UPSIDE

Northern Uganda Resilience Initiative 2019 - 2022

Draft KOBOKO DISTRICT BASELINE SURVEY REPORT 2019

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Introduction

The Northern Uganda Resilience Initiative (NURI) under the Uganda Programme on Sustainable and Inclusive Development of the Economy (UPSIDE) is supported by the Government of Denmark. It is aimed at enhancing resilience and equitable economic development in Northern Uganda. Its focus includes Climate Smart Agriculture (CSA), Rural Infrastructure (RI), Water Resources Management (WRM). Initially, the programme was rolled out in 6 districts in the West Nile and 3 districts in Acholi Sub Regions of Northern Uganda. Besides nationals in the regions, NURI works with 6 refugee settlements in the districts of Arua, Moyo, Adjumani and Lamwo. In 2020, the programme scaled up its implementation to Koboko district to benefit their communities. Thus, a baseline assessment was carried out in Koboko district to primarily provide the baseline values for the intervention performance indicators as per the progamme M&E manual. These values will enable setting realistic performance targets and assessing progress in the achievement of the set targets over the programme lifetime.

Methodology

The baseline study was conducted in Koboko district in the West Nile Sub Region of NURI programme implementation. It was a cross-sectional assessment involving quantitative and qualitative components, targeting farmers participating in the implementation of the NURI activities in Climate Smart Agriculture. The district was stratified into 6 rural sub-counties, in 29 parishes and 36 village, each village presented one farmers' group. A simple random technique of lottery method was used to randomly select 5 farmers from each village. Data collection was conducted using structured direct interviewing based on individual questionnaires developed to provide adequate data for the indicators. Key informants' interviews and focus group discussion were conducted to provide detailed information to explain findings from quantitative analysis. Edited quantitative data were entered in EpiData statistical package using a double data entry system to minimize entry errors. After cleaning, the data were exported to SPSS for analysis that involved univariate and bi-variate analysis.

Key Findings

Socio-demographic characteristics of respondents

A sample of 180 farmers participated in the study in Koboko district. Majority of the respondents were female (63.3%), aged 25-54years (68.1%), attained primary education (64.8%) and practicing commercial farming (78.3%).

Household Income

The total household income generated in Koboko by the interviewed farmers was (Ugx 1,798,408/= on average, especially UGx 1,291,517 /= from agricultural related produce and UGx506,892/= from non-agricultural sources. Male headed households earned UGx 511,274/= more than the female headed households. Households with heads aged less

than 25 years earned more annual income (UGx2,940,800/=) than those with heads in other age groups.

Food security

Majority of farmer households (81%) ate three or more meals per day in Koboko district. Seventeen percent (17%) of farmers had two meals per day; only 2% of farmer households received one (1) meal a day. Most households experienced serious food shortage from May to August with the climax being reported in the month of June by nearly 70% of the households.

Availability of Production Assets

A hand hoe was the most predominant production asset owned by all (100%) surveyed households in Koboko district. Other assets owned included a panga (77%), Radio (48%), mobile telephone set (47%), bicycle (29%), goats (28%), and poultry (26%), spray pumps (16%), motorcycles (7%), ox-ploughs (3%) and oxen (1%). The average total value of production assets in Koboko district was UGx526,030/=.

Land Ownership and Preparation Techniques

All (100%) farmer households in the district had access to land. On average, the surveyed households cultivated 2.24 acres of land in 2019. Hand-hoe (98%) dominated among the methods used in preparation of land for production. Use of ox-ploughs was nearly non-existent in the district. Family labor (91%) was the most dominant source of labour to prepare land for production followed by hired labour (60%) and Group rotational labour (12%).

Access and Use of Improved Agricultural inputs

Over 75% of the households used improved agricultural inputs in Koboko district. The households that used improved crop seeds were 40%, improved pesticides and herbicides (37%), improved vegetable seeds (31%), improved cassava cuttings (19%), and used modern tools (39%). Apart from cuttings and vines, over 55% of the households obtained their inputs from input dealers. Over 54% of the households used home saved materials cuttings and vines. Majority of the households highly rated the quality of inputs.

Agricultural Enterprise Production on Households' Land and Yield Per Acre

Regarding crop yield per acre for strategic crops, the highest average crop yield per acre was registered in maize, followed by rice, beans, soyabeans, sesame and sunflower. The non-strategic crops that had the highest yield per acre in Koboko district included sweet potatoes, Banana, Cassava, millet, and onions with average yield of above 1,000 kgs per acre. The non-strategic crops had a higher yield per acre (over 1,000 kgs per acre) than strategic crops with yield between 230 kgs and 550 kgs per acre. However, majority (over 50%) of the quantity of both strategic and non-strategic crops harvest was marketed to generate income for the households. Marketing for most crop produce was

done individually, as initiatives for collective/group marketing were nearly nonexistent for most crop varieties.

Access to Markets, Marketing and Communication

Most of the households obtained information about the market/prices of their produce from marketplaces (82.2%) and friends (52.8%). Other source of market information included radio advert (above 12%), company Agents (1.7%) and farmer organizations (3.3%).

Household participation in VSLA

Use of credit to finance agricultural production was observed among the farmer household in Koboko district; 59% used funds from VSLA. A total of UGx179,570 on average was obtained from VSLAs by farmers, 78% of loan was used to support agricultural production. %), petty trade (58%), school requirements (58%), and construction (45%). About 30% of the households got the VSLA loans to acquire household assets (35%) and health reasons (31%).

Sexual Reproductive Health and Rights

About SRHR and family planning, awareness is high (88%). Of these, 70% of farmer households had received training about SRHR mostly from health facilities (74%), friends/relatives (33%) and development partners. Ever use of family planning was at 54% of farmer households in Koboko district.

Conclusion

Overall, farmers in Koboko belong to low-income group, earning low incomes from sale of both agricultural and non-agricultural related products. Although the total land acreage cultivated is remarkable, the quantity of produce and yield per acre are still low, access to markets still faces various challenges including exploitation of farmers by middlemen, price fluctuations due to absence of collective marketing initiatives and good post-harvest storage facilities.

1.0 INTRODUCTION

1.1 Background

The Northern Uganda Resilience Initiative (NURI) is one of three engagements under the Uganda Programme on Sustainable and Inclusive Development of the Economy (UPSIDE). UPSIDE is one of the two thematic Programmes of the Danish Country Programme for Uganda 2018-2022, for which a Memorandum of Understanding (MoU) has been signed between the Government of Denmark and the Government of Uganda.

NURI will pursue enhanced resilience and equitable economic development in Northern Uganda, including for refugees and host communities. This will be achieved by supporting 1) Climate Smart Agriculture (CSA), 2) Rural Infrastructure (RI), and 3) Water Resources Management (WRM). Refugees and host communities will be among the beneficiaries as NURI is designed to support Uganda's progressive refugee policy and the nexus between development and humanitarian action.

Initially, NURI covered 9 districts in the West Nile and Acholi Sub Regions of Northern Uganda. The districts are Agago, Kitgum and Lamwo in Acholi sub region and Arua, Pakwach, Nebbi, Zombo, Moyo and Adjumani in West Nile sub region. Besides targeting nationals in these districts, NURI will work with refugee settlements within some of the selected districts. Selected settlements are Rhino Camp Refugee Settlement in Arua District, Palorinya Refugee Settlement in Moyo District, 3 selected refugee settlements in Adjumani District and Palabek Refugee Settlement in Lamwo District. In 2020, the NURI programme implementation expanded to Koboko district to benefit their communities with their programme activities.

1.2 Overview of the NURI Intervention

NURI consists of three outputs:

Output 1: Climate Smart Agriculture which is training of small-scale farmers in climate smart agriculture and marketing.

Output 2: Rural Infrastructure which is renovation and construction of agriculturally related rural infrastructure;

Output 3: Water Resources Management which is improved climate change resilience in Northern Uganda through WRM, including for refugees and host communities.

There will be training in Sexual Reproductive Health and Rights (SRHR) through the Danida funded - WAY programme. The WAY activities relating to NURI will be handled by CARE in close collaboration with NURI CF and implementing partners in the field.

The NURI intervention intends to benefit about 150,000 households in the selected programme area. The target is to reach 4,000 farmer groups consisting of 120,000 households with agricultural extension and training under Output 1. About 75% of these households will also benefit from VSLA. 28% of households are expected to be from refugee households. 1,800 groups are expected to benefit under Output 2, giving about 54,000 participants (households), of which about 30% are expected to be refugees. Under Output 3, eight communities at micro-catchment level including refugee hosting areas will participate in the programme. The estimated number of beneficiaries will be determined after a baseline survey.

For CSA, there will be 1,250 groups in the refugee settlements, which is 31% of the 4,000 groups, but since some of the groups are mixed refugees and nationals, the refugee households constitute an estimated 28% of the total number of households.

1.3 NURI Monitoring and Evaluation System

The M&E system is based on NURI log-frame and theory of change which in turn are in line with UPSIDE results framework as stipulated in the programme document and DED.

The objectives of the system are:

I. Measure progress towards achievement of component objectives and outcomes
II. Enhance learning, information sharing and feedback.
III. Provide a basis for improving delivery and decision making by facilitating the identification of potential implementation challenges and propose possible solutions.

1.4 Objectives of the Baseline study

The baseline assessment was conducted in Koboko district to primarily provide the baseline values for the NURI intervention performance indicators as per the progamme

M&E manual. The baseline values will provide a basis for setting realistic performance targets, assessing progress in the achievement of the set targets, and making necessary comparisons over the programme lifetime.

Primarily, the baseline study was intended to.

i. To collect data output and outcome indicators as stipulated in the M&E manual for both the refugees and new national groups.
ii. To collect data on the household characteristics for the refugees that may be necessary for setting their starting point for the production activities

2.0 METHODOLOGY

2.1 Setting

The baseline survey was carried out in Kobko district in the West Nile, covering 6 rural sub counties, 29 parishes and 36 villages where the NURI project is implemented. The covered sub-counties included the subcounty of Abuku, Dranya, Ludara, Midia, Kuluba and Lobule. (see the table below for details)

Table 1: Sub-counties and parishes covered in the study

SUBCOUNTY	PARISH	No of VILLAGES/ Farmers' Groups	SUBCOUNTY	PARISH	No of VILLAGES/ Farmers' Groups
LOBULE	AJIPALA	1	ABUKU	METINO	2
	LURUJO	2		NYAI	1
	PADROMBU	1		NYORICHEKU	2
	PONYURA	1		ONYOKUNGA	1
	YATUA	1	DRANYA	ALLA	1
LUDARA	CHAKULIA	1		AUNGA	1
	GUREPI	1		GINYAKO	1
	KECHI	1		LEIKO	1
	LUDARA	1		NYAGAZIA	2
	NYAJO	1	KULUBA	AYIPE	1
	PODO	1		KULUBA	1
MIDIA	ASUNGA	1		MONODU	2
	DRICILE	1		NYOKE	1
	KINGABA	2		PAMODO	1
	LURUNU	2	**Total**		**36**

2.2 Study design

The study was a cross-sectional assessment that involved quantitative and qualitative components. The qualitative component involved direct interviewing of selected farmers using a designed questionnaire. The quantitative questionnaire was developed based on selected programme indicators under output 1 of the programme that required baseline data in 2019. The table below presents details of the selected indicators and method of data collection used during the baseline study.

Table 2: Programme Performance Indicators

No.	Indicators	Data collection methods
Immediate Objective: To enhance resilience and equitable economic development in supported areas of Northern Uganda, including for refugees and host communities.		
1	% increase in average annual agricultural cash income of participating HHs (segregated by age, gender of HH head and refugee status)	HH interviews
2	% Reduction in number of participating HHs reporting periods of food insecurity (segregated by age, gender of HH head and refugee status)	HH interviews
Objective for output 1: To increase the agricultural output of small-scale farmers		
1	Cumulative % of participating HHs adopting additional CSA practices	HH interviews
2	Cumulative % increase in average yields per acre for strategic crops for participating HHs	HH interviews
3	Cumulative % of the quantity of strategic crops harvest that is sold	HH interviews
Main activities: Agricultural output of small-scale farmers including for refugees increased		
1.1	% of refugee HHs participating in mixed groups reporting having access to land	HH interviews
1.2	% of strategic crops produced by participating farmers collectively marketed	HH interviews
1.3	% of VSLA loans used for agricultural purpose by FGs and refugee HHs	HH interviews

Qualitative data were collected on different programme aspects to provide detailed information and explanation of the key findings in the quantitative analysis.

2.3 Targeted respondents and sample size

The study targeted new national farmers participating in the implementation of the NURI activities under output 1 of the programme which is Climate Smart Agriculture. The study was implemented in the 6 rural sub-counties, in 29 parishes and 36 village, each village presented one farmers' group.

A list of households for new national farmers in each farmers' group/village was compiled as a sampling frame and a simple random technique of lottery method was used to randomly select 5

farmers from each village. Thus, a total of 180 households participated in the study with the household head targeted as a respondent.

2.4 Data collection and quality control

Data collection was conducted through quantitative and qualitative methods.

Structured interviewing: Structured direct interviews were carried out with new nationals who were participating in implementation of NURI activities. Individual questionnaire was developed and used to collect data. Each questionnaire covered questions on a wide range of aspects including socio economic characteristics, Household income, food security, household assets, land ownership and preparation, access and use of improved agricultural production as well as access to markets, marketing strategy and communication.

Key informant interview: In-depth interviews were held with various key informants selected from key stakeholders. The key informants mainly included district local government agricultural Officials and refugee leaders. A key informant interview guide was used to collect the required data.

Focus group discussion; FGDs were organized and conducted with different groups of farmers. These helped in providing insights and explanations on knowledge and practices by the farmers in the Climate Smart Agriculture. Using a developed FGD guide, the discussions were held with various groups of farmers, each group with 15-30 people.

Data quality control: to ensure quality of data, the NURI CF identified their field workers in the district who served as research assistants during the study. The identified staff were graduates, conversant with Luo language and had skills and experience in conducting data collection, in-depth interviewing and moderating focus group discussions. A 4-days training workshop was held to equip all the identified research Assistants with the requisite skills and competences in both data collection procedures and correctly translating the tools in Lou language. All the study tools were pre-tested to ensure adequacy prior to the main field work exercise.

During field work, all the filled data collection tools were edited at the end of each day and identified errors were addressed the following day. All the filled tools were kept under lock and key to limit accessibility to prevent data tampering.

2.5. Data Processing and analysis

All dully filled questionnaires were verified, edited (in the field and in office) and electronically captured using a statistical package known as EpiData, a suitable software enriched with data validation instruments to ensure minimal data entry errors. Double data entry system was used to ensure a high degree of accuracy of captured data. After data entry, data were cleaned and exported to SPSS software (Statistical Package for Social Scientists) for processing and analysis. An analysis plan was formulated in line with the programme indicators in the M&E manual. Bothe univariate and bivariate analysis were performed to provide the required baseline values with the necessary disaggregation.

3.0 RESULTS

3.1.1 Demographic characteristics of study respondents

A total of 180 farmers participated in the study in Koboko district. Majority of the respondents were female (63.3%) while male respondents were 36.7%).

Majority of the respondents (68.1%) were aged 25-54 which is the most energetic and productive age group for agricultural production. Very few (16.8%) were under 25 years or 55+years (9.1%).

The results show that majority of farmers in the study had attained primary education (64.8%); lower primary (38.5%) and upper primary education (26.3%). About 20% of the respondents had attained post primary level and 15% had no formal education. The main occupation for majority (93.3%) of the respondent was farming with 78.3% practicing commercial farming and 15% of them being peasant farmers. About 4% of the respondents were reportedly involved mainly in business.

The baseline results show that although majority (76%) of households were male headed; but there is a significant proportion (24%) of households that were female headed. It was observed that there were no child-headed households surveyed and majority of the households were headed by adult aged above 35 years (about 51%). Refer to Table 1.

Table 3: Demographic characteristics of sampled community people

		No of HHs	Percentage (%)
Sex of the respondent:	Male	66	36.7%
	Female	114	63.3%
Age in years of the respondent	<25	30	16.8%
	25-34	56	31.3%
	35-44	40	22.3%
	45-54	26	14.5%
	55-64	17	9.5%
	65+	10	5.6%
Highest level of education for the respondent	No formal education Attended	27	15.1%
	Lower primary (P.1 – P.4)	69	38.5%
	Upper primary (P.5 – P.7)	47	26.3%
	O-level (S1-S4)	30	16.8%
	A-level (S5-S6)	5	2.8%
	Tertiary Institution	1	0.6%
Main occupation of the respondent	FARMER	141	78.3%
	PEASANT FARMER	27	15.0%
	BUSINESS	7	3.9%
	OTHERS	5	2.8%
Household category	Male headed	136	76.0%
	Female headed	43	24.0%
Age (years) of the household head	<25	5	2.8%
	25-34	47	26.1%
	35-44	37	20.6%
	45-54	45	25.0%

	55-64	26	14.4%
	65+	20	11.1%

3.2.1 Household Income

This baseline sought to document average household income in Koboko district. Both agricultural related and non-agricultural related income sources for the year 2019 were examined. All households surveyed shared with the study team the amount of money they obtained from sale of agricultural products such as produce, vegetables, animals (*i.e. cattle, goats, pigs and sheep*), poultry (*i.e. chicken, ducks and turkeys*), sale/hire of land, oxen and ox-plough, interest from VSLA savings, and non-agricultural products/services such as boda boda riding, brick laying, sale of firewood, charcoal, brewing local alcohol, among others.

Results show that farmers' households earned an average income of UGx 1,291,517 /= from agricultural related produce and UGx506,892/= from non-agricultural sources in Koboko district in 2019. Thus, households obtained money from sale of agricultural related products (72% of total income) almost three times their earnings from non-agricultural products/services (28%). The results also revealed that 54% and 89% of the farmers' households earned upto Ugx1,000,000/= per year from agricultural related products and non-agricultural products, respectively.

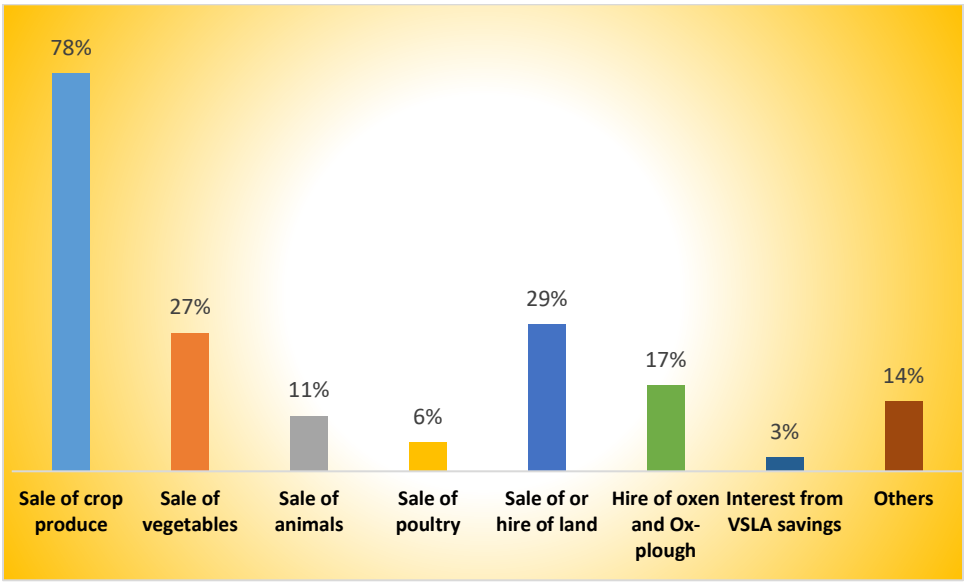
The monthly household income varied significantly with gender and age of the head. Results show that Male headed households earned UGx 511,274/= more than the female headed households. A higher proportion of male headed households (34%) earned more than Ugx 1.4 million in Koboko than female headed households (26%). Households with heads aged less than 25 years earned more annual income (UGx2,940,800/=) than those with heads in other age brackets. No major variations in amount earned were observed among other age groups of household heads. The average household cash income per age group of household head was observed to fall between UGx1,568,530 to 2,023,752 per year. See Table 4.

Figure 1 below shows that the most reliable agricultural related income sources in Koboko district were sale of crop produce (78%), sale of or hire of land (29%) and sale of vegetables (27%).

Table 4:Average annual household income from agricultural related and non-agricultural sources by gender and age of household heads

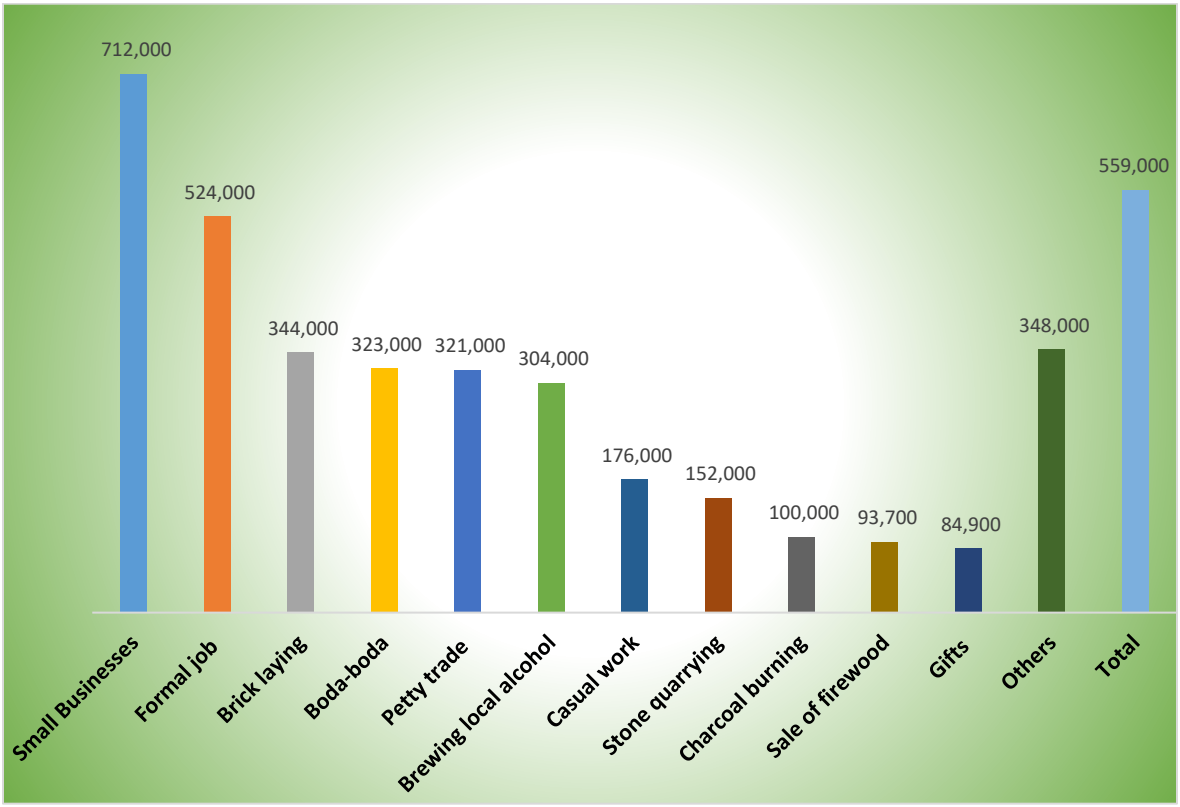
		Age of household head in years												Sex of HH head				Total	
		<25		25-34		35-44		45-54		55-64		65+		Male		Female			
		HHs	%	HHs	Percent	HHs	Percent	HHs	Percent	HHs	Percent	HHs	Percent	HHs	Percent	HHs	Percent	HHs	Percent
Agricultural related Household income in 2019	< 200,001	0	0%	3	6%	1	3%	3	7%	1	4%	4	20%	10	7%	2	5%	12	7%
	200,001-600,000	1	20%	13	28%	15	41%	11	24%	6	23%	8	40%	36	27%	18	42%	54	30%
	600,001-1,000,000	0	0%	9	19%	8	22%	8	18%	4	15%	2	10%	24	18%	7	16%	31	17%
	1,000,001-1,400,000	1	20%	12	26%	3	8%	7	16%	4	15%	4	20%	26	19%	5	12%	31	17%
	1,400,001-1,800,000	1	20%	2	4%	5	14%	7	16%	2	8%	0	0%	11	8%	6	14%	17	9%
	1,800,001-2,200,000	0	0%	2	4%	0	0%	0	0%	5	19%	1	5%	6	4%	2	5%	8	4%
	2,200,001-2,600,000	0	0%	2	4%	0	0%	5	11%	2	8%	0	0%	7	5%	2	5%	9	5%
	2,600,001+	2	40%	4	9%	5	14%	4	9%	2	8%	1	5%	16	12%	1	2%	18	10%
	Average income	**2,580,800**		**1,263,582**		**1,225,227**		**1,302,025**		**1,377,444**		**1,022,130**		**1,390,309**		**946,605**		**1,291,517**	
Non-agricultural related household income in 2019	< 200,001	1	20%	12	26%	16	43%	16	36%	12	46%	9	45%	48	35%	18	42%	66	37%
	200,001-600,000	3	60%	24	51%	11	30%	19	42%	4	15%	7	35%	52	38%	15	35%	68	38%
	600,001-1,000,000	1	20%	4	9%	5	14%	7	16%	6	23%	3	15%	21	15%	5	12%	26	14%
	1,000,001-1,400,000	0	0%	1	2%	3	8%	2	4%	0	0%	0	0%	5	4%	1	2%	6	3%
	1,400,001-1,800,000	0	0%	1	2%	0	0%	0	0%	1	4%	0	0%	1	1%	1	2%	2	1%
	1,800,001-2,200,000	0	0%	3	6%	1	3%	1	2%	1	4%	0	0%	4	3%	2	5%	6	3%
	2,200,001-2,600,000	0	0%	1	2%	1	3%	0	0%	0	0%	0	0%	1	1%	1	2%	2	1%
	2,600,001+	0	0%	1	2%	0	0%	0	0%	2	8%	1	5%	4	3%	0	0%	4	2%
	Average income	**360,000**		**557,096**		**474,162**		**399,578**		**646,308**		**546,400**		**524,279**		**456,709**		**506,892**	
Total Household income	< 200,001	0	0%	1	2%	0	0%	2	4%	1	4%	3	15%	6	4%	1	2%	7	4%
	200,001-600,000	0	0%	7	15%	9	24%	6	13%	1	4%	4	20%	19	14%	8	19%	27	15%
	600,001-1,000,000	0	0%	5	11%	6	16%	9	20%	4	15%	5	25%	19	14%	10	23%	29	16%
	1,000,001-1,400,000	2	40%	12	26%	3	8%	5	11%	5	19%	2	10%	26	19%	3	7%	29	16%
	1,400,001-1,800,000	1	20%	9	19%	8	22%	5	11%	3	12%	4	20%	20	15%	10	23%	30	17%
	1,800,001-2,200,000	0	0%	1	2%	4	11%	5	11%	2	8%	0	0%	10	7%	2	5%	12	7%
	2,200,001-2,600,000	0	0%	2	4%	1	3%	2	4%	3	12%	0	0%	6	4%	2	5%	8	4%
	2,600,001+	2	40%	10	21%	6	16%	11	24%	7	27%	2	10%	30	22%	7	16%	38	21%
	Average income	**2,940,800**		**1,820,678**		**1,699,389**		**1,701,602**		**2,023,752**		**1,568,530**		**1,914,588**		**1,403,314**		**1,798,408**	

Figure 1: Ranking of MOST agricultural related household income sources in Koboko district.



Crop produce was ranked high by farmers reportedly due to having ready market throughout the year and being backbone/source of livelihood for most households in their community.

Figure 2: *Annual household income obtained from other non-agricultural related sources.*



3.2.2 Food security

In this study, breakfast, lunch, and supper/dinner were the 3 most important meals to be eaten by the household per day in Koboko district. Table 5 below shows that majority (83%) of households in Koboko district reported having three or more meals per day and 17% of the households ate 2 meals a day but only one household had 1 meal a day. Very slight difference in the proportion of household eating at least 3 meals a day between male (83%) and female (81%) headed households. Notable variation in number of meals eaten per day was observed in the age groups of the household head. Over 76% of household with heads aged between 25 to 64 years had at least 3 meals and 60% of the household with heads aged either less than 25% or at least 65 years were taking 3 meals a day (Refer to table 6).

Reports of food shortage were notably high from the month of April to July. The worst food shortage was observed in June 2019, where nearly 70% the households reported experiencing food shortage. Refer to Table 6 for details on meals consumed per day and food shortage.

Table 5: Reported number of meals eaten per day at household level in Kobko district in 2019 by sex of household head.

	Overall		Sex of Household Head			
			Male		Female	
	HHs	%	HHs	%	HHs	%
Average number of meals consumed in the household per day						
1	1	1%	0	0%	1	2%
2	29	17%	22	17%	7	17%
3+	145	83%	111	84%	34	81%
Experienced food shortage in the month of year 2019						
January	22	12%	16	12%	6	14%
February	30	17%	18	13%	12	28%
March	34	19%	20	15%	14	33%
April	47	26%	35	26%	12	28%
May	86	48%	63	46%	23	54%
June	125	70%	96	71%	29	67%
July	33	18%	30	22%	3	7%
August	17	10%	16	12%	1	2%
September	14	8%	11	8%	3	7%
October	14	8%	12	9%	2	5%
November	13	7%	12	9%	1	2%
December	14	8%	9	7%	5	12%

Table 6: **Reported number of meals eaten per day at household level in Kobko district in 2019 by sex of household head.**

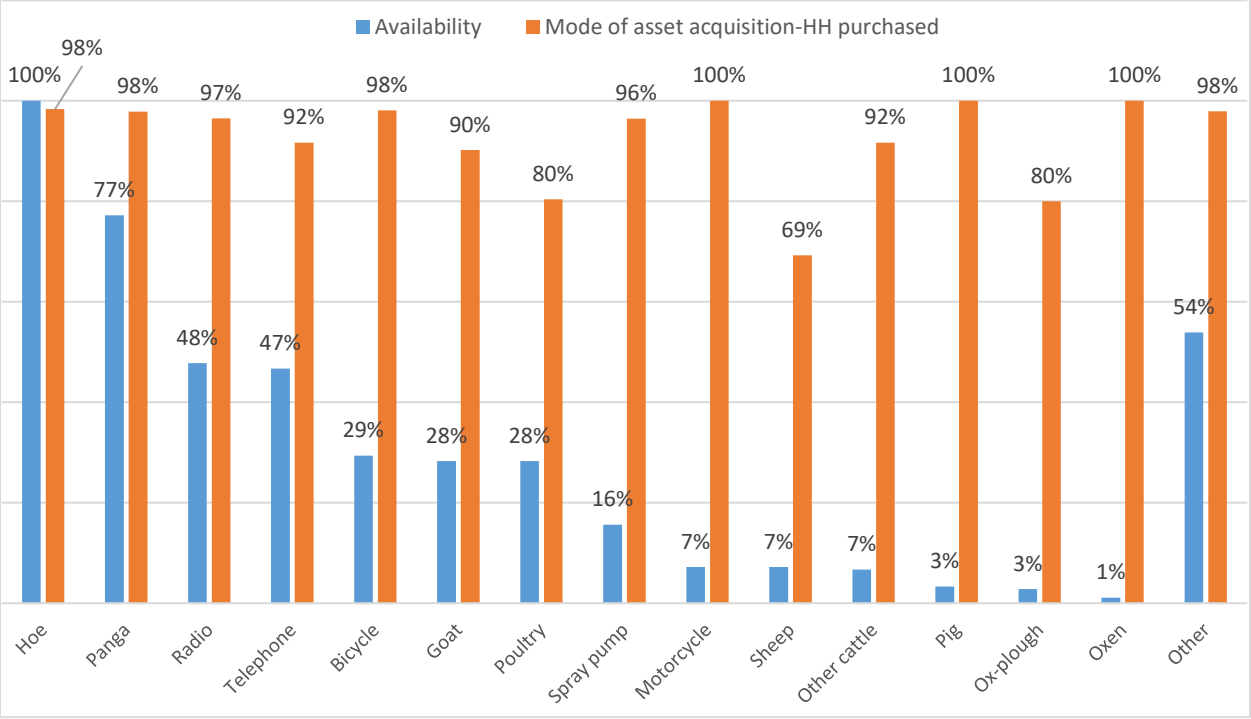
	Age of household head in years											
	<25		25-34		35-44		45-54		55-64		65+	
	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%
Average number of meals consumed in the household per day												
1	0	0%	0	0%	0	0%	0	0%	1	4%	0	0%
2	2	40%	4	9%	8	23%	3	7%	4	16%	8	40%
3+	3	60%	43	92%	27	77%	41	93%	20	80%	12	60%
Experienced food shortage in the month of year 2019												
January	0	0%	8	17%	6	16%	4	9%	4	15%	0	0%
February	1	20%	9	19%	6	16%	6	13%	7	27%	1	5%
March	1	20%	6	13%	12	32%	7	16%	4	15%	4	20%
April	1	20%	10	21%	10	27%	7	16%	10	39%	9	45%
May	2	40%	20	43%	12	32%	21	47%	17	65%	14	70%
June	3	60%	27	57%	26	70%	36	80%	18	69%	15	75%
July	0	0%	11	23%	7	19%	9	20%	3	12%	3	15%
August	0	0%	6	13%	2	5%	5	11%	3	12%	1	5%
September	1	20%	5	11%	0	0%	5	11%	2	8%	2	10%
October	1	20%	4	9%	2	5%	3	7%	2	8%	3	15%
November	1	20%	4	9%	6	16%	1	2%	0	0%	2	10%
December	0	0%	2	4%	6	16%	3	7%	1	4%	2	10%

3.2.3 Availability of Production Assets

This baseline sought to establish the type and quantity of production assets available in households in Koboko district. At every household surveyed, participants were asked to declare the range of production assets they owned in 2019; the quantity owned, mode of acquisition, how much they bought each production asset, its functionality status and estimated current monetary value.

Results show that a hand-hoe was the most predominant production asset owned by all surveyed households in Koboko district in 2019. Other assets owned included a panga (77%), Radio (48%), mobile telephone set (47%), bicycle (29%), goats (28%), and poultry (26%). Production assets that were found in very few households included spray pumps for spraying crops with pesticides (16%), motorcycles for transporting produce (7%), ox-ploughs (3%) and oxen (1%). Refer to Table 7 for details.

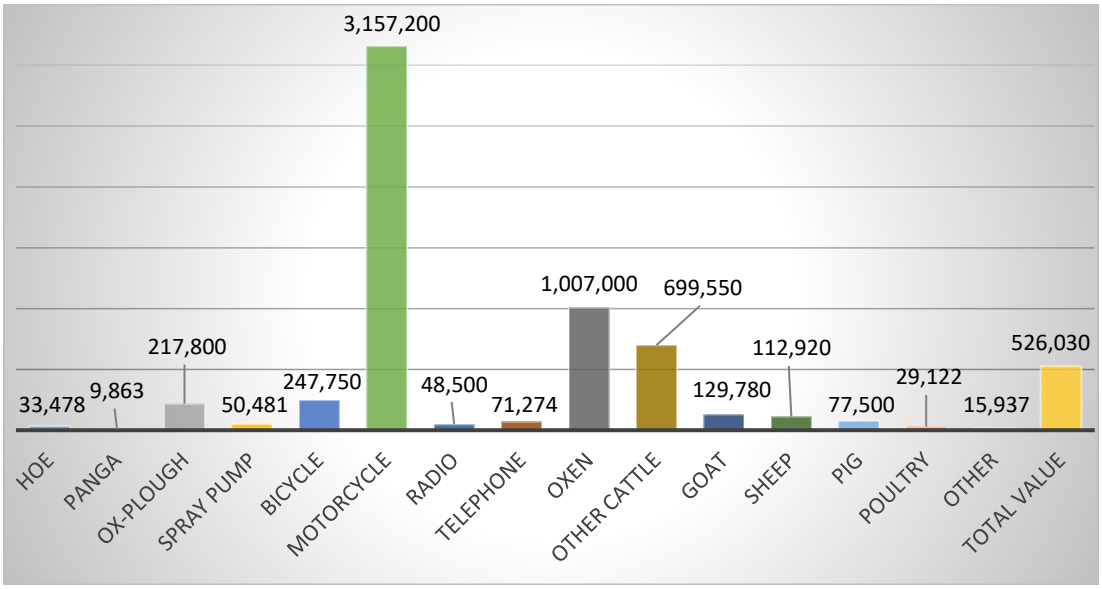
Figure 3: Production assets available in households



Results on the value of production assets found available during the survey revealed an average total value of UGx526,030/= in Koboko district. (refer figure 3).

About mode of acquisition, results show that nearly all participants bought their production assets. Only sheep (40%) and poultry (20%) were not purchased by households. The sheep were donated by local governments, NGOs, and development partners. Refer to figure 2 for details.

Figure 4: **Average value (UGshs) of production assets available in the household**



3.2.4 Land Ownership and Preparation Techniques

On average, interviewed households in Koboko districts cultivated 2.24 acres of land in 2019. Of these, 65.7% of the households used land of 1.61 acres on average owned by their family. And slightly over 21% and 4% of the households used hire land of 1.38 acres and borrowed land of 1.15 acres, respectively. Only 4 (0.9%) households cultivated communal land of 0.88 acres on average. Refer to table 10 below.

Regarding methods used in preparation of land for production, the study results show that in 2019, almost all (98%) households used the hand-hoe for both the first and second tillage of 1.8 acres in each. Use of tractor was also notably used by 13 households to cultivate 2 acres in the first tillage and by 7 households to cultivate 2.4 acres in the second tillage. See Table 10 below.

Households used varied and mixed sources of labor for cultivating land in Koboko district. Several households used a combination of family and hired labor to prepare their land for production, but with family labor as the most dominant source. On average family labor was used in 91% of the households and cultivated 1.2 acres on average while hired labor was used by 60% of the households to cultivate 38 acres on average. Group rotational labor was only reported by 12% of the households surveyed and cultivated 0.9 acres on average.

Table 7: Total acreage of land cultivated, mode of acquisition and source of labor used.

	HHs	Mean	Percent (%)
Total acreage of land cultivated by household in 2019	180	2.24	100.0%
Ways of acquiring total land cultivated by HH			
Family owned	165	1.61	65.7%
Communal owned	4	0.88	0.9%
Hired land	62	1.38	21.2%
Borrowed	14	1.15	4.0%
Government protected area	0	0.00	0.0%

Table 8: Methods used in preparation of land for production.

	First tillage in acres		Second tillage in acres	
	HHs	Mean	HHs	Mean
Hand Hoe	176	1.8	176	1.8
Ox-ploughing	0		0	0.0
Tractor	13	2.0	7	2.4
Total no. of acres	144	2.0	136	2.0

Table 9: Source of labour for cultivating the land for household production.

	HHs	Percent	Mean
Family labour	163	91%	1.2
Hired labour	108	60%	38.3
Group rotational labour	22	12%	0.9

3.2.5 Access and Use of Improved Agricultural inputs

It was observed that 75% of the households used improved agricultural inputs in Koboko district. Results show that nearly 40% of surveyed households planted improved crop seeds in 2019. Thirty one percent (31%) used improved vegetable seeds while 19% planted cuttings and vines. Furthermore, 37% of the households used improved/factory produced pesticides/herbicides to fight against pests and diseases while 18% used modern livestock drugs to treat their animals used. Fourteen percent (14%) used fertilizers and 39% used modern tools including spray pumps to fight against pests and diseases.

Majority (55%) of the households obtained their improved crop seeds in 2019 from input dealers in the district. Only 18% used home saved improved crop seeds. Over 54% of the households used home saved materials cuttings and vines such as cassava cuttings and sweet potato vines

and only 26% obtained such cuttings and vines from input dealers. Almost all (over 95%) of the households obtained vegetable seeds, fertilizers, pesticides, livestock drugs and tools from input dealers. It was noted that all households using inputs (except tools and livestock drugs) obtained them within reasonable distance of 4-8 kms from their sources. The sources for tools and livestock drugs were located quite far from the households withing an average distance of 10.5 kms and 11.1 kms, respectively.

In terms of quality of inputs, majority (over 73%) of farmers rated the vegetable seeds, fertilizers, pesticides, live-stocks drugs, and tools were rated as being of high quality. The rest of the households rated these inputs as moderate in quality. While 56% and 68% of the households rated improved crop seeds and cuttings and vines to be of high quality, less than10% rated them as low-quality inputs. Refer to table 11 below for details.

Table 10: Level of use of improved agricultural inputs, sources, quality of inputs and distance to input dealers.

	Type of input used		Distance (Kms) to source		Sources of inputs you used						Rating of quality of inputs					
					Input dealer		Home saved		Others		High		Moderate		Low	
Input used	**HH**	**%**	**HH**	**Mean**	**HH**	**%**	**HH**	**%**	**HH**	**%**	**HH**	**%**	**HH**	**%**	**HH**	**%**
Crop seeds	72	40%	73	7.9	42	55%	14	18%	20	26%	44	57%	27	35%	6	8%
Cuttings and vines	34	19%	32	4.8	8	26%	19	54%	10	27%	25	68%	10	27%	2	5%
Vegetable seeds	55	31%	55	6.7	52	95%	3	6%	0	0%	48	86%	8	14%		
Fertilizers	26	14%	22	7.4	21	84%	2	8%	2	8%	21	84%	4	16%		
Pesticides	66	37%	65	7.2	64	97%			2	3%	56	88%	8	13%		
Livestock drugs	32	18%	32	11.1	31	97%	1	1%			28	88%	4	13%		
Tools	70	39%	67	10.5	67	97%	1	4%	1	4%	50	73%	19	28%		

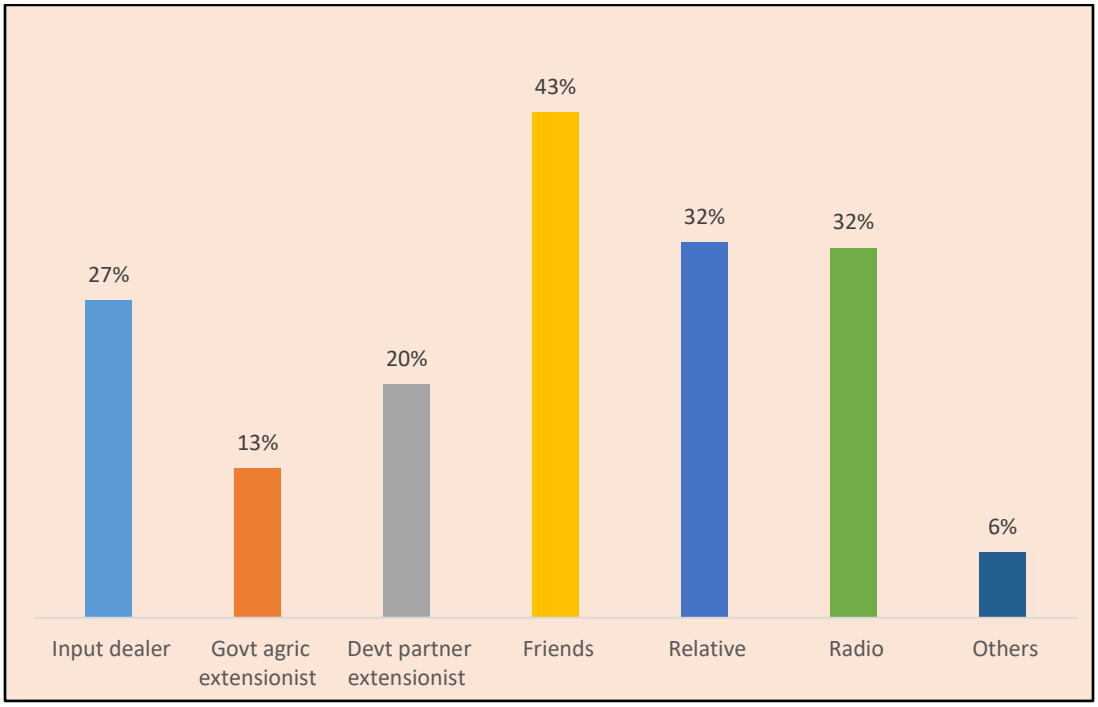
Based on their self-assessment, majority of farmers had good knowledge on use of several farm inputs including cuttings and vines (73%), livestock drugs (67%), farm tools (62%), crops seed (57%), and vegetables (56%). While 47% and 66% of the farmers felt that they had fair knowledge about use of fertilizers and pesticides/herbicides, respectively, a notable proportion of them (18% and 9% respectively) reportedly had poor knowledge about the use of the same inputs. Also, 14% and 9% of the farmers felt that they had poor knowledge on the use of livestock drugs and vegetables, respectively. See Table 12 for details.

Table 11: Rating farmers' knowledge on use of the inputs.

Inputs	Good		Fair		Poor	
	HH	%	HH	%	HH	%
Crop seeds	47	57%	32	39%	4	5%
Vegetable seeds	36	56%	22	34%	6	9%
Cuttings and vines	24	73%	6	18%	3	9%
Fertilizers	12	35%	16	47%	6	18%
Pesticides/herbicides	18	26%	46	66%	6	9%
Livestock drugs	24	67%	7	19%	5	14%
Tools	41	62%	23	35%	2	3%

Figure 4 below shows that friends (43%), relatives (32%), radio (32%) and input dealers (27%) were the most dominant sources of learning/information on how best to use agricultural inputs in Koboko district.

***Figure 5*:** Source of information on how best to use agricultural inputs in 2019.

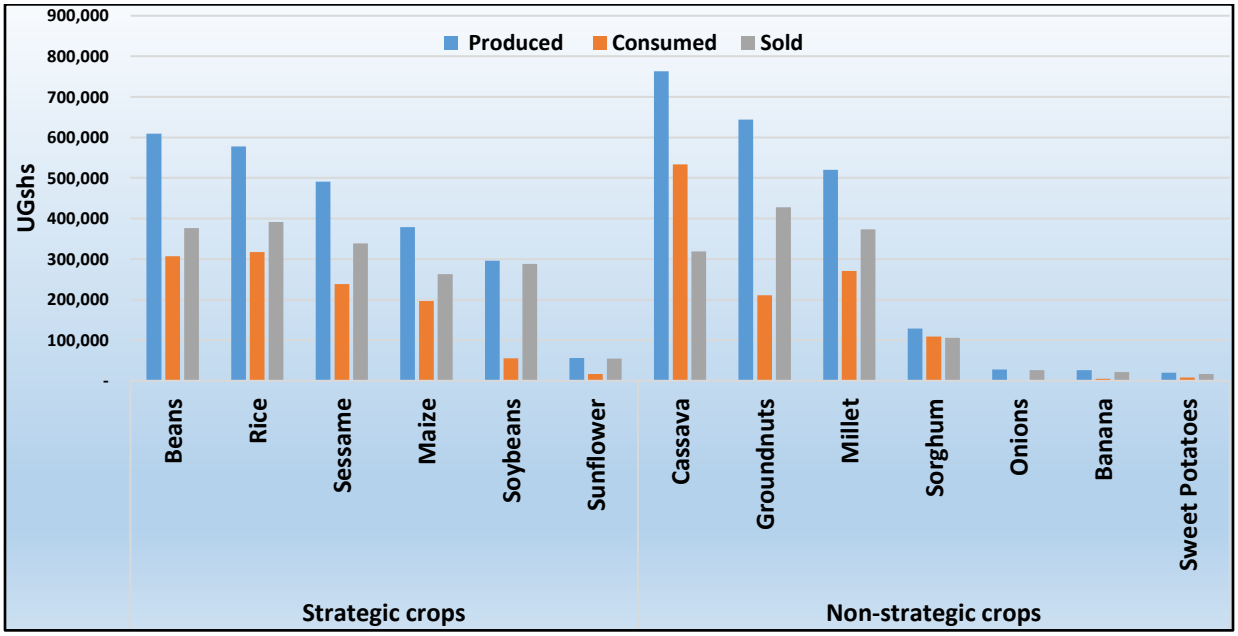


3.2.6 Agricultural Enterprise Production on Households' Land and Yield Per Acre

In addition, the baseline was intended to establish the quantity of crops produced, yield per acre and quantity together with the proportion of crops consumed. The crops assessed included 6 strategic crops namely sesame, beans, maize, soybeans, sunflower and rice. Non-strategic crops were groundnuts, cassava, sorghum, millet, pigeon peas, sweet potatoes, Irish potatoes, onions, and bananas.

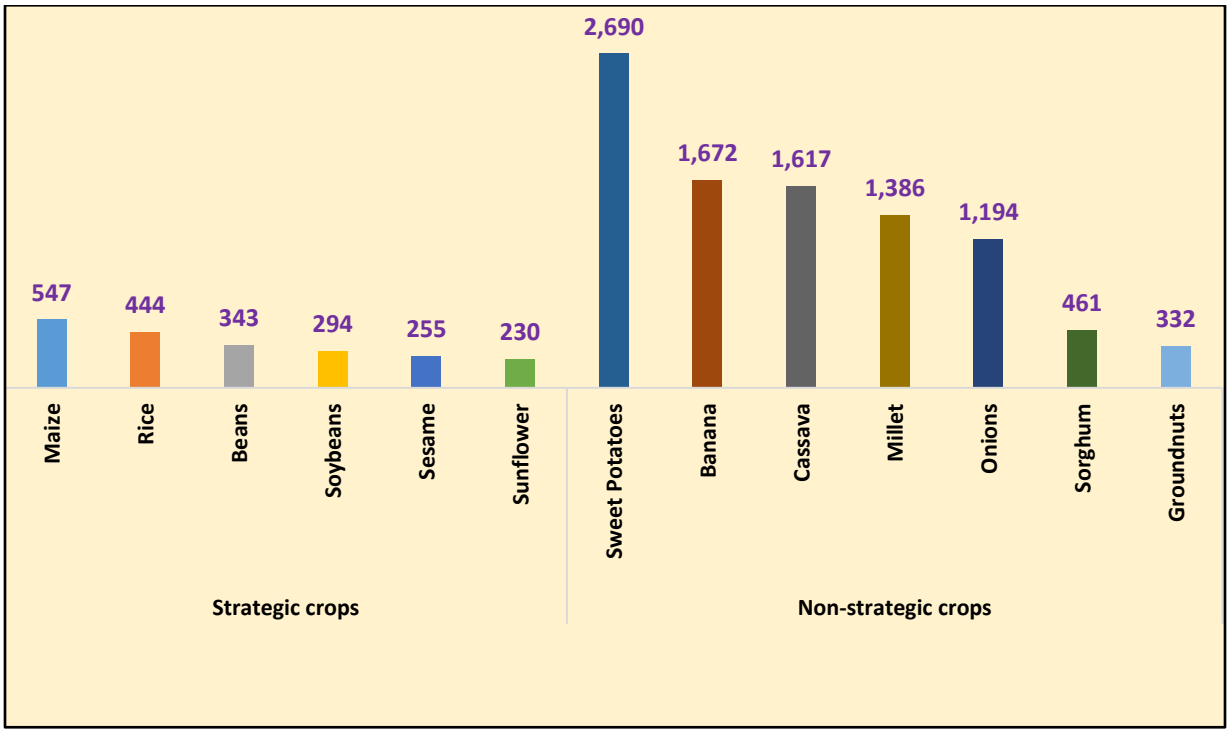
The dominant crops produced among the strategic crops in most households included (in descending order of production value) beans, rice, and sesame while cassava, groundnuts and millet were the most productive among the non-strategic crops.

***Figure 6*: Value (Ugx) of crops produced, consumed, and sold in 2019 in Koboko district.**



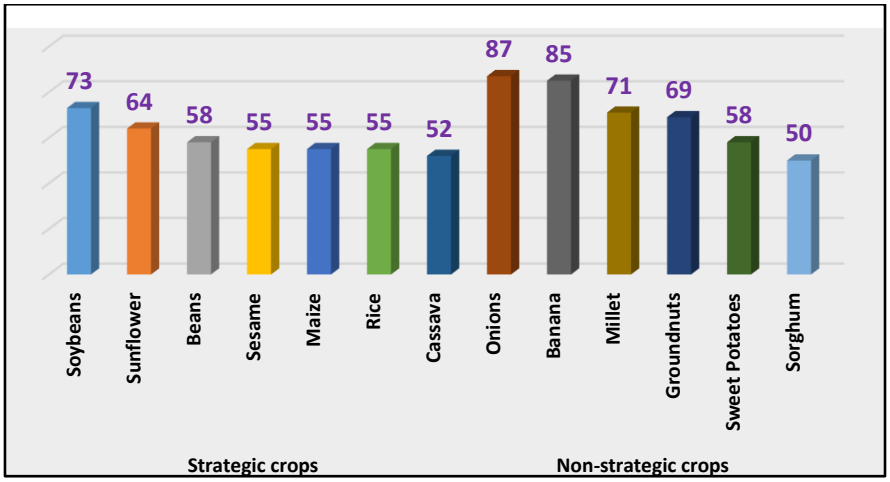
Regarding crop yield per acre for strategic crops, the highest average crop yield per acre was registered in maize, followed by rice, beans, soyabeans, sesame and sunflower. The non-strategic crops that had the highest yield per acre in Koboko district included sweet potatoes, Banana, Cassava, millet, and onions with average yield of above 1,000 kgs per acre. The graph shows that non-strategic crops had a higher yield per acre (over 1,000 kgs per acre) than strategic crops with yield between 230 kgs and 550 kgs per acre (see figure 18).

Figure 7: **Average crop yields (Kgs) per acre in 2019**



Comparison between quantities produced and sold shows that on average, households were selling more produce than they consumed. Figure 6 below shows that majority (more than 50%) of the crop harvest among strategic crops was marketed. The graph also shows that more non-strategic crops were marketed that strategic crops.

Figure 8: **Average percentage (%) of crops marketed in 2019.**



3.2.7 Access to Markets, Marketing and Communication

Most of the households involved in the study obtained information about the market/prices of their produce from marketplaces (82.2%) and friends (52.8%). Radio advert was reported by slightly above 12% of the households as their source for prices and demand from markets. Less than 5% got marketing information Company Agents (1.7%) and farmer organizations (3.3%). Refer to table 20.

***Table 12*: Source of marketing information for the crops produced.**

Source of information	HH	Percentage (%)
Market places	149	82.8%
Friends/relatives	95	52.8%
Radio adverts	23	12.8%
Farmer organisations	6	3.3%
Company agents	3	1.7%
Others	2	1.1%

During the study, the farmers identified the following as the most common marketing challenges encountered; low prices for produce and price fluctuations, Inadequate storage facilities, manipulation by middlemen, faulty weighing scales, absence of bulk buyers, lack of transport for bulk produce, bad roads, and lack of adequate marketing information, among others.

3.2.8 Household participation in VSLA

Access to credit facilities is a major factor that influences agriculture production. Thus, the study sought to establish the proportion of households involved in the NURI programme who participated in VSLA activities including saving and obtaining credit from the association. Results showed that about 75% of farmers participated in VSLA activities in 2019. Therefore about 25% of the households did not participated in in VSLA activities in 2019. This was mainly due negative attitude towards VSLAs, lack of money to save/absence of a stable and reliable source of income, and lack of trust.

The study also established that about 71% of the households that participated in VSLA activities in 2019 received training on VSLA methodology. Th farmers were trained by mostly by Community Based Organizations (CBOs) (47.4%), NGOs (34.7%), and other fellow groups (11.6%). However, most interviewed households (62.9%) felt that there was quite inadequate (low)

participation of youth of 18 - 28 years in VSLA activities in Koboko district. Only 11% of the households rated the youth participation in VSLA as high. See Table 21.

Regarding access credit in 2019 to finance agricultural production, results show that the households mainly got money financing their agricultural production activities mainly through sale of agricultural produce (60%) and loans obtained from VSLA (58.9%). The other ways of raising the money included individual household savings (26.7%), borrowing from family and friends (13.9%), gifts (5%) and micro-finance (SACCOs).

Table 13: Participation of Households in VSLA Activities

	HH	Percentage (%)
Households participated in VSLA activities in 2019	134	74.4%
Households received training on the methodology	95	70.9%
Entity that provided training on the methodology		
NGO	33	34.7%
Community Based Organization	45	47.4%
Learnt from another group	11	11.6%
Church based organization	0	0.0%
Rating the participation of youth of 18 - 28 years in VSLA activities		
High	18	10.5%
Medium	46	26.9%
Low	107	62.6%
Way of accessing money to finance agricultural production activities in		
VSLA	106	58.9%
Micro-finance (SACCOs)	3	1.7%
Bank	0	0.0%
Individual household savings	48	26.7%
Borrowing from family/friends	25	13.9%
Gifts	9	5.0%
Sale of agricultural produce	108	60.0%

Results in table 22 shows that 95% of the households participating in VSLA obtained a total of UGx 179,570 on average from VSLAs in Koboko district. The money obtained from VSLAs was used on various activities mainly for agricultural production (78%), petty trade (58%), school requirements (58%), and construction (45%). About 30% of the households got the VSLA loans to acquire household assets (35%) and health reasons (31%). Refer to Table 22.

Table 14: Amount received in VSLA loan and how it was used.

	HHs	Mean amount (UGshs)	Percentage (%)
Amount of money got as a loan from VSLA	127	179,570	
Ways the loan was used			
Agricultural production	108	107,440	78
Petty trade	25	105,200	58
School requirements	39	123,760	58
Health	28	40,036	31
Construction	5	136,000	45
Household asset	10	55,000	35

3.2.9 Gender and Youth Participation in Agricultural Production

Agricultural production comprises various activities ranging from opening of the land and preparation for planting, planting, weeding, pest, and disease management, harvesting, post-harvest handling to marketing. The study sought to establish the level of involvement of various household members by gender and age in the various agricultural production activities. The interest was to show what proportion of adults both male and female, and children in the surveyed households were involved in the production activities. Table 22 shows the level of involvement of the various household members in production activities as well as mobilization of resources to undertake the activities.

Table 15: Level of participation of household members in agricultural production

	Adult Female		Adult Male		Children		Adult Female and Adult Male		Adult Female and children		Adult Male and children		All (Adults and children		No HH members involved	
	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%	HHs	%
Level of involvement of household members in various production activities																
Land opening and preparation	5	3%	14	8%	1	1%	71	40%	16	9%	7	3.9%	62	35%	3	1.7%
Planting	6	3%	6	3%			52	29%	17	10%	4	2.2%	92	52%	1	0.6%
Weeding	42	24%	4	2%			41	23%	56	31%	1	0.6%	35	20%		
Pest and disease management	35	22%	54	33%			45	28%	6	4%	1	0.6%	1	1%	20	12.3%
Harvesting	51	29%	4	2%	1	1%	22	12%	54	30%			47	26%		
Post-Harvest handling	97	54%	4	2%			16	9%	47	26%			15	8%		
Marketing	77	43%	21	12%	1	1%	74	41%	5	3%					1	0.6%

Planning for new season	26	14%	37	21%			112	62%	3	2%			2	1%		
Use of income received from production	31	17%	35	19%			108	60%	3	2%			2	1%	1	0.6%
Household member in charge of mobilizing for the various agricultural production activities.																
Land opening and preparation	37	21%	95	53%			46	26%	1	1%			1	1%		
Planting	40	22%	75	42%	1	1%	49	27%	2	1%			13	7%		
Weeding	112	62%	24	13%			39	22%	4	2%			1	1%		
Pest and disease management	44	27%	81	50%			17	11%	1	1%			0	0%	18	11.2%
Harvesting	112	63%	26	15%			23	13%	2	1%	1	0.6%	15	8%		
Post-Harvest handling	150	84%	13	7%			6	3%	6	3%	1	0.6%	3	2%		
Marketing	66	37%	52	29%			59	33%							1	0.6%
Planning for new season	38	21%	69	38%			72	40%	1	1%						
Use of income received from production	34	19%	69	38%			75	42%	1	1%					1	0.6%

From table 23 above, it is evident that female adults were deeply involved in various production activities. Most of the mobilization and/or production activities were implemented by either the female adult alone, female adult together with male adult or female adult working with the children.

About 80% of the surveyed households acknowledged the participation of the youth (18- 28 years) in agricultural production in their communities as being high (35%) or medium (43.9%). Over 20% of the households indicated inadequate (low) participation of the youth.

3.2.10 Sexual Reproductive Health and Rights

Given that in the NURI context, Climate Smart Agriculture (CSA) is understood in the broadest sense, referring to not only climate-smart agronomic practices such as the choice of crops and varieties, planting dates, cultivation methods and soil and water conservation but also to the livelihood practices of households, the baseline sought to generate benchmark data on sexual reproductive health and rights (SRHR). Thus, the study sought to generate data on level of awareness of SRHR. Results show high awareness; 88% of the farmers had heard about SRHR in their community and 70% of them had received training about SRHR. See Table 24.

Table 16: Levels of awareness about SRHR and use of family planning methods.

	HHs	Percent
Ever heard about SRHR	159	88%
Received training about SRHR	111	70%
Providers of training		
Development partner/NGO	9	8%
Health facility	94	84%
Family/Friends	25	23%
Government official	12	11%
Ever used FP methods	84	54%
Source of FP services		
Health facility	63	74%
Family/friends	28	33%
Development partner center	1	1%
Other	2	2%

Table 24 further shows that only just over half (54%) of the farmers had ever used FP methods in Koboko district. Majority (74%) of the farmers in Koboko district obtained family planning methods from health facilities. The other FP sources were family and friends (33%) and development partner centers (1%).

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

Overall, the farmers in Koboko district belong to low-income group. In 2019, the average annual household income (Ugx 1,798,408/=) generated was quite low. Food insecurity was quite low, only 19% of the surveyed households ate less than 3 meals per day on average. Most households experienced serious food shortage from May to August with the climax being reported in the month of June by nearly 70% of the households.

Total acreage, 2.24 acres on average, of land cultivated in 2019 was reportedly inadequate. Most of the cultivated land was owned by families and hired from other farmers. The challenge, however, the hand-hoe still dominates among the methods used in preparation of land for production. Use of ox-ploughs was low and nearly non-existent in the district. A combination of family and hired labor to prepare land for production was used, but with family labor as the most dominant source. Use of improved crop seeds and other inputs is low; households that used improved crop seeds were 40%, improved pesticides and herbicides (37%), improved vegetable seeds (31%), improved cassava cuttings (19%), and used modern tools (39%). The low levels of use of improved agricultural inputs was attributed to limited knowledge/awareness on ways to use the improved agricultural inputs, absence of input dealers within walkable distances and high cost.

The most grown strategic crops in Koboko district were Beans, rice, sesame, and maize while non-strategic crops included cassava, groundnuts, and millet. Average yield per acre among Strategic crops in Koboko was found to be generally low. The crop yield per acre was notably higher among non-strategic crops (Sweet potatoes, Banana, and Cassava) than the strategic crops. However, majority (over 50%) of the quantity of both strategic and non-strategic crops harvest was marketed to generate income for the households. Marketing for most crop produce was done individually, as initiatives for collective/group marketing were nearly nonexistent for most crop varieties. Market places and friends dominated the sources of market information for most households.

Use of credit to finance agricultural production was observed among the farmer household in Koboko district; 59% used funds from VSLA. A total of UGx179,570 on average was obtained from VSLAs by farmers, 78% of loan was used to support agricultural production.

The SRHR and family planning awareness is quite high (88%). Of these, 70% of them had received training about SRHR mostly from health facilities and development partners.

4.2 Recommendations

Based on the study findings, the following suggestions are made.

- Support farmer households to access more improved agricultural inputs from within their communities.
- Train farmers on use of improved agricultural inputs
- Support small-holder farmers to access and use modern farming tools such as ox-ploughs and tractors
- Support farmer households to access more acreage of land for adequate agricultural production.
- Support farmer households to form groups for use in collective marketing of their produce.
- Increase opportunities for farmer households to participate in VSLA activities.
- Increase of opportunities for learning about SRHR and use of modern family planning services among refugee households