



THE REPUBLIC OF UGANDA
MINISTRY OF AGRICULTURE, ANIMAL INDUSTRY &
FISHERIES

FARMER REGISTRATION REPORT
AMURU DISTRICT

MAY 2020

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CHAPTER ONE: BACKGROUND

1.1 Introduction

This report presents findings of the farmer registration pilot exercise that was conducted by the Statistics Division team of the Ministry of Agriculture Animal Industry and Fisheries in collaboration with the Agriculture Cluster Development Project (ACDP) Coordination Unit team that provided technical guidance. The first chapter presents the objectives as well as the methodology that forms the basis of presentation of the survey findings, it also presents the scope and field organization as well as a brief on the data cleaning and analysis. The second chapter presents the findings from the activities that were implemented. Chapter three presents the achievements realized to date while Chapter four presents the challenges and recommendations for the next phase of implementation.

1.2 Background

Over the years, the Agricultural Sector has suffered from lack of reliable, accurate and timely data to inform decision making. Agricultural data are required by a broad spectrum of stakeholders including; Government; the private sector; the NGO's; Academia; the Donor community and the wider public including the farmers for a variety of purposes. Although there are many producers of Agricultural data in the country, they are not coordinated and the Agricultural statistics system remains fragile, vulnerable and not fully developed. This is reflected in the lack of consistent, reliable and data from the several players in the agricultural sector. This prompted Government to establish a one stop center for Agriculture data in the Ministry of Agriculture, Animal Industry and fisheries under the National Food and Agricultural Statistical System (NFASS) Project.

The Ministry's ASSP 2015/16-2019/20 identified setting up an efficient National Food and Agricultural Statistics System as one of the sector priorities if the sector is to provide timely and accurate data for policy and decision making. The overall goal of the NFASS is to ensure that data related to the Agricultural sector is accurate, timely, consistent, disaggregated and accessible so as to facilitate planning, and decision making. The NFASS focuses on; utilizing the data collected optimally so as to reduce the cost of data collection; harmonizing data collection protocols across MDAs and institutional partners; and, establishing a permanent field data collection system. The NFASS is implemented in 3 components namely; the Institutional component, The Data center which houses the database; and, the Routine Agriculture Administrative Data System. The Ministry started implementing the NFASS project in FY 2015/16 which was mainly government funded and with the help of USAID-

EEA was able to set up a state of the art Data center at MAAIF headquarters and also set up a MAAIF data base.

The Ministry in collaboration with the World Bank started implementing the Agriculture Cluster Development project (ACDP) in 2016 to support activities that will raise both productivity and production of maize, beans, cassava, rice, and coffee in 57 districts clustered into 12 high-potential agricultural areas. The project is implemented through four components namely; (i) support for intensification of on-farm production; (ii) value addition and market access; (iii) policy, regulatory and institutional support; (iv) Project coordination and ICT platform.

In 2018, the ACDP project was restructured and added a subcomponent 3.3 to support the implementation of the National Food and Agricultural Statistics System. Under this sub-component, all administrative data; surveys including systematic surveys of the number and capacity of inputs producers and producer organizations and systematic monitoring and transparent reporting on farmers and efforts to bulk their demand for inputs; sector studies; pest and diseases surveillance data; and any other sector data were to be undertaken.

Implementation of subcomponent 3.3 began in 2019 with all efforts focused on setting up the Routine Agricultural Administrative Data System (RAADS) and in order to set up the RAADS, there was need to have a sampling frame from which sample households for data collection will be drawn. The need for the sampling frame together with the national requirement to register farmers prompted the development of the National farmers register which was to be administered to all farming households in the country. After registration of farmers is completed, data collection using the already developed tools can then commence in the districts.

The Statistics division with assistance from the ACDP-PCU started piloting the Farmer register in 5 pilot districts to draw lessons that can be used in the roll out to the rest of the districts in the country.

1.3 Objectives

The primary purpose of this activity was to register and have a central database in the Ministry Data Center of all farmers in the country who practice agriculture for planning purposes.

Specifically, the Farmers' Registration exercise will provide;

1. Government with an estimate of the number of farmers in the country engaged in different Agricultural enterprises or values chains relevant for planning purpose and making investment decisions;
2. A sample frame for the routine data collection
3. A detailed understanding of the agricultural technology adoption in Uganda.
4. Provision of background information about the farmers (ie name, location, farm size, enterprise involved in, etc.) in Uganda

1.4 Methodology, Scope and Field Organization

The exercise started with the training of the Parish Chiefs and Extension staff which was conducted in each of the 5 ACDP pilot districts of Iganga, Amuru, Nebbi, Kalungu and Ntungamo. During the training, emphasis was put on articulating instructions regarding interviewing techniques and field procedures and a detailed review of the farmers register. The trainings mainly used English but translations were constantly done to ensure accurate re-translation and adequate understanding in order to assist in application during translation to local languages in the farmer registration exercise.

The training also involved use of visuals and power point presentations. The Parish Chiefs and Extension Staff were also taken through an illustration that they used as a field scenario example. At the end of the trainings, the parish chiefs and extension officers were dispersed to their respective Parishes/Subcounties to start the actual farmer registration. The registration exercise utilised the Paper Assisted Personal Interviewer (PAPI) where by the farmers' register books were printed and distributed across parishes.

During the actual data collection, teams consisting of cluster supervisors from the Ministry headquarters were routinely dispatched to the field after having been trained in data quality control procedures and field work coordination. They were also provided with a supervisor's manual to assist in carrying out their duties. At District level, supervision was also carried out by the District Production & Marketing Officers and the District Agricultural Officer (ACDP focal persons)

The procedures for supervision and communications between the Statistics Division and the interviewing teams during data collection were specified in the manuals and discussed during training for the farmer registration exercise. Close communication was maintained at all times between the Statistics Division and ACDP- PCU.

The registration covered all farmers in all villages to enable construction of the sampling frame for use in subsequent routine data collection.

The completed farmer registration books were assembled at the Subcounty headquarters and the Extension staff entered the data in tabs using the Computer Assisted Personal Interviewer (CAPI). The data was subsequently sent to the Ministry headquarters for Cleaning and Analysis

1.5 Data cleaning and analysis

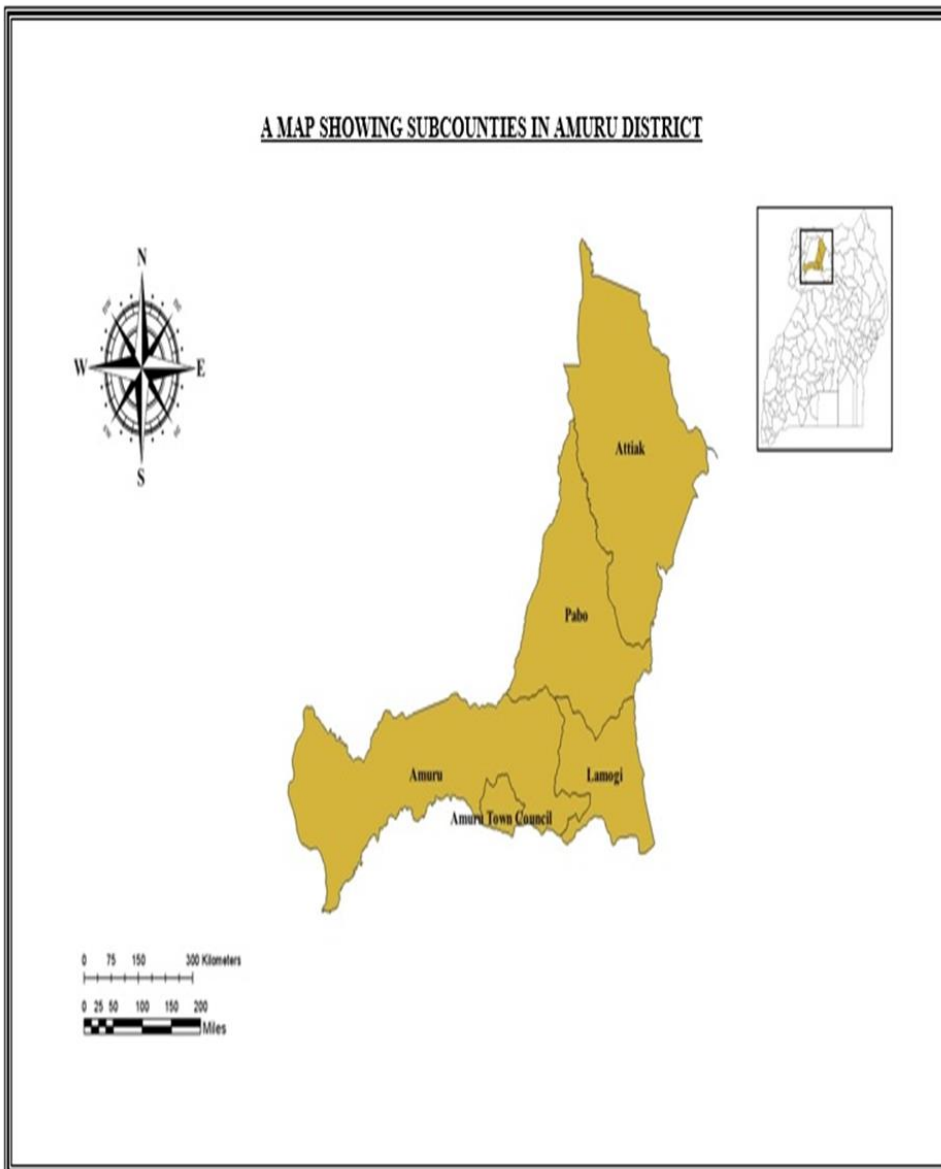
After data collection, the Statisticians extracted and merged all data from the different Pilot districts and exported to STATA. Cleaning was done to check out for inconsistencies and outliers. Data was analysed using STATA to obtain statistical outputs including frequencies and percentages in tabular and graphical forms. The statistical outputs were later extracted and presented in more acceptable tables ready for interpretation

CHAPTER TWO: SOCIO ECONOMIC CHARACTERISTICS

2.1 Introduction

This chapter presents information on; the distribution of Administrative units registered; distribution of Agriculture households by Sub County; the classification of Agriculture households by sex and age of household heads by Sub County; and type of farming activity involved in and main purpose.

2.2 Map of Amuru District showing Sub Counties



2.3 Section 1: Household Socio-Economic Characteristics

2.4 Distribution of Administrative Units registered

A total of 18,073 farming households from 70 villages, 33 Parishes and 5 sub counties including Town Councils were registered during the exercise as shown below. At the time of registration, Amuru district consisted of three (2) sub counties and two (3) Town councils (TC).

Table 1: Number of administration units registered

Sub-county/TC	Parish	Village
Amuru S/C	6	12
Amuru T/C	4	8
Pabbo S/C	7	18
Atiak S/C	8	16
Lamogi S/C	8	16
Total	33	70

2.5 Gender disaggregation of Farming households

Table 2 below shows that 10,387 (57.5%) of farming households registered were female headed while 7,686 (42.5%) were male headed. The majority of the farming households in all Sub Counties were female headed.

Table 2: Proportion of farming households by Sub County and sex of household head

Subcounty/ TC	Male	Female	Number
Amuru S/C	40.7	59.3	4,445
Amuru T/C	40.4	59.6	1,116
Atiak S/C	45.3	54.7	2,959
Lamogi S/C	33.5	66.5	4,013
Pabbo S/C	49.5	50.5	5,540
Total	42.5	57.5	18,073

A total of 5,439 farming households were headed by youths (18-30 years). Majority of farming households (8,349) were headed by individuals aged between 31 and 50 years (46.2%). Crop cultivation was the most common type of farming activity across all age groups followed by livestock rearing.

Table 3: Proportion of farming households by Sub County and age of household head

Sub-county/ TC	5-17	18-30	31-50	51-70	71 & Above	Total
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Amuru S/C	0.1	30.3	47.0	18.4	4.0	4,445
Amuru Town Council	0.0	34.8	43.7	18.7	1.3	1,116
Atiak S/C	0.0	24.7	48.3	22.5	4.0	2,959
Lamogi S/C	0.0	26.7	47.7	21.3	3.8	4,013
Pabbo S/C	0.0	34.3	43.8	17.4	4.1	5,540
Total	0.0	30.1	46.2	19.4	3.8	18,073

2.6 Disaggregation by farming activity

Findings revealed that majority of the farming households in all sub counties and town councils were involved in crop cultivation, Lamogi having the highest proportion at 99.4%. Overall, Farmer registration pilot findings revealed that 74.5% of the households reported to keeping livestock with Atiak having the highest proportion at 83.14%. The overall proportion of aquaculture households in all Sub counties was very low at 0.39%. Amuru Town Council had the highest proportion of aquaculture households at 1.43%. The proportion of Apiculture households practicing apiculture was 5.79%. The highest proportion of apiculture households were in Atiak at 8.85%.

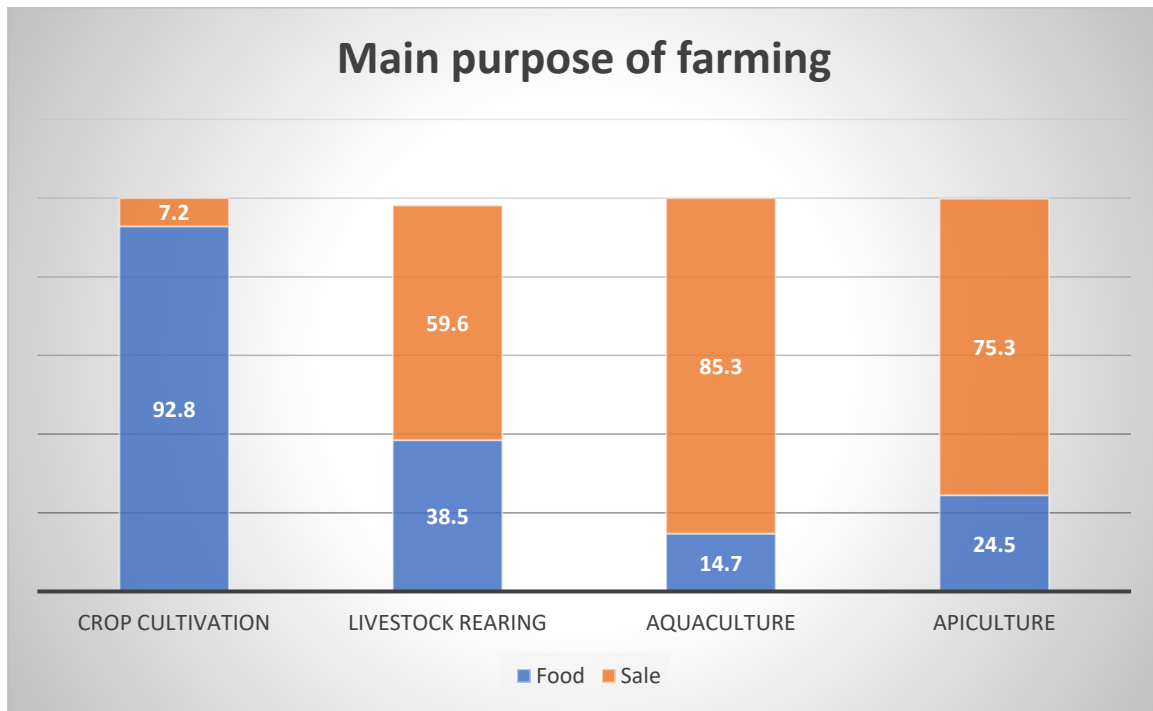
Table 4: Proportion of households practicing each farming activity by Sub County

Sub County	Crop	Livestock	Aquaculture	Apiculture
Amuru S/C	99.06	73.06	0.38	4.45
Amuru Town Council	99.37	80.56	1.43	7.26
Atiak S/C	98.48	83.14	0.34	8.85
Lamogi S/C	99.40	82.08	0.40	5.63
Pabbo S/C	97.44	64.44	0.22	5.05
Total	98.52	74.50	0.39	5.79

2.7 Main purpose of the farming activity

Figure 1 presents the main purpose or reason why farmers engage in different activities and the results reveal reveals that 67.8% of farming households are involved in agriculture activities with the main purpose of acquiring food (subsistence farming). The main purpose for growing crops was food while the main purpose for livestock rearing, aquaculture and apiculture was Sale.

Figure 1: Main Purpose of Farming Activity



CHAPTER THREE: CROP CULTIVATION

3.1 Introduction

According to the study results in the table 5 below, Cereals were the most commonly grown crop category in Amuru district while Tree Crops were the least commonly grown crop category.

Over 80% of households in Lamogi, Amuru and Amuru Town Council grew leguminous crops. Furthermore, 86% of households in Attiak grew Oil Seeds and Palm.

Results further revealed that more than half of the households in the Sub Counties grew Root Tubers with 90% of households in Attiak growing the crop category.

Less than 20% of households in the Sub Counties grew Fruits and Plantains.

Table 5: Proportion of households growing the different Crop Categories by Sub County

Sub County	Cereals	Leguminous	Oilseeds & Oil Palm	Vegetables	Root tubers	Fruits	Plantains	Tree crops
Amuru S/C	92.0	80.2	63.8	17.1	80.7	19.2	18.7	0.9
Amuru T/C	96.7	90.1	61.4	25.7	90.1	10.9	12.6	0.4
Atiak S/C	86.9	56.6	86.2	29.7	87.3	19.7	14.1	2.5
Lamogi S/C	95.2	84.4	57.1	24.0	86.4	12.1	15.4	0.6
Pabbo S/C	87.8	71.3	55.1	23.2	69.9	16.5	12.6	0.4
Total	90.9	75.1	63.2	23.1	80.3	16.4	15.0	0.9

3.2 Households involved in Crop Production

3.2.1 Cereals

The study results below revealed that Finger Millet was most commonly grown in Amuru, Amuru Town Council and Lamogi while Maize was most commonly grown in Attiak, Nyakyera and Pabo. 100% of households in Nyakyera reported to have grown Maize and Rice while over 60% of households in Amuru Town Council, Attiak and Lamogi grew Sorghum.

The results also show that over 70% of households in Lamogi and Amuru Town Council were reported to grow Finger millet. Less than 1% of households overall were reported to have grown Wheat.

Table 6: Proportion of households growing cereals by Sub County

Sub County/TC	Cereal Crops				
	Wheat	Rice	Maize	Finger millet	Sorghum
Amuru S/C	0.1	31.0	66.5	68.7	53.0
Amuru Town Council	0.3	41.4	71.2	77.9	61.1
Atiak S/C	0.1	9.5	65.7	12.6	64.2
Lamogi S/C	0.4	32.1	72.1	74.2	60.5
Pabbo S/C	0.1	51.5	62.9	51.3	40.1
Total	0.2	34.6	66.8	56.1	53.1

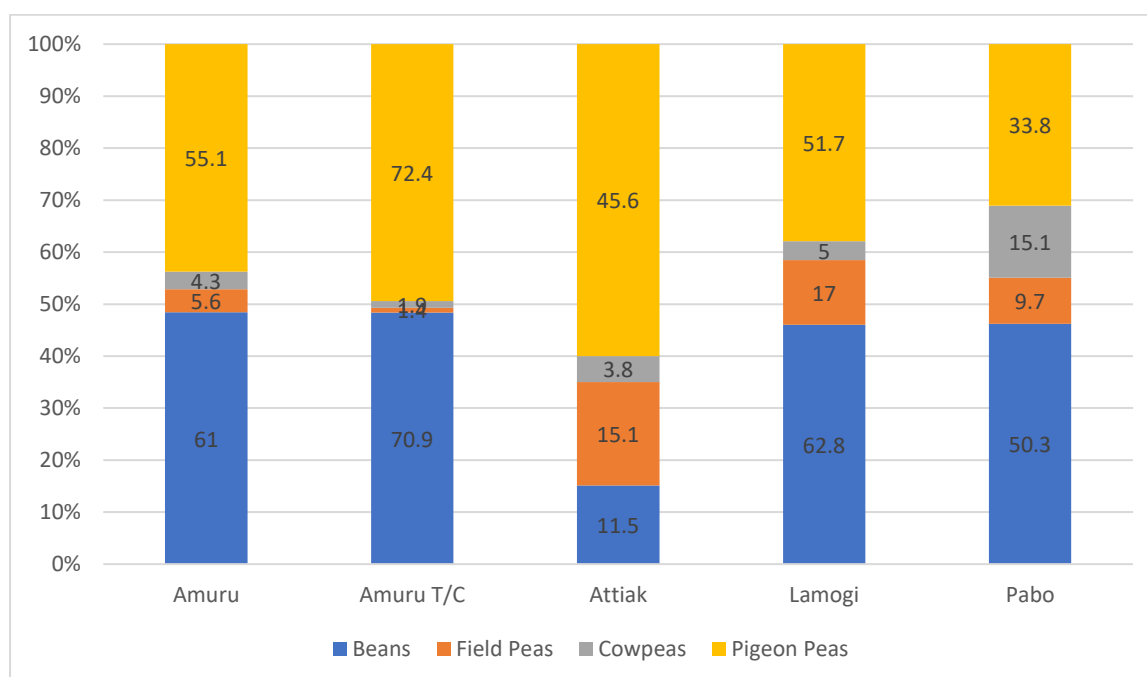
3.2.2 Legumes

Beans were the most commonly grown legumes by the households in Amuru, Lamogi and Pabo while Pigeon Peas were most commonly grown in Amuru Town Council and Attiak. Amuru Town Council had the highest proportion of households growing Beans and Pigeon Peas at 71% and 72% respectively.

Furthermore, Cow Peas were least commonly grown in Amuru, Attiak and Lamogi while Field Peas were least commonly grown in Amuru Town Council and Pabo. Less than 20% of households in the Sub Counties grew Cow Peas and Pigeon Peas.

Results further show that over 70% of households in Amuru grew Beans and Pigeon Peas.

Figure 2: Proportion of Households growing Legumes by Sub County

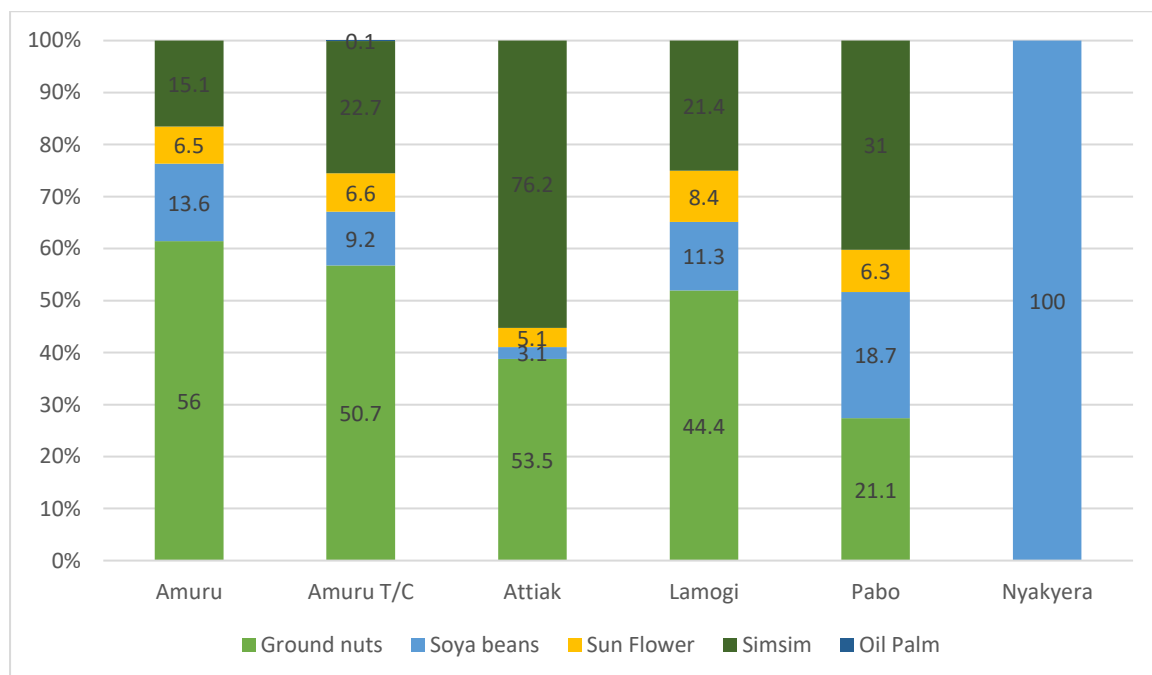


3.2.3 Oil seeds

According to the study results shown in Figure 3, Ground nuts were the most commonly grown Oil seeds by the households in Amuru, Amuru Town Council and Lamogi while Sim sim was most commonly grown by households in Attiak and Pabo. Amuru had the highest proportion of households growing Ground nuts at 56%. Furthermore, 76% of households in Attiak grew Sim Sim and 100% of households in Nyakyera were reported to grow Soya Beans. Less than 10% of households grew Sun flower.

Oil Palm was the least commonly grown Oil Seed by the Sub Counties at less than 1%.

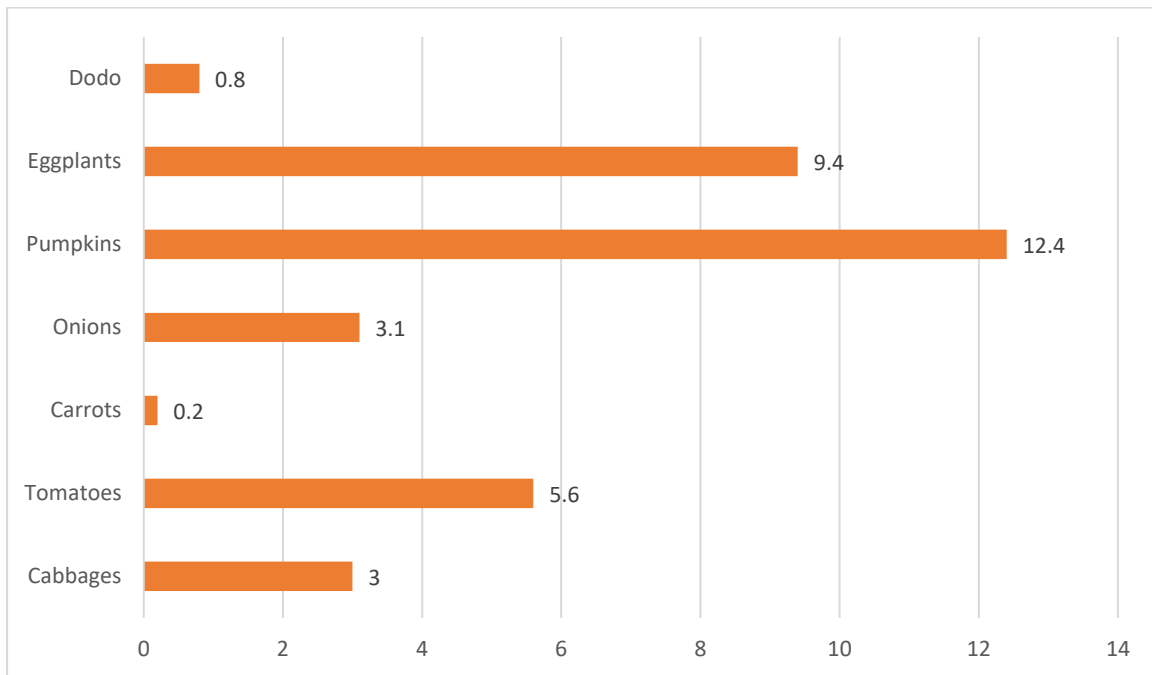
Figure 3: Proportion of households growing Oil Seeds by Sub County



3.2.4 Vegetables

Pumpkins were the most commonly grown Vegetable in the district followed by Egg plants. Carrots were the least commonly grown Vegetable in the Sub Counties at less than 1%. Pumpkins were most commonly grown in Amuru Sub County, Amuru T/C, Attiak and Lamogi while Egg plants were most commonly grown in Pabo. Attiak had the highest proportion of households growing Pumpkins and Eggplants at 22.6% and 10.4% respectively. Overall, less than 10% of households in the district grew Cabbages and Tomatoes with Amuru Town Council having the highest proportion of households growing the Vegetables, at 5.3% and 7.3% respectively. Furthermore, over 10% of households in Attiak, Lamogi and Pabo grew Egg plants.

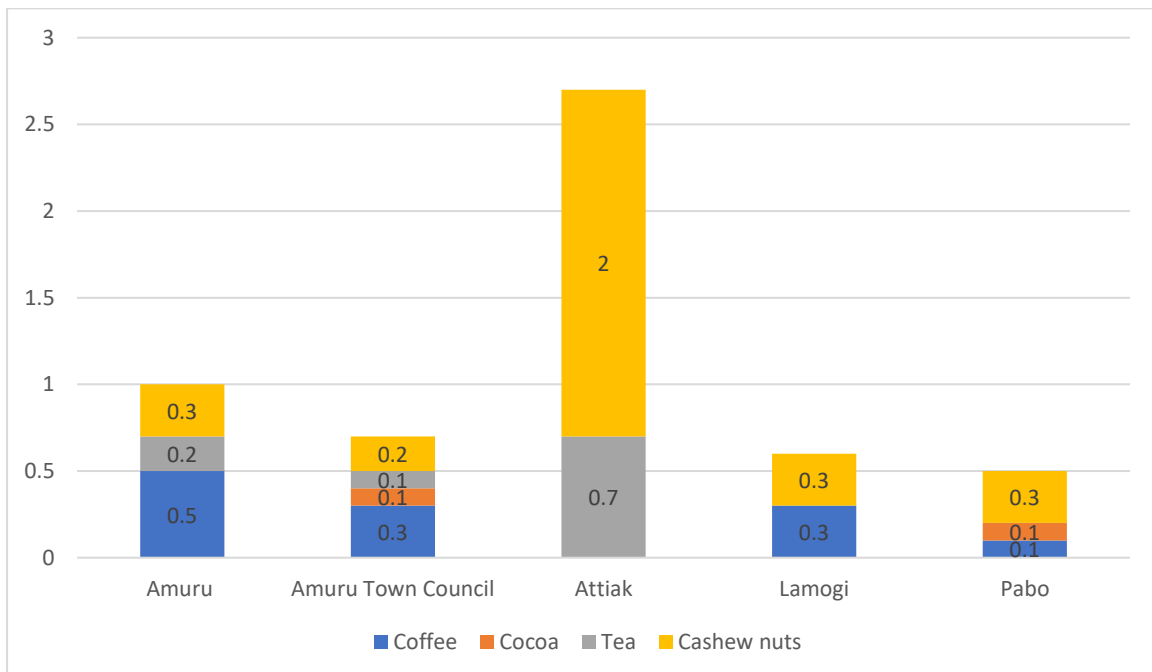
Figure 4: Proportion of households growing Vegetables in Amuru District.



3.2.5 Tree Crops

Overall, less than 1% of households grew Coffee, Cocoa, tea and Cashew nuts. Coffee was the most commonly grown Tree crop by households in Amuru and Amuru Town Council while Cashew Nuts were most commonly grown in Lamogi, Attiak and Pabo. Cocoa and Tea were the least commonly grown Tree crops in all Sub Counties.

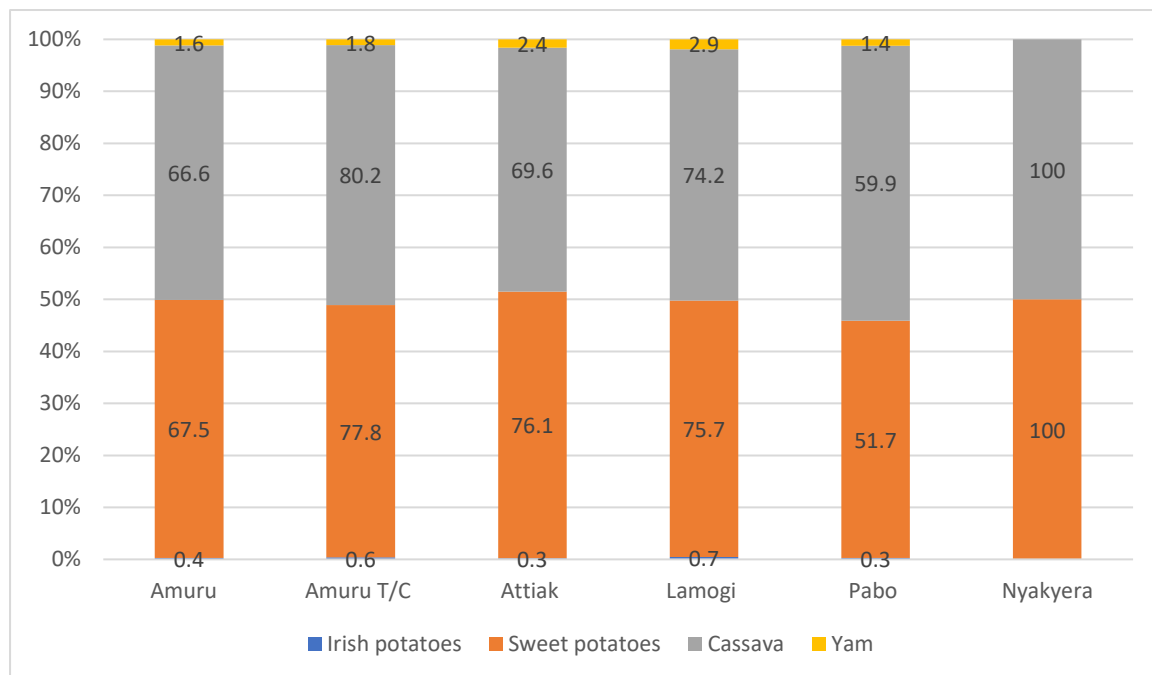
Figure 5: Proportion of households growing Tree Crops by Sub County



3.2.6 Root crops

Sweet potatoes were the most commonly grown root tubers by households in Amuru, Attiak and Lamogi while Cassava was most commonly grown in Amuru Town Council and Pabo. 100% of households in Nyakyera grew Sweet potatoes and Cassava. Over 70% of households in Amuru Town Council, Nyakyera, Attiak and Lamogi grew Sweet potatoes while over 70% of households in Lamogi, Amuru Town Council and Nyakyera grew Cassava. Furthermore, Irish potatoes were the least commonly grown Root Crops in the Sub Counties at less than 1%.

Figure 6: Proportion of households growing Root Tubers by Sub County



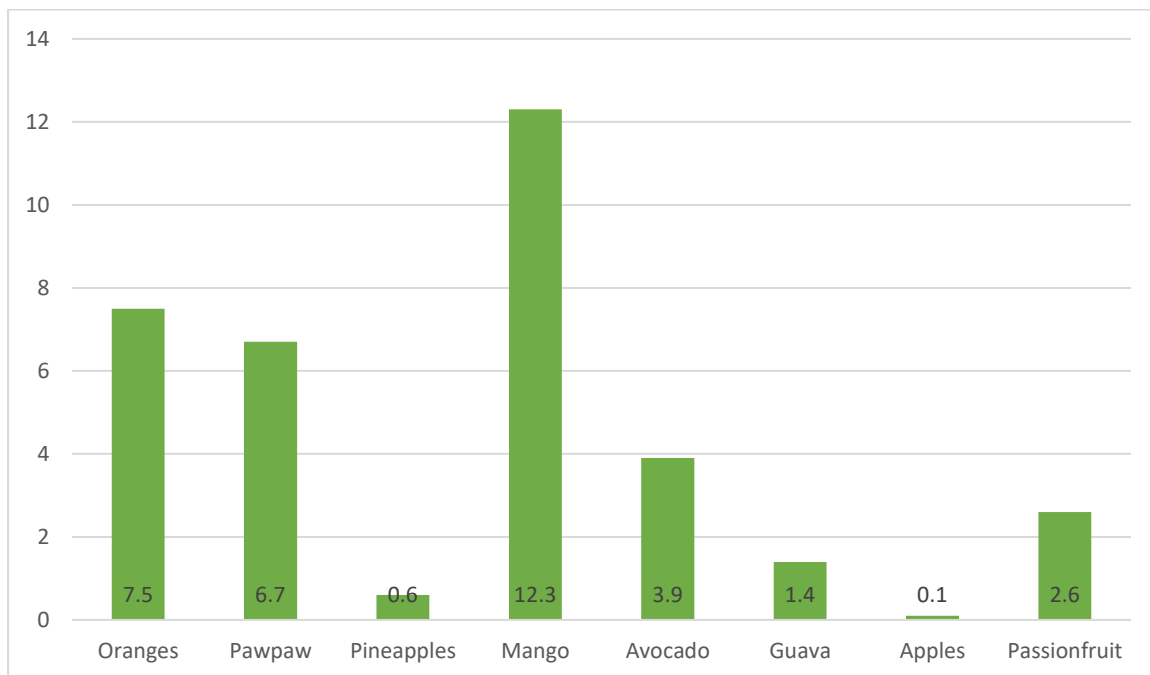
3.2.7 Fruits

Mangoes were the most commonly grown fruits by the Sub Counties with Attiak having the highest proportion of households growing the fruit at 15.6%.

Amuru had the highest proportion of households growing Oranges at 9%. Furthermore, less than 10% of households in the sub counties grew Pawpaw and Pineapples. Overall, 5% of households grew Avocado in the district.

Results further reveal that Apples were the least commonly grown Fruits in the district at less than 1%.

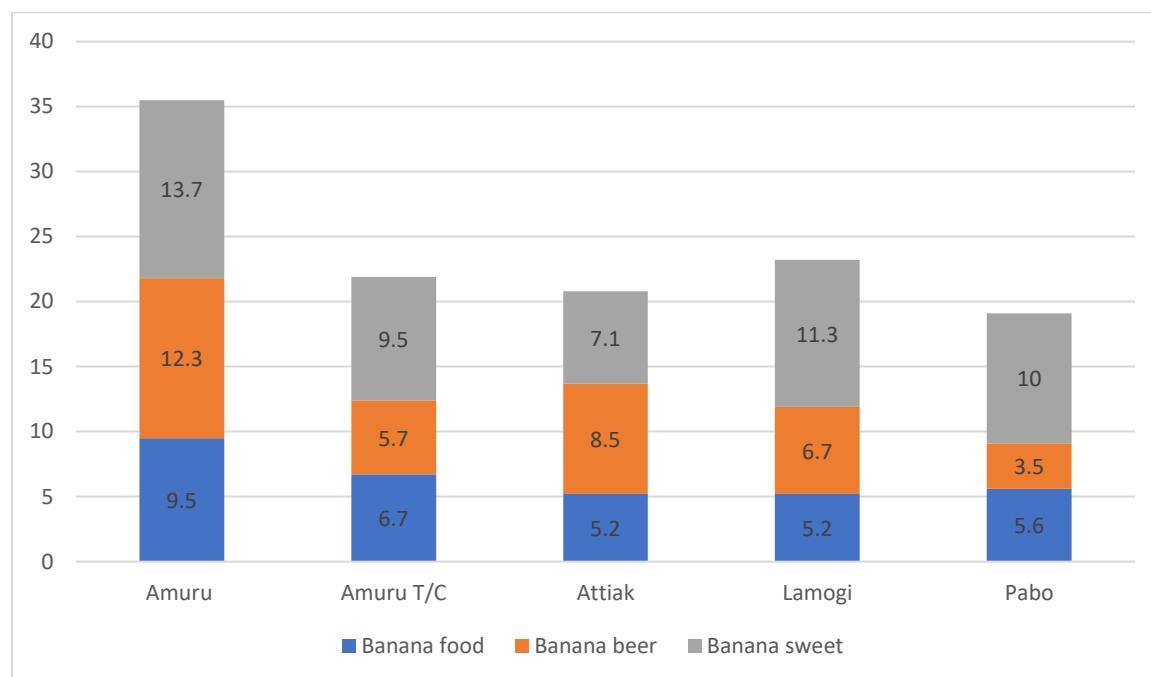
Figure 7: Proportion of households growing Fruits in Amuru district



3.2.8 Plantains

Banana Sweet plantains were the most commonly grown plantains in all Sub Counties except for Attiak where Banana Beer was the most commonly grown plantain. Amuru had the highest proportion of households growing Banana sweet and Banana beer at 13.7% and 12.3% respectively. Furthermore, Banana Food was the least commonly grown Plantain in Amuru, Attiak and Lamogi while Banana beer was the least commonly grown in Amuru Town Council and Pabo.

Figure 8: Proportion of households growing Plantains by Sub County



3.2.9 Sugar Cane, Vanilla and Cotton

Sugar cane was most commonly grown in Amuru, Amuru Town Council and Pabo while Cotton was most commonly grown in Attiak and Lamogi. Amuru Town Council had the highest proportion of households growing Sugar Cane at 7.8% while Attiak had the highest proportion growing Cotton at 9.6%.

Vanilla was least commonly grown within the Sub Counties at less than 1%.

Table 7: Percentage of households growing Sugar Cane, Vanilla and Cotton by Sub County

Sub County/TC	Vanilla	Sugarcane	Cotton
Amuru S/C	0.0	5.7	0.9
Amuru Town Council	0.2	7.8	0.7
Atiak S/C	0.1	0.9	9.6
Lamogi S/C	-	5.6	7.8
Pabbo S/C	0.1	5.3	3.3

3.3 Area under Crops in Acres.

According to the Agriculture Annual Survey (AAS) 2018, the National Mean Plot Size (MPS) was estimated to be 0.3 Ha amongst the 10 ZARDIs. Amuru belongs to the specific ZARDI of Ngetta. The district had an estimated MPS of 0.7 Ha.

3.3.1 Banana Food

The area under banana food was 972 Ha. The estimated number of plots was 1,388, out of which 1,026 were of pure stand (73.9%) while 362 were of mixed stand (26.1%).

3.3.2 Sweet Potatoes

The area under Sweet potatoes in the district was 1,912 Ha. The estimated number of plots were 12,744. Out of these 11,585 were of pure stand (90.9%) while 1,159 were of mixed stand (9.1%).

3.3.3 Beans

The area under Beans was 3,902 Ha and the estimated number of plots were 10,547. Out of these, 2,630 were of pure stand (24.9%) while 7,917 were of mixed stand (75%).

3.3.4 Rice

The area under Rice was 6,785 Ha and the estimated number of plots were 9,693. Out of these, 3,416 were of pure stand (35.2%) while 6,277 were of mixed stand (64.8%).

3.3.5 Irish Potatoes

The area under Irish Potatoes was 69 Ha and the estimated number of plots under Irish Potatoes were 69. Out of these, 73 were of pure stand (74.5%) while 25 were of mixed stand (25.5%).

3.3.6 Ground Nuts

The area under Ground Nuts was 6,376 Ha and the estimated number of plots under Ground Nuts was 9,108. Out of these, 4,021 (44.1%) were of pure stand while 5,087 (55.9%) were of mixed stand.

Table 8: Area under Crops

Crops	Pure	%Pure	Mixed	%Mixed	Total	Area(Ha)	Mean Plot Size (MPS) AAS,2018
Banana Food	1,026	73.9	362	26.1	1,388	972	0.70
Sweet Potato	11,585	90.9	1,159	9.1	12,744	8,921	0.70
Beans	2,630	24.94	7,917	75.06	10,547	7,383	0.70
Rice	3,416	35.2	6,277	64.8	9,693	6785.1	0.70
Irish Potatoes	73	74.5	25	25.5	98	69	0.70
Groundnuts	4,021	44.1	5,087	55.9	9,108	6,376	0.70

CHAPTER FOUR: AQUACULTURE

4.1 Introduction

There were 60 aquaculture households in Amuru practising aquaculture, Amuru Sub County had the highest proportion (0.34%) of aquaculture farmers in the district.

Table 9: Proportion of households practicing aquaculture by Sub County

Sub county/ TC	Proportion	Number
Amuru S/C	0.34	15
Amuru T/C	1.16	13
Atiak S/C	0.27	8
Lamogi S/C	0.32	13
Pabbo S/C	0.20	11
Total	0.33	60

Amuru Sub County had the highest proportion of households practicing aquaculture 0.34%. and Atiak had the lowest proportion of 0.27%. Overall, 0.33% of households were practicing aquaculture in Amuru district.

4.1.1 Fish ponds

Fish ponds were the most common type of production systems in Amuru with over 68.3% of the ponds being stocked as shown in the table below. However, Fish cages were not found in the registered households. At Sub-County level, Pabbo S/C had the highest number of fish ponds in the district while Amuru S/C had the lowest number of ponds. 81% of fish ponds are stocked with tilapia and 45% of the ponds are stocked with cat fish.

Table 10: Number and proportion of Fish ponds stocked

Sub County/TC	Ponds		
	Stocked	Un stocked	Proportion stocked
Amuru S/C	24	11	68.6
Amuru T/C	11	10	52.4
Atiak S/C	10	5	66.7
Lamogi S/C	22	8	73.3
Pabbo S/C	19	6	76.0
Total	86	40	68.3

4.1.2 Fish Tanks and Cages

Fish tanks were very rare among aquaculture households. Only Amuru Town Council had fish tanks. There were no cages found at the time of registration.

CHAPTER FIVE: LIVESTOCK REARING

5.1 Introduction

In Amuru, 13,429 of the farming households reported to keeping livestock with the majority were keeping poultry at 88% followed by goats at 72%. Only 28% reported to keeping cattle and 21% reported to keeping pigs. Very few households reported to keeping sheep, and rabbits.

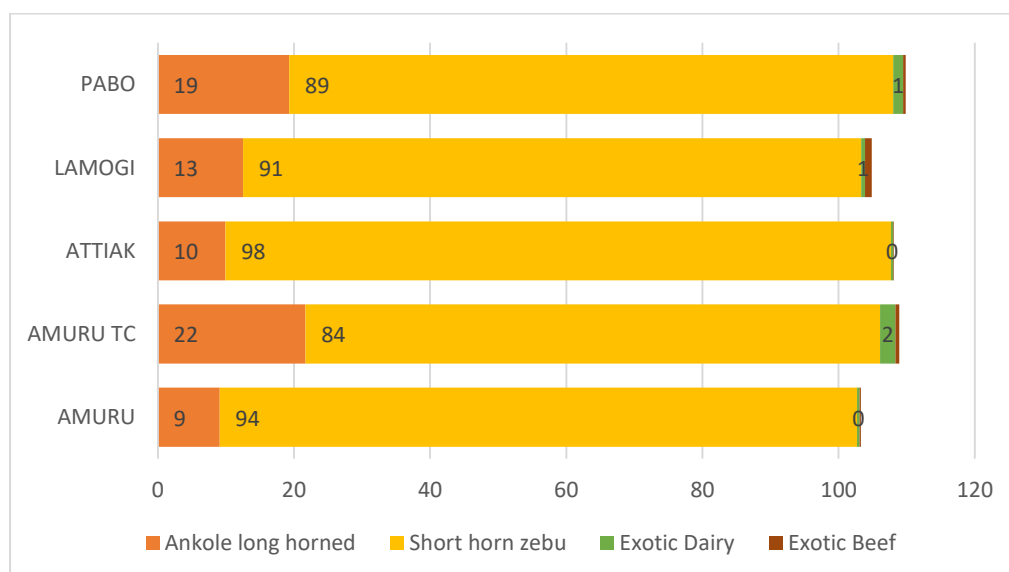
Table 11: Number of households keeping livestock

Sub County	Cattle	Goats	Sheep	Pigs	Rabbits	Dogs	Poultry
Amuru	551	2331	375	853	16	1,051	2932
Amuru TC	180	665	119	224	2	353	789
Attiak	1069	1750	336	526	14	960	2142
Lamogi	846	2329	307	666	57	1,110	2971
Pabo	1120	2622	448	614	26	1,160	3025
Total	3,766	9,697	1,585	2,883	115	4,634	11,859

5.1.1 Cattle Keeping

According to farmer registration results, a higher proportion of households in all Sub counties keep indigenous cattle mainly the Short horn zebu. Attiak Sub County had the highest proportion of households keeping Short Horned Zebu at 98% while Amuru Town Council had the highest proportion keeping Ankole Long Horned cattle (22%). Exotic cattle were rare in the district, with Amuru TC having the highest proportion at 2%.

Figure 9: Households keeping Cattle



5.1.2 Cattle population by breed

Findings reveal that Farmers keep more numbers of indigenous cattle than exotic cattle. According to pilot study findings in Table 14 below, there were more numbers of Short horned zebu than Ankole long horned cattle in all the Sub Counties. Attiak Sub County had the highest number of Short horned zebu with each household keeping on average 5 cattle while Pabo had the highest number of Ankole long horned cattle: each household keeping on average 4 cattle.

In the case of exotic cattle, more numbers of improved dairy cattle were recorded in all Sub Counties except for Amuru Town Council where more numbers of improved beef breeds were recorded. On average a household with improved dairy cattle reported to keeping 5 cattle and in the case of improved beef cattle breed, households reported to keeping 3 cattle. Pabo recorded the highest number of Exotic dairy cattle each household keeping on average 6 cattle.

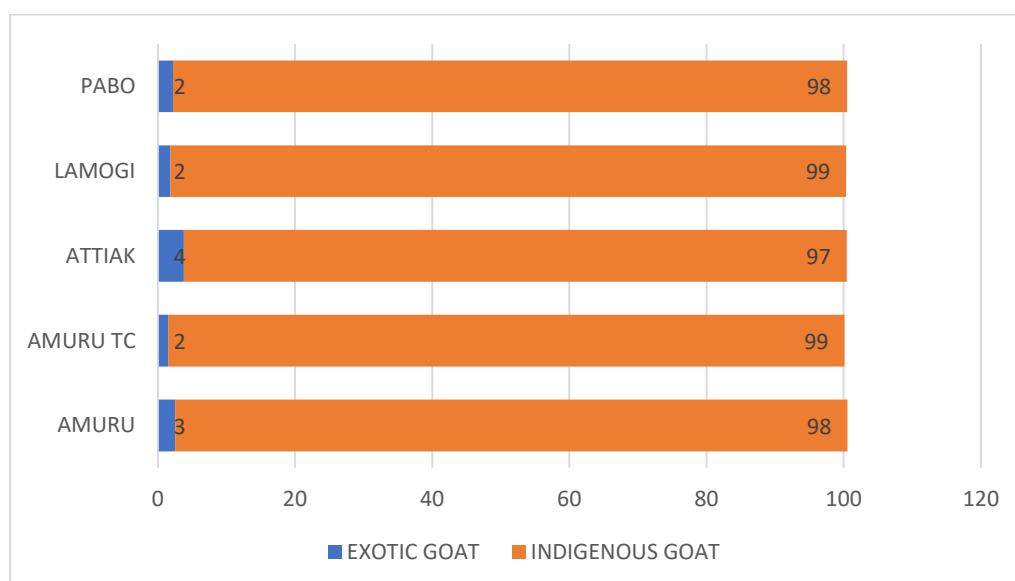
Table 12: Cattle population by breed

Sub County	Cattle Ankole Long Horned	Cattle Short Horn Zebu	Cattle Exotic/Improved Dairy	Cattle Exotic/Improved Beef
Amuru	164	1832	6	2
Amuru Tc	130	599	8	10
Attiak	399	5413	17	1
Lamogi	218	2456	17	15
Pabo	766	4590	92	15
Total	1677	14890	140	43

5.1.3 Goats

Farmer Registration results indicate that majority of the households with Goats in all Sub Counties reported to keeping indigenous breeds of goats at an overall percentage of . Attiak reported the highest number of households keeping Exotic goats at 4% while Pabo had the highest number of households keeping indigenous goats at 98%.

Figure 10: Households keeping Goats by Sub County



5.1.4 Goat Population by Breed

Generally, high numbers of indigenous goats compared to exotic breeds were kept across all Sub Counties. Pabo had the highest number of exotic breeds (14633) while Amuru had the highest number of indigenous breeds (297). Amuru T/C had the least number of Exotic Goats (52) and Indigenous Goats (3,297).

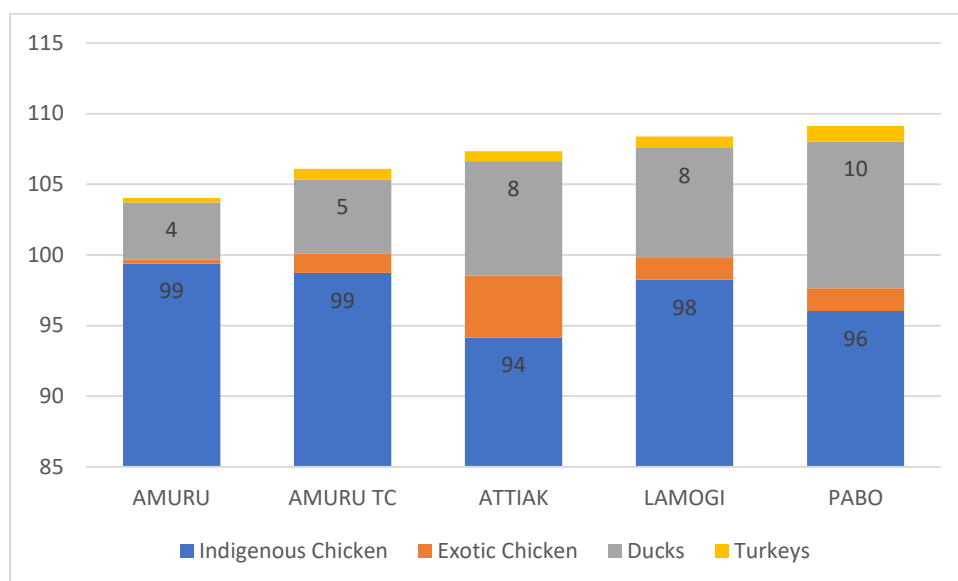
Table 13: Goat Population by Breed

Sub County	Goat - Exotic/Improved	Goat - Indigenous	Total
Amuru	297	11728	12025
Amuru T/C	52	3297	3349
Atiak	223	8412	8635
Lamogi	149	10127	10276
Pabbo	282	14351	14633
Total	1003	47915	48918

5.1.5 Poultry

A high number of households in all the Sub Counties keep indigenous chicken compared to other poultry breeds. Amuru TC and Lamogi had the highest number of households keeping indigenous poultry at 99% and 98% respectively. Ducks were second most kept type of poultry in Amuru district with Pabo Sub County having the highest proportion.

Figure 11: Households keeping poultry by Sub County



5.1.6 Poultry Population

Generally, there were higher numbers of indigenous chicken compared to other poultry breeds reported within the Sub Counties. Amuru reported the highest numbers of indigenous poultry (35,827) while Lamogi reported the highest numbers of Exotic Layers at 1,106. On average, a household with exotic layers reported to keeping 113 birds while households with indigenous chicken keep 11 birds on average.

Table 14: Poultry Population

Sub County	Poultry - Indigenous	Poultry Exotic - Broilers	Poultry Exotic - Layers	Poultry Breeders- Broilers	Poultry Breeders - Layers	Ducks	Turkeys
Amuru	35827	52	3	1	0	511	35
Amuru Tc	8793	122	8			216	53
Atiak	21154	591		230	5	715	48
Lamogi	31058	272	1106	106	11	1555	103
Pabbo	34387	424	16	56	54	2116	112
Total	131219	1461	1133	393	70	5113	351

5.1.7 Other livestock Population

There were higher numbers of pigs being kept than other livestock in all Sub Counties totalling to 9,796. Amuru Sub County had the highest numbers of pigs at 2,792. Furthermore, there were more numbers of indigenous sheep being kept than exotic sheep in all Sub Counties. Pabo reported the highest numbers of indigenous sheep at 1,942 and Attiak the highest numbers of

Exotic sheep at 104. Lamogi kept the highest numbers of rabbits (295) and Pabo the highest numbers of dogs (2,096). On average, households with rabbits have 5 animals while those with doga have on average 2 animals. A household with pigs had an average of 3 animals, and households with sheep had on average 4 exotic breeds and 4 indigenous breeds.

Table 15: Other livestock population

Sub County	Sheep - Exotic/Improved	Sheep - Indigenous	Pigs - Indigenous/Improved	Rabbits	Dogs
Amuru	61	1434	2792	55	1952
Amuru Tc	46	383	802	6	757
Atiak	104	1153	1643	88	1588
Lamogi	99	959	2350	295	2026
Pabbo	82	1942	2209	171	2096
Total	392	5871	9796	615	8419

CHAPTER SIX: APICULTURE FARMING

6.1 Introduction

There were 893 households practicing apiculture farming in the district. Atiak had the highest number of apiculture households with a proportion of 7.64%

6.2 Type of Beehives

6.2.1 Local beehive

Local beehives were the most common type of beehives in the Sub Counties. Seventy nine percent (79.8%) of the local beehives were colonized at the time of registration. At Sub-County level, Pabo had the highest number of colonized Local beehives while study findings further reveal that Amuru Sub County had the highest proportion of colonised local beehives (86.2%).

Table 16: Proportion of Local beehives by Sub County

Sub County	Local		
	Number colonized	Number Uncolonized	Proportion colonized
Amuru	1047	167	86.2
Amuru T/C	332	61	84.5
Atiak	884	301	74.6
Lamogi	890	195	82.0
Pabbo	1203	379	76.0
Total	4,356	1,102	79.8

6.2.2 Kenya Top Bar Beehives

Kenya Top Bar beehives were the second most common beehives in the district. 67.3% of the beehives were colonized at the time of registration. Lamogi had the highest number of colonized bee hives while all Kenya Top bar beehives in Amuru T/C were colonized.

Table 17: Proportion of Kenya Top Bar beehives by Sub County

Sub County	Kenya top bar		
	Number colonized	Number Un colonized	Proportion colonized
Amuru	6	8	42.9
Amuru T/C	2	0	100.0
Atiak	6	4	60.0
Lamogi	43	10	81.1
Pabbo	13	12	52.0
Total	70	34	67.3

6.2.3 *Langstroth Beehives*

Langstroth beehives were only found in Pabo Sub county, all (45) of which were colonized.

CHAPTER SEVEN: ACCESS TO AGRICULTURE TECHNOLOGIES AND SERVICES

7.1.1 Adoption of Improved Technologies

Results from the farmer registration pilot study revealed that the most common type of technologies adopted were ox plough and improved seed. The least common type of technologies adopted were irrigation, fertilisers, artificial insemination and milk coolers in Amuru district.

At Sub-county level, Lamogi S/C and Amuru S/C had the highest proportion of households that adopted inorganic fertilizer use. Pabo S/C had the highest proportion of households that used organic fertilizers, improved seed and pesticides.

The use of tractors and ox ploughs was highest in Pabo S/C while Lamogi S.C had the highest proportion of households using milk coolers.

Overall, the proportion of households who used artificial insemination was low at less than 2%. However, the Sub Counties of Pabo and Lamogi had 31% households with access to artificial insemination.

Results also showed that 15% of households in Amuru district used irrigation; Lamogi S/C having the highest adoption.

Table 18: Adoption of improved technologies

Use of improved technologies	Amuru	Amuru Tc	Attiak	Lamogi	Pabo	Nyakyera	Total
Tractor	15.63	7.56	9.37	11.5	55.94	0	20.86
Ox plough	8.9	2.07	17.36	15.43	56.19	0.02	56.6
Milk cooler	25.62	7.44	16.53	28.93	21.49	0	1.63
Irrigation	4.84	9.68	11.29	55.65	18.55	0	5.01
Organic fertiliser	18.75	7.89	12.34	23.03	37.99	0	8.19
Inorganic fertiliser	25.1	13.71	11.2	25.1	24.9	0	6.98
Pesticides	21.7	11.6	6.29	28.3	32.2	0	23.8
Improved seeds	7.45	5.34	8.56	27.53	51.13	0	45.97
Vaccination	12.02	8.03	29.02	20.27	30.6	0.05	24.66
Artificial Insemination	12.88	9.85	15.15	31.06	31.06	0	1.78

7.1.2 Access and Source of free/subsidized inputs

Results in table 23 below revealed that a higher percentage (90.5%) of the households in Amuru district reported to not receiving free inputs. Over 93% of farmers in Amuru and Pabo Sub Counties reported to not having received free/subsidized inputs.

Overall, 9.5% of households received free inputs, with Amuru T/C having the highest proportion of households in the district who reported to receiving the inputs at 15%. Of the households that reported to receiving free inputs, 48.8% received them from NAADS or OWC. More than half of households in Amuru, Attiak and Pabo received inputs from NAADS/OWC while the majority of households in Amuru Town Council and Lamogi cited Shops as their main source of inputs.

Furthermore, 36% of farming households received free/ subsidized inputs from Shops and 65.6% of households in Amuru T/C cited Shops as their source.

The findings also revealed that on average, 3% of households in Amuru district cited cooperatives or politicians as the source of inputs.

Further analysis on whether farmers used the free inputs showed that 95.3 % of households used them fully. Only 1% of households in the district reported to not having used the inputs.

Table 19: Access and Source of free/subsidized inputs

Sub County	Received Free/ Subsidised inputs	Source of Inputs						Household use of inputs		
		NAAD S/ OWC	Coopera tives	NG Os	Shops/ Local	Politi cians	Othe r	used	Used some	did not use
Amuru	6.28	69.03	11.83	10.32	6.02	0.86	1.94	98.49	1.51	0
Amuru TC	15.05	29.14	0.66	1.55	65.56	1.99	1.1	99.12	0.44	0.44
Atiak	14.9	53.56	0.38	4.04	40.77	0.48	0.77	93.21	4.89	1.9
Lamogi	11.65	34.88	3.18	5.39	46.88	6.73	2.94	93.64	5.26	1.1
Pabbo	6.64	64.59	2.16	18.11	5.41	4.86	4.86	95.68	2.43	1.89
Total	9.5	48.8	3.1	6.6	36.6	2.9	2.0	95.3	3.5	1.2

7.1.3 Reason for non-use of inputs

The major reason cited for non-use of free inputs was poor quality of the inputs supplied to the farmers. The percentage of farmers who cited this as the main reason for non-use was 32%. The second major reason was lack of rainfall.

Amuru, Attiak and Pabo Sub Counties cited poor quality of inputs supplied to farmers as the main reason for non-use of inputs while farming households in Amuru T/C, Lamogi and Pabo cited other reasons for non-use of inputs. Study findings further revealed that 18.8% of farmers in Pabo were not interested in the inputs.

Table 20: Reason for non-use of inputs

Reason for non-use	Amuru	Amuru T/C	Attiak	Lamogi	Pabo	Total
No knowledge	28.57	0	1.75	7.69	6.25	5.88
No rainfall	28.57	25	35.09	15.38	12.5	24.26
Poor quality	42.86	0	54.39	7.69	31.25	31.62
Not interested	0	0	0	3.85	18.75	3.68
Other (specify)	0	75	8.77	65.38	31.25	34.56

CHAPTER EIGHT: CHALLENGES, RECOMMENDATIONS, CONCLUSION

8.1 Challenges

- a) Slow and incomplete data collection.

Most of the parish chiefs were not able to either complete the exercise in time or complete the registration at all. For some the exercise was not of interest to them while others were too busy. This was partly because the Parish Chiefs had other activities assigned to them and also the transfers of parish chiefs from one parish to another.

- b) Slow and incomplete data entry

Most of the extension staff were not able to complete the data entry. This was also found to be caused by the busy schedules for these officers. Actually all project activities at the district level target extension workers. Additionally, the officers were not facilitated in time to be able to deliver the assignment in time.

- c) Lack of adequate equipment for data entry

The pilot was run with data collection being done through paper-based registers which were later on given to extension staff to enter. This was mainly due to the lack enough tablets which could only be given to subcounty extension staff. Additionally, even those at the subcounty were not enough to cover all staff in the district but had to be shared amongst the extension staff.

- d) Mandate crossovers

The mandate for deployment of parish chiefs falls under the purview of Ministry of Local Government. The supervision of the parish chiefs by the production officers was very difficult since they report to the senior administrative secretary who directly reports to the chief administrative officer. The senior administrative secretary were not involved from the start which made it difficult to supervise the parish chiefs.

8.2 Recommendations

- a) It has been identified that the workload for complete farmer registration is too much for the parish chiefs. The team proposes the use of enumerators to undertake the first complete enumeration of the farmer register. The annual updates thereafter can be done by the parish chiefs

- b) Purchase of more tablets to be used by the enumerators such that data entry is done at the point of data collection. This shall eliminate the duplication of effort and inefficiency that has been observed during the pilot
- c) Review of guidelines for the extension grant to include data collection activities and facilitation for the parish chiefs to update the registers. The job descriptions for the extension staff already include the role for data collection and therefore just need an institutionalised form on facilitation to support sustainability of the process.
- d) Development of a Standard Operating Procedures (SOP) and Memoranda of Understanding (MoU) with the relevant stakeholders in complement to the extension grant guidelines, the team proposes a development of a SOP that shall clearly stipulate the roles and responsibilities of all authorities that have a role to play under RAADRS. This shall also be enforced with signing of MoUs with these relevant authorities to further strengthen the working relationships

8.3 Planned Way Forward

- Roll out the crop and livestock tools in the second season of 2020 in the 5 pilot districts. The tools are to be administered by the Parish Chief with support from Extension Workers and LC1 Chairpersons
- A national stakeholder engagement to discuss implementation arrangements during roll out. The output will be an MOU between Ministry of Local Government and MAAIF.
- Phased Data collection to be rolled out starting with 15 districts. This will involve Training Parish Chiefs, Extension Staff and Deployment of Parish Chiefs and Extension Staff
- Implement the Institutional Data Module

8.4 Conclusion

The design of RAADRS is a well thought put process that can solve the problem of regular data collection in the agricultural sector. However, the process needs to be incorporated not only the government structures but also in the “culture” of work within the LGs. This calls for a concerted effort from all relevant authorities right from the lowest level of administration up to MAAIF.

ANNEX

9.1 Average Number of Animals

Livestock type	Number
Cattle - Ankole Long Horned	3
Cattle - Short Horn Zebu	4
Cattle Exotic/Improved - Diary	5
Cattle Exotic/Improved - Beef	3
Goat - Exotic/Improved	4
Goat - Indigenous	5
Sheep - Exotic/Improved	4
Sheep - Indigenous	4
Pigs - Indigenous/Exotic/Improved	3
Rabbits	5
Dogs	2
Poultry - Indigenous	11
Poultry Exotic - Broilers	11
Poultry Exotic - Layers	113
Poultry Breeders- Broilers	9
Poultry Breeders - Layers	5
Ducks	6
Turkeys	4

9.2 Average Number of Animals by sex of Household Head

LIVESTOCK TYPE	SEX OF HH Head	NUMBER
Cattle - Ankole Long Horned	Male	3
	Female	3
Cattle - Short Horn Zebu	Male	5
	Female	4
Cattle Exotic/Improved - Diary	Male	7
	Female	3
Cattle Exotic/Improved - Beef	Male	4
	Female	2
Goat - Exotic/Improved	Male	4
	Female	4
Goat - Indigenous	Male	6
	Female	4
Sheep - Exotic/Improved	Male	5
	Female	4
SHEEP - Indigenous	Male	4
	Female	3
PIGS	Male	4
	Female	3
Rabbits	Male	5

	Female	5
Dogs	Male	2
	Female	2
POULTRY - Indigenous	Male	13
	Female	10
POULTRY Exotic - Broilers	Male	10
	Female	11
POULTRY Exotic - Layers	Male	367
	Female	5
POULTRY Breeders- Broilers	Male	14
	Female	6
POULTRY Breeders - Layers	Male	5
	Female	6
Ducks	Male	6
	Female	6
Turkeys	Male	3
	Female	5

9.3 Number of farmers who received free/subsidized inputs in the last 12 months

COMMODITIES	AMURU
Pasture Seed	14
Maize Seed	787
Bean	396
Rice	161
Coffee	13
Tea	6
Mango	366
Orange	371
Apple	-
Cocoa	2
Passion Fruits	10
Pineapples	2
Banana Food	45
Cassava	296
Pesticides	125
Artificial Fertilisers	55
Poultry	162
Veterinary Services	259

Artificial Insemination	2
Fish	6
Dairy Cattle	13
Beef Cattle	41
Goats	165
Pigs	69
Total	3,366
