro-dealers by County	9
Table 3.2: General characteristics of agro-dealers	10
Table 3.3: Characteristics of employees engaged by agro dealers.....	15
Table 3.4: Percentage of agro-dealers stocking different crop seeds by county	16
Table 3.5: Main maize seed suppliers (% of respondents)	18
Table 3.6: Average volume of major seed types stocked (in Kg) by agro-dealers in 2014 and 2015.....	19
Table 3.7: Average volume of seeds stocked by agro-dealers (in kg): 2014 and 2015....	19
Table 3.8: Changes in average volume of crop seeds sold (in Kg) during the long rains season of 2015 and 2016.....	20
Table 3.9: Changes in average volume of maize seed stocked (in Kg) during the long rains season of 2015 and 2016 across counties.....	20
Table 3.10: Type of seed varieties agro-dealers plan to stock for the September/October season.....	22
Table 3.11: Annual average cost of business	26
Table 3.12: Main sources of seeds (% of respondents)	26
Table 3.13: Proportion of agro-dealers indicating sources of various crop seeds in 2015 by county	27
Table 3.14: Average number of customers who purchased crop seeds in 2015	28
Table 3.15: Average number of customers who purchased crop seeds in 2015	29
Table 3.16: Proportion of customers preferring different package sizes of crop seeds	29
Table 3.17: Main crop seed varieties unavailable from agro-dealership outlets	31
Table 3.18: Proportion of agro-dealers indicating best source of information about crop seeds.....	32
Table 3.19: Type of training provided to staff	36
Table 3.20: Sources of external funding by agro-dealership type	39
Table 3.21: Agro-dealership constraints in maize and non-maize seed business.....	40
 Table 6.6.1: Number of direct suppliers from various sources for crop seeds stocked in 2015 (% of sample)	 68
Table 6.6.2: Proportion of customers preferring different package sizes of crop seeds ...	69
Table 6.6.3: Benefits derived from agro-dealer associations for members (% of sample)	69
Table 6.6.4: Number of direct suppliers from various sources for crop seeds stocked in 2015 (% of sample)	70

List of Figures

Figure 3.1: Position of the respondents in the agro-dealership business	9
Figure 3.2: Distribution of interviewed agro-dealers by gender and by county.....	10
Figure 3.3: Distribution of agro-dealerships by type	11
Figure 3.4: Type of agro-dealership by age group	12
Figure 3.5: Highest level of education achieved by agro-dealership owners.....	13
Figure 3.6: Education level of agro-dealership owners by county (% of sample)	13
Figure 3.7: Education level of agro-dealers by gender	14
Figure 3.8: Proportion of agro-dealerships having full time employees	14
Figure 3.9: Proportion of agro dealers having full time employees by agro dealership type	15
Figure 3.10: Proportion of stock values of different products traded by agro-dealers	16
Figure 3.11: Proportion of agro-dealers stocking different crop seeds	17
Figure 3.12: Percentage of agro-dealers anticipating to stock various types of seed in the forthcoming short rain season (October-December 2016).....	21
Figure 3.13: Cost of business in agro-dealership.....	23
Figure 3.14: Cost of trading in maize and non-maize seeds	24
Figure 3.15: Cost of trading in maize and non-maize seeds by trader type	25
Figure 3.16: Preferred communication mode with suppliers (%).....	27
Figure 3.17: Rate of restocking seed supplies	28
Figure 3.18: Proportion of agro-dealers who have tried to stock some seed varieties but were unable to obtain them	30
Figure 3.19: Mode of educating customers on new seed varieties (% of sample)	31
Figure 3.20: ICT application in business management	33
Figure 3.21: ICT application in accessing agronomic information	33
Figure 3.22: ICT application in communicating with various clients	34
Figure 3.23: Proportion of agro-dealers who provide or facilitate staff training on new seed varieties stocked	34
Figure 3.24: Proportion of agro-dealers by dealership type providing or facilitating staff training on new seed varieties stocked	35
Figure 3.25: Type of training provided to staff	35
Figure 3.26: Proportion of agro-dealers belonging to agro-dealer associations.....	36
Figure 3.27: Awareness of existence of agro-dealer associations for non-members (% of sample).....	37
Figure 3.28: Reasons for awareness of existence of agro-dealer associations but not interesting in joining (% of sample)	38
Figure 3.29: External funding for agro-dealership	38
Figure 3.30: Sources of external funding for agro-dealers.....	39
Figure 3.31: Types of complaints received by agro-dealers	40

Figure 6.1.1: Location of interviewed agro-dealers in in Meru County	46
Figure 6.1.2: Location of interviewed agro-dealers in in Murang'a County	47
Figure 6.1.3: Location of interviewed agro-dealers in in Taita-Taveta County	48
Figure 6.1.4: Location of interviewed agro-dealers in in Kisii County	49
Figure 6.1.5: Location of interviewed agro-dealers in in Nakuru County	50
Figure 6.1.6: Location of interviewed agro-dealers in in Bungoma County	51
Figure 6.1.7: Location of interviewed agro-dealers in in Trans-Nzoia County	52
Figure 6.1.8: Location of interviewed agro-dealers in in Kericho/Bomet Counties	53

ACRONYMS AND ABBREVIATIONS

AE	Agri Experience Ltd
AGMARK	Agricultural Market Development Trust
AGRA	Alliance for a Green Revolution in Africa
CIG	Common Interest Group
CNFA	Cultivating New Frontiers in Agriculture
FGD	Focus Group Discussion
HA	Hectares
ICT	Information and Communications Technology
KALRO	Kenya Agricultural & Livestock Research Organization
KASP	Kenya Agro-dealer Strengthening Program
KEPHIS	Kenya Plant Health Inspectorate Service
KII	Key Informant Interview
KSC	Kenya Seed Company
KMT	Kenya Markets Trust
MT	Metric tonnes
NAAIP	National Accelerated Agricultural Input Access
SACCO	Savings and Credit Cooperative Organization

ACKNOWLEDGEMENTS

Bayesian Consulting Group Ltd gratefully acknowledges all Agri Experience Ltd staff who provided support in the execution of this study. We single out Victor Mushira who was our contact person at the beginning of this study for his invaluable support. We also wish to register invaluable contribution of Nkatha Ngichu-the Knowledge and Results Manager. We acknowledge Anastasia Mbatia, Aline O'Connor (Director) and all other Agri Experience staff in making this study a success.

We thank all the respondents who agreed to spend their time responding to our questions. These include the agro-dealers, famers, key informants, and county officials that we interviewed. We also wish to thank our field enumerators and their supervisors who ensured that data collection was carried out speedily and successfully. We gratefully acknowledge our data analysts for the good and timely work of data entry and cleaning.

EXECUTIVE SUMMARY

Agri Experience (AE) and the Kenya Market Trust (KMT) have formed a partnership to address the challenges faced by agro-dealers. AE and KMT believe agro-dealers are an essential link between the seed companies and the seed users (farmers). The focus of the partnership is therefore to help agro-dealers increase and expand the supply of certified crop seeds and information and increase the access to and correct use of quality seed by farmers.

By focusing on this node of the seed value chain, the partnership expects to address an important component of the seed supply system. The two institutions will be addressing the underlying constraints to access to good quality seeds. This baseline study was commissioned by AE to provide information and indicators against which changes as a result of interventions can be assessed in future. Further, other sector stakeholders can use the results to plan interventions in the seed supply systems.

The agro-dealer baseline survey was carried out to generate baseline data and information on agro-dealership businesses in Kenya from the perspective of crop seed trade. A broad range of issues were covered in this study. These included the socio-economic characteristics of the agro-dealership owners, including their gender; education level; number and gender of employees; type of seed stocked and sold; costs of running an agro-dealership business; crop seed supply chains; relationships with seed suppliers and their customers; sales trends between 2014 and 2016; use and application of ICT; membership in agro-dealer associations; and, business challenges. This information will be used by Agri Experience Ltd and other stakeholders in the seed sector to inform interventions for enhancing the role of agro-dealers as the critical link between seed producing companies and farmers.

The study collected data from a random sample of 438 agro-dealers spread across seven (7) counties, spanning various regions in the country. The counties included in the study were Taita-Taveta (Coast region); Meru (Upper Eastern); Nakuru (Central Rift); Kericho (South Rift); Trans-Nzoia (North Rift); Bungoma (Western); and, Kisii (Nyanza). The agro-dealers were interviewed using semi-structured questionnaires. In addition to the agro-dealers, the survey team interviewed a total of 15 key informants and conducted 8 focus group discussions (FGDs). Data from the semi-structured questionnaires was entered using CS-PRO then transferred to STATA and SPSS. Data was analysed using statistical procedures such as frequency analysis, means and cross-tabulations. The findings were discussed and triangulated using the qualitative information generated from the key informant interviews and FGDs.

The main findings of the study and their implications are summarized in the table below:

-

	Broad study area/objective	Highlight of key findings	Implication/recommendation (If any)
1.	Nature of agro-dealers' relationship with crop seed companies and farmers	▪ Majority of agro-dealers (60%) sourced their seed from Kenya Seed Company but many sourced from more than one company. ▪ 19% sourced seed from local distributors. ▪ 21% sourced seed from other seed companies. ▪ 66% communicate with their suppliers via phone. ▪ Restocking is very prompt; 94% indicated that they are restocked promptly upon request. ▪ Majority of farmers purchased maize seed from agro-dealers and slightly over half of the customers were women. ▪ 44% of agro-dealers indicated that farmers prefer a certain package of seed. ▪ 38% prefer the 2kg seed package compared to other sizes. ▪ 51% of agro-dealers indicated that they are unable to meet demand of farmers for seed. ▪ 76% of agro-dealers educate farmers about new seed across the counter. ▪ 66% of agro-dealers said they are unable to address complaints by farmers.	○ The high proportion of agro-dealers unable to address farmers' complaints is alarming. Since majority may not have all the technical knowledge needed, seed companies should strengthen their capacity to deal with such complaints. ○ Farmer education of new varieties may not be adequate since it is conducted across the counter. ○ In order to promote the use of new seed varieties additional efforts by seed companies such as demonstration plots, media advertisements, promotional events etc are required.
2.	Crop seed trade dynamics		
2(a)	Trends in seed sale volumes, business growth and financing	▪ Substantial growth in maize seed stocked was recorded between 2014 and 2015. On average, volumes of maize seed stocked increased by 85%.. ▪ There was also an increase in volume of maize seed sold during the March-April season of 2016 compared with the same period in 2015. For maize seeds, the value of sales increased by 27%.	○ The observed increase in volume stocked and value sold is a good indicator of growth of the seed sector.

2(b)	Adoption of new seed varieties	None of the agro-dealers indicated that they intended to stock new varieties for the 2016 short rains season (October-November). This finding is expected because new varieties are generally introduced during the long rain season (March-April).	
2(c)	Customer/stockist base	100% of agro-dealerships interviewed stocked maize seed. 41% of interviewed agro-dealers stocked bean seed; 16% stocked sorghum seed; 10% stocked finger millet seed; and, only 4% stocked green grams. - In 2015 the average number of maize seed customers was 905/agro-dealer, of whom 56% were female.	
2(d)	Reasons for farmer seed choices	- Maize is the most purchased seed in the country. All agro-dealers interviewed stocked maize. This observation is expected because agro-dealers are certain to sell the maize seed because of prevalent use. - For other crop seeds, the numbers of customers are fewer and majority of farmers prefer to use seeds from the informal seed systems.	
3	Involvement and role of women and youth in agro-dealership business	- A fairly good gender balance is observed in agro-dealership business. Among the respondents, 56% were males and 44% were females - But ownership is dominated by men; 63% of owners were men and only 37% were women. 71% of youth operated their businesses as stockist. Only 4% of youth operated wholesale agro-dealerships.	
4.	Agro-dealership associations and their level of influence and advocacy	Only 24% of the agro-dealers indicated that they belonged to a county agro-dealer association.	There is need to for the association to better communicate and demonstrate value to potential members given the

		▪ 37% said they were too busy to participate and 29% felt that nothing much would be achieved by the groups.	apathy that most agro-dealers expressed about joining groups.
5.	Access to and use of ICT in agro-dealership businesses	▪ Use of ICT for business management is low among the stockists. 66% indicated they do not use any computer-based ICT tools for business management. ▪ 75% of wholesalers use ICT (Quick-books and Excel) as tools for business management	○ AE could work with other stakeholders that work on ICT innovation to explore appropriate ICT options for stockists
6.	Challenges faced by agro-dealership businesses	▪ Only 14% of agro-dealers dealing in maize seed indicated that they faced no challenge compared to 26% for the non-maize seed. ▪ Inadequate cash to pay for supplies was cited by 18% of maize seed traders. ▪ 19% cited insufficient quantities as a major challenge.	○ Inadequate financing for the business is a major challenge for the agro-dealers. It could explain why a sizeable number are unable to meet the demand from their customer. Affordable business financing is needed.

1.0 INTRODUCTION

1.1 Background

High and sustained agricultural productivity is required to achieve food security, reduce poverty and enhance overall economic growth. Productivity of most food crops in Kenya is far below potential. For instance, maize productivity stands at about 1.6 MT/ha compared to a global average of about 4 MT/ha (Sheanhan, Ariga and Jayne, 2016).

In the past, growth in crop production has been due to increase in acreage. However, with declining land sizes, increases in production will inevitably have to be achieved through increases in productivity. As noted by Kibaara *et al.* (2008), the per capita land ownership and per capita cultivated land area has been declining over time because of sub-division, especially through land inheritance.

Increasing productivity requires use of high yielding inputs such as good quality seeds, fertilizers, and agro-chemicals. Quality seed has been shown to have great potential to increase on-farm productivity and enhance food security (Muyanga *et al.*, 2005). However, good quality seeds are not readily available and when available they are not affordable to the majority of farmers. The over-arching challenge for the seed sector is to develop a seed production and delivery system that can significantly increase access to and correct use of quality seed by smallholder farmers.

In Kenya informal and formal seed delivery systems exist side by side. The informal seed system is dominant, accounting for about 78% of all seed used in the country (Ayieko and Tschirley, 2006). The informal seed system is characterized by the use of uncertified seeds that are often recycled, contributing to poor crop yields. Under this seed supply system, farmers obtain seed from a variety of informal sources, including their own on-farm production, neighbours and relatives, local traders and other such sources. The formal seed system, on the other hand, provides good quality certified seeds. These have been proven to give higher returns to farming (Ayieko and Tschirley, 2006). Under the formal system, seeds produced by seed companies are supplied to the farmers through a network of wholesale distributors and agro-dealers.

According to Belt *et al.* (2015), there are three main market-based models that currently supply seeds:

1. The *chain leader model* is organized around an influential actor (who is also a buyer of farmers' outputs). It operates through contract farming arrangements whereby the chain leader supplies the farmers with inputs (seeds) but also buys farmers' outputs. The chain leader supplies the seeds either directly or through

agro-dealers. The main challenge with this model is that it is limited to few commercial crops and the risk of side-selling by the farmers is very high.

2. The *local traders model* features several output buyers instead of one major chain player. These buyers supply inputs (seeds) to farmers at credit through a network of local traders/agro dealers.
3. The *agro-dealer model* is most prevalent in Kenya and is central to the formal seed system. This model is driven by profit-seeking agro-dealers who often run several business streams within their premises (hardware, agro-vet, etc). Agro-dealers are an important part of the farm inputs value chain, playing a major role in ensuring that farmers access important agricultural inputs required to improve agricultural productivity on their farms (Poulisse, 2007). Agro-dealers are defined generally as small-scale independent stockists or inputs dealers who play an important role in distributing farm inputs (Odame and Muange, 2012). The exact number of agro-dealers in Kenya is not known but a survey carried out by Agricultural Market Development Trust (AGMARK) under the Kenya Agro-dealer Strengthening Program (KASP) found that there were about 10,000 agro-dealers in 2010 (Okello, 2010). According to Korir (2016), KEPHIS estimates that there are 3,500 licensed agro-dealers while the Ministry of Agriculture, Livestock and Fisheries under the National Accelerated Agricultural Input Access (NAAIP) program estimates that there are 9,000 agro-dealers in Kenya. While the exact number may be elusive given the possibility of new entry and exit every year or season, agro-dealers play an important role in linking farmers and suppliers of inputs.

As noted by Odame and Muange (2012), the agro-dealer model faces several challenges that limit access by farmers to quality seed:

1. Inadequate working capital that limits business expansion.
2. High prices, mainly due to long distances to agro-dealership outlets and poor infrastructure that adds to transportation costs.
3. Inadequate supply of inputs during the peak planting season, resulting in frequent stock-out of essential supplies.

Both state and non-state actors have proposed interventions to address the challenges faced by agro-dealers. The Kenya Agro-dealer Strengthening Programme (KASP) implemented by AGMARK and the NAAIP implemented by the Ministry of Agriculture are typical examples.

It is under this context that Agri Experience (AE) and the Kenya Market Trust (KMT) have formed a partnership to address the challenges faced by agro-dealers. AE and KMT believe agro-dealers are an essential link between the seed companies and the seed users (farmers). The focus of the partnership is therefore to help agro-dealers increase and expand the supply of certified crop seeds and information and increase the access to and correct use of quality seed by farmers.

By focusing on this node of the seed value chain, the partnership expects to address an important component of the seed supply system. The two institutions will be addressing the underlying constraints to access to good quality seeds. This baseline study was commissioned by AE to provide information and indicators against which changes as a result of interventions can be assessed in future. Further, other sector stakeholders can use the results to plan interventions in the seed supply systems.

1.2 Objectives of the baseline study

The objectives of the baseline study are to:

- i. Establish the dynamics of the relationship between the agro-dealers, seed companies and farmers;
- ii. Establish the following aspects of trade in crop seed:
 - a. Trends in sales volumes, business growth and financing
 - b. Adoption of new crop seed varieties
 - c. Customer (farmer) and/or stockist base
 - d. Reasons for farmer seed and input choices
 - e. Adoption of farmer-centred seed and input distribution strategies
- iii. Establish the involvement of women and youth in the seed agro-dealership business;
- iv. Assess county agro-dealer associations' level of influence and advocacy;
- v. Assess agro-dealers' access to and usage of ICT and other internet services such as *MbenguChoice*¹.

1.3 Scope of the survey

The study covered the following regions and counties in Kenya:

1. Central (Muranga county)
2. Coast (Taita-Taveta)
3. North Rift (Trans-Nzoia)
4. South Rift (Kericho)
5. Central Rift (Nakuru)
6. Nyanza (Kisii)
7. Upper Eastern (Meru)
8. Western (Bungoma)

During data collection a small part of Bomet County was also covered (See Figure 2.1 for details). The actual counties were selected randomly from a list of 34 counties of interest to AE that had been classified by region.

¹ MbenguChoice is an online tool (also available as a phone application on Google Play Store) that allows Kenya farmers, agro-dealers and extension workers to access a list of crop seed varieties that are suitable for specific counties and agro-ecological zones.

Various farm-related, demographic and socio-economic data and information were collected from the sampled agro-dealers. Input-specific data and information was also collected. The study endeavoured to capture contextual, qualitative information related to the seed value chain that might explain the success (or failure) of the agro-dealer model. In order to properly capture the gender dynamics of the agro-dealer model, the study collected sex-disaggregated data, particularly for gender-sensitive indicators. The semi-structured questionnaire used in this the survey is in Appendix 6.2. The survey team interviewed the owners of the agro-dealerships or, in their absence, the managers. The main focus of the study was on crop seed even though the agro-dealers were dealing with many other products. The survey covered the past two years (2014 and 2015) and the first season of 2016 (March-April).

2.0 METHODOLOGY

2.1 Introduction

An inception meeting between AE staff and the consultants was held at the beginning and an inception report prepared. The two teams discussed and agreed on the timelines and the study counties. Individual study county maps showing location of interviewed agro-dealers are presented in Annex 6.1. The choice of individual counties was informed by where AE is currently working and/or planning to extend its work. However, care was taken to represent the diverse regions in the country as explained under section 1.3.

For triangulation of information, three interview modules were adopted. The modules included:

- Individual seed trader interviews;
- Key informant interviews (KII); and,
- Focus group discussions.

Consequently, interview tools and an FGD checklist were developed, shared with AE for review and comments before revision and adoption. The final survey tools are annexed to this report (see Annexes 6.2, 6.3 and 6.4). In the next sub-sections, we discuss the detailed methodological approaches used to collect data, analyse it and present results.

2.2 Sampling Design

With the estimated population of agro-dealers of 10,000 (See AGMARK & CNFA, 2010), the sample size (following Israel, 1990), was computed as:

$$n = \frac{\left(\frac{P[1-P]}{\frac{A^2}{Z^2} + \frac{P[1-P]}{N}} \right)}{R}$$

Where: n=sample size required; N=number of agro-dealers; P=estimated variance in the population, as a decimal; A=precision desired, as a decimal; Z=Z-score at the desired confidence level; and, R=estimated response rate, as a decimal.

Because the population variability could not be easily determined, we applied the conservative figure of 50%. At 95% level of confidence, A=0.05 and Z=1.96. Because the interviews were to be personally administered by the enumerators, we expected a good response rate of about 90%. The sample size was therefore calculated as:

$$n = \frac{\left(\frac{0.5[1-0.5]}{\frac{0.05^2}{1.96^2} + \frac{0.5[1-0.5]}{10000}} \right)}{0.9} = 411$$

To cushion against any future attrition, a total of 438 agro-dealers were eventually interviewed. The distribution of the interviewees across counties was guided by concentration of the agro-dealers following the sampling list provided by AE. Table 2.1 provides a summary of the number of interviewees per county.

Table 2.1: Number of dealers interviewed

County	No. interviewed	Percentage of total sample
Muranga	65	14.8
Taita Taveta	50	11.4
Meru	50	11.4
Kisii	38	6.4
Trans Nzoia	46	10.5
Nakuru	70	16
Kericho	58	15.5
Bungoma	61	13.9
Total	438	100

The agro-dealers interviewed were randomly selected from the list of agro-dealers provided by AE using an online research randomizer (www.randomizer.org).

Besides the 438 agro-dealer interviews, 15 KIIs and eight FGDs were conducted (See Table 2.2). The key informants included the agriculture sector experts such as county Crop Officers and sub-county Agricultural Officers (see Annex 6.5 for details). Thus, they were purposely selected based on their expertise. The FGD participants were drawn from farmer groups, carefully selected to ensure gender balance. A total of 62 people participated, of whom women constituted 40% of the participants.

Table 2.2: Number of KII and FGD

County	KII	FGD
Muranga	2	1
Taita Taveta	3	1
Meru	3	1
Kisii	1	1
Trans Nzoia	1	1
Nakuru	2	1
Kericho	1	1
Bungoma	2	1
Total	15	8

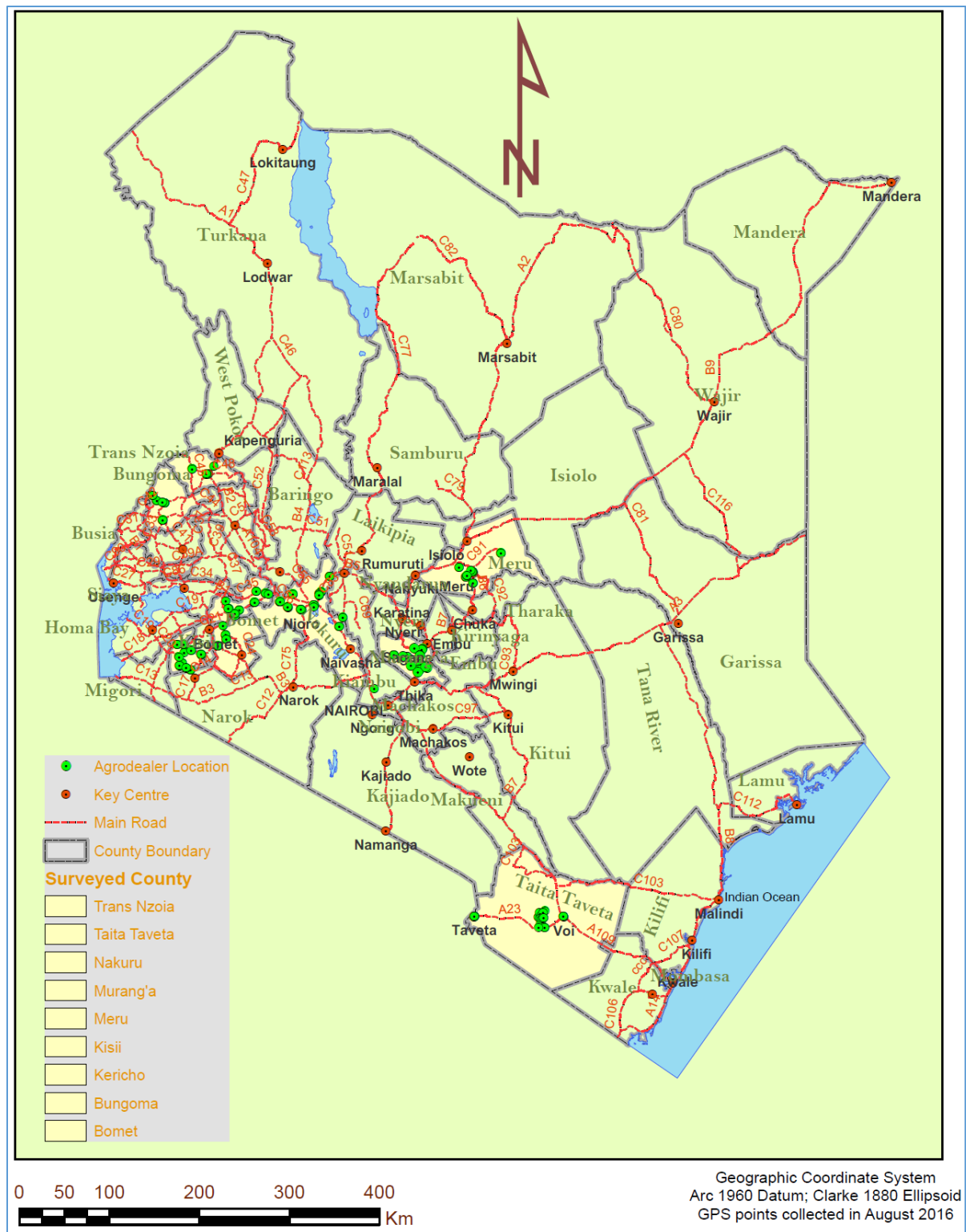


Figure 2.1: Counties included in the study

2.3 Data collection

Data for this study came from both primary and secondary sources. Secondary sources provided background to the project and the variables on which primary data had to be collected, as well as information on the seed sub-sector in Kenya. Among the secondary sources used were peer-reviewed journal articles, technical reports and grey literature.

Primary data were obtained from the field survey of randomly sampled agro-dealers, purposely-selected key informants and focus groups. The data was collected using semi-structured questionnaires administered with individual traders. The KIs and FGDs were based on carefully designed checklists. The researchers were, however, free to probe the respondents for deeper understanding and clarity of the issues being discussed. The senior researchers were supported by experienced assistants for note taking.

Data quality control was managed at three levels. At individual enumerator level, at the end of each day enumerators checked their own work for completeness of questionnaires, legibility of entries and internal consistency. The second level of quality control involved supervisors who cross-checked all questionnaires submitted by the enumerators. The supervisors recorded the questionnaires received, reviewed them and discussed the errors detected with the enumerators before recommending corrections. At the third level, data entry, inconsistencies were referred to individual enumerators for clarification.

2.4 Data analysis and presentation of results

Analysis of quantitative data involved computation of totals, means and proportions of key variables.

Qualitative data obtained from KIs and FGDs were processed through content and semiotic analysis. Content analysis entailed classifying data into key themes and analysis of patterns by comparing major themes identified. Semiotic analysis involved critical assessment of use of both verbal and body language during the interview process. Semiotic analysis was done concurrently with the data collection process with the aim of identifying any emphasized opportunities and challenges in the seed sub-sector. Content analysis was also applied on secondary information.

The results observed are presented in the next section along specific themes: general characteristics of the interviewees, types of crop seeds stocked; crop seed sales and their variations across space and time; cost structure of seed marketing; crop seed supply system; application of ICT in agro-dealership; social capital and networks among the agro-dealers; and, challenges in seed trade. We use a combination of prose and info-graphics in presentation of the results for brevity and clarity.

3.0 RESULTS AND DISCUSSIONS

3.1 General characteristics of the interviewed agro dealers

A total of 438 agro-dealerships were included in this study. Their distribution across regions and counties are summarized in Table 3.1.

Table 3.1: Distribution of sampled agro-dealers by County

Region	County	No. interviewed	Percent in total sample
Central	Muranga	65	14.8
Coast	Taita-Taveta	50	11.4
North Rift	Trans-Nzoia	46	10.5
Western	Bungoma	61	13.9
Nyanza	Kisii	38	8.7
Central Rift	Nakuru	70	16.0
South Rift	Kericho	58	13.3
Upper Eastern	Meru	50	11.4
TOTAL		438	100

As noted in the methodology chapter, the owners of agro-dealerships were the preferred respondents. In their absence, the agro-dealership managers were interviewed. The responses were split almost evenly between the two groups as shown in Figure 3.1.

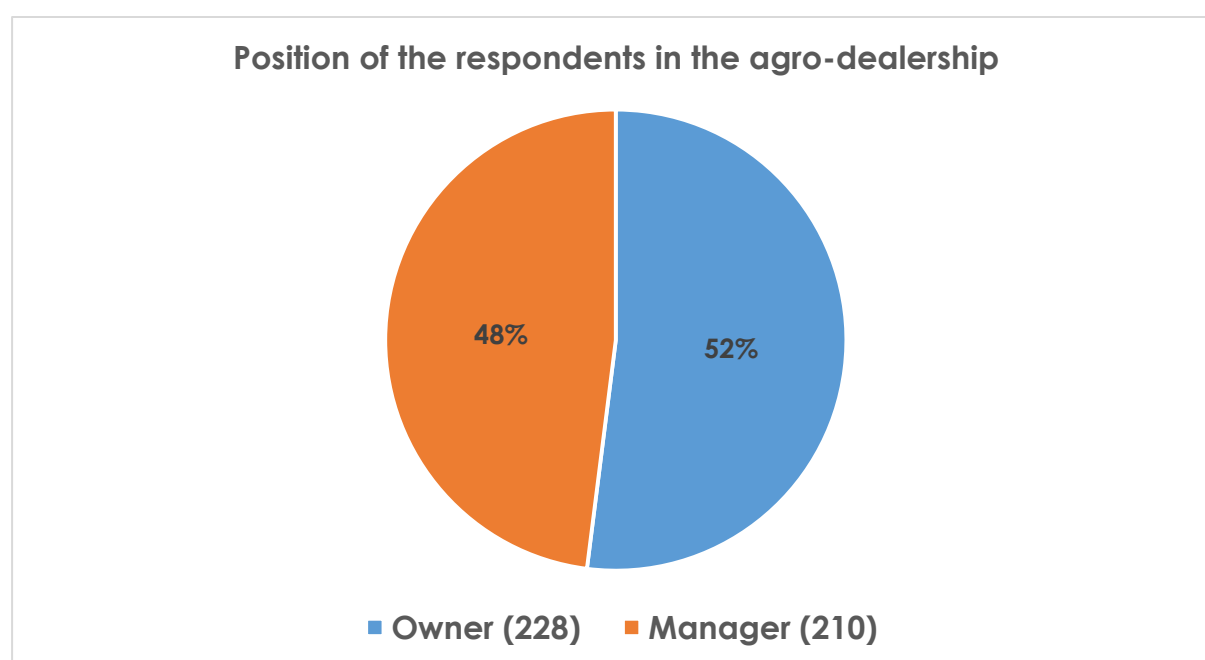


Figure 3.1: Position of the respondents in the agro-dealership business²

In terms of gender of the respondents, there were more males (56%) than females (44%) as shown in Figure 3.2. A similar pattern of gender distribution was observed

² Numbers in parentheses indicate the sample size. This format is used throughout this report.

across counties except in Murang'a, where female respondents were more than their male counterparts.

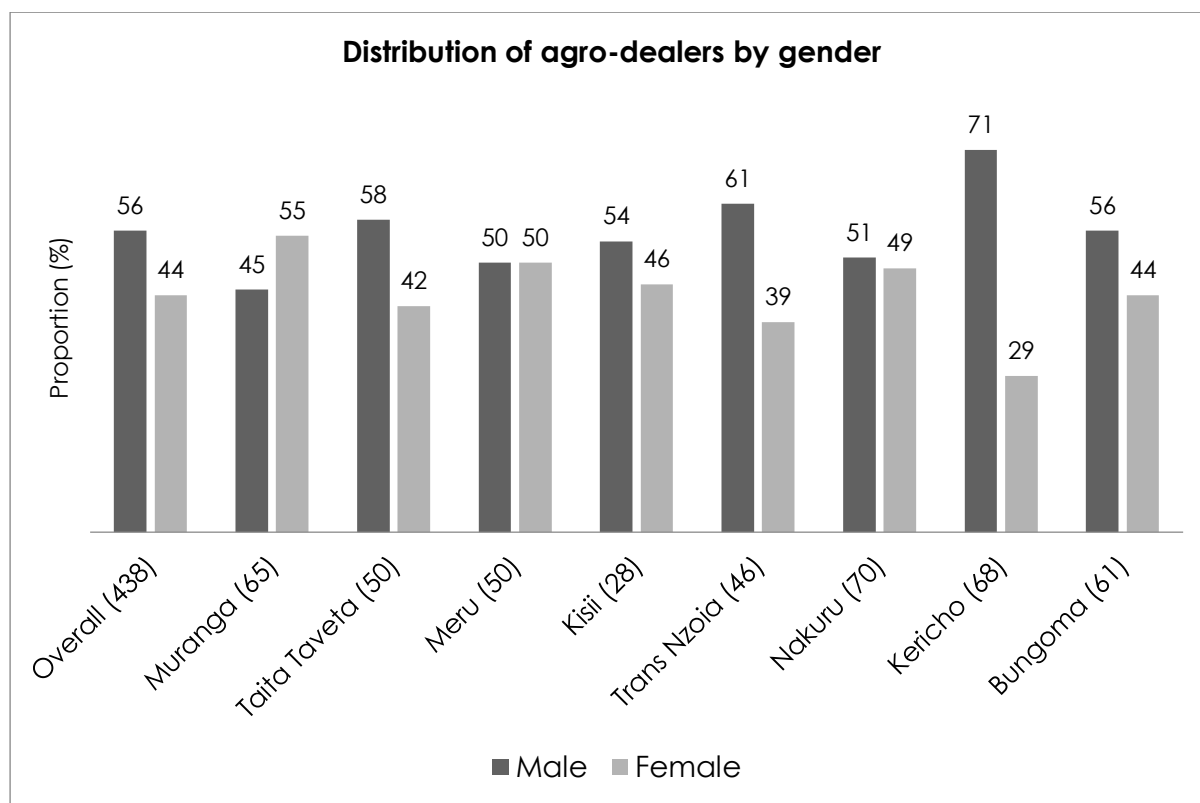


Figure 3.2: Distribution of interviewed agro-dealers by gender and by county

Table 3.2 depicts the general characteristics of the respondents. Overall, 52% of those interviewed indicated they were owners of agro-dealerships. About 48% of the respondents were employed as managers in the agro-dealership businesses. Across counties, Meru had the highest proportion of owners running their businesses at (70%).

Table 3.2: General characteristics of agro-dealers

Characteristics	Whole sample (438)	Muranga (65)	Taita Taveta (50)	Meru (50)	Kisii (38)	Trans Nzoia (46)	Nakuru (70)	Kericho (58)	Bungoma (61)
Position of respondent (% of sample)									
Owner	52	49	56	70	50	57	51	47	41
Manager	48	51	44	30	50	43	49	53	59
Gender of business owners									
Male	63	39	63	53	54	74	62	72	67
Female	37	61	37	47	46	26	38	28	33
Average age of owners (years)									
Male	45	41	46	47	44	45	48	42	46
Female	43	39	39	43	43	45	47	44	47
Type of input dealership by gender(% of sample)									
Wholesaler/stockist	(130)	(12)	(6)	(12)	(7)	(16)	(33)	(15)	(29)
Male	52	50	50	33	43	56	52	60	55
Female	48	50	50	67	57	44	48	40	45
Stockist	(308)	(53)	(44)	(38)	(31)	(30)	(37)	(43)	(32)
Male	57	43	59	55	58	63	51	77	56
Female	43	57	41	45	42	34	49	23	44

Note: Sub-samples in parentheses.

In terms of gender of the owners, 63% of owners were men while 37% were women. These findings corroborate AGMARK's observations (2010) that the number of women owning agro-dealerships is quite low (30%). There exist great gender disparities in terms of access to financial resources, credit, technologies, and even information, which partly explain the low participation of women entrepreneurs in agro-dealerships.

In the survey, the agro-dealership businesses were classified into two categories; (a) wholesaler/stockists and (b) stockists³. As shown in Figure 3.3, 71% were stockists while 29% were wholesaler/stockists.

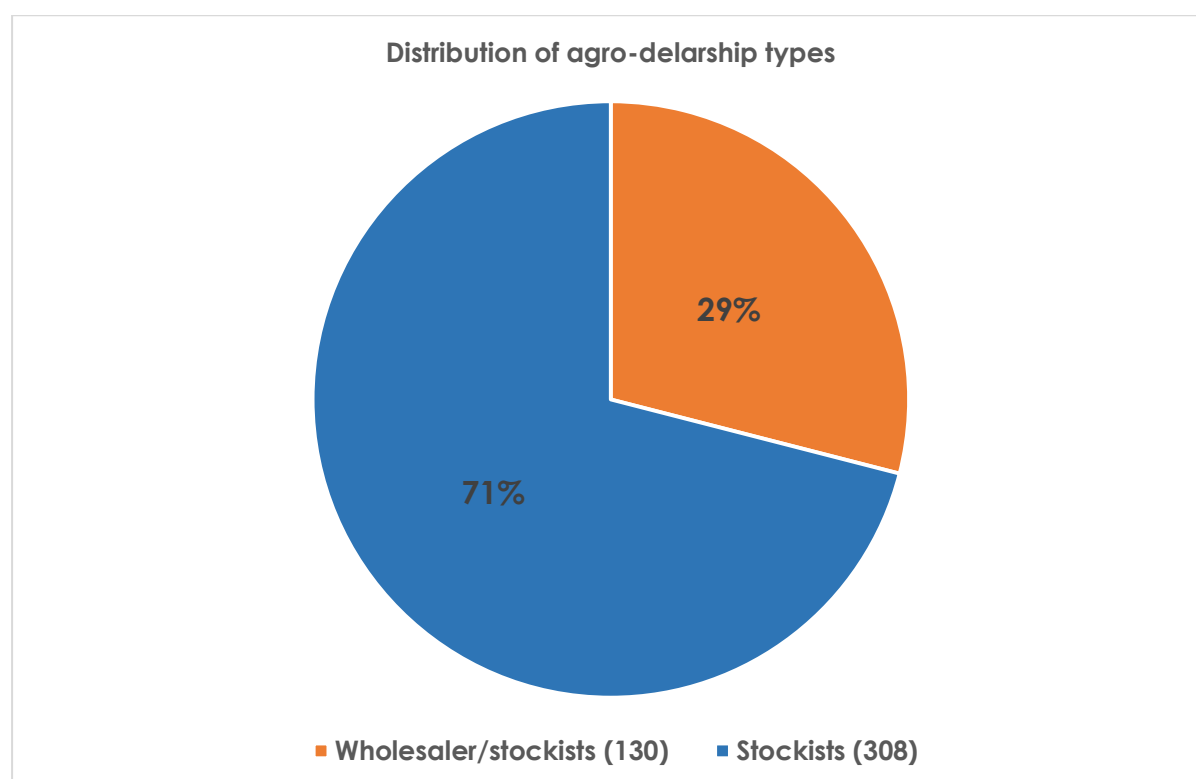


Figure 3.3: Distribution of agro-dealerships by type

Disaggregation of agro-dealership type by gender shows that 52% of wholesaler/stockists dealerships were owned by men while 48% were female owned. On the other hand, 57% of stockists outlets were owned by men while 43% were owned by women (see Table 3.2). Across the counties, the proportions of male to female, by agro-dealership type varied, with wholesaler/stockists in Meru and Kisii having more female, 67% and 57%, respectively. Muranga, on the other hand, had more female stockists (57%), with the rest of the counties being mainly dominated by male stockists. Kamau et al., (2014) and GOK (2010) notes that more than half of those engaged with Micro Finance Institutions (MFIs) in Muranga County are women. This means that given the well-recognized role of microfinance as a means of poverty alleviation, women have taken this advantage to join the sector to improve their incomes and

³ Agro-dealers were categorized into two main; wholesalers/stockists consist of agro-dealers who do both wholesaling and retailing while stockist do retailing only.

consequently enhance economic development, plausibly explaining the study findings.

Analysis of ownership by age group and agro-dealership type showed that majority of youth (71%) and middle-aged (66%) agro-dealers were stockists (Figure 3.4).

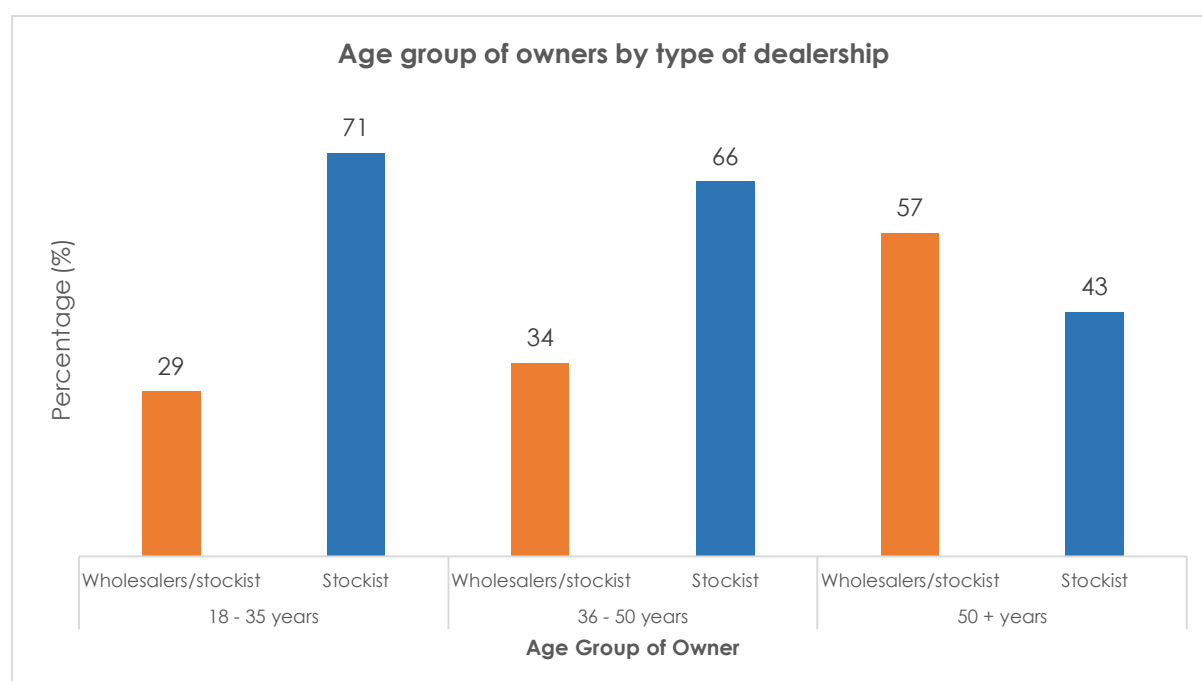


Figure 3.4: Type of agro-dealership by age group

Education level of agro-dealers is a proxy indicator for their ability to understand and be trained on issues relevant to the sub-sector.

Analysis of the educational attainment of the agro-dealers showed that most of the agro-dealers are fairly well schooled. However, we were unable to obtain data on education level of all the agro-dealers because, either the managers interviewed did not have such information or simply they were unwilling to disclose it. Overall, this information was captured for only 239 agro-dealerships. Thus, interpretation should be done with caution, especially for the counties that registered very low responses, such as Kisii, Meru, Trans Nzoia and Kericho, where the rate of response was less than 50%.

85% of respondents had post-secondary education (See Figure 3.5). Only 3% indicated they had no education at all. About 2% and 10% had primary and secondary education respectively.

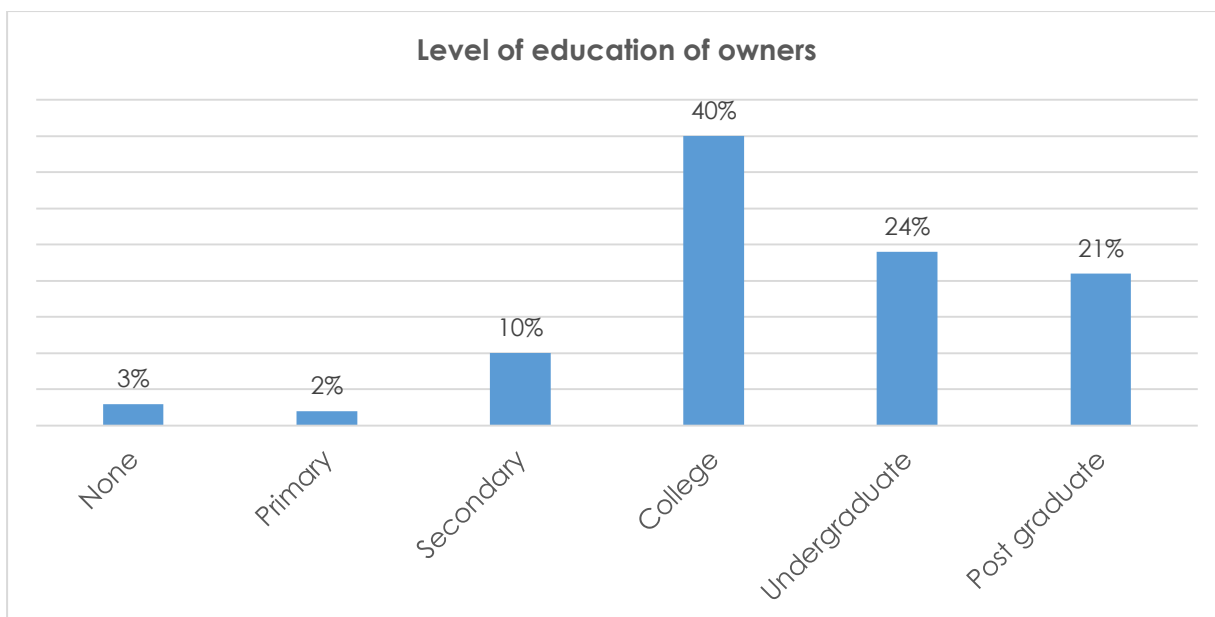


Figure 3.5: Highest level of education achieved by agro-dealership owners

Figure 3.6 shows the level of education achievements of agro-dealers by county. In counties such as Muranga, Kisii and Kericho, 40% and above of the agro-dealers had college level education. In Trans Nzoia County, although the education variable was captured for only 20 out of the 46 agro-dealers, 70% of those had postgraduate training. In Bungoma, 50% of the agro-dealer respondents had undergone postgraduate training.

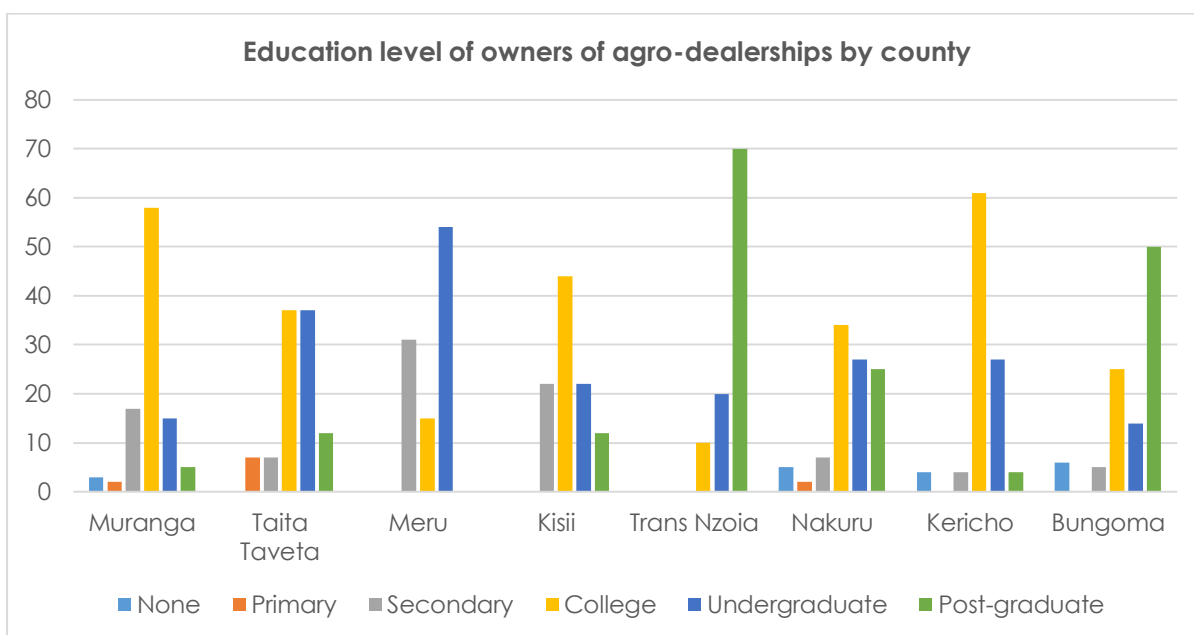


Figure 3.6: Education level of agro-dealership owners by county (% of sample)

Education level by gender of owners of agro-dealerships reveals that 88% and 83% of men and women respondents respectively have college-level education or above (Figure 3.7). Findings from this survey are consistent with those of earlier studies (Muhammad *et al.*, 2003; Odame and Muange, 2010) which found that input dealers in Kenya were mostly male (77%), aged about 37 years, and well-educated (average of 13 years of formal education, i.e. college level).

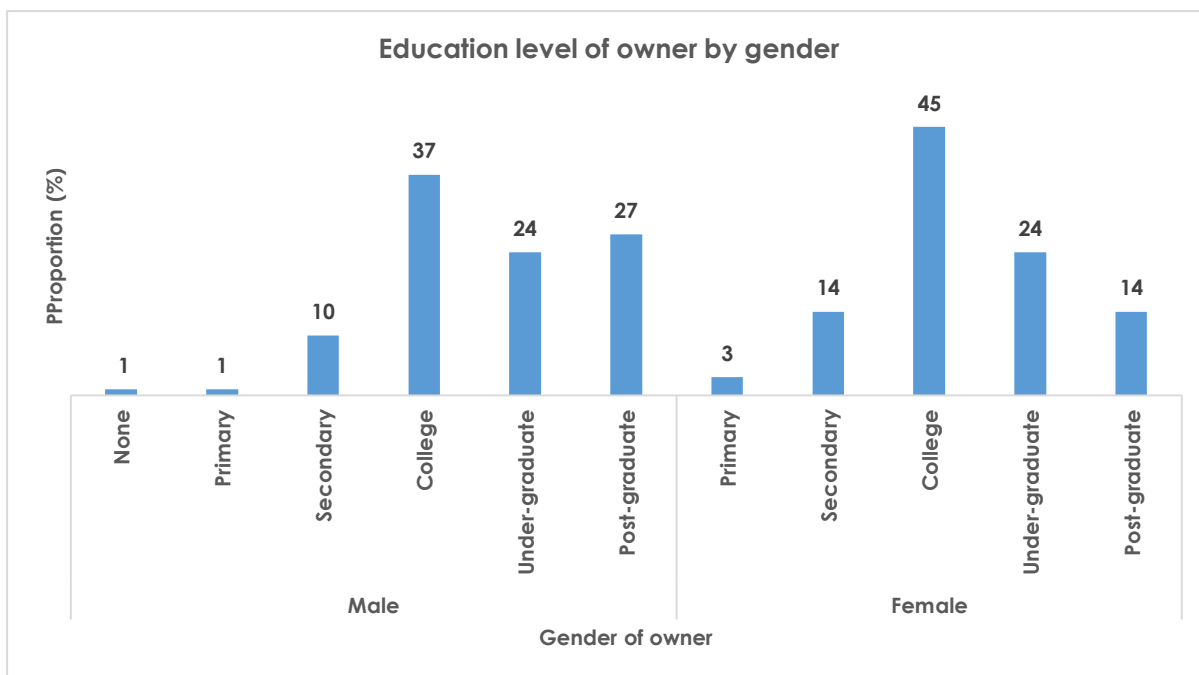


Figure 3.7: Education level of agro-dealers by gender

Slightly over half of the agro-dealership businesses (51%) employed workers on a full-time basis. Across the counties, Nakuru had the highest proportion of agro-dealers (74%) employing full-time workers while Meru had the least (30%) as shown in Figure 3.8. For Nakuru, this was expected given the high volume transacted by agro-dealers.

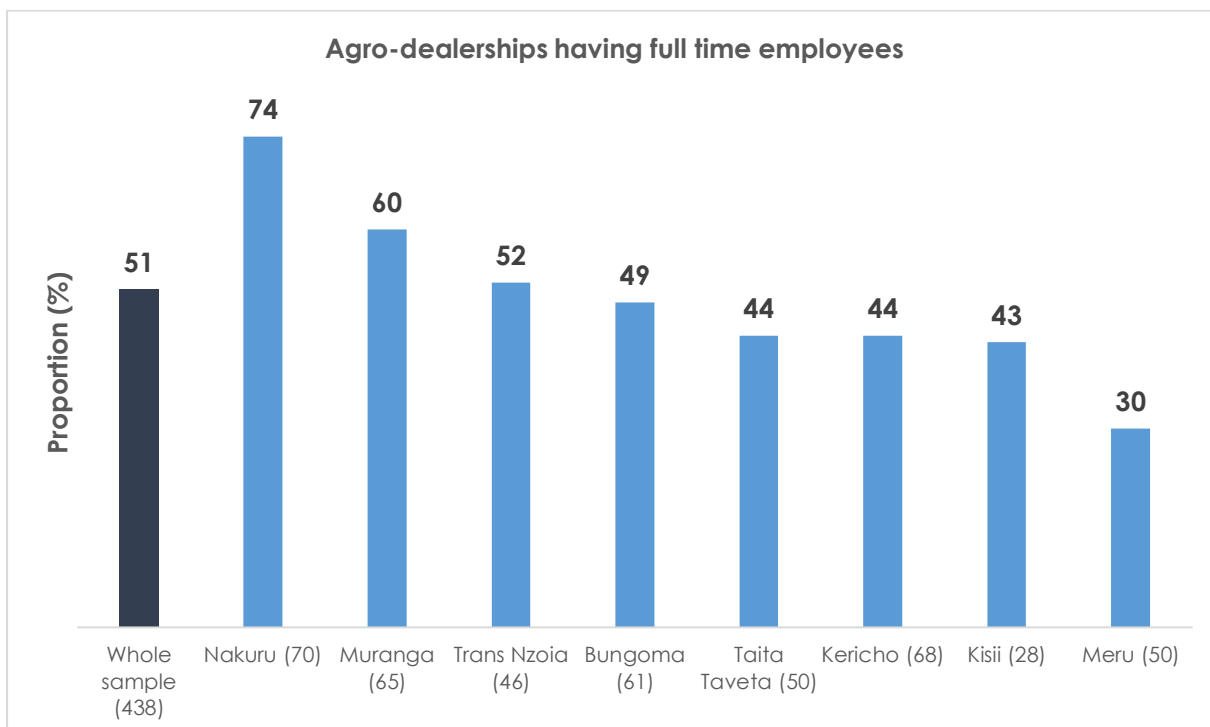


Figure 3.8: Proportion of agro-dealerships having full time employees

There were no significant differences on the characteristics of employees by gender of agro-dealership owner (Table 3.3). Employees had an average of 3 years' experience in managing an agro-dealership business.

Table 3.3: Characteristics of employees engaged by agro dealers

Gender of Owners	Gender of employees	Average No.	Average Years of Experience	No. of computer Literate	No. with formal training in agriculture
Female	Men	2	3	2	2
	Women	2	2	2	2
Male	Men	2	3	2	2
	Women	2	2	2	2

Disaggregation by type of agro-dealership reveals relatively lower proportion of full time employees engaged by stockists (41%) compared to wholesaler/stockists (75%) as shown in Figure 3.9. This is expected given the lower average volumes transacted by stockists compared to wholesalers. It is therefore not economically feasible to employ many employees on a full-time basis but rather have casuals or part time staff who can be called upon during peak sales periods.

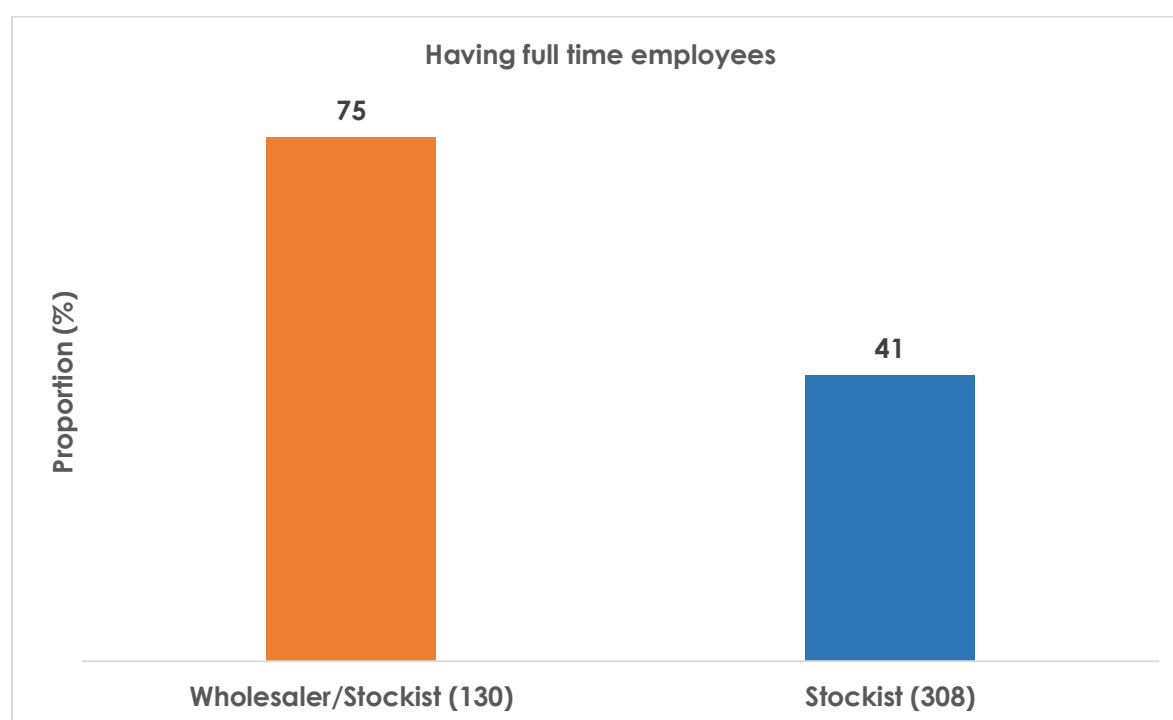


Figure 3.9: Proportion of agro dealers having full time employees by agro dealership type

Agro-dealership relative stock values

In stock-value terms, maize-seed business accounted for the single largest portfolio (at 25%) of agro-dealership business (see Figure 3.10).

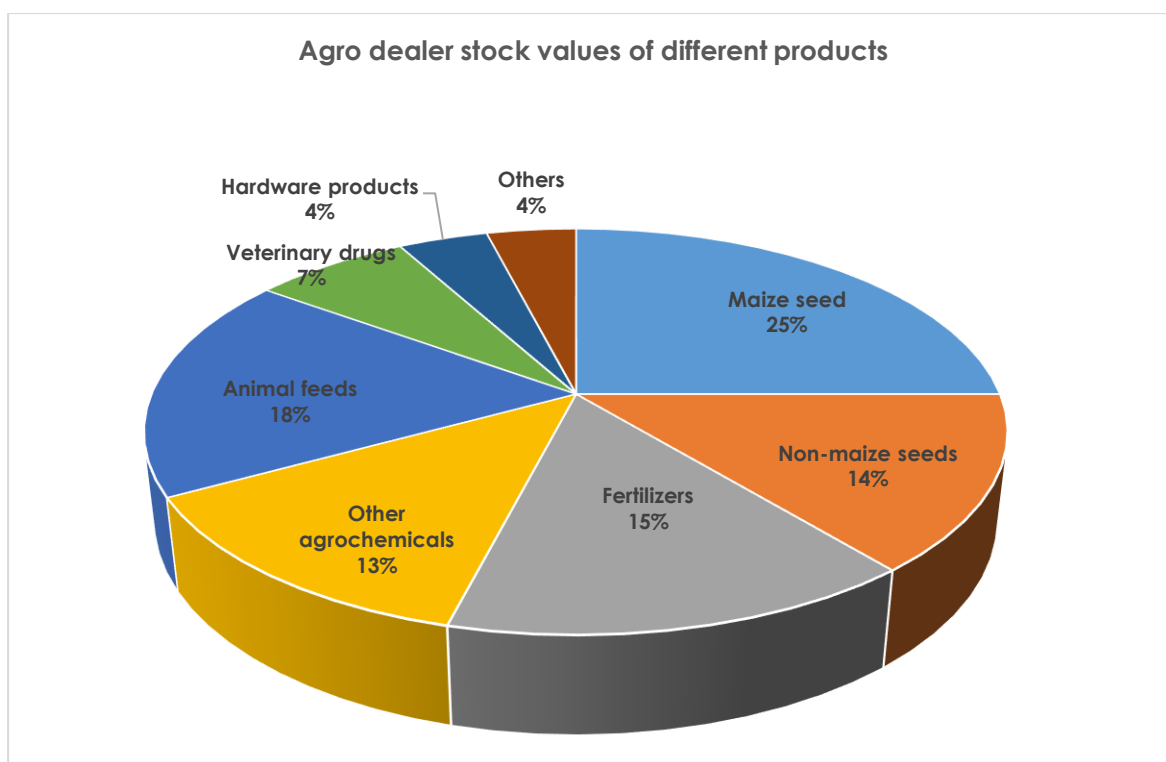


Figure 3.10: Proportion of stock values of different products traded by agro-dealers

The non-maize seed business on average accounted for about 14% of the value of stock. Our follow-up enquiries with agro-dealers indicated that value of vegetables seeds is roughly 5%. Non-seed inventories constituted about 61% of the stocks held by agro-dealers. The major non-seed stocks held include animal feeds (18%); fertilizers (15%); other agro-chemicals (13%) and veterinary drugs (7%). Diversification of agro-dealership is a common model not only in Kenya but across the sub-Saharan Africa as noted by (Chisinga, 2011). Due to the seasonal nature of agriculture, with demand for agro-inputs being extremely low during the off-peak seasons, most agro dealers run diversified business portfolios in order to smooth their flow of income.

3.2 An overview of types of crop seed stocked

Maize seed was the main crop seed stocked. All agro-dealerships interviewed across all counties stocked maize seed (see Table 3.4).

Table 3.4: Percentage of agro-dealers stocking different crop seeds by county

	Maize	Beans	Sorghum	Finger Millet	Green Grams	Cowpeas
Overall	100	42	16	10	4	4
Muranga	100	8	0	0	0	0
Taita Taveta	100	8	0	0	10	0
Meru	100	13	2	4	12	12
Kisii	100	11	11	7	0	4
Trans Nzoia	100	83	35	11	11	7
Nakuru	100	42	21	4	0	3
Kericho	100	78	29	32	1	0
Bungoma	100	76	26	13	0	10

This observation was expected given the dominance of maize as a staple crop in Kenya across all agro-ecological zones and the promotion it has received over the years.

".... certified maize seeds are readily available in the market and majority of the farmers use certified seeds, mainly due to maize diseases that attack non-certified maize seeds and the over-emphasis on maize as a staple crop in Kenya which has led to much awareness creation among maize farmers through trainings..."

Crops Expert, Ministry of Agriculture – Key Informant – Nakuru County

A similar general pattern was observed across different agro-dealership types as shown in Figure 3.11.

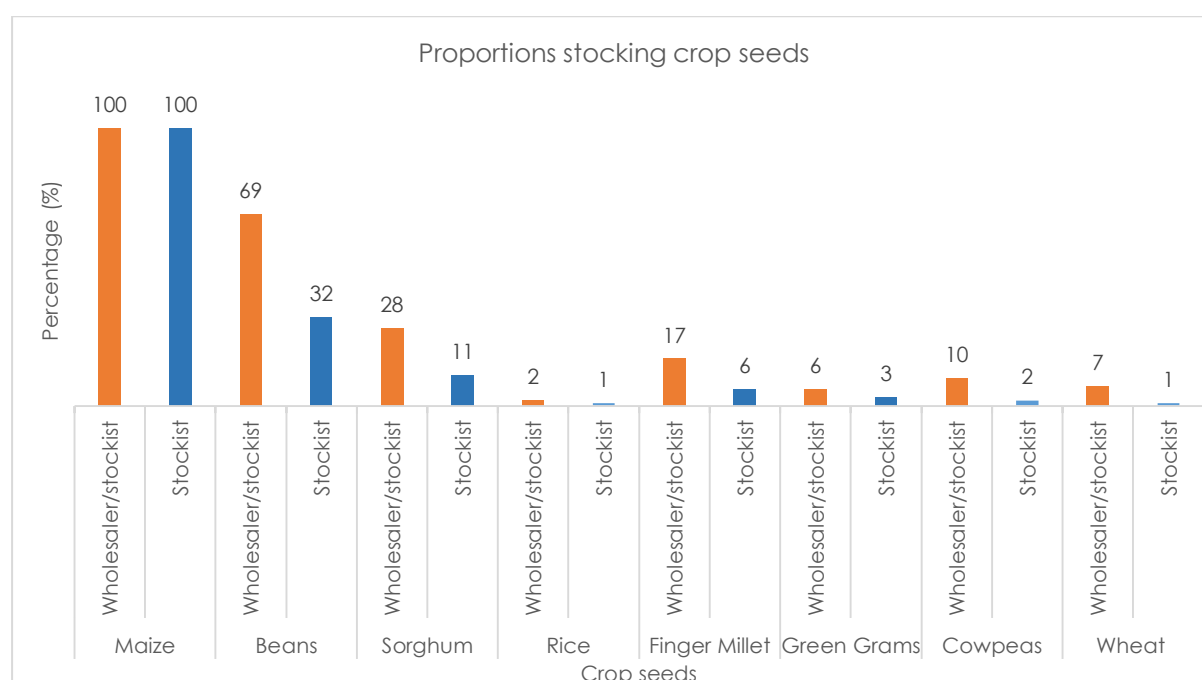


Figure 3.11: Proportion of agro-dealers stocking different crop seeds

Beans and sorghum were, respectively, the second and third most stocked seeds. 10% of agro-dealers stocked finger millets, while a paltry 4% of agro-dealers stocked green grams and cowpeas (see Table 3.4). Discussions with farmers and agro-dealers revealed that low demand for certified non-maize seeds was the reason for the low level of stocks in the agro-outlets.

".... most agro-dealers here stock various maize seed varieties in their stores, especially during the planting season, but very little of the non-maize seed varieties, since most of us do not prefer those non-maize seed varieties from the shops..."

Farmer – Focus Group Discussion – Kisii County

Several reasons were advanced by both farmers and agro-dealers on the low use of certified non-maize seeds: very low supply; low awareness of their existence; the relative high price of the certified seeds; and, the low demand for final products in the

market. Kariuki (2015) noted that an estimated 78% of the maize growing area in Kenya was planted with certified seed in 2013, but this compared to a paltry 3% for beans, 16% for sorghum, and 13% for cowpea.

Discussions with key informants, while confirming the slow uptake of certified seeds, especially non-maize, also revealed ways in which uptake of the same can be bolstered. These could include promotional campaigns on use and benefits of certified seeds; field trials and demos on superior certified seeds; and, enforcement of laws governing seed industry.

Sixty percent of agro-dealers cited Kenya Seed Company as their main supplier of maize seeds (See Table 3.5). Nineteen percent of the agro-dealers indicated that they obtain their supplies of maize seed from various local seed distributors. The domination of market penetration by KSC is largely due to its long history of operation and extensive outreach. Over time, KSC has gained the trust of agro-dealers and farmers.

Table 3.5: Main maize seed suppliers (% of respondents)

Source of seeds	Whole Sample	Muranga	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Kenya Seed Co.	60	14	32	10	41	90	68	42	70
East Africa Seed	3		2				2		
Pannar Seed	2						2		
Simlaw Seed	3		2			2			4
Elgon Seed	2	2							
Pioneer	6					5	5	3	4
Western Seed	5					3			6
Local distributors	19	84	64	90	59		23	55	16

A study by Marechera *et al.*, (2016) confirms that indeed KSC controls about 80% of total annual seed production and sales in Kenya. Agro-dealers located in remote areas mainly purchased seeds from wholesale traders/distributors located in major market towns. They cited competition from grocery and even hardware shops, which resort to stocking seeds during the planting seasons, as their main threat.

Table 3.6 provides a summary of seed stock volumes for 2014 and 2015, by agro-dealership type. The results show an increase in the average amount of maize seed stocked by the different type of agro-dealers between 2014 and 2015. Similar increases are noted for all the other crops, except beans stocked by wholesalers/stockist. Owing to good rainfall distribution in most parts of the country, coupled with inputs subsidy support (both national and county governments), areas planted and production of most of the staple food crops was higher in 2015 compared to 2014 (State Department of Agriculture, 2015). This necessitated agro-dealers stocking more seeds to cope with demand. Focus group discussions

confirmed that there was high demand for maize seeds, triggered by good rains in 2015. Part of the increase could also be explained by the general growth in demand for certified seed across the country.

Table 3.6: Average volume of major seed types stocked (in Kg) by agro-dealers in 2014 and 2015

	Maize	Beans	Sorghum	Rice	Finger Millet	Green Grams	Cowpeas	Wheat
Wholesaler/stockist (130)								
2015	107,141	4,705	2,645	240	1,070	1,819	1,055	12,958
2014	42,095	5,599	1,401	180	822	928	1,445	9,039
% change	155	-16	89	33	30	96	-27	43
Stockist (304)								
2015	3,619	463	190	510	182	1,002	5,860	87
2014	2,724	296	122	250	131	697	3,349	75
% change	33	56	56	104	39	44	75	16

A closer look at the patterns across counties showed that volume of maize stocked increased by 85% between 2014 and 2015. For beans seeds, the average agro-dealers' stocks declined by 64%, 30% and 25% in Taita Taveta, Trans Nzoia and Kericho counties, respectively as shown in Table 3.7. Due to the drought in 2014 majority of the beans harvested were sold as food commodity as opposed to seed, which explains the reduction in bean sales volumes for 2015.

Table 3.7: Average volume of seeds stocked by agro-dealers (in kg): 2014 and 2015

	Overall	Murang'a	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Maize	(438)	(65)	(50)	(47)	(38)	(46)	(70)	(57)	(61)
2015	19,705	6,400	2,477	5,067	2,807	9,471	25,964	90,079	4,582
2014	10,634	5,363	2,123	4,651	1,565	7,929	9,466	46,464	3,382
% change	85	19	17	9	79	19	174	93	35
Beans	(181)	(5)	(4)	(6)	(7)	(38)	(28)	(48)	(45)
2015	1,154	245	228	412	449	807	2,364	844	1,386
2014	1,239	176	636	306	404	1,152	2,206	1,124	1,199
% change	-7	39	-64	35	11	-30	7	-25	16
Sorghum	(71)			(1)	(3)	(16)	(15)	(20)	(16)
2015	810			240	238	688	2,082	329	486
2014	417			360	229	325	772	247	429
% change	94			-33	4	112	170	33	13
Finger millets	(42)			(2)	(4)	(5)	(3)	(20)	(8)
2015	312			1,548	324	634	156	217	99
2014	241			1,002	264	420	106	187	98
% change	29			54	23	51	47	16	1

Note: Sub-samples in parentheses.

Sorghum seeds were completely not stocked in Muranga and Taita Taveta while in Meru traders' stocks reduced by 33%, attributed mainly to low demand from farmers who continue to prefer use of local seed varieties for these crops. From focus group discussions, most farmers had a low preference for non-maize seeds from agro-input shops, instead preferring to recycle seeds from previous seasons' harvest. This pattern is driven by lack of information, high seed prices, taste preference of consumers,

resistance/tolerance to pests/diseases and the low demand for produce of those crops in the markets.

3.3 Crop seed sales

Agro-dealers provided information on the amounts of seeds of major crops sold over the last two consecutive long rain seasons (i.e. March/April of 2015 and 2016). The findings are summarized in Table 3.8. The volumes sold of all major seed types (maize, beans and sorghum) increased between the two time periods across all agro-dealership types. As noted above, this is attributed primarily to favorable rains.

Table 3.8: Changes in average volume of crop seeds sold (in Kg) during the long rains season of 2015 and 2016

	Maize	Beans	Sorghum
Wholesaler/stockist			
March/April 2015	53,014	2,186	557
March/April 2016	73,375	2,841	900
% change	38	30	62
Stockist			
March/April 2015	2,653	311	74
March/April 2016	3,442	477	126
% change	29	53	70

Maize, beans and sorghum seed sales increased across all the agro-dealership types. The comparison across counties revealed some notable differences as shown in Table 3.9.

Table 3.9: Changes in average volume of maize seed stocked (in Kg) during the long rains season of 2015 and 2016 across counties

	Over all	Murang'a	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Maize	(434)	(65)	(50)	(49)	(38)	(46)	(67)	(58)	(61)
March/April 2016	8,875	3,507	7,713	3,110	1,773	6,175	33,425	6,017	2,392
March/April 2015	6,984	3,438	6,640	3,342	1,858	5,163	24,075	4,803	1,840
% change	27	2	16	-7	-5	20	39	25	30
Beans	(178)	(5)	(5)	(6)	(7)	(38)	(27)	(47)	(43)
March/April 2016	1,018	172	48	405	600	484	3,343	874	495
March/April 2015	737	221	48	418	445	585	2,344	493	330
% change	38	-22	0	-3	35	-17	43	77	50
Sorghum (62)					(2)	(16)	(12)	(17)	(15)
March/April 2016	269				312	339	370	173	218
March/April 2015	172				306	185	334	117	74
% change	56				2	83	11	48	195

For maize seed there were increases in volumes sold in all counties except Meru and Kisii, where average volumes declined by 7% and 5% respectively. Interviews with key informants in Kisii revealed that the use of uncertified local maize seeds had increased recently, due to emergence of a maize disease in the 2013/14 period which affected the certified maize seed varieties more than the local varieties. Volumes of beans and sorghum seeds sold also increased across all the agro-dealership types between 2016 and 2015, with notable variations across counties. For instance, the average volume of beans stocked decline by 22% in Murang'a but increased by 35% and 43 % in Kisii and Nakuru respectively.

For the September/October short rains season of 2016, 79%, 23% and 4% of agro-dealers indicated intention to stock maize, beans and sorghum seeds respectively (Figure 3.12).

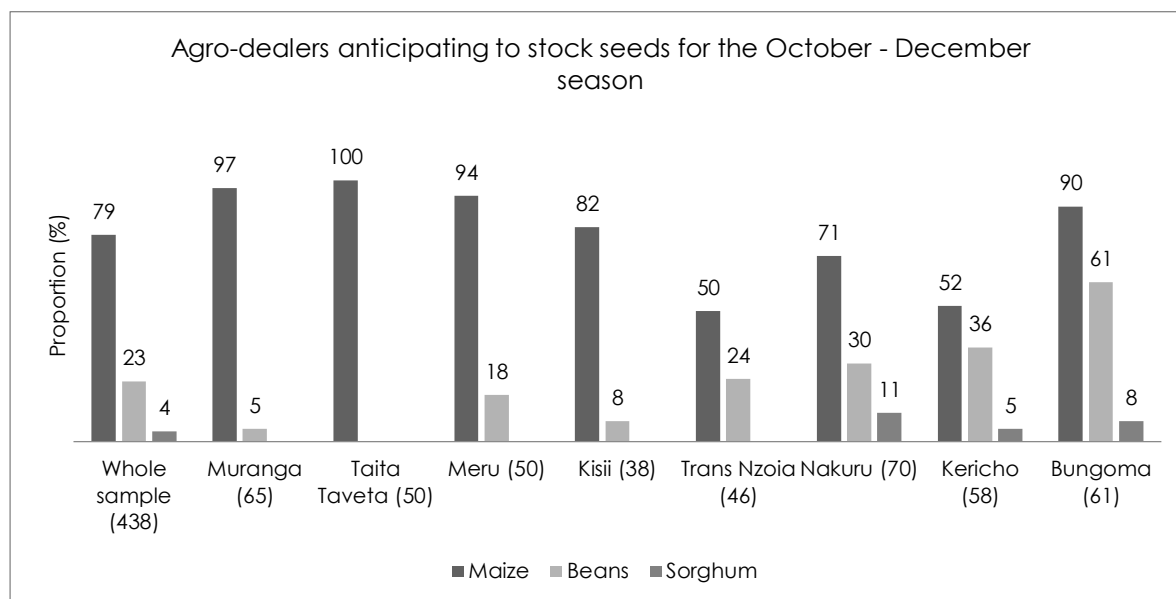


Figure 3.12: Percentage of agro-dealers anticipating to stock various types of seed in the forthcoming short rain season (October-December 2016)

Regional variations were observed on intention to stock crop seeds for the upcoming season, with Trans Nzoia and Kericho having a relatively lower number of agro-dealers intending to stock maize seeds. Agro-dealers in these two counties expect much lower demand for maize seeds during the October – December season, as farmers rely mainly on the long rains season (March – May rains) for maize production. These counties however, plant mainly the short-cycle, early-maturing crops during the short rains, hence the relatively large proportion of agro-dealers planning to stock bean seeds. Generally, importance of the rainy seasons for different areas seems to be a key determinant for expected demand of the crop seeds.

Agro-dealers indicated that they planned to stock many seed varieties for the September/October 2016 season, as shown in Table 3.10.

Table 3.10: Type of seed varieties agro-dealers plan to stock for the September/October season

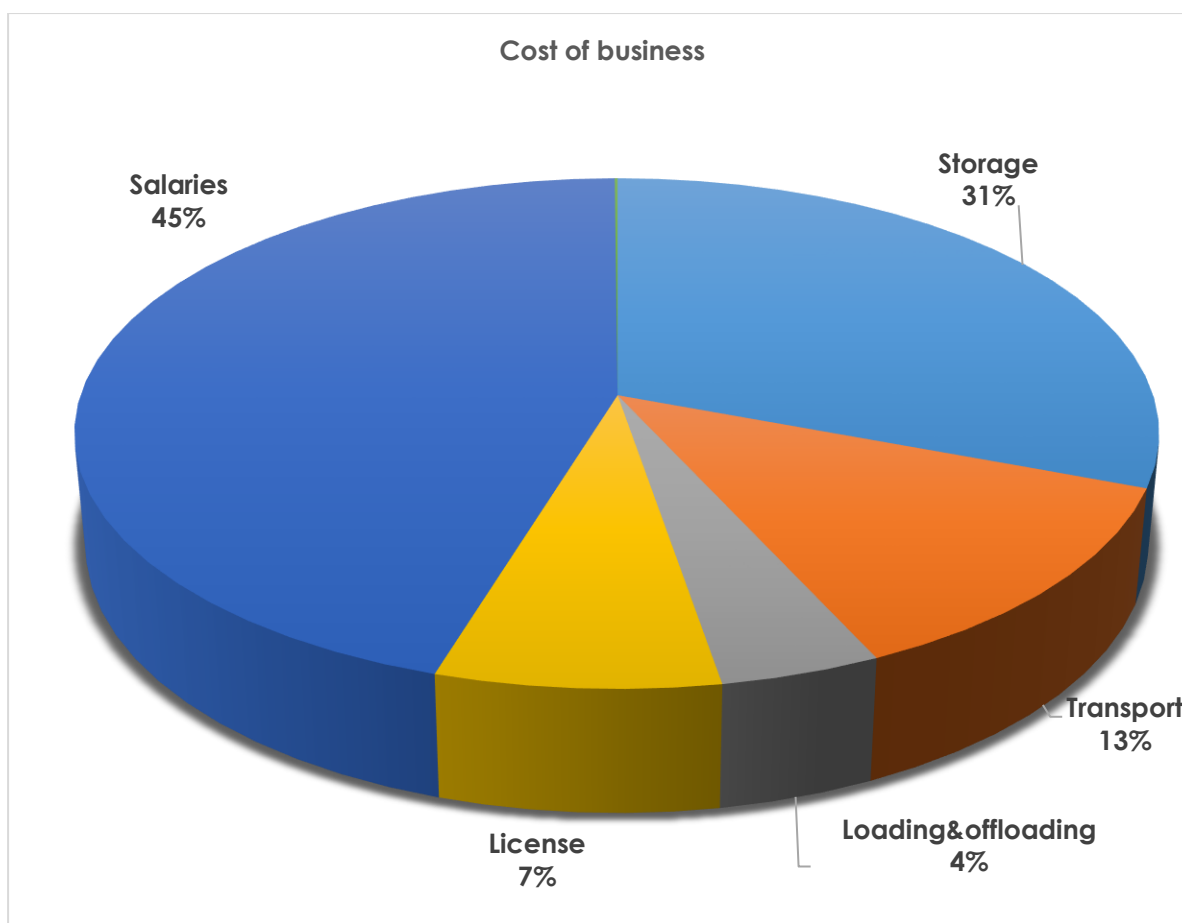
	Maize	Beans	Sorghum
Muranga (63)	Duma, Pioneer 3253, KS_H5 series, KS_H6 series, , Pioneer series	Rosecoco	
Taita Taveta (50)	Duma, KS_H6 series, Pioneer series		
Meru (47)	Duma, KS_H6 series, Mosanto DK series,	Muchui, GL 92	
Kisii (31)	KS_H6 series, Simba, Pioneer series	Rosecoco	
Trans Nzoia (22)	WS_WH5 series, KS_H5 series, KS_H6 series, Mosanto DK series	KK2, KK8, Rosecoco	
Nakuru (47)	Pioneer series, KS_H6 series, KS_H5 series	Chelalang, Rosecoco, Wairimu	Seredo, Lel-det, Serena
Kericho (26)	KS_H5 series, KS_H6 series, WS_WH5 series, Pioneer series	Rosecoco, Chelalang	Seredo
Bungoma (55)	WS_WH5 series, Duma, KS_H5 series, KS_H6 series		Seredo, Serena

Clearly seed varieties stocked varied from one region to another, due to the varied agro-ecological zones. About 62% of agro-dealers indicated that the varieties stocked were not new, being the same varieties they stocked from last year. The fact that 38% of agro-dealers plan on stocking new seed varieties seems a significant proportion, especially considering the usual slow uptake of new seed varieties in the market by farmers.

3.4 Cost of Business in Agro-dealership

In this section, we examine the different costs incurred by agro-dealers in their business activities. The key cost elements include storage; transport; loading and offloading labor; licensing; wages and salaries; and, sales promotion. We computed the average costs incurred on the different elements for an entire trading year.

Overall, salaries to full time employees constituted the largest portion of the operational costs, constituting 45% of the total annual cost. This was followed by storage which constituted 31% of the total cost. Figure 3.13 provides a summary of proportionate cost structure of a typical agro-dealer.

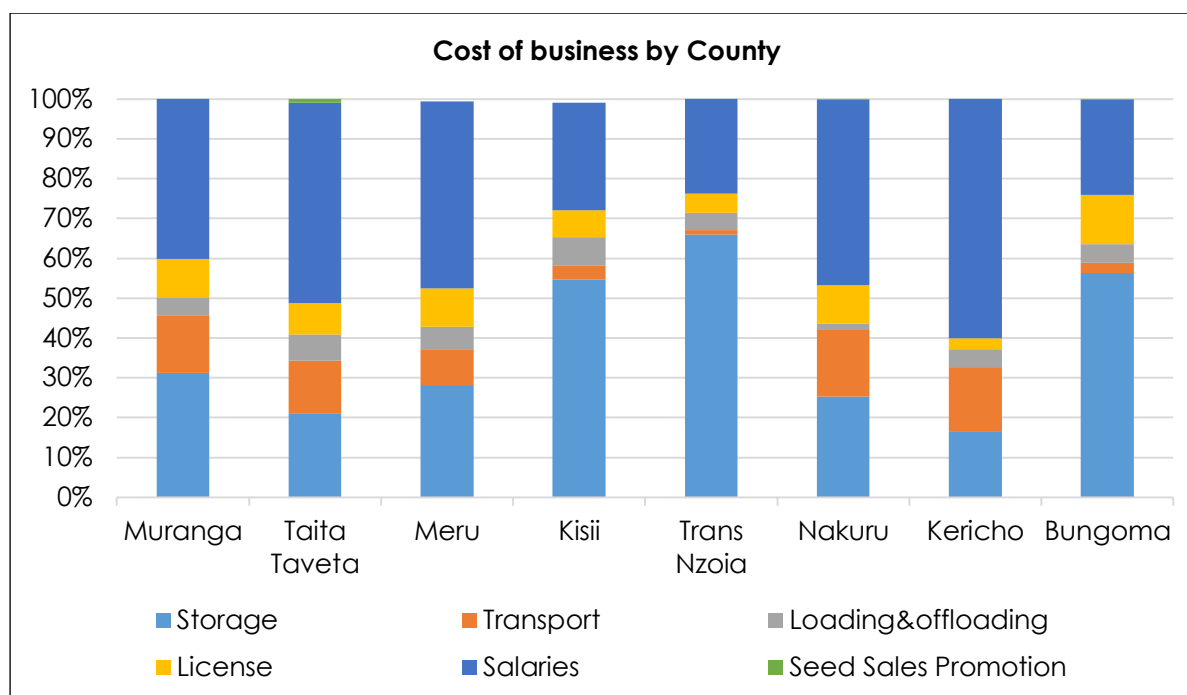


No. of Observations=438

Figure 3.13: Cost of business in agro-dealership

A typical agro-dealer annually spends an average of KSh 123,349 on salaries of full time employees, KSh 83,934 on storage charges, KSh 33,894 on transportation charges, KSh 20,104 on license fees, KSh 11,403 on loading and offloading charges, and a paltry KSh 272 on seed sales promotion. The low spending on seed sales promotion signifies that most of the agro-dealers do not undertake sales promotion activities. This is driven mainly by the nature of the seed market; agro-dealers basically sell seeds produced by others (seed companies) and have no direct incentive to invest in sale promotion as such.

Across counties, the cost structure of the agro-dealers reflected almost the same pattern as observed above (Figure 3.14).

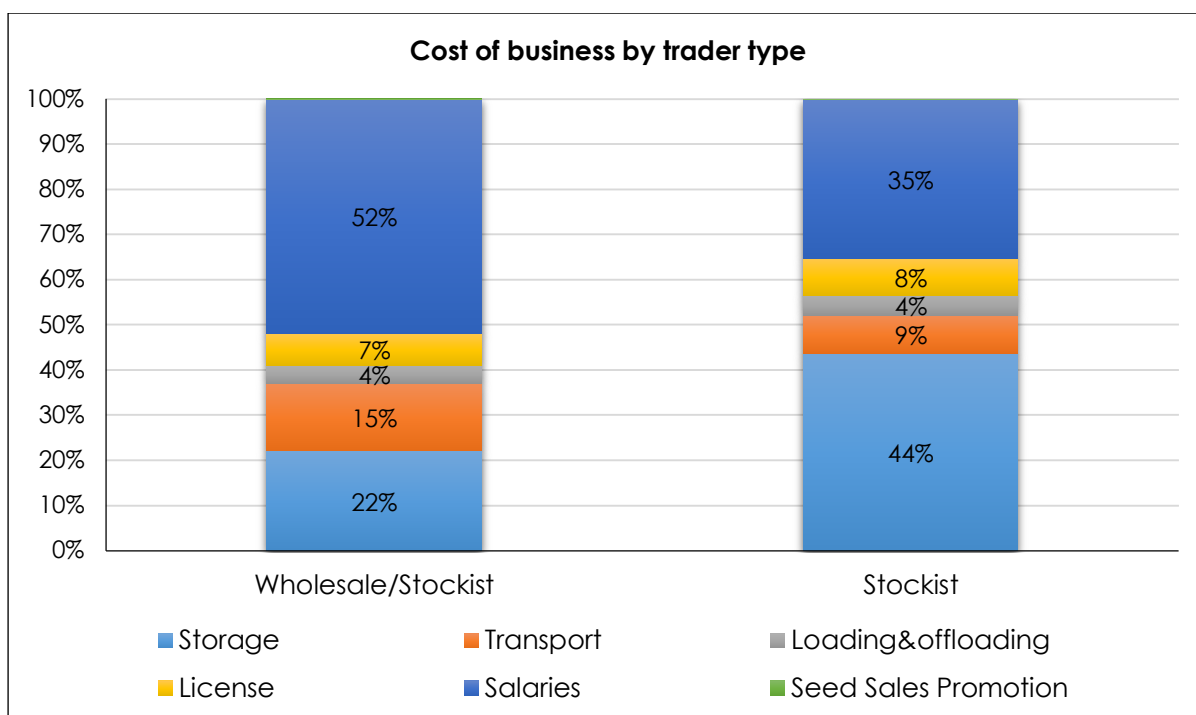


No. of Observations: Muranga=65; Taita Taveta=50; Meru=50; Kisii=38; Trans Nzoia=46; Nakuru=70; Kericho=58; Bungoma=61

Figure 3.14: Cost of trading in maize and non-maize seeds

Storage and salaries dominated the cost components across the counties. For Kisii, Trans Nzoia and Bungoma, storage constituted the bulk of the cost of doing business. In Muranga, Taita Taveta, Meru, Nakuru and Kericho, salaries constituted the largest proportion of the cost of doing business. The rest of the cost components constituted smaller fractions of the total cost of doing business. These variations in cost structure can be explained by two factors: scale of operation and engagement of full time employees. The high cost of storage in Trans Nzoia and Bungoma is most probably attributable to large scale operation. In Trans Nzoia, 35% of the agro-dealers operated as wholesalers while in Bungoma 48% of the agro-dealers operated as wholesalers. Such a scale of operation would require that the agro-dealers run large stores, hence incurring high storage costs. In Kisii, although only 18% of the agro-dealers operated as wholesalers, only 32% of the agro-dealers had full-time employees, making cost of storage relatively more significant than the cost of labour. Agro-dealers in Muranga, Taita Taveta, Meru, and Kericho tend to operate on a small scale. About 82% of agro-dealers in Muranga, 88% in Taita Taveta, 76% in Meru and 74% in Kericho operated as stockists. This meant lower costs on storage by virtue of small stores required for such scales of business. The higher proportion of labour cost in Nakuru relative to storage cost, despite 47% of the county's agro-dealers operating as wholesalers, is most probably attributable to the fact that 74% of the agro-dealers in this county employed full-time workers.

For deeper understanding of the cost distribution, we examined the costs by trader types: wholesaler cum stockist and stockists (Figure 3.15).



No. of Observations: 130 for wholesale /stockists; 308 for stockists

Figure 3.15: Cost of trading in maize and non-maize seeds by trader type

Both the wholesalers /stockists and the stockists spend the bulk of their costs on salaries and storage. For the wholesalers cum stockists, salaries constitute more than half of the total costs. Possibly, this is due to the fact that these traders are likely to employ more or better-skilled workers. For the stockists, storage constitutes the highest proportion of the total cost (not absolute value).

For comparison of the two trader categories in terms of cost of doing business, average amounts spent on different budget items annually are presented in Table 3.11.

The wholesalers/stockist spends more on every cost component than the stockist. This is not surprising because the difference in the scale of operation warrants such variations. For example, the stockist would spend less on transport because, more often, it is the wholesaler who delivers the goods to him/her. Because wholesalers sell in bulks, they are also expected to operate larger stores than the stockists. Thus, they spend more on storage. Moreover, because wholesalers are likely to employ more and/or better skilled workers, they spend more on salaries of the full time staff. As would be expected, they also pay more for licenses.

Table 3.11: Annual average cost of business

Cost component	Wholesaler cum stockist	Stockist
	Cost (KSh)	Cost (KSh)
Storage	121,023	68,279
Transport	82,411	13,415
Loading & offloading	21,974	6,940
License	37,960	12,566
Salaries	284,584	55,294
Seed Sales Promotion	492	179
No. of Observations	130	308

Notably, however, the two trader categories spend very little on seed sales promotion, an issue that merits attention if farmers are to get prompt information of new developments in the seed subsector.

3.5 Crop seed supply systems

Agro-dealers sourced seeds mainly from seed companies, large distributors/wholesalers and, to a smaller extent, KALRO. About 80% of wholesaler/stockists sourced maize seeds from seed companies, while 75% of stockists sourced them from large distributors/wholesalers (See Table 3.12). For all the crop seeds, wholesaler/stockists relied more on seed companies than other sources. This is to be expected since seed companies give better prices and also guarantee the quality of their products.

Table 3.12: Main sources of seeds (% of respondents)

	Seed companies	Distributors/wholesalers	KALRO/Government
Maize			
Wholesaler/stockist (128)	80	50	7
Stockist (303)	50	75	1
Beans			
Wholesaler/stockist (128)	55	27	
Stockist (303)	20	16	
Sorghum			
Wholesaler/stockist (128)	22	8	
Stockist (303)	4	4	
Finger millet			
Wholesaler/stockist (128)	11	5	
Stockist (303)	2	2	

Regional disparities were also evident, with distributors/wholesalers being the most common source for maize seeds, as observed by a relatively higher proportion of agro-dealers (Table 3.13).

Table 3.13: Proportion of agro-dealers indicating sources of various crop seeds in 2015 by county

	Whole Sample (438)	Muranga (65)	Taita Taveta (50)	Meru (50)	Kisii (38)	Trans Nzoia (46)	Nakuru (70)	Kericho (58)	Bungoma (61)
Maize									
Seed companies	59	26	66	11	57	100	69	45	100
Distributors/Wholesaler	67	80	74	96	68	45	50	81	46
KALRO/Government	3	5					4		2
Beans									
Seed companies	30	5	4	6	4	78	30	40	67
Distributors/wholesalers	19	2	4	6	4	35	7	50	33
Sorghum									
Seed companies	9					26	14	12	18
Distributors/wholesalers	5				4	9	4	13	8
Finger millet									
Seed companies	4				4	11	1	12	5
Distributors/wholesalers	2				4	4	1	7	5

Agro-dealers' relations with customers and suppliers

The preferred communication mode with suppliers was through telephone calls (66%), except in Kisii and Trans Nzoia counties where majority of agro-dealers (57% for Kisii and 52% for Trans Nzoia) preferred personal visits from suppliers (See Figure 3.16).

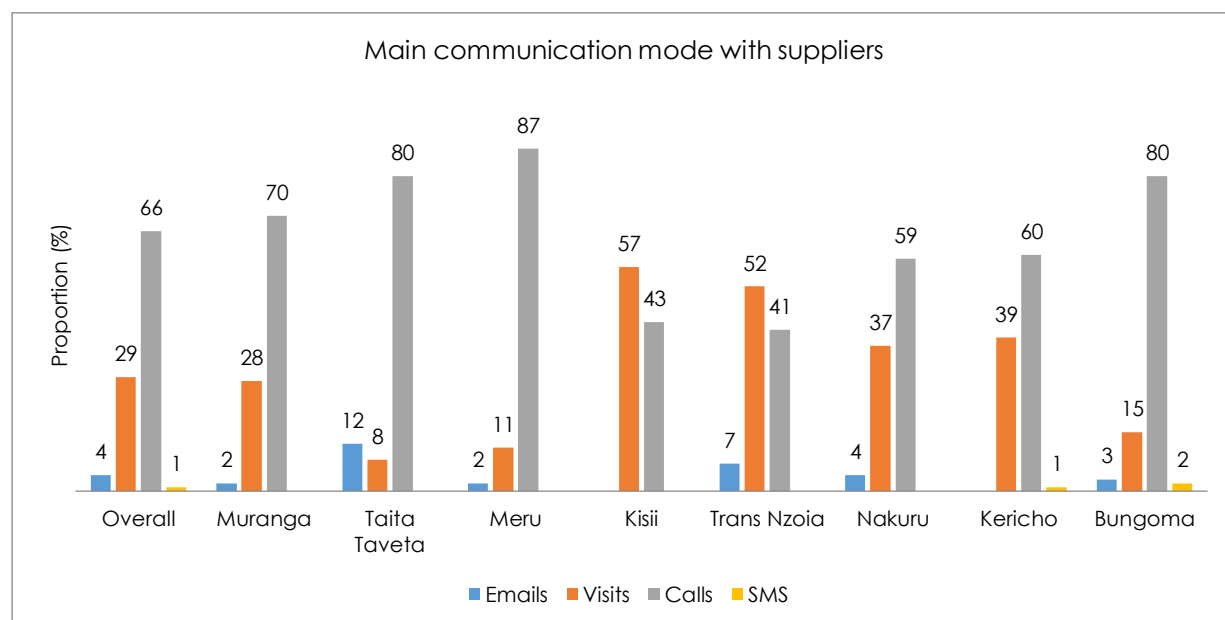


Figure 3.16: Preferred communication mode with suppliers (%)

With regard to restocking of major supplies once they ran out, 94% of agro-dealers indicated promptness in restocking, implying a constant and close relationship between agro-dealers and suppliers (Figure 3.17).

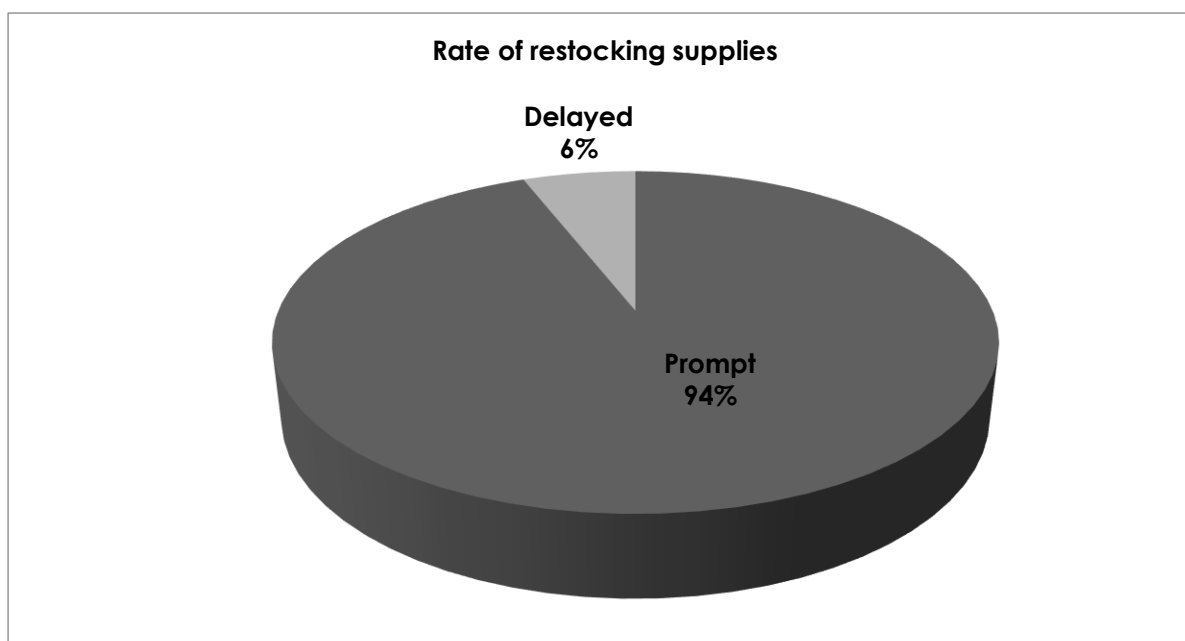


Figure 3.17: Rate of restocking seed supplies

Information was also collected on the number of farmers who bought seeds in 2015. This could also act as a pointer towards demand for seeds in 2016 (Table 3.14). There was a high number of customers purchasing maize seeds, followed by bean seeds. Wholesalers/stockists received the highest number of customers, confirmed also by focus group discussions, as they were able to offer customers relatively better prices than stockists.

Table 3.14: Average number of customers who purchased crop seeds in 2015

	Wholesaler/stockist	Stockist
Maize	(125)	(300)
Number of customers in a year	3,526	805
Proportion of women customers (in %)	53	57
Bean	(78)	(82)
Number of customers in a year	896	414
Proportion of women customers (in %)	45	53
Sorghum	(30)	(22)
Number of customers in a year	487	121
Proportion of women customers (in %)	43	54
Finger Millet	(14)	(6)
Number of customers in a year	612	132
Proportion of women customers (in %)	43	43

Wholesalers/distributors were noted by farmers interviewed during the FGDs as having the ability to offer better prices than stockists, which would account for the higher number of customers they received. Though situated mainly in major centres or urban areas, wholesalers'/distributors peak periods for receiving customers were during localized market days, when most farmers, including those from remote areas, travel to the open-air markets to make bulk purchases. For the maize seeds, relatively more women were purchasing seeds from agro-dealers than male counterparts. Okelo *et al.*, (2014) notes that women access agro-dealerships in substantial numbers because they do a large share of agricultural work on the farms and because agro-dealers

have more linkages with common interest groups (CIGs), which tend to be mostly made up of women.

Across the counties, Taita Taveta and Kericho had the highest number of customers purchasing maize seeds (see Table 3.15). These regions are characterised by high numbers of farmers demanding certified seeds, against a low number of suppliers. Therefore, the average number of customers per agro-dealer is expected to be higher than in areas with higher numbers of agro-dealership outlets.

Table 3.15: Average number of customers who purchased crop seeds in 2015

	Overall	Muranga	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Maize	(425)	(64)	(50)	(47)	(38)	(45)	(67)	(58)	(59)
Number of customers in 2015	905	365	2,831	509	1,044	288	814	1,305	237
% of customers that were women	56	65	58	58	65	47	60	54	45
Beans	(160)	(4)	(3)	(5)	(2)	(36)	(25)	(45)	(40)
Number of customers in 2015	412	87	362	580	30	208	204	818	305
% of customers that were women	52	80	63	66	60	44	58	53	45
Sorghum	(52)				(1)	(12)	(13)	(14)	(12)
Number of customers in 2015	173				20	187	183	161	173
% of customers that were women	49				70	42	57	49	42

Kericho and Meru had the highest average number of customers purchasing beans seeds, with Muranga, Taita Taveta and Meru having none. The observed regional differences could be attributed to cultural preferences in terms of food staples.

Appendix Table 6.6.2 shows the proportion of agro-dealers who indicated preference for specific package sizes of seed by gender. About 38% of the agro-dealers indicated that farmers prefer 2-kg packets of seeds. Preference is mainly driven by the farm size. Others, especially in low rainfall areas, indicated preference for the 1-kg packet, in the event that first planted crop seeds fail to germinate and re-planting is required. Few customers preferred the bulky packages. Based on the FGDs, smaller packs can encourage farmers to try new varieties and expand companies' client-base because they are affordable. This model of delivering seeds in small packages is already being promoted by many players, including AGRA. There were notable variations in preference for package size for the crop seeds by region (see Appendix Table 6.6.2)⁴.

Among the farmers that prefer particular package sizes, majority of them (both males and females) prefer the 2kg packets for both maize and bean seeds (see Table 3.16).

Table 3.16: Proportion of customers preferring different package sizes of crop seeds

Crop/package size	Percent preference by gender	
	Women	Men
Maize		

⁴ These regional results ought to be interpreted with an understanding that a relatively small number of agro-dealers responded to the question of regional preferences for specific package sizes. Small sample sizes can give results that are misleading.

Less than 1 kg packet	29	20
1-kg packet	32	17
2-kg packet	36	49
5-kg packet and more	3	14
Beans		
Less than 1 kg packet	39	32
1-kg packet	16	8
2-kg packet	44	44
5-kg packet and more	1	16

Unavailability of certain varieties of seed partly contributes to the low adoption rate by farmers. About 41% of agro-dealers interviewed confirmed that at times they have been unable to stock some seed varieties due to unavailability from the source (Figure 3.18).

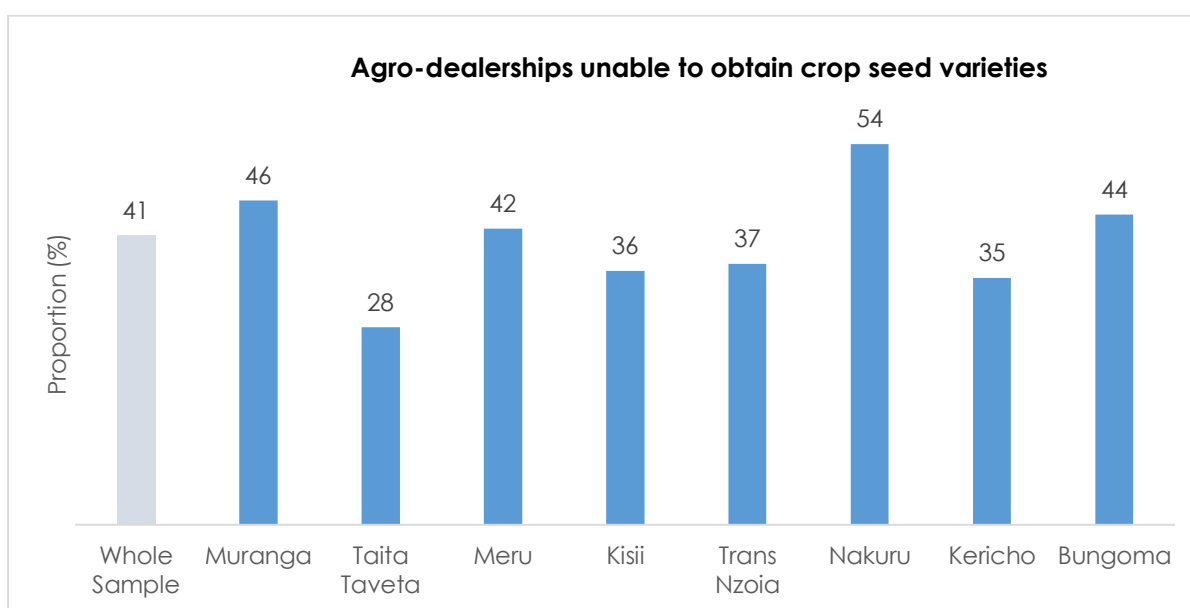


Figure 3.18: Proportion of agro-dealers who have tried to stock some seed varieties but were unable to obtain them

Nakuru had the highest proportion of agro-dealers who said they were unable to secure certain varieties (54%). FGDs with farmers confirmed that unavailability of some seed varieties has partially contributed to their low uptake. Unavailability was noted as being common during critical times of planting, when there is increased demand for seeds by farmers.

"... at times there is shortage experienced, especially during the critical time of planting, and we end up purchasing a variety that is not preferred by us in an attempt to beat the planting timeline. But when we are so much pushed we end up recycling maize seeds..."

Farmer – Focus Group Discussion – Taita Taveta County

The varieties sought but were unavailable varied from county to county (Table 3.17). Important to note, some seeds considered unavailable in one area were found to be

readily available in other parts, underscoring the regional supply and demand dynamics.

Table 3.17: Main crop seed varieties unavailable from agro-dealership outlets

	Maize	Beans	Sorghum
Muranga (63)	H513,	Rosecoco	
Taita Taveta (50)	Pioneer, H614, H513	Nyayo	
Meru (47)	H513		
Kisii (31)	H520, H624		
Trans Nzoia (22)	H614, H513,		
Nakuru (47)	H624, H6213, H624, DK series		
Kericho (26)	H624, Pioneer varieties,		Seredo
Bungoma (55)	H513, WH505		

With regard to farmer education on new seed varieties, about 98% of agro-dealers indicated that they educated farmers. The most preferred mode of educating farmers was over-the-counter consultations (Figure 3.19). Though a positive gesture, this mode could be too restrictive, only reaching those farmers who walk-in and enquire about seed features. Furthermore, the amount of time required might not be adequate given the agro-dealer may have many customers to serve. This mode of reaching out to farmers can also explain the low level of spending by agrodealers on seed promotion activities.

While there seems to be a general consensus among agro dealers that they do offer education or advisory services to farmers, focus group discussions with farmers provided a mixed view. Farmers across the different counties held varied opinions about agro-dealers' knowledge of certified seeds, and advisory services provided. Farmers in Kisii, Kericho, Bungoma, Meru and Trans Nzoia observed that most of the agro-dealers in those areas were knowledgeable and could provide useful advisory services.

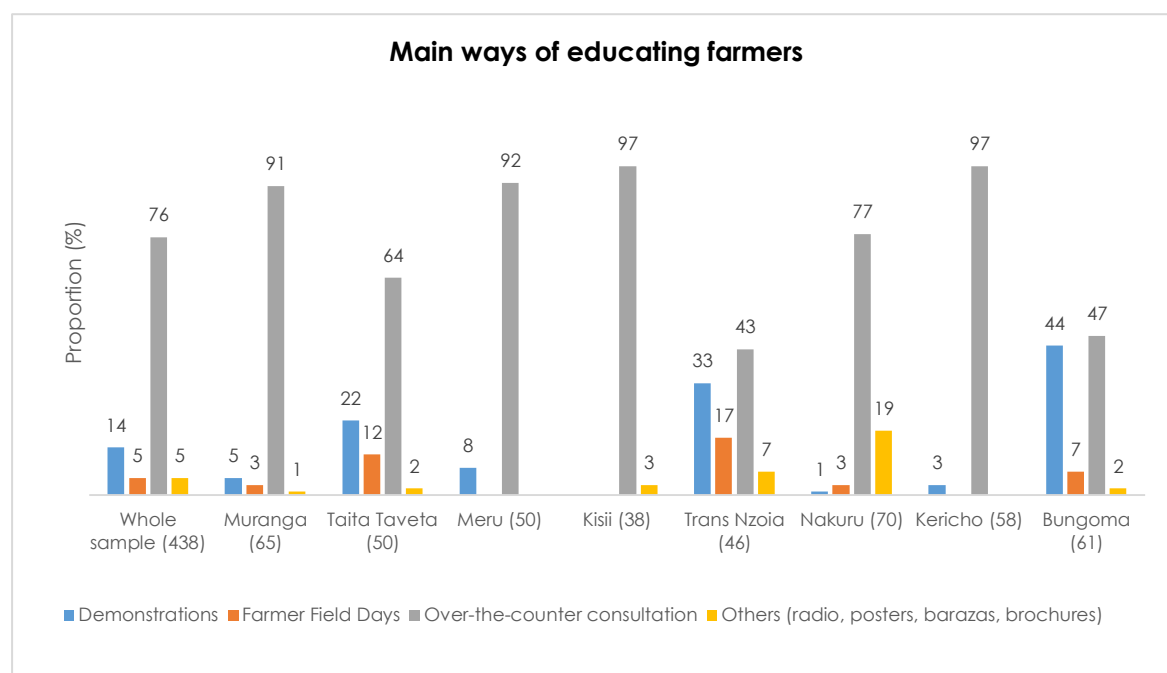


Figure 3.19: Mode of educating customers on new seed varieties (% of sample)

However, in Taita Taveta, Nakuru and Muranga, there was a general feeling that only a few agro-dealers were knowledgeable. The sentiment of most farmers was that agro-dealers are primarily driven by commercial interests and therefore give little attention to providing technical advice to farmers.

"...some of our agro-dealers are knowledgeable but majority are not, so most of us opt to consult the local agriculture extension officers..."

Farmer – Focus Group Discussion – Muranga County

The most popular sources of information on crops seeds cited by agro-dealers were seed companies, workshops/seminars and wholesalers/distributors (Table 3.18).

Table 3.18: Proportion of agro-dealers indicating best source of information about crop seeds

	Overall (438)	Muranga (65)	Taita Taveta (50)	Meru (50)	Kisii (38)	Trans Nzoia (46)	Nakuru (70)	Kericho (58)	Bungoma (61)
Seed companies	36	26	44	11	21	33	84	29	23
Internet	3		10			6		4	3
Radio	9	22	3	4	5	15		14	10
Agrodealer association	7	9	9	2		13		3	21
Wholesalers/distributors	18	19	27	83	18		4	5	4
Farmers	5	15	5		8			10	
Workshops/seminars	22	9	2		48	33	12	35	39

Variation in sources of information was also noted across the counties, with the highest proportion of agro-dealers in Nakuru (84%) relying on seed companies. Wholesalers/distributors were the best source in Meru (83%), while workshops/seminars were cited by 35% and 39% of agro-dealers in Kericho and Bungoma respectively.

3.6 Application of ICT in agro-dealership business

ICT applications are very useful tools for helping agro-dealerships to expand and improve efficiencies at all levels of their businesses. The study sought to find out the various computer or phone-based tools agro-dealers were using in the day-to-day running of their businesses. Figure 3.20 depicts the proportion of agro-dealers using ICT applications in managing their business.

Generally, use of computer based applications in business management was low among stockists. None of the agrodealers interviewed are using phone-based applications for business management. This may be due to the complex nature of some of these applications and comparatively high cost of accessing them (the cost of internet in Kenya on a mobile phone is still relatively high) . Across the counties, Trans Nzoia and Bungoma had 63% and 61% of agro-dealers using QuickBooks and Microsoft Excel, respectively. These two counties also had the highest number of agro-dealers with post-college level education, plausibly explaining their interaction with these applications.

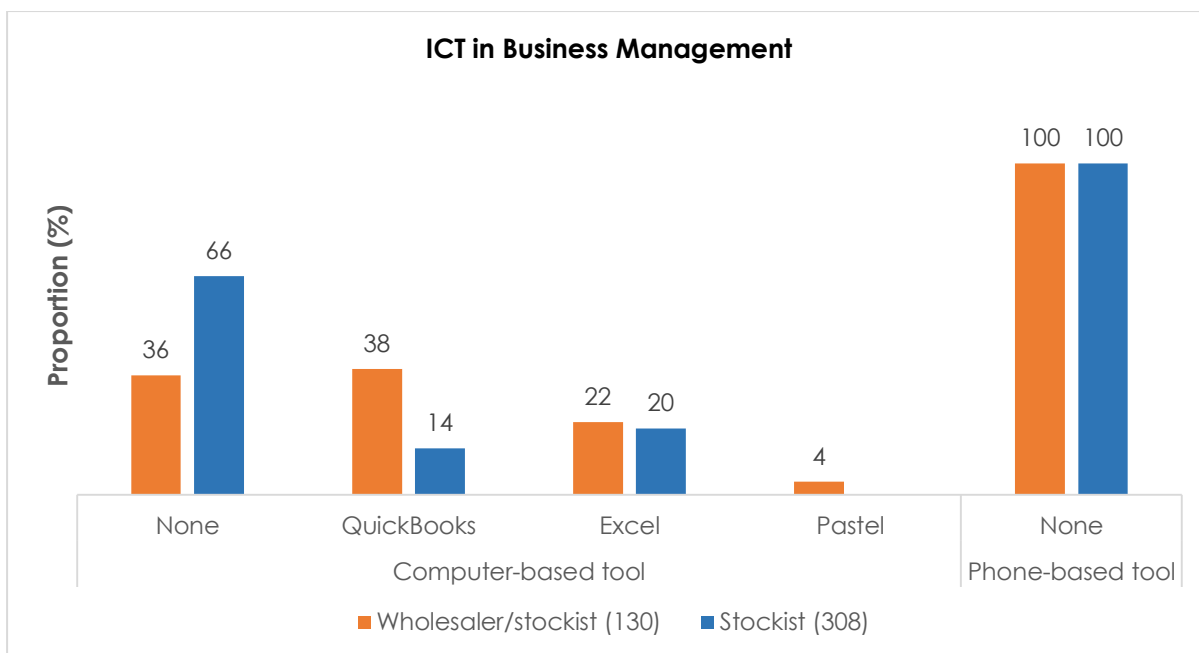


Figure 3.20: ICT application in business management

Agro-dealers were also probed on the use of ICT applications like MbeguChoice, e-extension services and other platforms in accessing information related to inputs. Generally, use of MbeguChoice tool is impressive among wholesalers, but is low among stockists (Figure 3.21).

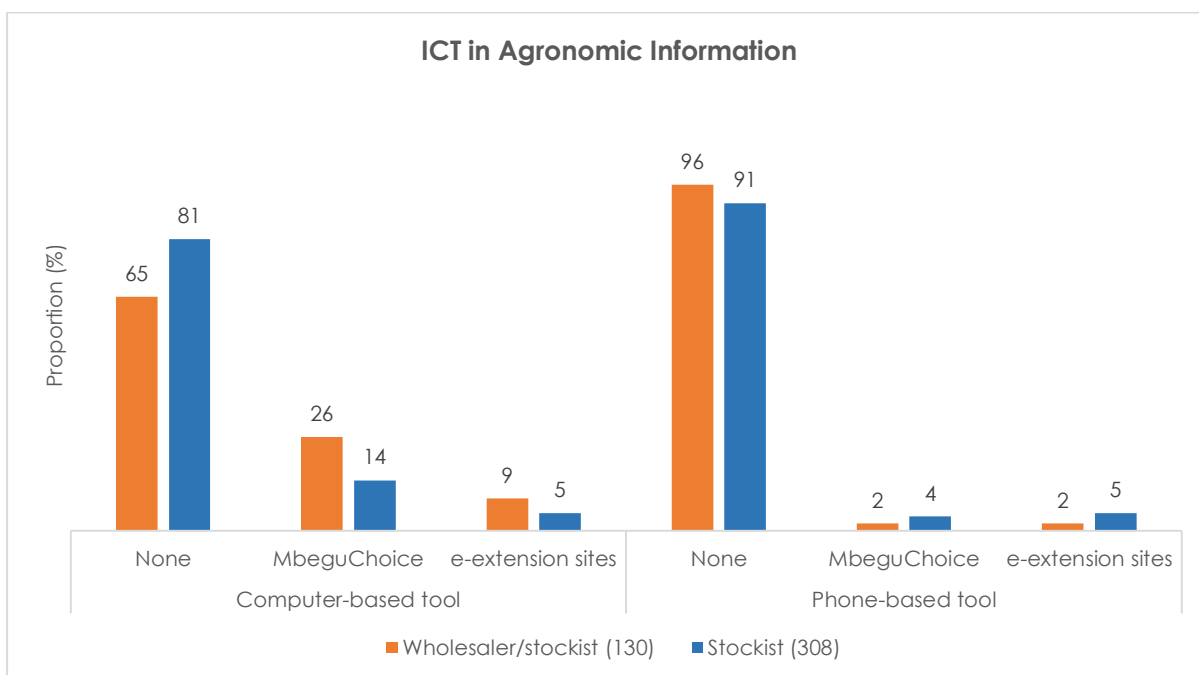


Figure 3.21: ICT application in accessing agronomic information

In terms of communication with customers, the use of internet based platforms was low. Phones were the main communication tools with clients (Figure 3.22). The low use of emails can be attributed to high cost and insufficient infrastructure which contributes to its low uptake. Mobile phones are commonly used by most agro-input

dealers since almost every household in Kenya owns at least one mobile phone handset (Etyang *et al.*, 2014). Mobile phones are mostly used by agro-input dealers to communicate with other agro-input dealers, the farmers and suppliers.

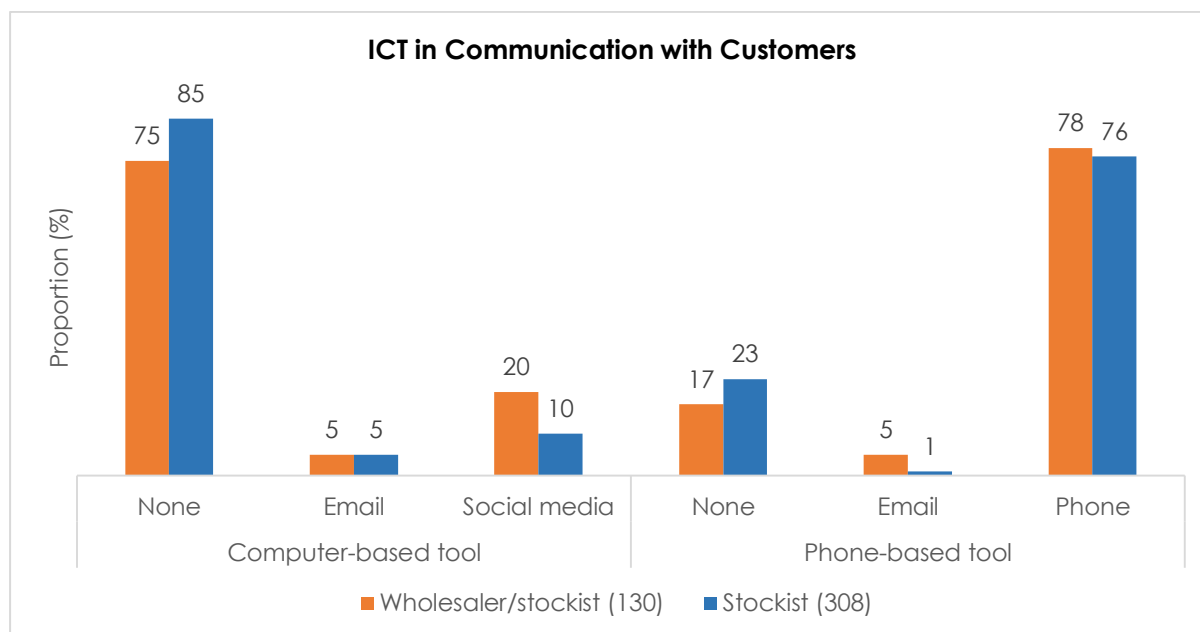


Figure 3.22: ICT application in communicating with various clients

To improve the capacity of agro-dealers to effectively manage their business as well as poise them for further growth, relevant trainings are necessary. Figure 3.23 shows that 54% of agro-dealers facilitate training for staff on new seed varieties. Regional disparities existed; about 87% of dealers in Trans Nzoia trained staff while only 22% in Murang'a did the same. Concerns should remain about the relatively large proportion of agro-dealerships (46%) that do not offer training to staff on new seed varieties.

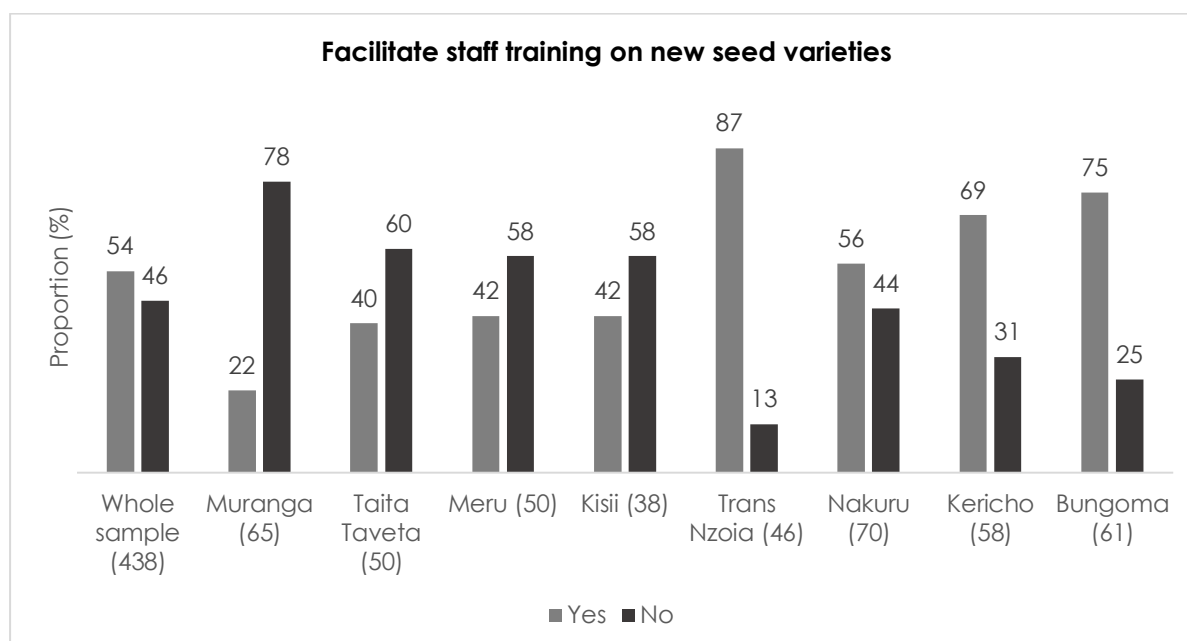


Figure 3.23: Proportion of agro-dealers who provide or facilitate staff training on new seed varieties stocked

A large proportion of stockists (56%) do not provide any training support to their staff (Figure 3.24). This is possibly explained by the low number of full time staff employed by the stockists and the type of work the employees do. The agrodealers may not see the value in investing in training employees that are only engaged on a part-time basis.

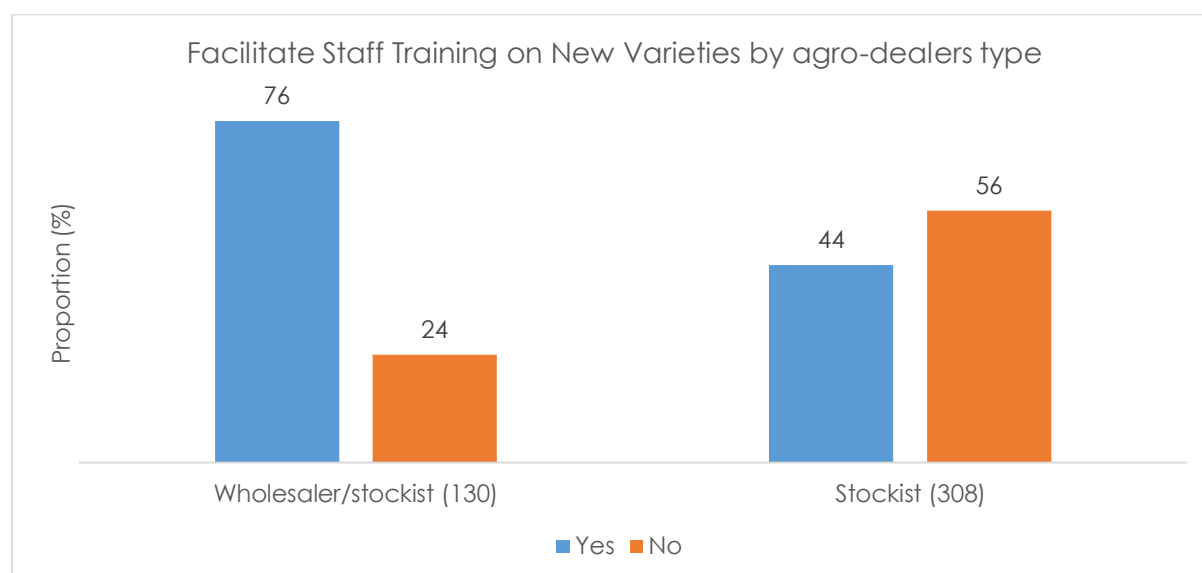


Figure 3.24: Proportion of agro-dealers by dealership type providing or facilitating staff training on new seed varieties stocked

The areas staff were trained on are depicted in Figure 3.25. The main areas of training were characteristics of new seed varieties, yield potential and maturity periods.

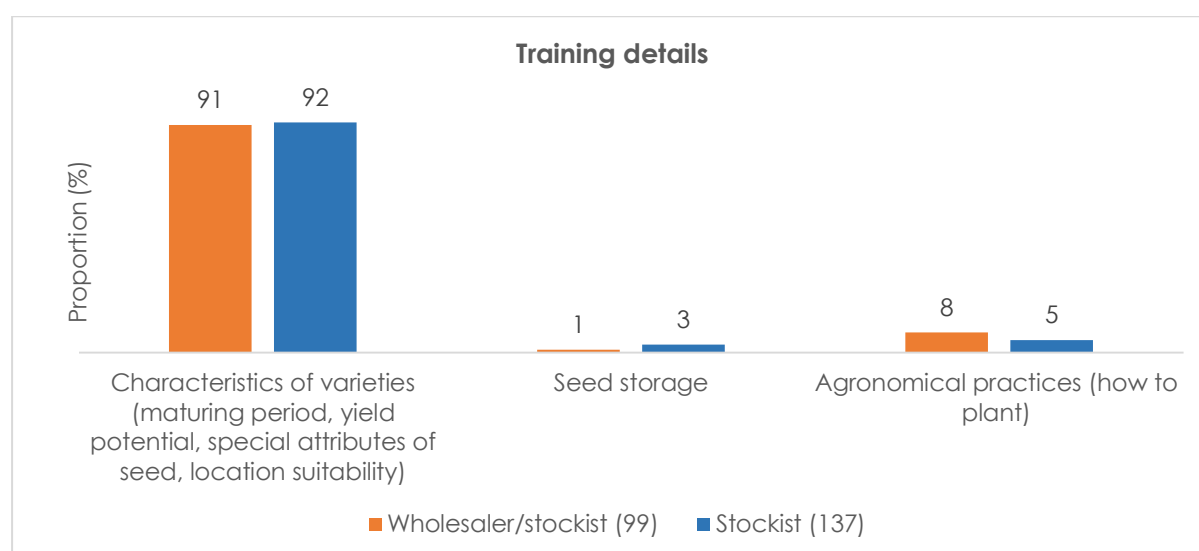


Figure 3.25: Type of training provided to staff

Training areas varied across the counties but largely, characteristics of new varieties featured as the major need in all counties except in Kisii, Kericho and Bungoma where majority cited yield potential. Notable for Trans Nzoia, most staff (38%) were trained on maturity periods for the new seed varieties (see Table 3.19).

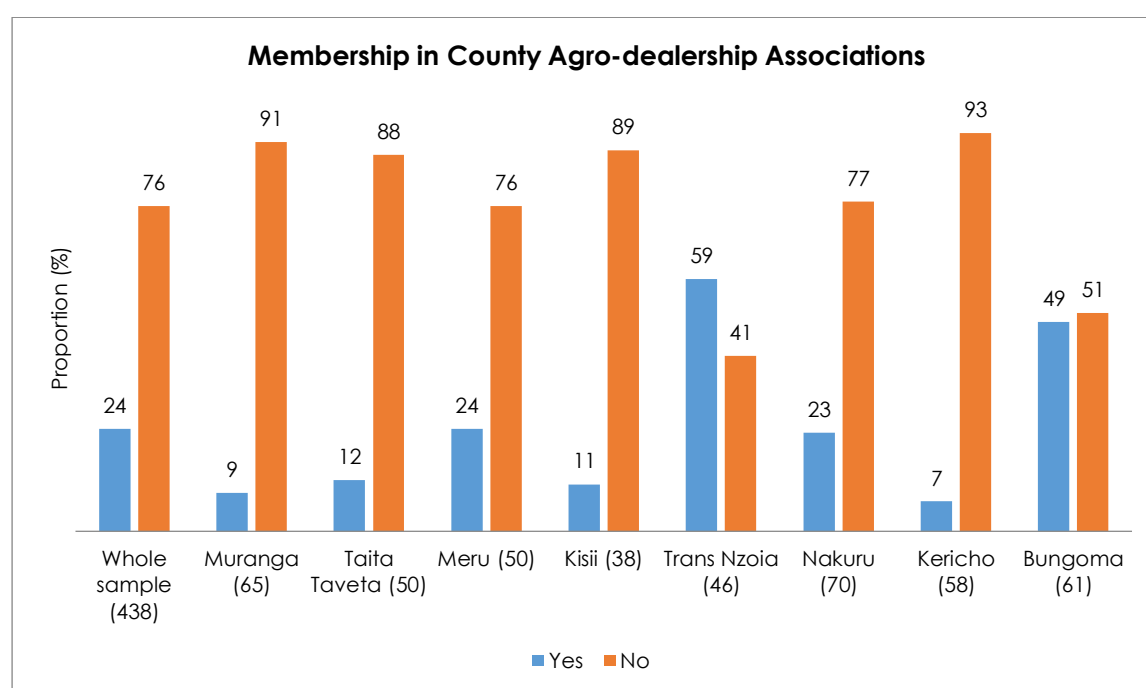
Table 3.19: Type of training provided to staff

Type of training	Overall (236)	Muranga (14)	Taita Taveta (20)	Meru (21)	Kisii (16)	Trans Nzoia (40)	Nakuru (39)	Kericho (40)	Bungoma (46)
Characteristics of new varieties	92	100	85	81	93	98	97	93	89
How to plant	6		5	14		2	3	5	11
Seed storage	2		10	5	7			2	

3.7 Group participation and networking

Formation of agro-dealer associations is critical in providing a platform for lobbying and influencing agricultural policy formulation, particularly at the county level. Despite its importance, membership to agro-dealer associations was found to be low. Overall, about 24% of agro-dealers indicated they were members of agro-dealer associations (see Figure 3.26).

However, it's important to note that the concept of agro-dealer associations is relatively new and was only introduced recently in many counties. The low participation of agro-dealers in associations partly confirms feedback received from key informants. Most agro-dealers lack platforms for interaction with sector stakeholders, other than through occasional agribusiness forums organized by Ministry of Agriculture, seed producers and NGOs. Strong and vibrant agro-dealer associations can be very instrumental in advocating for such platforms.

**Figure 3.26: Proportion of agro-dealers belonging to agro-dealer associations**

Membership agro-dealer associations was low across most counties, except for Trans Nzoia and Bungoma, where 59% and 49% of the dealers, respectively were members.

In terms of benefits of association, 34% of agro-dealers rated negotiation with suppliers as the most important benefit (see Appendix Table 6.6.3). However, there are regional differences perceived benefits. In Murang'a and Taita Taveta, harmonization of sale prices of inputs and negotiating finances with financial institutions were cited as the most important benefits.

Agro-dealers who are not members of county associations were asked about their awareness of the existence of associations (Figure 3.27). Overall, only 21% of those who had no membership to county associations were aware of their existence. Across the counties, awareness remained relatively low, except in Trans Nzoia and Bungoma where 73% and 94%, respectively, were aware of their existence. There is need for outreach programs to sensitize agro-dealers about existence of groups and their potential benefits.

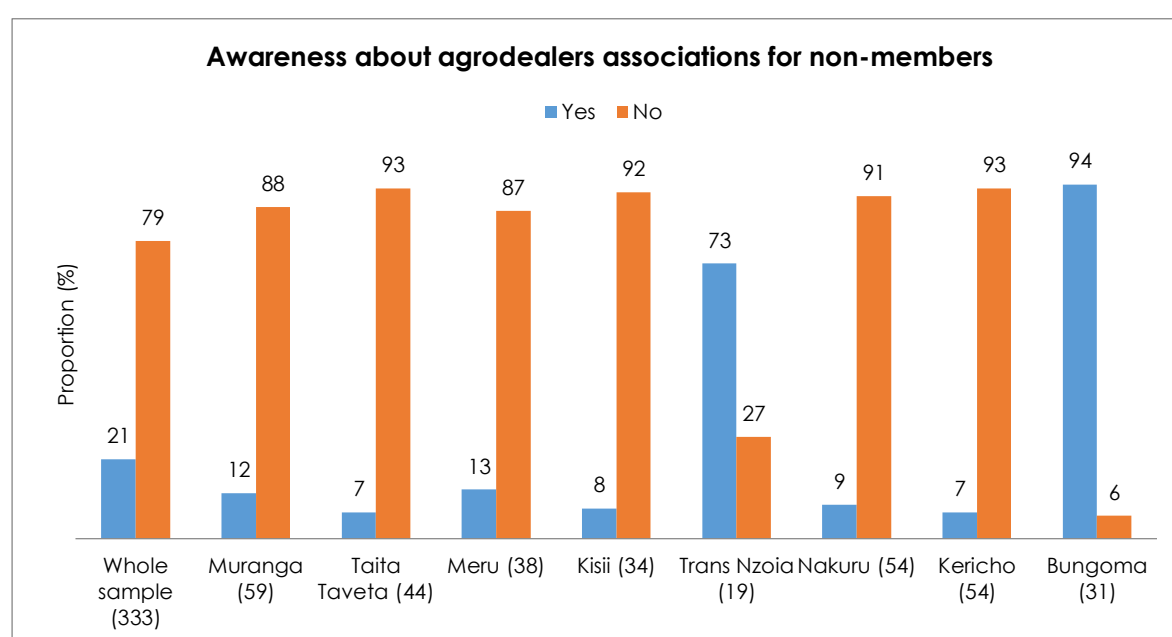


Figure 3.27: Awareness of existence of agro-dealer associations for non-members (% of sample)

Agro-dealers who were aware of associations but had not become members cited various reasons for non-membership, including being too busy to participate and the feeling that such groups would not help them achieve much (Figure 3.28). There is a long history of cooperative movement in Kenya that ended up mostly not benefiting farmers but officials. The potential role of membership in agro-dealer association for enhancing agro-dealer bargaining power and influence should be promoted.

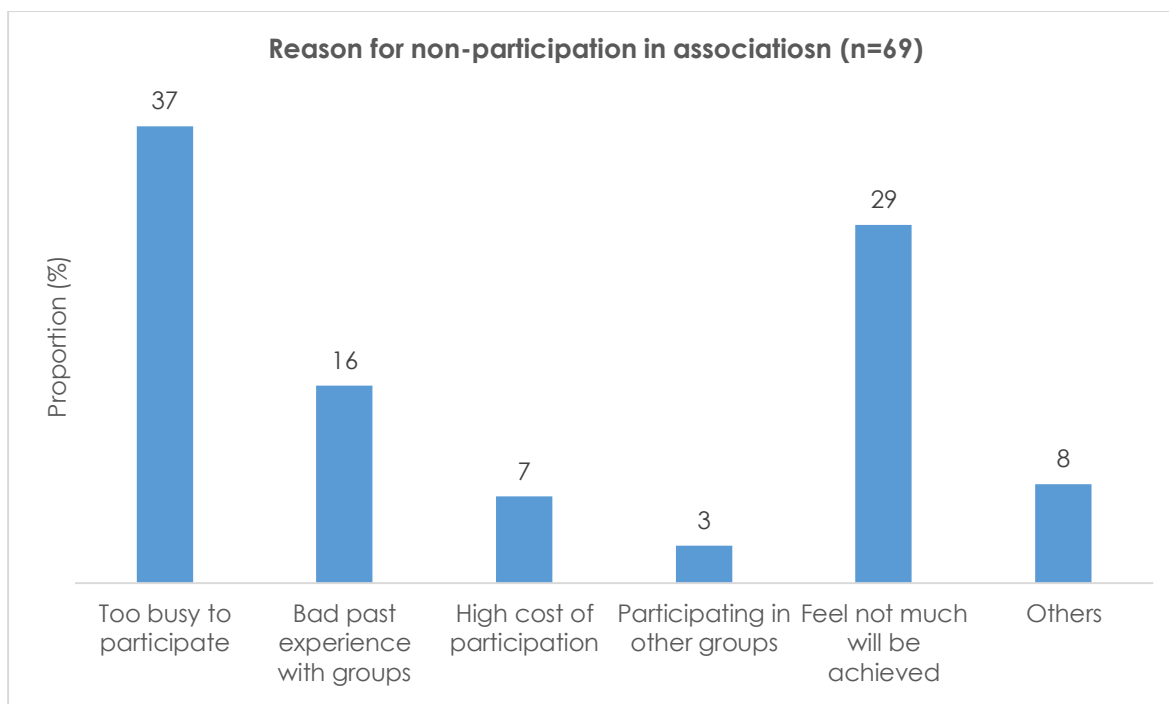
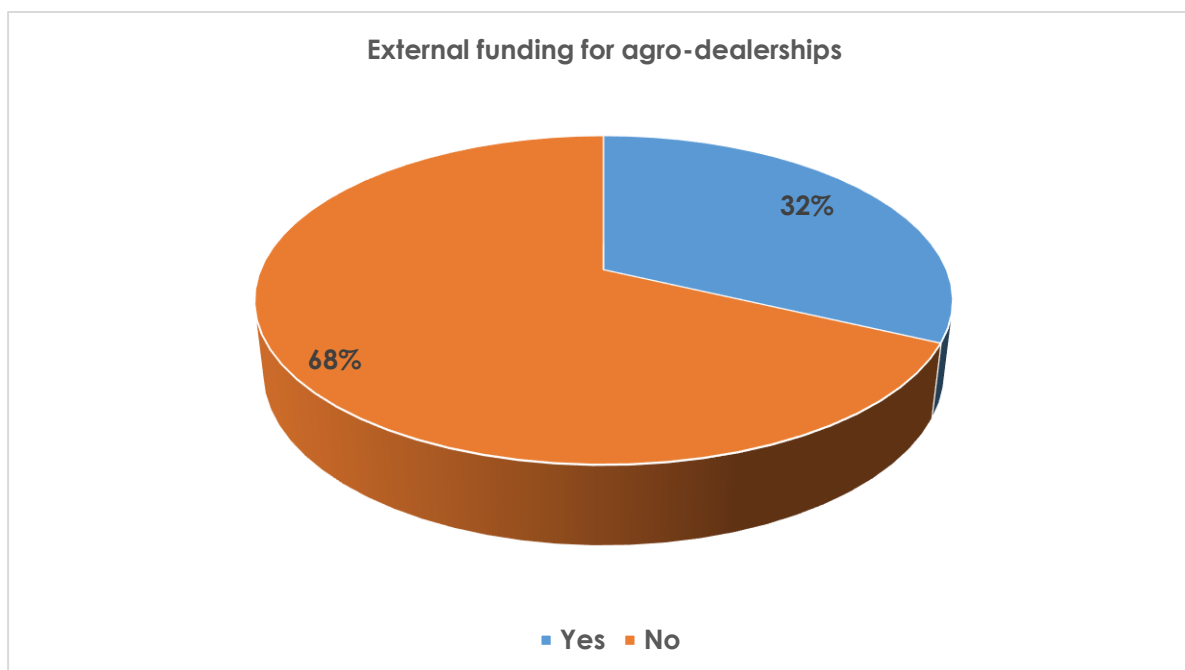


Figure 3.28: Reasons for awareness of existence of agro-dealer associations but not interesting in joining (% of sample)

3.8 Sources of external funding to the business

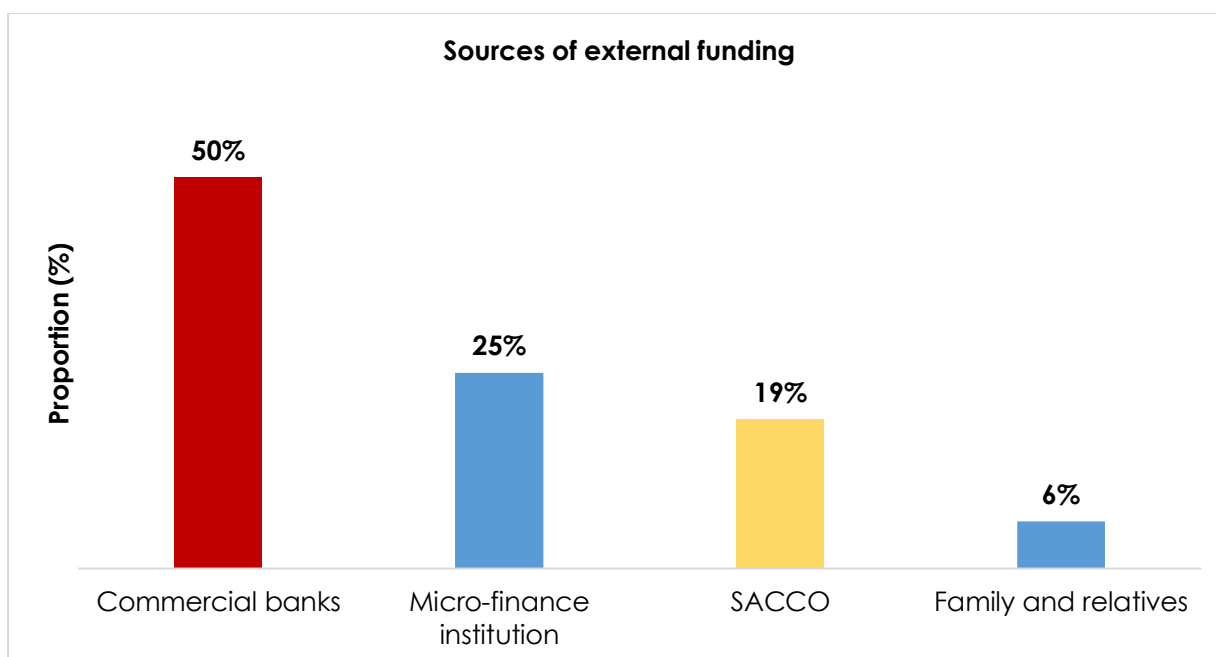
Only 32% of the agro-dealers had received external funds to finance their businesses; 68% indicated that they did not receive any external funding (see Figure 3.29).



N=Yes (140); No (298)

Figure 3.29: External funding for agro-dealership

Among the 140 agro-dealers (32%) who obtained external funding, multiple sources of funding were identified, as summarized in Figure 3.30.



Sample size: Commercial banks (70); Micro-finance institution (34); SACCO (27); Friends/Relatives (9)

Figure 3.30: Sources of external funding for agro-dealers

When broken down by agro-dealership types, some interesting dimensions were revealed as summarized in Table 3.20. Majority of those who accessed external funding were in the category of stockists and the majority borrowed from commercial banks. The observation that more stockists used external funding is expected given their sizes of their business and capital outlay. Do to the relatively smaller size of stockists they may not be able to produce high enough profits to finance the business as would wholesaler/stockists.

Table 3.20: Sources of external funding by agro-dealership type

Agro-dealership type	Source of finance							
	Commercial banks		Micro-finance institutions		Friends/relatives		SACCO	
	No.	%	No.	%	No.	%	No.	%
Wholesaler /stockists (49)	27	39	11	32	2	22	9	33
Stockists (91)	43	61	23	68	7	78	18	77
TOTAL	70	100	34	100	9	100	27	100

3.9 Agro-dealership business challenges

Table 3.21 provides a summary of the challenges faced by the agro-dealers for maize and non-maize seed business streams. The challenges for the two business streams are similar. However, the proportion of agro-dealers who indicated that they did not face any challenges in the non-maize seed business was almost twice those in the maize seed business.

Agro-dealers were also asked to indicate whether they received any complaint from their customers. About 41% had received complaints while 59% had not.

Table 3.21: Agro-dealers' main constraints in maize and non-maize seed business

Constraint	Main challenge faced by dealers			
	For maize seed		For non-maize seed	
	No.	%	No.	%
None (no constraint)	61	14	114	26
Inadequate cash to pay suppliers	79	18	81	19
Delayed deliveries	56	13	50	11
High cost of inputs	45	10	49	11
Insufficient quantities	86	19	64	14
Poor quality inputs	31	7	11	3
Inadequate information	24	5	22	5
Others (High taxes, high interest rates, short repayment period, etc.)	56	14	47	11
TOTAL	438	100	438	100

Figure 3.31 summarizes the type of complaints from farmers. Most complaints were about low germination (46%) and fake seeds (23%).

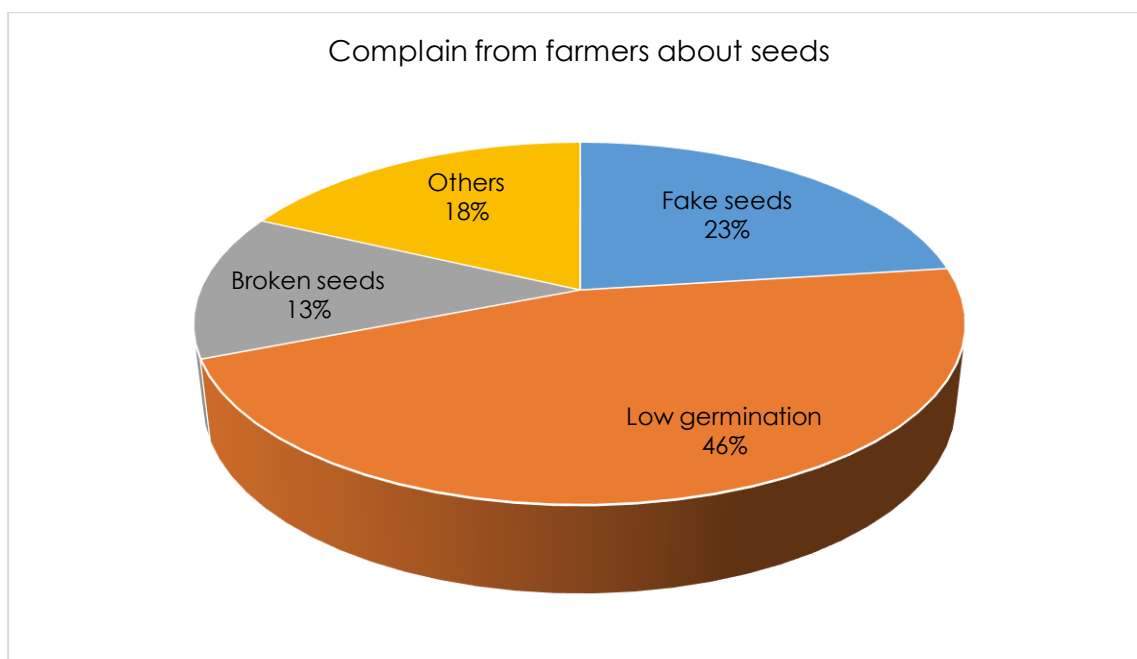


Figure 3.31: Types of complaints received by agro-dealers

Of the dealers who received complaints, 66% were not able to do anything about them, mainly because they did not have the capacity to deal with their complaints or did not know who they could refer the farmers to.

4.0 SUMMARY CONCLUSIONS AND RECOMMENDATIONS

4.1 Summary and conclusions

The overall purpose of this baseline study was to generate data and information on the dynamics of the agro-dealers business in Kenya. The study covered various issues, including: the socio-economic characteristics of agro-dealers; their relationships with seed companies and farmers; types of crop seeds they are involved in and sales dynamics over the past few years; gender disaggregation of agro-dealership business; use of ICT; and, membership in agro-dealer associations.

This information will be used by Agri Experience Ltd and other stakeholders in the seed sector to inform interventions to help agro-dealers increase and expand the supply of certified crop seeds and information and increase the access to and correct use of quality seed by farmers. .

To achieve this objective, a random sample of 438 agro-dealers were interviewed across 7 counties using a semi-structured questionnaire. In addition, a total of 15 KII and 8 FGDs were conducted.

Based on the findings, the study concluded the following:-

1. Overall, both genders more or less equally participate in the agro-dealership business in Kenya; among the respondents 56% were male and 44% were female. However, ownership was skewed in favour of men; among the agro-dealership owners 63% were male and only 37% were female. There were no major differences in terms of gender in the type of agro-dealership business. Interventions to support agro-dealerships should bear in mind the gender aspects
2. About half of all agro-dealerships are run by employed managers (48%) and not the owners. Interventions meant to help the agro-dealership offer better services to farmers should take into account that to successfully reach the farmers, the interventions should work with both the owners and managers.
3. The majority of agro-dealership owners are well educated; 85% of them have post-secondary school education. High level of education is highly correlated with ability to adopt modern technologies for business. This is a positive finding because it offers an opportunity to provide the agro-dealers with advanced technological interventions to improve their business. However, the study also found that the majority of agro-dealers (75%) do not use ICT-based applications to improve their business. Obstacles to ICT use should be identified and addressed.
4. Most agro-dealerships (71%) operate as stockists. Therefore, interventions to improve their efficiency should bear in mind that they are small and operate at the downstream end of the seed market chain.
5. About 71% of the stockists are youth (defined here as under the age of 35 years) while 57% of the wholesale/stockist enterprises were owned by people who were over 50 years of age. Supporting stockists in agro-dealership business would also imply supporting the youth who are the majority owners.

6. Crop seed business in Kenya is predominantly about maize seed. All agro-dealers interviewed stock maize seed (100%). Only 42% stocked beans, 16% stocked sorghum 4% stocked green grams and 4% stocked cowpeas seeds.
7. Maize seed business accounted for about 25% of the agro-dealership business; while non-seed stocks accounted for about 61% of the value of stock. This information is critical in designing strategies for engaging agro-dealers because they have interest beyond the seed business.
8. Substantial growth in maize seed sales were recorded between 2014 and 2015. On average the volume of maize sold among the stockist increased by 29%. This could partly be attributable to better rainy season in 2015 but it may also reflect a growing trend in maize seed business. Longer term trends are required to make more conclusive judgement.
9. The bulk of business cost for agro-dealership business consists of salaries (45%), storage (about 31%) and other costs (24%).
10. Agro-dealers spend very little on seed promotion (less than 1%). The implication of this is that there are lost opportunities for farmers to receive information on new and/or improved technologies. This is a link in the seed value chain that may require urgent interventions for strengthening.
11. A substantial proportion (about 41%) of maize seed stockists do not get their maize seed directly from seed companies. Majority of those who sourced from seed companies used more than one supplier.
12. About 94% of the agro-dealers indicated that they get their seeds promptly from their suppliers.
13. Overall, 44% of agro-dealers indicated that farmers prefer seeds in small packages. This is understandable given the cost of purchase. A further 41% of the agro-dealers also indicated that they do not get the seed varieties they desire or need.
14. Majority of agro-dealers (76%) prefer over-the-counter consultations with their clients when informing them about new seed varieties.
15. The level of participation in agro-dealer association is low. Only 24% of the total agro-dealers interviewed indicated membership in an agro-dealer association.

4.2 Recommendations

Based on the findings and conclusions, the study recommends the following:-

1. Efforts to promote and encourage agro-dealers to form or join existing associations should be intensified given the current level of membership. These efforts must however take into account the reasons limiting participation of the dealers in associations. Majority say they are very busy and therefore joining groups would be a burden. Therefore, the anticipated benefits of membership have to be well articulated or at least be demonstrated from existing associations.
2. There should be efforts by all stakeholders to promote diversification of the crop seed sectors from the current dominance of maize seed. Promotional efforts for non-maize certified seed should be intensified. For this to be successful it has to account for both the demand side (educating farmers on the need to plant certified non-maize seeds) and also from the supply side (increasing production of non-maize seeds by seed companies).

3. There should also be efforts to promote diverse crop seed varieties by all players. For instance, KALRO and seed companies other than Kenya Seed Company should increase efforts to promote their seeds to increase the diversity of varieties available to farmers.
4. Use of ICT should be promoted among agro-dealers for efficiency and ease of doing business. This can be done by partnering with other players who are promoting used of affordable but innovative ICT tools in the agri-business sector.

5.0 REFERENCES

- Ayieko, M.W. and Tschirley, D.L., 2006. Enhancing Access and Utilization of Quality Seeds for Improved Food Security in Kenya. Tegemeo Institute of Agricultural Policy and Development. Working Paper No. 27. Nairobi, Kenya
- Chisinga, B. (2011). Seeds and subsidies: the political economy of input programmes in Malawi. *IDS Bulletin*, 42, 59–68.
- Chisinga, B., 2011. Seeds and subsidies: the political economy of input programmes in Malawi. *IDS Bulletin*, 42, 59–68.
- Etyang, T.B., Okello, J.J., S. Zingore, P.F. Okoth, F.S. Mairura, A. Mureithi and B.S. Waswa (2014). Exploring Relevance of Agro Input Dealers in Disseminating and Communicating of Soil Fertility Management Knowledge: The Case of Siaya and Trans Nzoia Counties, Kenya. *Agricultural Information Worldwide – vol. 6*.
- GOK (2010), Economic Survey Nairobi. Government Printers.
- Kamau, P. W., Kimani, E., and Wamue-Ngare, G. 2014. Gender relations in access to micro finance resources among women in Kiharu constituency, Murang'a County, Kenya. Prime Research on Education (PRE) ISSN: 2251-1253. Vol. 4(5), pp. 717-722
- Kariuki, J (2015). Food Security and Crop Seed in Kenya: Challenging Trends We Cannot Afford to Ignore. *Policy Brief*.
- Kibaara, B., Ariga, J., Olwande, J., and Jayne, T.S., 2008. Trends in Kenyan Agricultural Productivity: 1997-2007. Tegemeo Institute of Agricultural Policy and Development, Working Paper No. 31/2008.
- Korir, D.K., 2016. Agro-dealer National and County Licensing Requirements. A presentation made at the 1st Mazao Forum on Agro-dealers and Crop Seed-Vital Links for Food Security in Kenya on 3rd March 2016 in Kisumu, Kenya.
- Marechera, G., Muinga, G. and Irungu, P. (2016). Assessment of Seed Maize Systems and Potential Demand for Climate-Smart Hybrid Maize Seed in Africa. *Journal of Agricultural Science*; Vol. 8, No. 8.
- Marechera, G., Muinga, G. and Irungu, P., 2016. Assessment of Seed Maize Systems and Potential Demand for Climate-Smart Hybrid Maize Seed in Africa. *Journal of Agricultural Science*; Vol. 8, No. 8.
- Muhammad, L., Njoroge, K., Bett, C., Mwangi, W., Verkuil, H. and De Groote, H. (2003). The Seed Industry for Dryland Crops in Eastern Kenya, Mexico D.F.: CIMMYT and Kenya Agricultural Research Institute (KARI)
- Muhammad, L., Njoroge, K., Bett, C., Mwangi, W., Verkuil, H. and De Groote, H., 2003. The Seed Industry for Dryland Crops in Eastern Kenya, Mexico D.F.: CIMMYT and Kenya Agricultural Research Institute (KARI)
- Muyanga, M, Ayieko M W, and Gem A K (2005). 'Analysis of Agricultural Productivity in Kenya' A World Bank Agricultural Policy Review Technical Background Paper, May 2005
- Odame, H. and Muange, E., 2012. Can Agro-dealers deliver the Green Revolution in Kenya? Policy Brief No. 045. Futures Agriculture, Brighton, UK.
- Odame, H., and Muange, E. (2011). Can agro-dealers deliver the green revolution in Kenya? *IDS Bulletin*, 42(4), 78–89

- Okello, B., 2010. External End of Project Evaluation of Kenya Agrodealer Strengthening programme (KASP). Final report. AGMARK-Kenya, Nairobi, Kenya.
- Okello, B., Paruzzolo, S., Mehra, R., Shetty, A and E, Weiss (2013). Agrodealerships in Western Kenya: How Promising for Agricultural Development and Women Farmers? *International Center for Research on Women Publication*.
- Poullisse, J. (2007). Increased fertilizer use opportunities and challenges for food security in Sub-Saharan Africa. Paper presented at the 13th International Annual Conference and Exhibition. Arab Fertilizer Association. Sham El-Sheikh, 6 – 8 Feb 2007
- Sheahan, M., Ariga, J., and Jayne, T.S., 2016. Modelling the Effects of Input Market Reforms on Fertilizer Demand and Maize Production: A Case Study from Kenya. Tegemeo Institute of Agricultural Policy and Development. Working Paper No. 59/2016. Nairobi, Kenya

6.0 ANNEXES

6.1. County maps showing location of interviewed agro-dealers



Figure 6.1.1: Location of interviewed agro-dealers in in Meru County

Source: Authors', 2016

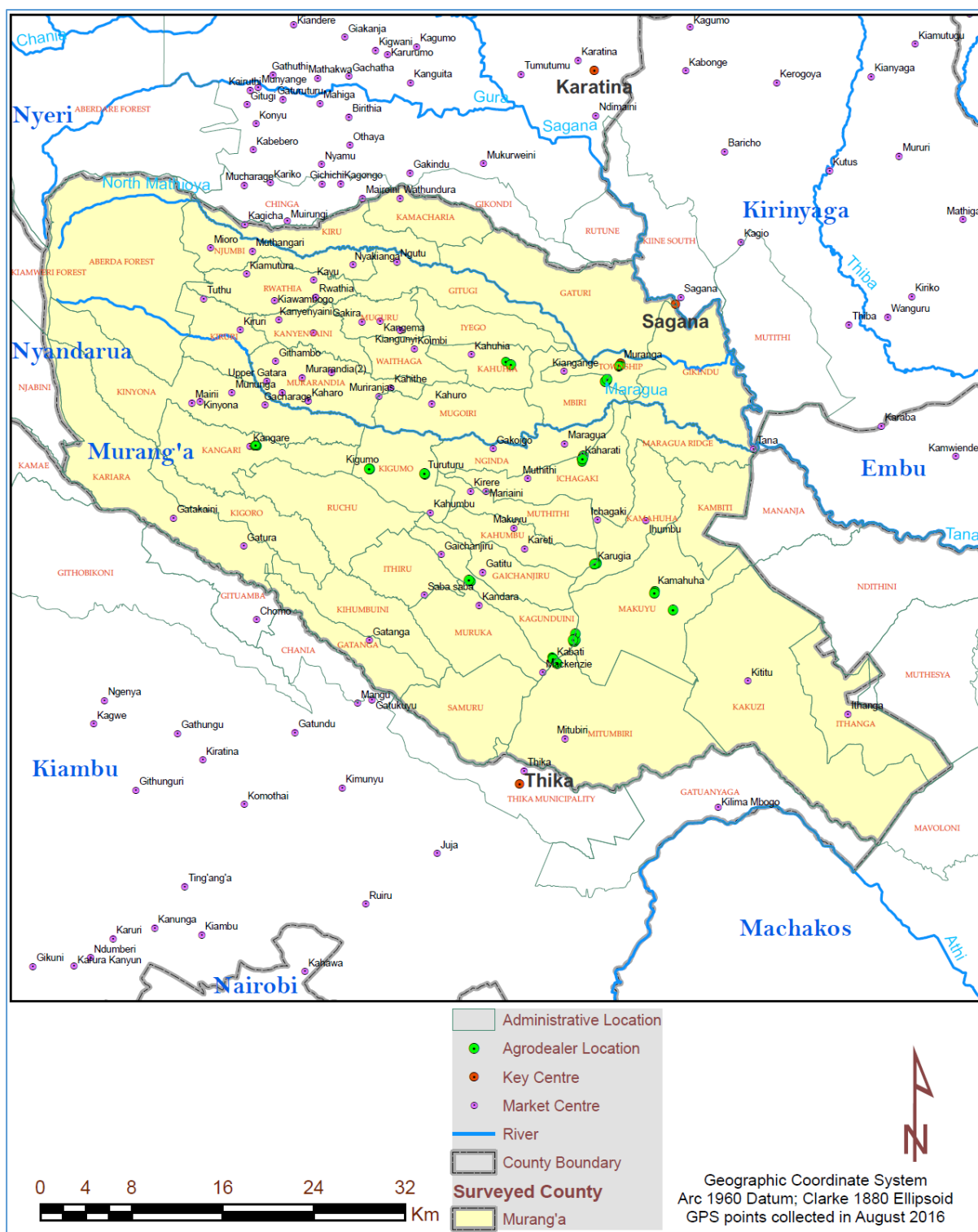


Figure 6.1.2: Location of interviewed agro-dealers in in Murang'a County

Source: Authors', 2016

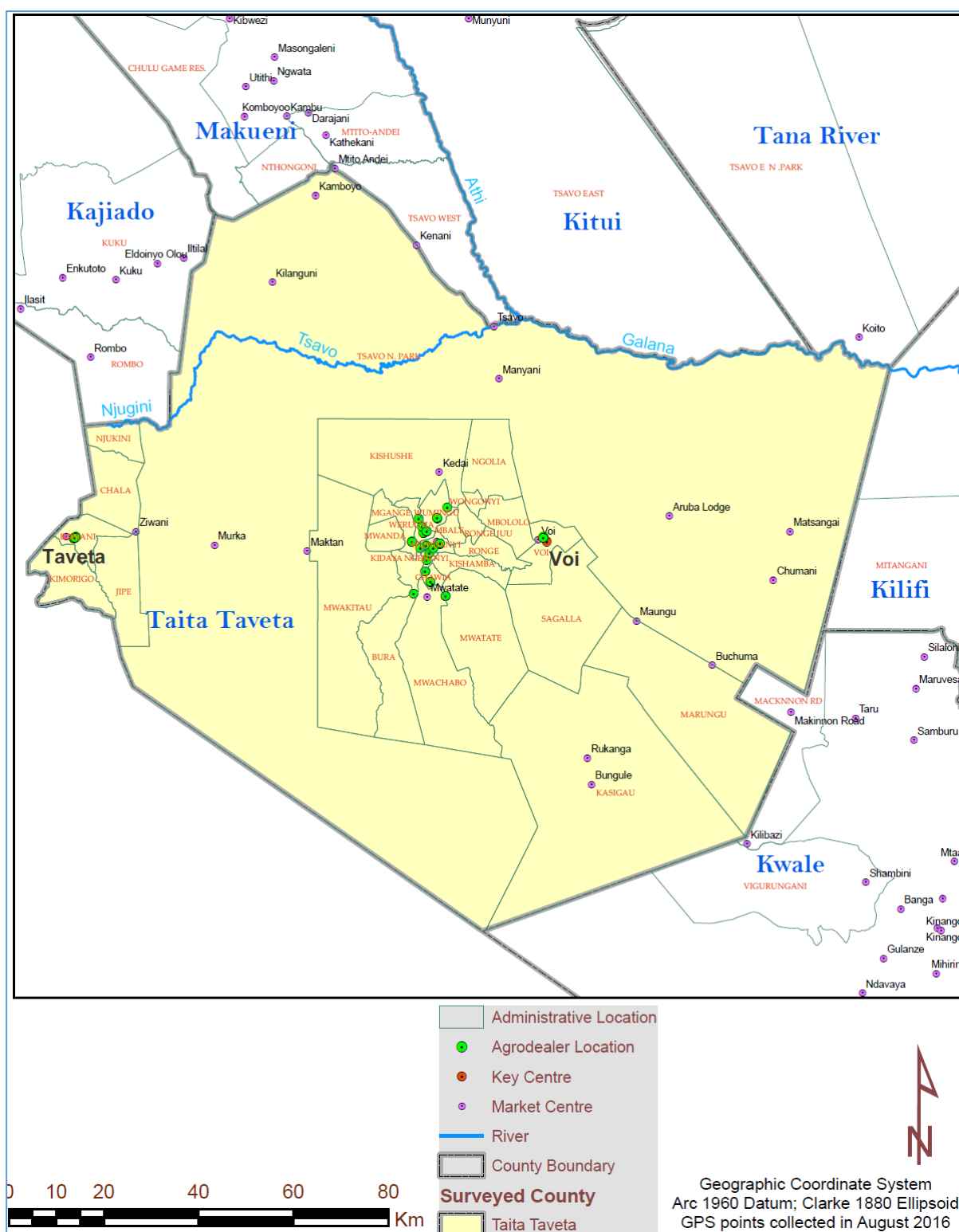


Figure 6.1.3: Location of interviewed agro-dealers in in Taita-Taveta County

Source: Authors', 2016

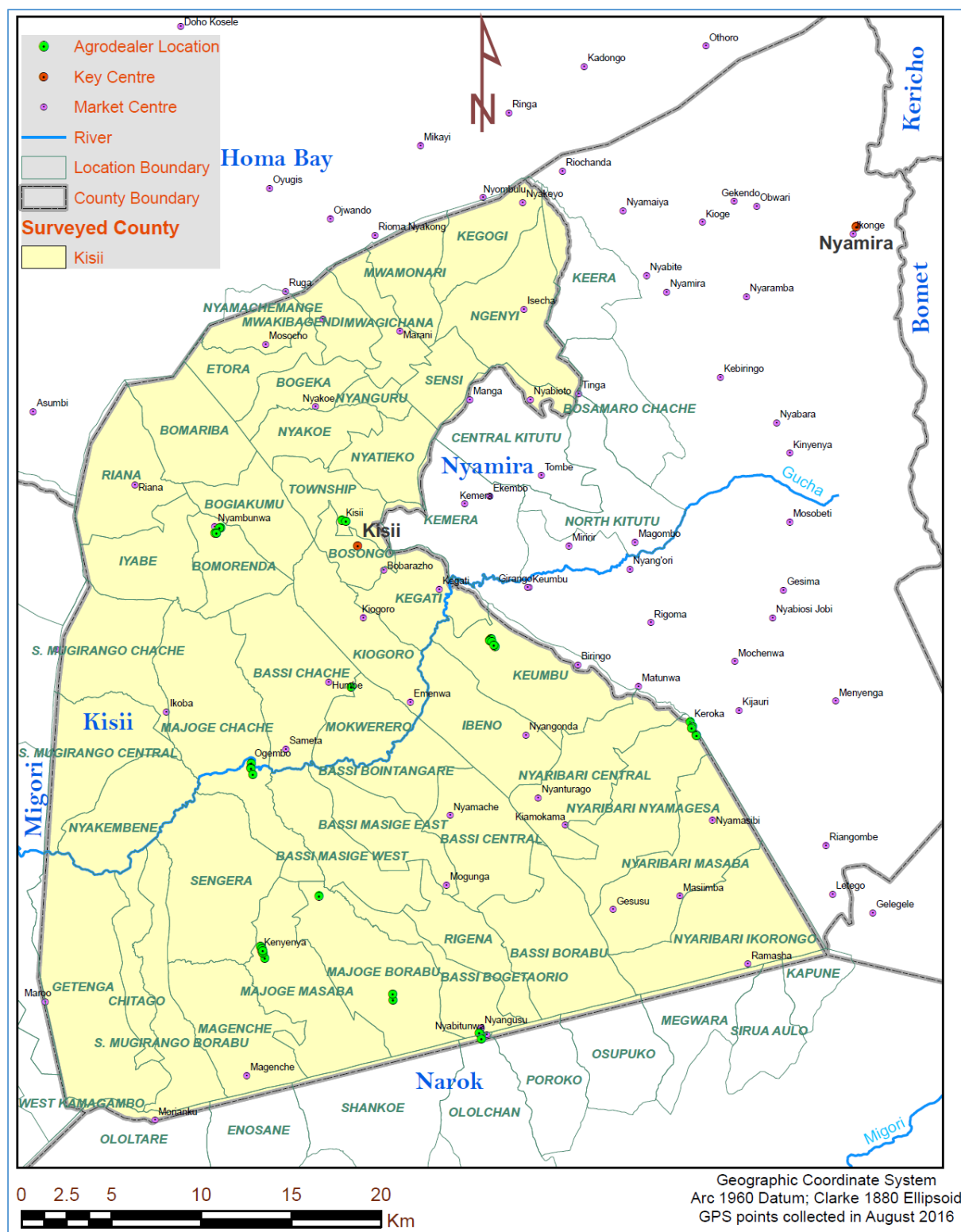


Figure 6.1.4: Location of interviewed agro-dealers in Klsii County

Source: Authors', 2016



Figure 6.1.5: Location of interviewed agro-dealers in in Nakuru County

Source: Authors', 2016

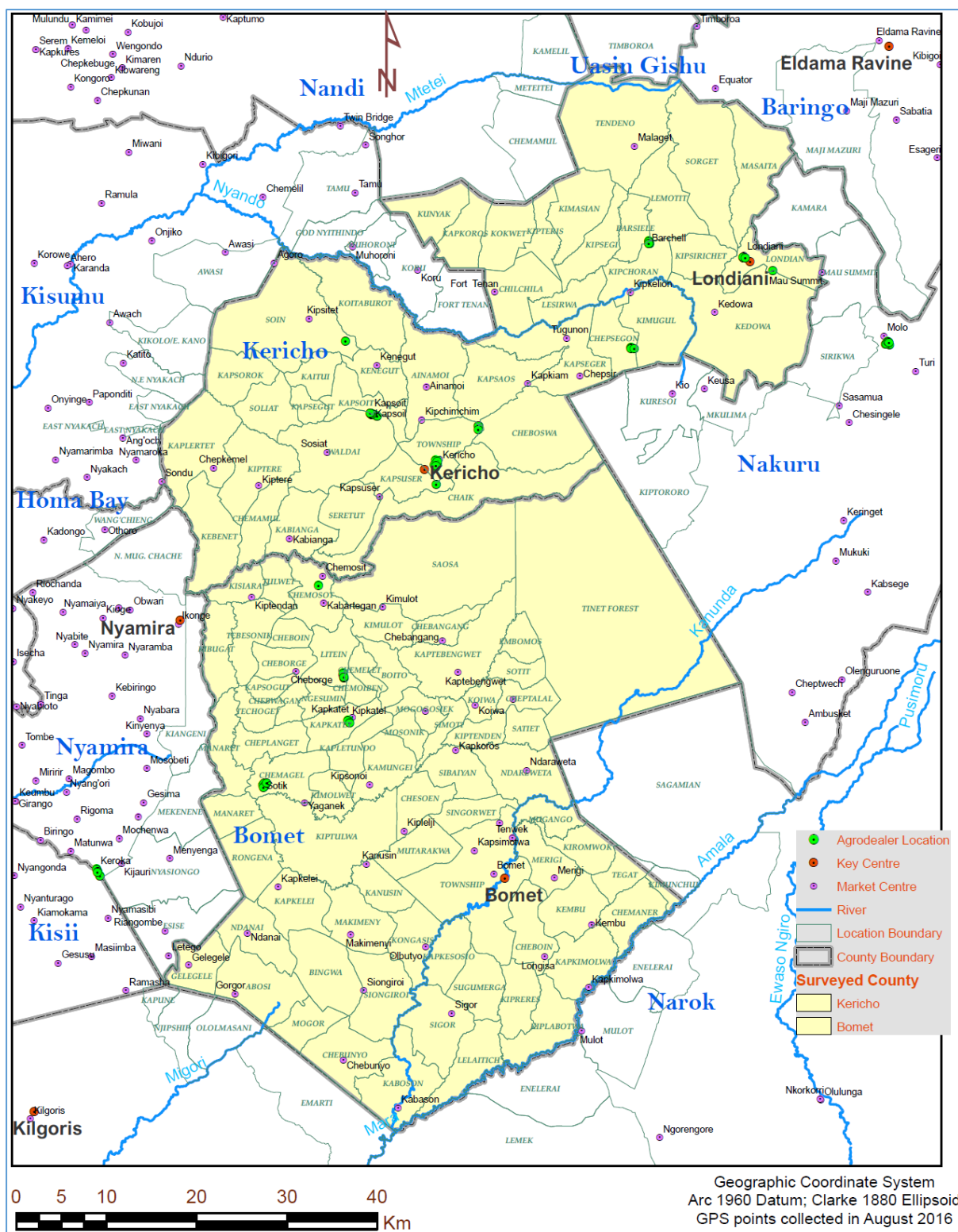


Figure 6.1.8: Location of interviewed agro-dealers in in Kericho/Bomet Counties

Source: Authors', 2016

6.2 Survey questionnaire

Kenya Agrodealer Baseline Study 2016

Field Questionnaire

Introductory Statement

Start with greetings and self-introduction. Tell the respondent that this survey is being carried out by the Bayesian Consulting Group Ltd on behalf of Agri-Experience Ltd (**a partner of AGMARK and organizer of MAZAO FORUMS**). Agri-Experience The aim is to understand the functioning of the seed value chain to inform policy for efficient operation of the sub-sector.

Inform them that they have been selected randomly among many others to participate in this survey based on their experience in trading in agricultural inputs.

Assure them that Agri-Experience will treat their identity and responses as strictly confidential. Their responses will be merged with others in discussing the findings.

If you agree we will write down your contact information in case some issues in the questionnaire are unclear and we wish to contact you later on.

With the background that I have provided, would you like to be interviewed?

Thank you for your kind co-operation.

Part A: General

Date of interview: [____/____/____]

Questionnaire Number: _____

Time started: _____

Time Ended: _____

Name of interviewer:

GPS location of interview:

Name of respondent:

Gender of respondent: _____ [0=female
1=Male]

Position of respondent: _____

Business name _____

[0=Owner 1=manager 2=Owner & Manager]

Telephone contact of respondent: _____

County: _____

Sub-county (District): _____

Town _____

Part B: General Information

B1. When is the main planting season in this area? [_____] 1= March/April, 2= October/November

B2. Do you have a second planting season in this area? _____ [0=No 1=Yes]

Part C: Seed types stocked, Sale Information and general Business Costs

C1. Please provide the following information with regard to the crop seeds you stock:-

						2015		2014	
	Seed type	Do you stock seeds for the following crops? [0=No 1=Yes]	Names of main seed suppliers	Main communication mode with suppliers [codes: 1=emails 2=visits 3=calls 4=sms]	Restocking supply [1=prompt 2=delayed]	Volume	Unit [code]	Volume	Unit [code]
1	Maize								
2	Beans								
3	Sorghum (<i>Mtama</i>)								
4	Rice								
5	Finger millet (<i>Wimbi</i>)								
6	Green grams (<i>Ndengu</i>)								
7	Cowpeas (<i>Kunde</i>)								
8	Pigeon peas (<i>Mbaazi</i>)								
9	Chickpea (<i>Faranga mbaazi</i>)								
10	Dolichols (<i>njahi</i>)								
11	Wheat								
12	Irish potatoes								
13	Cassava								
14	Sweet potatoes								

Unit codes: 1= kg (kilograms), 2= Mt (metric tonnes) 3= bales 4= specify _____

C2. Compare the volume of crop seed sales in March/April of 2015 and March/April 2016 for the different seeds that you stock.

		March/April 2016		March/April 2015		Change in volume between March/April 2015 and March April 2016	Possible reason for the observed change
	Seed type	Volume	Unit [code]	Volume	Unit [code]	Codes [1=increased; 2=remained the same, 3=decreased]	
1	Maize						
2	Beans						
3	Sorghum						
4	Rice						
5	Finger millet						
6	Green grams						
7	Cowpeas						
8	Pigeon peas						
9	Chickpea						
10	Dolichos (Njahi)						
11	Wheat						
12	Irish potatoes						
13	Cassava						
14	Sweet potatoes						

Unit codes: 1= kg (kilograms), 2= mt (metric tonnes) 3= bales 4= specify _____

C3. What crop seeds and varieties do you plan to stock for the September/October planting season?

	Crop seed	0=No 1=Yes	Variety (ies)	Indicate the number of these varieties that are new in your stock (only added in 2016)
1	Maize		_____/_____ ./_____ _____/_____ ./_____	
2	Beans		_____/_____ ./_____	
3	Sorghum		_____/_____ ./_____	
4	Rice		_____/_____ ./_____	
5	Finger millet		_____/_____ ./_____	
6	Green grams		_____/_____ ./_____	
7	Cowpeas		_____/_____ ./_____	
8	Pigeon peas		_____/_____ ./_____	
9	Chickpea		_____/_____ ./_____	
10	Dolichols		_____/_____ ./_____	
11	Wheat		_____/_____ ./_____	
12	Irish potatoes		_____/_____ ./_____	
13	Cassava		_____/_____ ./_____	
14	Sweet potatoes		_____/_____ ./_____	

C4(a). Are you aware of any crop seed subsidy programs in your county? _____ [Yes=1; No=0] **if no go to C5a.**

C4 (b) If Yes in C4a., which crop seeds are offered in the subsidy programmes?

C4c. If yes in C4 (a), how has the seed subsidy affected your seed business? [_____] **codes:** 1=No effect 2=increased sales of seed 3=reduced sales of seeds 4=other, specify

C5 a. Using the year 2015 as a reference, kindly provide an estimate of different components of your business in terms of stock as in the table below:-

	Business component	Proportion (%) in terms of value of stock* for 2015
1.	Maize seed	
2.	Non-Maize seed	
3.	Fertilizers	
4.	Other agrochemicals	
5.	Animal feeds	
6.	Veterinary drugs	
7.	Hardware	
8	Other (specify)	

*The sum should add to 100%

C5 b. Please indicate the amount of cost (in Ksh) you incurred in running your business in the past 12 months

	Cost item	Total cost (KShs)
1	Storage/rental fee	
2	Transportation charges	
3	Hired labour for loading and/or offloading	
4	License fees	
5	Wages and/or salaries	
6	Seed promotion activities(specify them)	
7	Other(specify)	

Part D: Crop Seed Supply Chain

D1. We would like to understand your sources of and market for crop seed.

D1a. Kindly provide the following information for the sources of your crop seeds stocked in 2015.

	Seed Type	No. of direct suppliers				No. of customers in a year	
		Seed Co mp	Distributors/ Wholesalers	KALRO/ Government	Other (Specify)	No. of customers	Proportion of women (%)

		anies					
1	Maize						
2	Beans						
3	Sorghum						
4	Rice						
5	Finger millet						
6	Green grams						
7	Cowpeas						
8	Pigeon peas						
9	Chickpeas						
10	Dolichols						
11	Wheat						
12	Irish potatoes						
13	Cassava						
14	Sweet potatoes						

D1c. How many stockists/down-lines did you supply your crop seeds to in 2015?

D2. Are there specific package sizes of crop seeds that are preferred by women or men? [_____]

0=No 1=Yes **If No skip to D5**

D3. If yes in D2, provide details:

Seed	Preferred package size [codes: 1=less than 1kg packet; 2= 1-kg packet; 3=2-kg packet; 4=5-kg bag; 5= more than 5kg bag; 6=others, specify]	
	Women	Men
Maize		
Beans		
Sorghum		
Rice		
Finger millet		

Green grams		
Cowpeas		
Pigeon peas		
Chickpea		
Dolichols		
Wheat		
Irish potatoes		
Cassava		
Sweet potatoes		
Other, specify		

D4. What is your suggestion for additional package sizes for women customers? Please specify the crop and suggested package size.

D5. Are there crop seeds which farmers request for but you are unable to supply? [_____] 0=No
1=Yes

D6. If yes in D2, provide the crop names and variety

D7. Are there crop seed varieties you have tried to stock but you have been unable to obtain?
[_____] 0=No 1=Yes **If No skip to D9a**

D8. If yes in D7, provide the details of the crop seeds below.

	Crop	0=No 1=Yes	Variety (ies)
1	Maize		

2	Beans		_____/_____/_____ _____
3	Sorghu m		_____/_____/_____ _____
4	Rice		_____/_____/_____ _____
5	Finger millet		_____/_____/_____ _____
6	Green grams		_____/_____/_____ _____
7	Cowp eas		_____/_____/_____ _____
8	Pigeon peas		_____/_____/_____ _____
9	Chick pea		_____/_____/_____ _____
10	Dolich ols		_____/_____/_____ _____
11	Wheat		_____/_____/_____ _____
12	Irish potato es		_____/_____/_____ _____
13	Cassa va		_____/_____/_____ _____
14	Sweet potato es		_____/_____/_____ _____
			_____/_____/_____ _____
			_____/_____/_____ _____

D9 a. Do you educate your customers on new varieties you stock? _____ [Yes =1, No=0]

D9 b. What is the main way in which you educate your customers on new seed varieties? [_____]

codes: 1=demonstrations 2=farmer field days 3=brochures 4=radio 5=television 6=social media 7=posters 8=barazas 9=consultation over the counter 10=others, specify _____

D10. What is your best source of information about crop seed? [_____] **codes:** 1=seed companies 2=internet 3=radio 4=agrodealers associations 5=wholesalers/distributors 6=Farmers 7=Forums such as workshops, seminars etc 8=others, specify _____

Part E: Employees and technology in the business

E1a. Do you have full-time employees in your agro dealership? _____ [Yes=1, No=0]

E1b. **If yes in E1a.**, please provide the following information on your full time employees

Age bracket	Male					Female				
	Number	Average years of experience	Minimum education level *(Use codes below)	No. of computer literate	No. with formal training in agriculture	Number	Average years of experience	Minimum education level *(Use codes below)	No. of computer literate	No. with formal training in agriculture
Under 18										
18-35										
36-50										
50+										

* **Codes:** 0=None 1=adult literacy 2=primary school 3=secondary level 4=College 5=undergraduate 6=post-graduate 7=others, specify: _____

E2. What computer- or phone-based tools do you use in your business?

Activity	Main computer-based tool used	Tablet	Phone
Business management [codes: 1=QuickBooks 2=Excel 3=Pastel 4=Sage 5=other, specify]			
Agronomic information [codes: 1=Mbeguchoice 2=e-extension sites 3=other, specify]			
Communication with clients [codes: 1= email 2=social media 3=phone 4=SMS 5=other, specify]			
Communication with seed companies [codes: 1= email 2=social media 3=phone 4=SMS 5=other, specify]			
Others (specify)			

E3. Do you provide or facilitate training to your staff on new seed varieties you stock? [_____] 0=No 1=Yes **If no skip to F1**

E4. **If yes in E3**, provide details of seed training provided:

Most important

2nd most important

3rd most important

Codes: 1= characteristics of varieties 2= location suitability of seeds for farmers 3= maturity of seed variety 4=Yield potential 5=Special attributes of seed variety 6=how to plant 7=seed storage 8=other (specify) _____

Part F: Social Capital and Networks

F1. Are you a member of a County Agrodealers Association? _____ [1=Yes 0=No] **If no skip to F3**

F2. **If yes in F1**, what are some of the benefits you get from the association?

Most important

2nd most important

3rd most important

Codes: 1=negotiating with suppliers for better price 2=harmonizing sale prices of inputs 3=social welfare 4=negotiating with county government on levies 5=negotiating with national government on taxes 6=negotiating financing with financial institutions 7=organizing joint transport 8=organizing joint product promotion 9=enhanced specialization 10=networking with other agrodealers 11=other, specify _____

F3. **If No in F1**, are you aware of the existence of an agrodealer association in this County? [_____] 0=No 1=Yes

F4. **If yes in F3**, why have you not joined? [_____] **Codes:** 1=too busy to participate 2=bad past experience with social groups 3=high cost of participation 4=already involved in alternative groups 5=feel that the group is not likely to achieve much 6=other, specify _____

Part G: Business Challenges

G1a. What constraints do you experience in sourcing maize crop seeds?

Most important constraint

2nd Most important

3rd Most important

Code: 1=inadequate cash to pay suppliers 2=delayed delivery 3=high cost of inputs 4=high taxes 5=high transport costs 6=poor quality of the inputs 7=inadequate information on seed varieties 8=lack of information on alternative crop seed sources 9=insufficient quantities 10=strict cash payments 11=short credit periods 12=high interest charged on credit purchases 13=other, specify _____

G1b. What constraints do you experience in sourcing other (non-maize) crop seeds?

Most important constraint

2nd Most important

3rd Most important

Code: 1=inadequate cash to pay suppliers 2=delayed delivery 3=high cost of inputs 4=high taxes 5=high transport costs 6=poor quality of the inputs 7=inadequate information on seed varieties 8=lack of information on alternative crop seed sources 9=insufficient quantities 10=strict cash payments 11=short credit periods 12=high interest charged on credit purchases 13=other, specify _____

G2. Have farmers complained to you about crop seeds bought? [_____] 0=No 1=Yes **If no skip to G4b**

G3a. **If yes in G2**, what is the approximate number of farmers that complained in 2014? _____ And in 2015? _____

G3b. In G3a above, what proportion of the complaining farmers were women in 2014? _____ And in 2015? _____

G4a. **If yes in G2**, what are the **three** most frequent complaints?

Most frequent

2nd most frequent

3rd most frequent

Codes: 1=fake seeds 2=poor packaging 3=low germination 4=broken seeds or seeds that is not clean 5=seeds with impurities 6=misleading information 7=Other (Specify) _____

G4b How do you solve such crop seed complaints from farmers when they occur?

G5. Have you had any person or institution help you to fund the business? [_____] 0=No 1=Yes

G6. **If yes in G5**, what was the source of the external funding? [_____] **codes:** 1=microfinance institution 2=commercial bank 3=friends and/or relatives 4=Savings and Credit Cooperative 5=other, specify _____

Part H: Information about the business

H1a. Is this business owned by one person or jointly by several people? _____ [1=owned by one person 2=by more than one person]

H1b. Type of input dealership [_____] **codes:** 1=wholesaler/distributor 2=wholesaler and stockist 3=stockist 4=others, specify _____

H2. We would like to follow up with a few questions about business ownership:-

	Name of business owner(s) (If NOT the respondent)	Highest level of education achieved * (Use codes below)	Age
1			
2			
3			
4			
5			

Codes: 0=None 1=adult literacy 2=primary school 3=secondary level 4= College 5=undergraduate 6=post-graduate 7=others, specify: _____

Thank you for your time and contribution.

THE END

6.3 Key Informant Checklist

Agri Experience Limited (AE)

Agrodealer Baseline Study

Key Informant Checklist for Agrodealers'

Introduction

We are conducting a baseline study to understand the functioning of the seed value chain to inform policy for efficient operation of the sub-sector. To improve efficiency in the seed sub-sector, it is important to get views of experts dealing in the sector. The study is being carried out by the Bayesian Consulting Group Ltd on behalf of Agri-Experience and the Kenya Markets Trust (KMT).

You have been identified as a key informant to participate in this interview.

Your expert opinion will be useful in triangulating information from other sources such like previous studies and individual agro-dealer questionnaire interviews.

We appreciate this opportunity to talk to you.

Questions for National and County Governments, regulatory authorities, seed producers and other stakeholders

- i. What is your assessment of the seed market? (trends of demand for certified seeds; availability of varieties; reasons for the observed trends; participation of women and youth in seed business; preferred varieties and reasons for preference)
- ii. How do farmers get new information on new seed varieties? How effective are the approaches?
- iii. When farmers have complaints about seeds, to whom do they raise such complaints? How are the complaints dealt with? What is the trend of complaints by farmers on seeds? (Are they increasing or declining?)
- iv. What can be done to improve uptake of certified seeds among the smallholders?
- v. Do agrodealers have a forum to interact with other sector stakeholders such as county government, national government, seed producers, farmers, etc
- vi. How effective are the legal and policy frameworks that govern the crop seed sector?
 - a. What are the limitations of these frameworks and how can this be addressed?
 - b. Are you involved in developing these legal and policy frameworks? In what ways are you involved? If not, how would you like to be involved
- vii. What challenges are associated with seed certification process?
 - a. How are the challenges overcome?
- viii. What is the process of licensing seed producers and agro-dealers? *(only ask regulators -ask for seed producers first then agro-dealers)*
 - a. How effective is this process of licensing?

- b. How do you deal with non-compliance by the seed producers and agro-dealers?
- ix. Informal seed trade is a big component of seed trade in Kenya.
 - a. What has been the effect of the informal seed trade?
 - b. In your opinion what needs to be done to guarantee the quality of seed in the informal seed trade?
- x. What are the main challenges facing the crop seed sector currently?
 - a. How are these challenges being addressed?
 - b. How effective are the measures being put in place to address these challenges?
- xi. What would you recommend as the best way to improve efficiency in the seed sub sector?

6.4 Focus Group Discussion Checklist

Agrodealer Baseline Study

FGD Checklist

Welcome

Thank you for agreeing to be part of the focus group. We appreciate your willingness to participate.

Introductions

Moderator; Assistant moderator; participants

Purpose of Focus Groups

We are conducting a baseline study to understand the functioning of the seed value chain to inform policy for efficient operation of the sub-sector. We the Bayesian Consulting Group Ltd are conducting this study on behalf of the Agri Experience Ltd . The reason we are having the focus groups is to get an in-depth understanding of the certified crop seed supply and use in your area. The information collected will inform lobbying for appropriate policies for the benefit of farmers.

We need your input and would like to urge you to share your honest and open thoughts with us.

Ground Rules

1. You will do the talking, we will do the listening.
 - We would like everyone to participate.
 - We may call on you if we have not heard from you in a while.
2. There are no right or wrong answers.
 - Every person's experiences and opinions are important.
 - Speak up whether you agree or disagree.
 - We want to hear a wide range of opinions.
3. What is said in this room stays here.
 - We want people to feel comfortable sharing when sensitive issues come up.
4. We shall record the proceedings of the group.
 - We want to capture everything you have to say.
 - We will not identify anyone by name in our report. You will remain anonymous.

Insert Ice breaker here (to increase comfort and level playing field)

PART I: Availability and use of certified crop seed in the area

Question 1: What type of certified crop seed are widely used in this area? (Indicate varieties)

Crop seed type	Varieties

Question 2: (a) Are all the crop seeds readily available (in adequate quantities) at the time when they are required? If not all are available which ones are not and why?

Question 2 (b): If they are not available at the right time and in adequate quantities what options do farmers in the area use?

Question 3(a): How far do farmers have to go to buy the seeds in this area? Who are the main suppliers of crop seed?

Question 3 (b): Are farmers in this area able to secure seeds on credit from the agro dealers?

Question 3 (c): Are there farmer groups/organizations through which farmers procure seeds in bulk?

Question 4(a): In general, what proportion of farmers in this area use certified seed? _____[Follow up; if low ask why and if very high why?]

Question 4(b): Is market for produce readily available for surplus produce from this area? If not how do farmers deal with surplus production?

PART II: Seed quality, packaging and affordability

Question 5 (a): What is your view on the quality of crop seed used in this area? (Germination rate, yields, absence of seed borne-diseases etc)

Question 5 (b): What options are available for farmers in this area for dealing with low quality seed?

Question 6: Are the packaging sizes of seed convenient for most farmers in this area? If not what would be the most preferred package sizes?

Question 7: Give an indication on the affordability of certified crop seeds in this area?

Question 8: Are subsidized seeds available to farmers in this area? If yes, how accessible are they?

PART III: Relationship with Agro dealers

Question 9: Are the agro dealers in this area generally knowledgeable about certified seeds? What kind of expert information are they able to offer to farmers?

Question 10: If you have complains about the quality of seeds available in your area, whom do you address them with? How are complains raised by farmers addressed? Are you satisfied with the way the complains are addressed?

Part IV: Way Forward

Question11: What would you recommend as a way forward to increase supply and use of certified crop seeds in this area?

6.5 List of Key Informants

Name	Gender	Designation/Company	County	Contacts
Joseph Langat	M	Department of Agriculture	Kericho	0722946144 langat45@gmail.com
Florence Osiemo	F	District Agricultural Officer	Kisii	0714123597
Kariuki Njoroge	M	Sub County Agribusiness officer	Muranga	0721577297
Wahienya, M	M	South Sub county Agriculture officer	Muranga	0721861967
Faith Mwai	F	Wheat crop officer/Njoro sub-County	Nakuru	
Nancy Njogu	F	Maize crops officer	Nakuru	
David Mbaabu	M	Extension Research Liaison Training Officer/ Ministry of Agriculture- Igembe South sub-county	Meru	0724556257
Mrs. Mburugu	F	Sub-county Agricultural Officer Imenti North	Meru	
Stanley mworia	M	Principal Agricultural Officer Imenti Central sub-county	Meru	0716496078
Alfred Olang	M	Sub-County Agriculture Coordinator	Trans Nzoia	0712617934
Felix Mukeni	M	Crops Officer- Kimilili	Bungoma	0721493876
Sely Rono	F	Maize Breeding Dept. – KALRO Kitale	Trans Nzoia	Sely.rono@yahoo.com

6.6 Annex Tables

Table 6.6.1: Number of direct suppliers from various sources for crop seeds stocked in 2015 (% of sample)

No. of direct suppliers	Overall	Muranga	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Maize									
Seed Companies									
None	41	74	34	89	43		31	56	
1	37	20	52	6	29	47	46	26	65
2	15	5	12	3	18	44	11	7	30
3 and above	7	1	2	2	10	9	12	11	5
Distributors/wholesalers									
None	33	20	26	4	32	56	50	19	54
1	38	48	40	77	32	36	19	42	19
2	20	17	22	9	22	7	21	31	25
3 and above	9	15	12	10	14	1	10	8	1
KALRO/Government									
None	98	95	100	96	100	100	96	100	98
1	1	2		4			1		2
2	1	3					3		
Beans									
Seed Companies									
None	18	25	33	40	50		22	41	
1	73	75	67	40	50	100	67	37	98
2	4						11	7	2
3 and above	5			20				15	
Distributors/wholesalers									

None	50	75	33	40	50	56	81	26	51
1	35	25	67	40	50	44	4	37	41
2	12						11	30	8
3 and above	3			20			4	7	
Sorghum									
Seed Companies									
None	23				100	100	29	43	8
1	72						71	36	92
3 and above	5							21	
Distributors/wholesalers									
None	58					67	79	36	58
1	28				100	33		36	42
2	9						14	21	
3 and above	5						7	7	

Table 6.6.2: Proportion of customers preferring different package sizes of crop seeds

	Overall (438)		Muranga (65)		Taita Taveta (50)		Meru (50)		Kisii (38)		Trans Nzoia (46)		Nakuru (70)		Kericho (58)		Bungoma (61)	
Maize	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M
No preference	55	56	55	54	52	52	46	40	71	71	65	65	51	51	54	56	61	65
Less than 1 kg packet	13	9	15	22	30	26	8	6	4	4	22	17	1	7	1	3	25	12
1-kg packet	14	7	15	22	18	18	44	22	7	7	4	7	11	36	3	39	11	3
2-kg packet	16	22	15	3		4		26	18	18			36		41		3	3
5-kg packet		1						4			2					1		
More than 5-kg packet	1	5									7	11		6				16
Beans																		
No preference	86	86					94	92			74	70	83	83	76	76	69	69
Less than 1 kg packet	5	5									24	28	4	1	1		15	13
1-kg packet	2	1									2		1	1		1	13	5
2-kg packet	6	6					4	6					11	13	22	22	3	2
5-kg packet														1				
More than 5-kg packet								2				2						11
Sorghum							2											
No preference	97										98	95	91	94	93	93	95	95
Less than 1 kg packet											2						2	2
1-kg packet	1												4	2	1	1	2	
2-kg packet	2												4	4	6	6	2	
5-kg packet																		
More than 5-kg packet	1											5						3

Table 6.6.3: Benefits derived from agro-dealer associations for members (% of sample)

	Overall	Muranga	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Negotiating with suppliers	34	17	17	42	34	52	31		30
Harmonizing inputs sale prices	9	33					19	20	10
Social welfare	8					7	31		3
Negotiating with County/National govts.	5				33		6		10
Negotiating with financial institutions	3		33						
Organizing joint transport	2								
Joint product promotion	4			8		4			7
Enhanced specialization	15		17		33	26	6	20	17
Networking with other agrodealers	12	17	17	8		11	7	40	13

Others	8	33	16	42				20	10
--------	---	----	----	----	--	--	--	----	----

Table 6.6.4: Number of direct suppliers from various sources for crop seeds stocked in 2015 (% of sample)

No. of direct suppliers	Overall	Muranga	Taita Taveta	Meru	Kisii	Trans Nzoia	Nakuru	Kericho	Bungoma
Maize									
Seed Companies									
None	41	74	34	89	43		31	56	
1	37	20	52	6	29	47	46	26	65
2	15	5	12	3	18	44	11	7	30
3 and above	7	1	2	2	10	9	12	11	5
Distributors/wholesalers									
None	33	20	26	4	32	56	50	19	54
1	38	48	40	77	32	36	19	42	19
2	20	17	22	9	22	7	21	31	25
3 and above	9	15	12	10	14	1	10	8	1
KALRO/Government									
None	98	95	100	96	100	100	96	100	98
1	1	2		4			1		2
2	1	3					3		
Beans									
Seed Companies									
None	18	25	33	40	50		22	41	
1	73	75	67	40	50	100	67	37	98
2	4						11	7	2
3 and above	5			20				15	
Distributors/wholesalers									
None	50	75	33	40	50	56	81	26	51
1	35	25	67	40	50	44	4	37	41
2	12						11	30	8
3 and above	3			20			4	7	
Sorghum									
Seed Companies									
None	23				100	100	29	43	8
1	72						71	36	92
3 and above	5							21	
Distributors/wholesalers									
None	58					67	79	36	58
1	28				100	33		36	42
2	9						14	21	
3 and above	5						7	7	