

UPSIDE

**Northern Uganda Resilience Initiative
2019 - 2022**



**BASELINE SURVEY REPORT FOR
ADJUMANI, MOYO AND OBONGI DISTRICTS**

FINAL

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Acronyms

CSA	: Climate Smart Agriculture
DED	: Development Engagement Document
FGDs	: Focus Group Discussions
HHs	: Households
Kgs	: Kilograms
M&E	: Monitoring and Evaluation
MoU	: Memorandum of Understanding
NURI CF	: NURI Coordination Function
NURI	: Northern Uganda Resilience Initiative
RI	: Rural Infrastructure
S/C	: Sub-county
SPSS	: Statistical Package for Social Scientists
SRHR	: Sexual and Reproductive Health and Rights
UGx	: Uganda Shillings
UNHCR	: United Nations High Commissioner for Refugees
UPSIDE	: Uganda Programme on Sustainable and Inclusive Development of the Economy
VSLA	: Village Savings and Loans Associations
WFP	: World Food Programme
WRM	: Water Resources Management

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Executive Summary

Introduction and methodology

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 is on Climate Smart Agriculture (CSA), Rural Infrastructure (RI) and Water Resources Management (WRM). It covers 3 districts in North West Nile, 5 districts in the South West Nile and 3 districts in Acholi Sub Regions of Northern Uganda. Besides nationals in the regions, NURI will work with refugee settlements in the districts of Arua, Obongi, Moyo, Adjumani and Lamwo. Since the implementation in North West Nile started later than other districts, NURI conducted baseline study in North West Nile between July and August 2020. The baseline assessment was carried out to provide the baseline values for the intervention performance indicators as per the programme 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 study covered three districts of Adjumani, Moyo and Obongi in North West Nile. Using a cross-sectional survey design employing both quantitative and qualitative methods of data collection, its targeted farmers organized in groups including 302 households (HHs) for new nationals, 122 women refugee HHs and 112 mixed refugees. A combination of multistage sampling, cluster sampling and simple random sampling techniques were used to select the study respondents. Data collection was conducted using structured direct interviewing based on individual questionnaires developed to provide adequate data for the indicators. Focus Group Discussions were carried out with 10 groups of the new national farmers and 8 of refugees that provide detailed information to explain findings from quantitative analysis. All quantitative data were entered in EpiData software using a double data entry system to minimize entry errors. After cleaning and performing all logical checks, the data were exported to SPSS for analysis that involved univariate and bi-variate analysis.

Indicators at Outcome level

Increase in average annual agricultural cash income of participating HHs (segregated by age, gender of HH head and refugee status)

The average annual agricultural cash income in 2019 was Ugx1,079,340 for new national farmers in the three districts and it was UGx359,264 for mixed refugee groups and UGx288,204 for women refugee groups in the districts of Adjuman and Obongi. The assessment results of income from non-agricultural activities in 2019 indicated average annual cash income for new national farmers as UGx1,200,546 in the three districts while mixed refugee groups and women refugee groups in Adjuman and Obongi districts had an average annual non-agricultural income of UGx343,773 and UGx512,778, respectively. Furthermore, the results also revealed that male headed Households earned more income compared to female headed households in both new nationals and mixed refugee groups. In all the groups (new nationals, women refuge groups and mixed refugee groups), the annual agricultural income in 2019 was found to increase with increasing age for the household head (upward trend). Majority (59%) of the farmers ranked sales of crop produce as the most reliable agricultural source of income in 2019.

Reduction in number of participating households reporting periods of food insecurity (segregated by age, gender of HH head and refugee status)

The assessment results revealed that about 80% of the households for new nationals, women refugees and mixed refugee groups experienced food shortage during the month of June. Over 30% of the households in the three groups reported that the period of food shortage stretched from May to July 2019. This trend was observed in each of the districts of Adjuman, Moyo and Obongi. The respondents reported that most households had only one meal per day during the period of food shortage. It was also established that most households for new nationals experienced food shortage in May to July due to heavy rains that destroyed crops like cassava, poor post-harvest planning and handling, and high costs of produce in the markets. For the refugee groups, the shortage was attributed to a reduction in food rations distributed by World Food Programme (WFP) and UNHCR to refugee households, delays in food distribution, sale of the received food rations and weather vagaries.

However, generally food security among new nationals and refugees was high, but it varied by type of household and across districts. Overall, over 94% of the households among new nationals and refugees consumed at least 2 meals per day on average. The proportion of households that had at least 3 meals per day on average was 43% for new nationals, about 49% for women refugees and about 46% among mixed refugee groups. While majority (over 57%) of households for each group in the districts of Obongi and Moyo consumed at least 3 meals per day, over 60% of the households for each group in Adjuman district had 2 meals per day on average. While slightly more female headed households had at least 3 meals per day than the male headed households, there was no significant variation in the proportion of households that consumed at least 3 meals per day across different household head age groups.

Indicators at Output Level

Cumulative percentage pf participating HHs adopting additional CSA practices

This indicator was not included in the baseline study but will be included in the upcoming adoption study.

Cumulative percentage increase in average yields per acre for strategic crops

While households in the National farmer groups in Adjuman and Moyo district planted all the 5 strategic crops including Sesame, beans, maize, Soyabeans and Rice, Obongi district was not growing soybeans and rice. Only one household planted sunflower in Adjuman and Obongi districts. Women refugee households in Obong district and mixed refugee households in both Adjuman and Obong districts grew only 3 strategic crops including sesame, beans, and maize while the women refugee groups in adjuman planted only sesame and maize as strategic crops.

The yield per acre for the strategic crops varied across districts. For national farmers in the three districts, crop yield variation was as follows in kgs per acre: Sesame (182 to 216), beans (268 to 342), maize (426 to 522), Soyabeans (313 to 380), sunflower (167 to 1040) and Rice (748 to 1010). The variation of crops yield (kgs) per acre among refugees across districts was sesame (320 to 816), beans (306 to 667), and maize (776 to 1081).

Cumulative percentage of the quantity of strategic crops harvest that is sold

The percentage of the strategic crops produced varied according to type of strategic crop. About 50% of the strategic crops including sesame, beans and maize were marketed by all the three groups while 66-88% of the crops namely soyabeans, rice and sunflower were sold by national farmers to generate household income. Slight variation in the percentage of crops sold was observed across districts.

Marketplaces (66%), friends and relatives (40%), and Radio (18%) were reported as the main sources of crop produce marketing information. The main challenges reported by the groups in marketing their agricultural produce included high transport costs, poor roads, price fluctuations, absence of bulk buyers and high market dues charged on farmers. This was mainly due to selling of their produce individually and collective selling of produce being associated with only a few crops.

Additional assessment at outcome level

Production assets

Households for Nationals had a wide range of production assets in 2019 valued at an average of UGX 2,430,000/= for the 3 districts combined. No major variations were observed across the districts (UGX2,350,000 for Adjumani, UGX2,360,000 for Moyo and UGX2,820,000 for Obongi). The commonly owned assets were hand-hoes (98%) and a panga (85%). Results show that all households in Adjumani (100%) and nearly all household in Moyo (96.9%) and Obongi (96.2%) had a hand-hoe. More households in Adjumani (23%) and Moyo (about 18%) reportedly had Ox-plough and Oxen than Obongi district (8%) in 2019. The least owned assets include motorcycle, spray pump and sheep

Average value of crop production

Wide variation in the average total value of strategic crops across type of household group was observed with UGX552,523 for new nationals, UGX246,894 for mixed refugee groups and UGX178,275 for women refugee groups. This was mainly due the fact that new nationals grow more strategic crops (6 crops) than the refugee groups (only 3 crops). While refugee households in Obongi district had higher average value of crop production than those in Adjumani districts,

new national households in Moyo district registered the highest average crop production value (UGx638,573) and Obongi district had the least average value of crop production (UGx 399,265). The average crop production for national households in Adjumani was UGx 547,449.

Indicators at output level

Household participation in VSLA

In 2019, nearly all households for Nationals (94%) participated in VSLA activities and over 90% of these received training on VSLA. According to district, 97% of the national households in Adjumani, 94% in Moyo and 85% in Obongi participated in VSLA in 2019. Active members of VSLA saved and borrowed money from the VSLA. Over all households borrowed UGx 278,750/= on average from VSLA. The money borrowed from VSLA was reportedly used in agricultural production (65%), petty trade (57%), buying school requirements (59%), construction (54%), acquiring household assets (44%) and paying for health services (41%).

For refugee households, slightly over 60% of women refugee households and mixed refugee households participated in VSLA. Adjumani district had higher proportion of both refugee households (73%) that participated in VSLA activities in 2019 than households in Obongi districts (47.5% and 53.6% respectively). The average amount of money borrowed from VSLA was UGx 183,000/= for women refugee and UGx 172,000/= for mixed refugee households. The results also revealed that refugee household in Adjumani (both women and mixed refugee HHs) borrowed more than twice the amount of money borrowed from VSLA by refugee households in Obongi in 2019. The main reasons provided by women refugee households that did not participate in VSLA included being very busy with other activities, lack of the money for the weekly savings, lack of knowledge about VSLA and not being members of the existing groups.

Knowledge about Sexual and Reproductive Health Rights (SRHR)

Awareness about sexual and reproductive health and rights (SRHR) was nearly universal (97%) in the three districts for the national households. The few national households that did not know about SRHR was due to failure for households to attend SRHR training and lack of access to Radio to listen to SRHR messages. However, there was low utilization of family planning, only 35% of the national households had ever used any modern family planning (FP) method. Low FP

utilization was due to households fearing of side effects, regularly using of traditional methods of birth spacing and existence of high cost of modern FP methods.

Awareness about SRHR was also very high among refugee households. Over 96% of women refugee and mixed refugee households had heard about SRHR. But modern family planning (FP) utilization was extremely low. Only 26% of women refugee HHs and 23% of mixed refugee HHs had reported ever used a modern Family Planning method.

Assessment of other indicators

Access to production land

Generally, the new national households cultivated 2.8 acres on average in 2019. The district of Moyo had the biggest acreage cultivated by new national households and the least acreage of cultivated land for new nationals was 2.4 in a Obongi district. Adjumani district had an average of 2.8 acres of land cultivated. Almost all the new national households (93%) in the 3 districts cultivated family-owned land.

Refugee HHs had limited access to land for agricultural production in 2019. Assessment results show that the mean acreage of land cultivated per refugee household was less than an acre. The largest mean acreage cultivated was 0.67 acres among mixed refugee households and 0.61 acres among women refugee households in Adjumani district. In Obongi district, the mean acreage of land cultivated by women refugee households was 0.43 acres while mixed refugee households reported 0.56 acres as land cultivated. The land cultivated by refugees was mostly obtained through allocation by the Office of the Prime Minister (88%).

Use of agro-improved inputs

In all the three districts, it was observed that use of improved agricultural input in 2019 was high (69%) among the new national farmers. Utilization of improved agricultural input across districts was 72% in Adjuman district, 71% in Moyo district and Obogi district had the least prevalence of 59%. The most used improved inputs among national farmers households included livestock drugs (73%), tools (66%), pesticides (54%) and vegetable seeds (46%).

Notable proportions of refugee households used improved agricultural inputs for production in 2019. Results show that more than half (59%) of the mixed refugee households and 56% of women refugee households used improved agricultural inputs in 2019. More refugee households in Obongi (over 65%) than Adjumani (43% for women, 53% for mixed) used improved agricultural inputs in 2019.

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

Geographically, NURI covers 11 districts in the West Nile and Acholi Sub Regions of Northern Uganda. The districts are Agago, Kitgum and Lamwo in Acholi sub region; Arua, Pakwach, Nebbi, Zombo and Madi-Okollo in South West-Nile as well as Moyo, Obongi and Adjumani in North West-Nile sub region. Besides targeting nationals in these districts, NURI works with refugee settlements within some of the selected districts. The 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.

The implementation of NURI CSA activities kicked off and the process of building the NURI M&E system is moving hand in hand with the take off in the implementation process. One of the key tasks in the M&E system is to conduct a baseline study in the areas of implementation. Since the implementation in North West Nile started later than other districts, NURI conducted baseline study in North West Nile between July and August 2020 covering three districts of Adjuman, Moyo and Obongi.

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.

NURI Target groups

NURI will support farmer households divided up in different categories: Old national farmer groups, new national farmer groups, mixed groups, and women refugee groups. For the baseline study, the target respondents were selected from the new national groups, mixed farmer groups and women refugee groups. The old groups were not included in the baseline study since they were targeted in a survey was conducted in 2017 under RDNUC (DAR3 & RALNUC3).

Old National farmer groups refer to the farmer groups that were supported under RDNUC but will continue to receive support under NURI.

New National farmer groups refer to farmers who have not received any support from Danida in the previous RDNUC programme.

Mixed groups refer to farmer groups that have both new nationals and refugees working together. The level of engagement with these group types is the same as with new national farmers.

Women refugee groups refer to an only refugee women group.

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 to primarily provide the baseline values for the NURI intervention performance indicators as per the programme 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.

The baseline study was primarily intended to.

- i. To collect data on 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 study was carried out in 4 districts in the West Nile in Northern Uganda where NURI programme is being implemented. The districts included Adjuman, Moyo and Obongi. Eleven sub-counties from the 3 districts participated in the study (see the table below for details)

Table 1: Sub-counties, villages and refugee settlements covered in this baseline

DISTRICT	SUB-COUNTY	REFUGEE SETTLEMENTS
ADJUMANI	ARINYAPI	MAAJI
	ITIRIKWA	MUNGULA
	PACHARA	
	PAKELE	
	UKUSIJONI	
MOYO	LAROPI	
	LEFORI	
	METU	
OBONGI	GIMARA	PALORINYA
	PALORINYA	
	ITULA	

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: NURI 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 farmers participating in the implementation of the NURI activities under output 1 of the programme (Climate Smart Agriculture). Specifically, the targeted respondents were farmer groups participating in the NURI programme as new national farmers, mixed refugee, and women refugee groups (that have not received support from any DANIDA programme).

New National farmers

A multistage sampling technique was employed in the selection of the study respondents. For each of the 3 study districts, sub-counties were divided into three distinct categories as high, medium, and low, based on their agricultural production performance due to difference in agro-ecology and land holdings. In Adjumani, two sub-counties were randomly selected using the goldfish method

from the category of high and medium while one sub-county was randomly done from the low performance category. In Moyo, two sub-counties were randomly selected using the same method from the high production categorization and one from each of the other two categorizations giving a total of four. Obongi district was newly carved out of Moyo and had a total of three sub-counties, all the three sub-counties were purposely selected for the study. In terms sampling within the selected sub-counties, two parishes were randomly selected using a gold fish method, giving Adjumani a total of 10 parishes, 8 in Moyo and 6 Obongi.

A list of households/farmer groups for new national farmers was compiled as a sampling frame for each selected parish and a simple random technique of lottery method was used to randomly obtain 12 respondents from each selected parish. A total of 302 respondents for the new national group participated in the study.

Refugee households (mixed and women refugee groups)

In the settlements, administrative units are broken down into zones, blocks and villages as the smallest unit. The target groups are settled in villages which will be the smallest unit of sample selection. It is not possible to categorize the settlements in terms of production potential as is done with sub-counties where the national farmer groups are located (low, medium & high). Therefore, settlements in the two districts will all be in the sample and every zone/block and village had an equal chance of being included in the study sample.

In Palorinya, all three zones included in NURI activities were included in the sample. From each zone, 2 blocks were selected and from each block, 4 villages were selected randomly. This gives a total of 6 blocks, 2 from each zone and 12 villages, 2 from each block.

In Mungula and Maaji, 3 zones were randomly selected for the study. One block was selected from each zone and from each block two villages were selected. This gives a total of 6 zones for both Mungula and Maaji, 6 blocks and 12 villages.

Key Informant Interviews

Purposive sampling was used to select the respondents based on the roles they played in the respective DLGs and LLGs.

Focus Group Discussions

Using the farmer group lists as the sampling frame, farmer groups for focus group discussions were selected using simple random sampling method. Caution was observed such that groups selected for FGD were not involved in the household interviews.

2.4 Data collection and quality control

Data collection was conducted between 13th and 24th July 2020 through quantitative and qualitative methods.

Structured interviewing: Structured direct interviews were carried out with new nationals, mixed refugees and women refugees who were participating in implementation of NURI activities. Individual questionnaire was developed and used to collect data from each of the afore-mentioned category of respondents. 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 individuals among their field workers in each 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. Both univariate and bivariate analysis were performed to provide the required baseline values with the necessary disaggregation.

2.6 Limitation of the study

The study had limitations in the sample size which can be considered smaller that it should have been. Because of time & cost constraints, it was decided that smaller but in-depth analysis of farmer households could be appropriate. The survey should have used probability proportional to size sampling which could have given higher numbers in the mentioned districts. The sample size achieved was based on production characteristics of the different sub-counties in the district, total number of farmer groups in a district, the size & number of sub-counties of outreach within a district.

Even though the sample size is smaller, the study findings are reliable for two reasons; the farmer communities are homogenous and evenly spread out within the sub-counties and production categorization (high, medium & low) of the districts has been represented. The results may not necessarily depend on large numbers but on the similarity in production patterns & other characteristics.

3.0 RESULTS

3.1 DEMOGRAPHIC CHARACTERISTICS

Socio-demographic characteristics such as gender, age, and education of especially the household head have an influence on how individuals appreciate support interventions.

In this section, benchmark data on the socio-demographic characteristics of Nationals and the Refugees in the Farmer Groups targeted by the Project are presented.

3.1.1 Demographic characteristics of Nationals in Farmers' Groups

In all the three districts, more than half of Nationals who participated in the baseline were female (58.6%), aged between 25-44 years, with at least Primary level education (91%). Less than 10% had no formal education and the majority (61.5%) had attained primary level education. A notable proportion of the surveyed households (HHs) were either headed or managed by females (21.6%), male headed HHs were 76.7% while 1.7% were child headed (see Table 3).

Table 3: Demographics of Nationals in the Baseline

Characteristic		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Sex of respondent	Male	73	48.7	30	32.3	19	36.5	122	41.4
	Female	77	51.3	63	67.7	33	63.5	173	58.6
Age of respondent	<25	16	10.7	7	7.2	5	9.4	28	9.3
	25-34	51	34.0	40	41.2	20	37.7	111	37.0
	35-44	46	30.7	19	19.6	14	26.4	79	26.3
	45-54	22	14.7	19	19.6	9	17.0	50	16.7
	55-64	13	8.7	9	9.3	4	7.5	26	8.7
	65+	2	1.3	3	3.1	1	1.9	6	2.0
Highest level of education for the respondent	No formal education Attended	13	8.6	7	7.2	7	13.2	27	9.0
	Lower level primary (P.1 – P.4)	47	31.1	18	18.6	12	22.6	77	25.6
	Upper level primary (P.5 – P.7)	60	39.7	35	36.1	13	24.5	108	35.9
	Attended O-level (S1-S4)	30	19.9	28	28.9	16	30.2	74	24.6
	Attended A-level (S5-S6)	0	0.0	0	0.0	2	3.8	2	0.7
	Tertiary Institution	1	0.7	8	8.2	2	3.8	11	3.7
	University Education	0	0.0	1	1.0	1	1.9	2	0.7
Respondent main occupation	Business	11	7.3	4	4.1	6	11.3	21	7.0
	Civil Servant	1	0.7	7	7.1	3	5.7	11	3.6
	Farming	139	92.1	87	88.8	44	83.0	270	89.4
Category of household	Male headed	115	76.7	73	74.5	43	81.1	231	76.7
	Female headed	19	12.7	21	21.4	9	17.0	49	16.3
	Female managed	12	8.0	3	3.1	1	1.9	16	5.3
	Male child managed	4	2.7	1	1.0	0	0.0	5	1.7
	<25	8	5.3	4	4.1	1	1.9	13	4.3

Characteristic		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Age of household head	25-34	47	31.1	29	29.9	16	30.8	92	30.7
	35-44	44	29.1	21	21.6	16	30.8	81	27.0
	45-54	30	19.9	25	25.8	6	11.5	61	20.3
	55-64	19	12.6	13	13.4	8	15.4	40	13.3
	65+	3	2.0	5	5.2	5	9.6	13	4.3

3.1.2 Demographic characteristics of surveyed Refugees

A total of 234 refugees, from mostly female headed HHs and aged between 25 – 44 years were covered. Results show that among the women refugee HHs, slightly over half (59.8%) of respondents were from female headed HHs while among mixed refugee HHs, about half (49.1%) the respondents were drawn from female headed HHs. Over half the respondents had at least primary level education. But respondents with no formal education were notable mostly found in women refugee HHs (23.8%) compared to 17.1% from mixed refugee HHs. Notable proportions had also attained O-level as highest level of education (27.9% for mixed and 15.6% for women refugee HHs respectively) but few had attained tertiary or A-level (see Table 4).

Table 4: Demographics of the Refugees at Baseline

		Women Refugee Households						Mixed Refugee Households					
		ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Sex of respondent	Male	0	0.0	0	0.0	0	0.0	15	27.8	21	37.5	36	32.7
	Female	60	100	59	100	119	100	39	72.2	35	62.5	74	67.3
Age of respondent	<25	3	5.0	12	19.4	15	12.3	9	16.4	7	12.3	16	14.3
	25-34	24	40.0	18	29.0	42	34.4	14	25.5	17	29.8	31	27.7
	35-44	17	28.3	18	29.0	35	28.7	13	23.6	17	29.8	30	26.8
	45-54	8	13.3	8	12.9	16	13.1	15	27.3	12	21.1	27	24.1
	55-64	5	8.3	5	8.1	10	8.2	3	5.5	3	5.3	6	5.4
	65+	3	5.0	1	1.6	4	3.3	1	1.8	1	1.8	2	1.8
Highest level of education attained	No formal education	16	26.7	13	21.0	29	23.8	9	16.4	10	17.9	19	17.1
	Lower primary education (P.1 – P.4)	6	10.0	13	21.0	19	15.6	14	25.5	14	25.0	28	25.2
	Upper primary education (P.5 – P.7)	26	43.3	28	45.2	54	44.3	16	29.1	11	19.6	27	24.3
	O-level (S1-S4)	11	18.3	8	12.9	19	15.6	13	23.6	18	32.1	31	27.9
	A-level (S5-S6)	0	0.0	0	0.0	0	0.0	1	1.8	0	0.0	1	0.9
	Tertiary Institution	1	1.7	0	0.0	1	0.8	2	3.6	3	5.4	5	4.5
Respondent main occupation	Business	24	40.0	3	4.8	27	22.1	14	25.5	0	0.0	14	12.5
	Farming	36	60.0	59	95.2	95	77.9	38	69.1	57	100	95	84.8
	Student	0	0.0	0	0.0	0	0.0	3	5.5	0	0.0	3	2.7
Category of household	Male Headed	18	30.0	31	50.0	49	40.2	25	45.5	32	56.1	57	50.9
	Female Headed	42	70.0	31	50.0	73	59.8	30	54.5	25	43.9	55	49.1

		Women Refugee Households						Mixed Refugee Households					
		ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Age in years of household head	18-28	3	5.0	13	21.0	16	13.1	9	16.4	6	10.5	15	13.4
	29-38	30	50.0	22	35.5	52	42.6	15	27.3	25	43.9	40	35.7
	39-48	15	25.0	11	17.7	26	21.3	13	23.6	16	28.1	29	25.9
	49-58	6	10.0	9	14.5	15	12.3	14	25.5	8	14.0	22	19.6
	59+	6	10.0	7	11.3	13	10.7	4	7.3	2	3.5	6	5.4

3.2 BASELINE INDICATORS FOR NATIONALS

3.2.1 Household Income

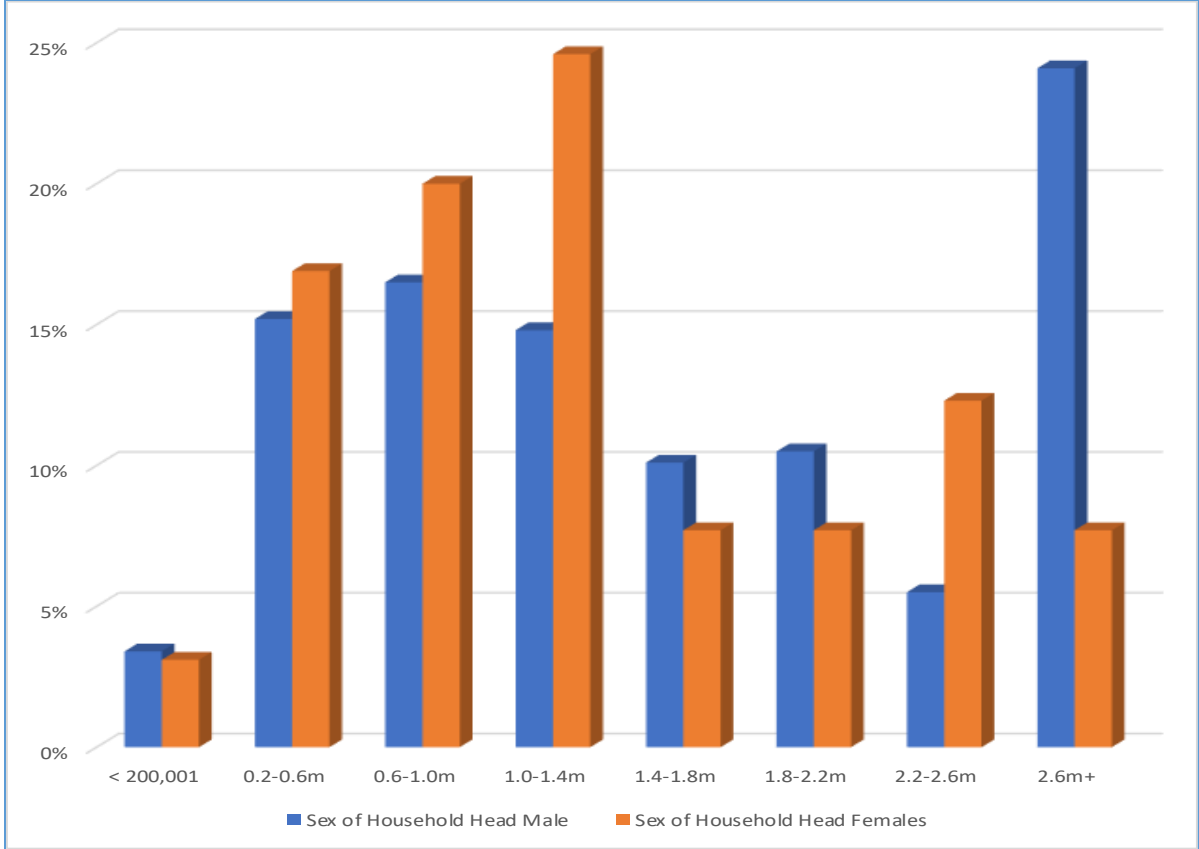
Using 2019 as the base year, this baseline sought to establish the different sources of income for the targeted HHs, the most reliable source of income and money earned from each source. Results show that HHs for Nationals earned their income from both agricultural and non-agricultural sources. The average total HH income from all sources was UGx 2,280,000/= with Obongi district reporting the highest at UGx 3,620,000/= followed by Adjumani at UGx 2,050,000/= while Moyo had the least at UGx 1,900,000/=. In 2019, although overall income earned by nationals was higher from Non-agricultural sources than agricultural sources, the districts of Adjumani and Moyo earned most of their income from agricultural sources compared to non-agricultural sources. For instance, the average income from agricultural sources was UGx 1,231,102/= in Adjumani compared to UGx 822,093/= from non-agricultural sources. In Moyo, both agriculture and non-agricultural sources contributed nearly equal amounts, but in Obongi non-agricultural sources tripped the incomes earned from agricultural sources (See Table 5).

Table 5: Average Total HH Income and the Sources for Nationals in 2019

UGx		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Levels of HH income	< 200,001	3	2.0	2	2.0	5	9.4	10	3.3
	200,001-600,000	22	14.6	13	13.3	12	22.6	47	15.6
	600,001-1,000,000	26	17.2	19	19.4	7	13.2	52	17.2
	1,000,001-1,400,000	24	15.9	21	21.4	6	11.3	51	16.9
	1,400,001-1,800,000	16	10.6	9	9.2	4	7.5	29	9.6
	1,800,001-2,200,000	17	11.3	10	10.2	3	5.7	30	9.9
	2,200,001-2,600,000	10	6.6	7	7.1	4	7.5	21	7.0
	2,600,001+	33	21.9	17	17.3	12	22.6	62	20.5
Average total HH income		2,050,000		1,900,000		3,620,000		2,280,000	
Agric. related HH income in 2019	< 200,001	14	9.3	14	14.3	7	13.2	35	11.6
	200,001-600,000	49	32.5	25	25.5	27	50.9	101	33.4
	600,001-1,000,000	30	19.9	31	31.6	7	13.2	68	22.5
	1,000,001-1,400,000	22	14.6	13	13.3	2	3.8	37	12.3
	1,400,001-1,800,000	6	4.0	5	5.1	4	7.5	15	5.0
	1,800,001-2,200,000	9	6.0	2	2.0	2	3.8	13	4.3
	2,200,001-2,600,000	5	3.3	2	2.0	2	3.8	9	3.0
	2,600,001+	16	10.6	6	6.1	2	3.8	24	7.9
	Average/mean		1,231,102		985,614		820,262		1,079,340
Non-agric. related HH income in 2019	< 200,001	48	31.8	30	30.6	19	35.8	97	32.1
	200,001-600,000	46	30.5	31	31.6	13	24.5	90	29.8
	600,001-1,000,000	16	10.6	14	14.3	6	11.3	36	11.9
	1,000,001-1,400,000	14	9.3	3	3.1	4	7.5	21	7.0
	1,400,001-1,800,000	5	3.3	5	5.1	2	3.8	12	4.0
	1,800,001-2,200,000	9	6.0	8	8.2	1	1.9	18	6.0
	2,200,001-2,600,000	4	2.6	2	2.0	1	1.9	7	2.3
	2,600,001+	9	6.0	5	5.1	7	13.2	21	7.0
	Average/mean		822,093		916,918		2,803,226		1,200,546

Disaggregation of income by gender revealed that higher average total HH incomes were mostly reported by male headed as opposed to female headed HHs. As can be seen in Figure 1 below, it was mostly male headed HHs that earned more than UGx 2.6 million (24.1%) compared to female headed HHs (7.7%). The bigger proportions of female headed HHs earned between UGx 200,000/= and UGx 1.4 million.

Figure 1: Gender disaggregation of average total HH income earned



Regarding age of HH head, results show no major variations, nearly all HH heads irrespective of age earned between UGx 200,000 – 2.2 million. Fewer HH heads reported either earning less than UGx 200,000/= or more than UGx 2.2 million (see Table 6).

Table 6: Disaggregation of average total HH income by age of HH Head

Average total HH Income in UG shillings	Age of Household Head (in completed years)					
	<25 (%)	25-34 (%)	35-44 (%)	45-54 (%)	55-64 (%)	65+ (%)
< 200,001	8.0	2.0	5.0	2.0	5.0	0.0
200,001-600,000	15.0	13.0	12.0	18.0	23.0	23.0
600,001-1,000,000	31.0	21.0	7.0	21.0	18.0	23.0
1,000,001-1,400,000	23.0	17.0	24.0	16.0	3.0	8.0
1,400,001-1,800,000	8.0	5.0	14.0	10.0	13.0	8.0
1,800,001-2,200,000	15.0	13.0	7.0	7.0	5.0	31.0
2,200,001-2,600,000	0.0	7.0	10.0	7.0	8.0	0.0
2,600,001+	0.0	22.0	21.0	20.0	28.0	8.0

About reliability of sources income, ranking of all the agricultural sources of income reported in 2019 revealed majority (over 58%) of the HHs reported sale of crop produce as the most reliable. Other sources considered among the most reliable include sale of animals (34.5%), interest from VSLA savings (29.2%) and sale of vegetables (26%). Across districts, slight variations were observed in the ranking, for instance, Nationals in Adjumani ranked sale of crop produce highest (51.2%) followed by sale of animals (39.1%) while interest from VSLA savings (37%) was ranked third. In Moyo, it was sale of vegetables that came second to sale of crop produce while in Obongi, it was interest from VSLA savings that came second to sale of crop produce (see Table 7).

Table 7: Most reliable source of agricultural related HH income for Nationals in 2019

Most reliable source	ADJUMANI		MOYO		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Sale of crop produce	65	51.2	58	69.0	27	61.4	150	58.8
Sale of vegetables	17	22.7	14	33.3	2	20.0	33	26.0
Sale of animals	18	39.1	13	31.0	9	32.1	40	34.5
Sale of poultry	4	9.5	7	24.1	4	25.0	15	17.2
Sale of or hire of land	0	0.0	0	0.0	0	0.0	0	0.0
Hire of oxen and Ox-plough	3	17.6	1	25.0	0	0.0	4	18.2
Interest from VSLA savings	44	37.3	5	9.3	8	34.8	57	29.2

Sale of crop produce was considered the most reliable source of income in 2019 because HHs had surplus production, they planted crops with a short maturity period (*such as vegetables*) and the demand was readily available and high. It was further explained that accessing market for crop produce is not complex.

Crops have ready market, less efforts needed in production... The demand for crop produce was high and they did not take long to mature... Crop produce were in surplus and the demand was high (New national farmers).

Similar explanations were given to support choice of sale of animals as the most reliable source of income. Respondents acknowledged that looking for market for an animal is very easy and they can be sold at any time of the year.

It is easy to sell animals, it is a reliable source of income because looking for the market is not very difficult especially within the village...there is a ready market for pigs (New national farmers).

3.2.2 Food security

This baseline study adopted number of meals eaten in a day as a proxy measure for food security or insecurity. In documenting number of meals eaten at HH level per day, consideration was made for breakfast, lunch, and supper. Households that reported having all the above or even more were all classified as having three (3+) meals per day. Based on the above measure, results show that at baseline, majority (94%) of HHs for Nationals were food secure, eating either 2 meals (51.2%) or 3+ meals (43.2%) per day. Only 17 HHs of the 302 (5.6%) surveyed reported eating 1 meal in a day, most of whom found in Adjumani (16) and 1 HH in Obongi. Nearly three quarters (73.1%) of HHs in Obongi and 61.2% in Moyo ate at least 3 meals compared to Adjumani (21.2%). For Adjumani, majority ate 2 meals (68.2%). However, the months of the year in which HHs ate at least 3 meals varied, only 9% of all HHs surveyed consumed 3+ meals all year round, 12% had 3+ meals for 11 months, 11% for 10 months. For others (16%), the number of months in which HHs consumed 3+ meals ranged between 4-9 months (see Table 8).

Table 8: Food Security among HHs of Nationals in 2019

		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Average number of meals consumed per day	1	16	10.6	0	0.0	1	1.9	17	5.6
	2	103	68.2	38	38.8	13	25.0	154	51.2
	3+	32	21.2	60	61.2	38	73.1	130	43.2
HHs that had 3+ meals all year round									
0		114	76	33	34	11	21	158	52
1		0	0	1	1	0	0	1	0
3		0	0	1	1	0	0	1	0
4		3	2	3	3	1	2	7	2
5		0	0	0	0	3	6	3	1
6		1	1	1	1	0	0	2	1
7		2	1	3	3	0	0	5	2
8		4	3	4	4	1	2	9	3
9		6	4	6	6	8	15	20	7
10		9	6	16	16	8	15	33	11
11		5	3	18	18	12	23	35	12
12		7	5	12	12	9	17	28	9

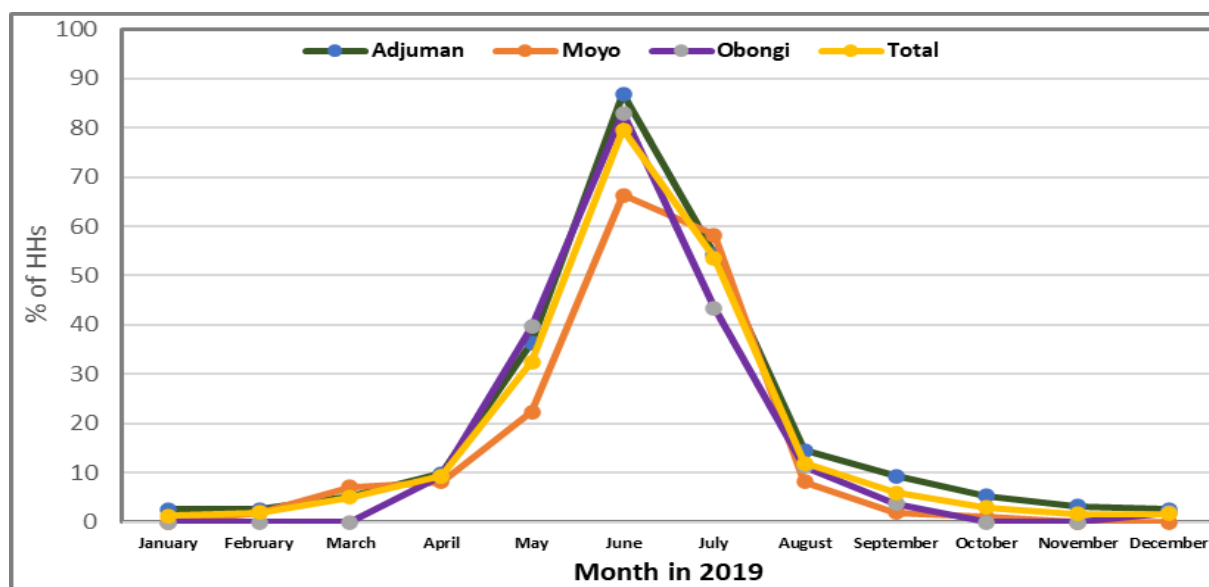
Disaggregation of data by sex and age of HH head reveals small variations; more HHs consumed 2 meals. For instance, the bigger proportions of both male-headed and female headed HHs consumed 2 meals i.e., 52.5% and 46.2% respectively. Similarly, irrespective of the age of the HH head, bigger proportions consumed 2 meals (see Table 9).

Table 9: Number of meals consumed by HHs during 2019 by gender and age of HH head

		Sex of Household Head				Age of Household Head (in completed years)											
		Male		Female		<25		25-34		35-44		45-54		55-64		65+	
		(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%
Average no. of meals consumed per day	1	12	5.1	5	7.7	2	15.4	7	7.6	5	6.2	2	3.3	1	2.6	0	0.0
	2	124	52.5	30	46.2	8	61.5	44	47.8	39	48.1	35	57.4	21	53.8	7	53.8
	3+	100	42.4	30	46.2	3	23.1	41	44.6	37	45.7	24	39.3	17	43.6	6	46.2

The months of May, June and July is when most HHs experienced food shortage. In all the 3 districts of Adjumani, Moyo and Obongi, notable proportions reported experiencing food shortage in those 3 months of 2019 with the climax in June. For instance, food shortage in May 2019, across all districts was in 33% of HHs but the proportion rose to about 80% in June 2019, dropping later (in July) to 53%. HHs in Adjumani and Obongi suffered most with figures rising to over 80% in June (see Figure 2).

Figure 2: Percentage of HHs for nationals that experienced food shortage in each month, 2019



Some of the respondents associated the shortage in food with bad weather, particularly heavy rains which apparently destroyed crops like cassava, poor post-harvest planning and handling, as well as high cost of produce in the markets. In several HHs, respondents acknowledged selling off a lot of produce from the previous season; the food kept for home consumption unexpectedly did not last up to the time of harvest for the subsequent season. Others planted late which resulted in having no food crops ready for harvesting by June.

Preparation of fields to plant for the season delayed...Crops are not yet ready for harvesting by June...the saved food got finished before June and July...high prices of food stuffs in the market (New national farmers).

Causes of food shortage cited were similar in all FGDs held with the various farmers groups in the three districts namely selling off too much produce, heavy rains, poor soils and cultivation of small pieces of land.

We sold off our produce because we needed to pay school fees or loans from VSLAs, but this year has been okay, because of the lockdown, we did not have demands for school fees, so never sold off too much of our produce (FGD with Anzoa Farmers Group, Pakelle S/C, Adjumani).

We had heavy rains, our gardens became waterlogged which destroyed our crops...our cassava was affected, it rotted from the gardens because of the prolonged rains (FGD with Lemeriwara Farmers Group, Gimara S/C, Obongi).

We had many stray animals from the neighboring parishes that destroyed our crops...heavy rains and hippos from River Nile destroyed our crops (FGD with Ujekogwe Youth Farmers Group, Laropi S/C, Moyo).

Food shortage was because of poor soil fertility, this land does not favor cassava production anymore...reliance of traditional farming techniques led to low production (FGD with Amasiku Farmers Group, Metu S/C, Moyo).

We experienced food shortage because we cultivate small pieces of land and we use traditional farming practices (FGD with Anzoa Farmers Group, Pakelle S/C, Adjumani).

To cope with food shortage HH devised various measures including burning charcoal, collecting firewood for sale and fishing.

We had to resort to charcoal, we sold charcoal to get money for buying food...for me, I sold firewood (FGD with Lemeriwara Farmers Group, Gimara S/C, Obongi).

Some farmers resorted to fishing to earn some money they could use to buy food...some households were hiring out ox-ploughs (FGD with Obikitri Farmers Group, Itula S/C, Obongi).

3.2.3 Availability of Production Assets

Households for new Nationals had a wide range of production assets in 2019 valued at an average of UGX 2,430,000/= for the 3 districts combined. No major variations were observed across the districts and the commonly owned assets were hand-hoes (98%) and a panga (85%). Results show that all HHs in Adjumani and nearly all in Moyo (96.9%) and Obongi (96.2%) had a hand-hoe. Variations were mostly observed with Ox-plough and Oxen; these were more common in Adjumani and Moyo than Obongi. In Obongi only 7.5% of HHs had an Ox-plough and Oxen respectively in 2019.

Other production assets reported in notable proportions included phones, poultry and goats cited available in 70.9%, 65.9% and 63.9% of HHs, respectively. However, the three districts were not at the same level, Moyo and Obongi had more HHs with these assets compared to Adjumani. For instance, telephones were available in 58.9% of HHs in Adjumani compared to 84.7% in Moyo and 79.2% in Obongi. Similarly, Poultry was available in 58.9% HHs in Adjumani compared to 81.1% in Obongi. A few HHs also had Radios, bicycles, and motorcycles. The least available production assets were Spray pumps and Sheep. Only 8.9% of HHs had Spray Pumps in the three districts i.e., 11.2% in Moyo, 7.9% in Adjumani and 7.5% in Obongi (See Table 10).

Table 10: Production Assets available to HHs for Nationals in 2019

	ADJUMANI		MOYO		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Hand Hoe	151	100.0	95	96.9	51	96.2	297	98.3
Panga	118	78.1	89	90.8	49	92.5	256	84.8
Ox-plough	36	23.8	18	18.4	4	7.5	58	19.2
Spray pump	12	7.9	11	11.2	4	7.5	27	8.9
Bicycle	44	29.1	28	28.6	20	37.7	92	30.5
Motorcycle	18	11.9	8	8.2	6	11.3	32	10.6
Radio	59	39.1	59	60.2	29	54.7	147	48.7
Telephone	89	58.9	83	84.7	42	79.2	214	70.9
Oxen	36	23.8	16	16.3	4	7.5	56	18.5
Other cattle	51	33.8	33	33.7	20	37.7	104	34.4
Goat	84	55.6	70	71.4	39	73.6	193	63.9
Sheep	10	6.6	9	9.2	3	5.7	22	7.3
Pig	22	14.6	38	38.8	2	3.8	62	20.5
Poultry	89	58.9	67	68.4	43	81.1	199	65.9
Other	69	45.7	59	60.2	35	66.0	163	54.0
Average total value	2,350,000		2,360,000		2,820,000		2,430,000	

About mode of acquisition of production assets, results show that across all districts, nearly all HHs purchased the production assets themselves. Apart from Ox-ploughs, Oxen and Poultry, less

than 5% of HHs had been supported to acquire the production assets they had. This means that over 95% of HHs for Nationals used their own resources to purchase the production assets they possessed in 2019 (see Table 11).

Table 11: Mode of acquisition of the production assets by HHs of Nationals

Mode of Acquisition of Asset		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Hand Hoe	HH purchased	149	98.7	94	98.9	51	100.0	294	99.0
	Others	2	1.3	1	1.1	0	0.0	3	1.0
Panga	HH purchased	115	98.3	87	97.8	47	95.9	249	97.6
	Others	2	1.7	2	2.2	2	4.1	6	2.4
Ox-plough	HH purchased	32	91.4	14	82.4	4	100.0	50	89.3
	Others	3	8.6	3	17.6	0	0.0	6	10.7
Spray pump	HH purchased	10	83.3	10	90.9	4	100.0	24	88.9
	Others	2	16.7	1	9.1	0	0.0	3	11.1
Bicycle	HH purchased	42	97.7	28	100.0	20	100.0	90	98.9
	Others	1	2.3	0	0.0	0	0.0	1	1.1
Motorcycle	HH purchased	17	94.4	8	100.0	6	100.0	31	96.9
	Others	1	5.6	0	0.0	0	0.0	1	3.1
Radio	HH purchased	58	98.3	58	100.0	29	100.0	145	99.3
	Others	1	1.7	0	0.0	0	0.0	1	0.7
Telephone	HH purchased	85	96.6	82	100.0	42	100.0	209	98.6
	Others	3	3.4	0	0.0	0	0.0	3	1.4
Oxen	HH purchased	26	81.2	13	81.2	3	75.0	42	80.8
	Others	6	18.8	3	18.8	1	25.0	10	19.2
Other cattle	HH purchased	41	82.0	30	93.8	18	94.7	89	88.1
	Others	9	18.0	2	6.2	1	5.3	12	11.9
Goat	HH purchased	73	88.0	64	98.5	38	100.0	175	94.1
	Others	10	12.0	1	1.5	0	0.0	11	5.9
Sheep	HH purchased	10	100.0	7	100.0	3	100.0	20	100.0
Pig	HH purchased	20	90.9	36	97.3	2	100.0	58	95.1
	Others	2	9.1	1	2.7	0	0.0	3	4.9
Poultry	HH purchased	71	82.6	59	93.7	42	100.0	172	90.1
	Others	15	17.4	4	6.3	0	0.0	19	9.9
Other	HH purchased	66	97.1	55	98.2	33	97.1	154	97.5
	Others	2	2.9	1	1.8	1	2.9	4	2.5

3.2.4 Land Ownership and Preparation Techniques

Access and ownership of land is critical to farmers' groups as it determines production potential. This baseline sought to establish the nature of land ownership and total acreage of land cultivated in 2019 by all Households targeted by NURI to form a benchmark for evaluation of project impact. Results show that most land cultivated by HHs in 2019 is family owned. Ninety-three percent (92.9%) of all HHs owned the land as a family. For 6.9% of the HHs, some of the land (1.7 acres) they cultivated in 2019 had been hired while 5.2% and 1.5% cultivated borrowed and government

land, respectively. Use of communal land was reported only in Adjumani by 2.9% of the HHs (see Table 12).

The mean acreage of land cultivated by HHs across the three districts in 2019 was 2.8 acres. HHs in Moyo and Adjumani cultivated slightly more land than those in Obongi; the mean acreage cultivated in Moyo and Adjumani was 3.0 and 2.9 acres respectively compared to 2.4 acres in Obongi.

In terms of labor to cultivate the land, family and hired labor are the most common in the three districts. More than half the HHs across the three districts used family labor to cultivate the acreage of land they utilized in 2019; i.e. 60.3% in Adjumani, 60.8% in Obongi and 55.2% in Moyo supplementing it with hired labor. The practice of using group rotational labor was nearly non-existent; only 5.4% of HHs in Adjumani and 6.8% in Moyo reported to have used it in 2019. It was only in Obongi where use of group rotational labor was reported by a notable number of HHs i.e. 10.8% (see Table 12).

To open the land in 2019, most HHs used hand-hoes and ox-ploughs for both the first and second tillage. Use of tractors was reported but not very common. For instance, in Adjumani, only 9 HHs used a tractor in 2019, compared to 99 HHs and 82 HHs that used hand-hoes and/or ox-ploughs respectively to open land for cultivation for the 2019 seasons. Similar reports were made in Moyo; for Obongi, none of the HHs used a tractor to open the land; they relied on only hand-hoes and ox-ploughs for both the first and second tillage to cultivate the mean acreage of 2.4 acres (see Table 13).

Table 12: Acreage of land cultivated by HHs of Nationals in 2019 and mode of acquisition

	ADJUMANI			MOYO			OBONGI			Total		
	HHs	Mean acres	Percent (%)	HHs	Mean acres	Percent (%)	HHs	Mean acres	Percent (%)	HHs	Mean acres	Percent (%)
Total acreage of land cultivated by HH in 2019	151	2.9	100.0	97	3.0	99.0	53	2.4	100.0	301	2.8	99.7
Ways of acquiring total land cultivated by HH												
Family owned	131	2.8	90.5	91	2.7	94.7	51	2.2	97.4	273	2.7	92.9
Communal owned	5	4.5	5.5			0.0			0.0	5	4.5	2.9
Hired land	11	1.5	3.9	19	1.6	11.7	3	2.6	6.6	33	1.7	6.9
Borrowed	10	1.6	3.8	10	1.7	6.4	6	1.4	7.4	26	1.6	5.2
Government protected area	4	1.5	1.5	1	6.0	2.3			0.0	5	2.4	1.5
Ways of acquiring labour for cultivating the total acreage of land for HH production in 2019												
Family labour	136	1.9	60.3	89	2.0	55.2	51	1.6	60.8	276	1.9	58.6
Hired labour	83	1.8	33.6	66	2.1	43.3	33	1.4	34.4	182	1.8	37.2
Group rotational labour	20	1.2	5.4	13	1.7	6.8	10	1.5	10.8	43	1.4	6.8

Table 13: Methods used in 2019 by Nationals to open land in preparation for production

	Adjumani				Moyo				Obongi				Total			
	First tillage		Second tillage		First tillage		Second tillage		First tillage		Second tillage		First tillage		Second tillage	
	HHs	Mean acres	HHs	Mean acres	HHs	Mean acres	HHs	Mean acres	HHs	Mean acres	HHs	Mean acres	HHs	Mean acres	HHs	Mean acres
Hand Hoe	99	1.8	139	2.6	59	1.7	78	2.2	48	1.9	46	2.2	206	1.8	263	2.4
Ox-ploughing	82	2.8	18	3.1	69	2.4	37	2.6	14	2.0	6	1.2	165	2.6	61	2.6
Tractor	9	2.8	4	2.0	4	1.7	0	0.0			0	0.0	13	2.5	4	2.0
Total acreage	143	2.8	139	2.8	93	2.9	89	2.8	50	2.4	39	2.3	286	2.7	267	2.7

3.2.5 Access and Use of Improved Agricultural Inputs

Agricultural productivity is greatly influenced by the nature of inputs used by farmers. This baseline sought to establish the proportion of farmers that used improved agricultural inputs, type of inputs used, source and distance to the source. Results show that in 2019, 69% of HHs used an improved agricultural input ranging from crop seeds, fertilizers, pesticides, livestock drugs to tools. Among the three districts, Adjumani and Moyo reported the highest use of improved agricultural inputs at 72% and 71% respectively. This implies that in Adjumani only 28% and 29% in Moyo never used improved inputs. For Obongi, HHs that used improved agricultural inputs was low at just over half (59%) the HHs surveyed; nearly half (41%) never used improved inputs.

Among HHs that used improved inputs, the most cited improved inputs used in 2019 were livestock drugs. As earlier highlighted, animals such as oxen, other cattle, goats, sheep and pigs were available in all the three districts though not in every HH and these require drugs for better performance. Results show that overall, 72.7% of the HHs used livestock drugs in 2019 with the highest number recorded in Moyo district at 84.9% followed by Obongi at 71.4% and 65.5% in Adjumani. Livestock drugs were followed by tools, pesticides, vegetable seeds, crop seeds, cuttings, and vines as well as fertilizers. Use of some of the inputs varied across the three districts with some reporting more use than others. For instance, use of pesticides was significantly higher in Moyo compared to Adjumani and Obongi (see Table 14).

Table 14: Households for Nationals that used improved agricultural inputs in 2019

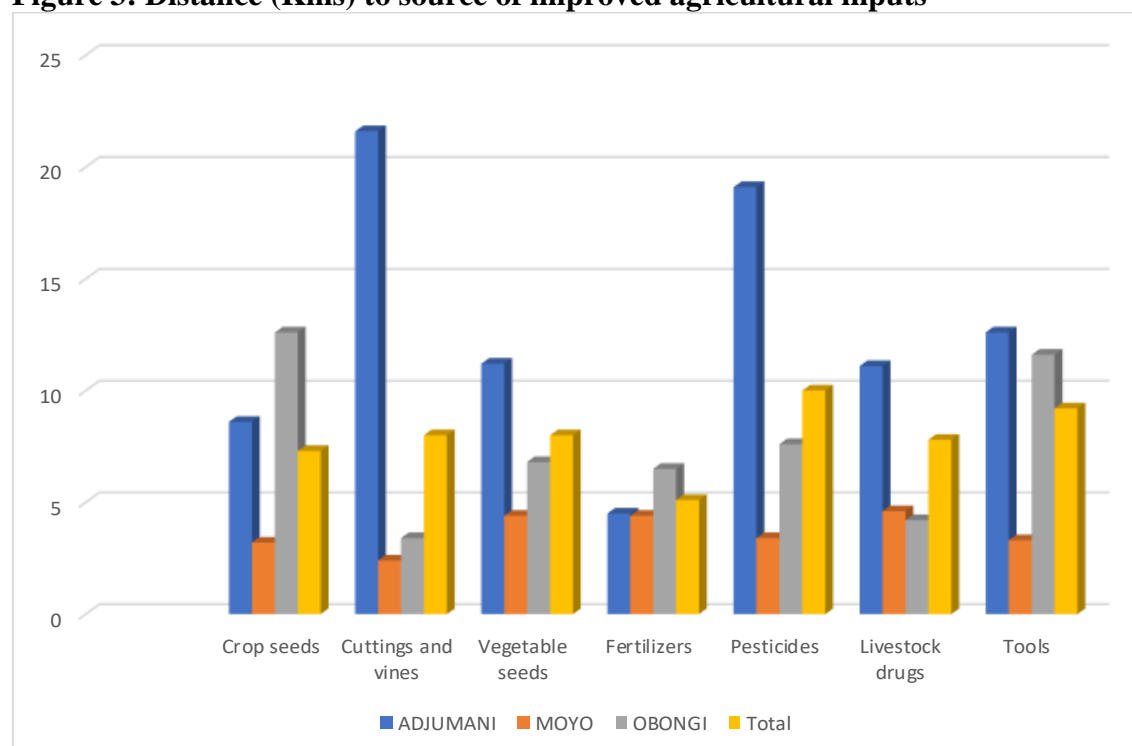
	ADJUMANI		MOYO		OBONGI		Total		
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	
HHs that used improved agricultural input in 2019	108	72	70	71	31	59	209	69	
Type of improved agricultural input used									
Crop seeds	58	39.7	23	24.5	13	28.3	94	32.9	
Cuttings and vines	35	28.2	6	8.5	6	16.2	47	20.3	
Vegetable seeds	53	51.5	32	45.1	6	23.1	91	45.5	
Fertilizers	4	8.0	4	20.0	0	0.0	8	10.1	
Pesticides	25	39.1	30	83.3	6	42.9	61	53.5	
Livestock drugs	55	65.5	45	84.9	20	71.4	120	72.7	
Tools	49	74.2	27	60.0	17	54.8	93	65.5	
Sources of inputs you used									
Crop seeds	Input dealer	37	63.8	17	22.1	9	25.0	63	36.8
	Home saved	11	19.0	48	62.3	18	50.0	77	45.0
	Others	10	17.2	12	15.6	9	25.0	31	18.1
Cuttings and vines	Input dealer	13	36.1	3	6.0	3	11.5	19	17.0
	Home saved	17	47.2	40	80.0	20	76.9	77	68.8
	Others	6	16.7	7	14.0	3	11.5	16	14.3

		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Vegetable seeds	Input dealer	44	83.0	27	47.4	4	23.5	75	59.1
	Home saved	1	1.9	23	40.4	8	47.1	32	25.2
	Others	8	15.1	7	12.3	5	29.4	20	15.7
Fertilizers	Input dealer	2	40.0	5	50.0	0	0.0	7	46.7
	Home saved	1	20.0	4	40.0	0	0.0	5	33.3
	Others	2	40.0	1	10.0	0	0.0	3	20.0
Pesticides	Input dealer	24	96.0	31	100.0	6	100.0	61	98.4
	Others	1	4.0	0	0.0	0	0.0	1	1.6
Livestock drugs	Input dealer	50	89.3	39	90.7	18	94.7	107	90.7
	Home saved	4	7.1	0	0.0	0	0.0	4	3.4
	Others	2	3.6	4	9.3	1	5.3	7	5.9
Tools	Input dealer	49	98.0	16	50.0	12	54.5	77	74.0
	Home saved	1	2.0	3	9.4	3	13.6	7	6.7
	Others	0	0.0	13	40.6	7	31.8	20	19.2

For the 2019 season, some of the farmers obtained their improved agricultural inputs from input dealers while others used the inputs they had saved at home from the previous year. Use of home saved inputs was more common for cuttings and vines cited in 68.8% of HHs across the three districts. Other improved inputs for which HHs used left-overs saved at home included crop seeds (cited by 45% HHs), fertilizers (33.3%) and vegetable seeds (25.2%). The bigger proportion especially for vegetable seeds sourced them from input dealers (59.1%). Results also show that whereas some HHs used home saved fertilizers, nearly half (46.7%) sourced their 2019 stock from input dealers. For the case of pesticides nearly all of them (98.4%) got the 2019 supplies from input dealers. Similarly, 90.7% of HHs that used livestock drugs in 2019, they obtained them from input dealers.

Generally, use of improved inputs in 2019 was notable, although the distance to the source presents a challenge. Results in figure 2 below show that the least distance to an input dealer was 2.4 kms. Some farmers needed to travel as many as 19kms in Adjumani to reach an input dealer for pesticides, and 11kms for livestock drugs and vegetable seeds. Distances to input dealers in Moyo were more reasonable.

Figure 3: Distance (Kms) to source of improved agricultural inputs



Despite the long distances, majority of HHs in the baseline acknowledged that improved agricultural inputs were always available in the dealers' shops within their respective sub-counties. The commonly cited improved input that is always available in the dealers' shops was livestock drugs, closely followed by tools, pesticides, and fertilizers. Vegetable seeds, cuttings and vines, and crop seeds were reported always available by more HHs in Adjumani compared to Moyo and Obongi (see Table 15).

In terms of quality of the inputs, over half the HHs across the three districts rated the various inputs highly. Notable proportions (over 28%) felt the inputs were of moderate quality. Those that felt that the inputs were of low quality were less than 7% and, in some instances, non-existent like in the case of fertilizers and pesticides. See Table 15 for a detailed assessment of the quality of the various inputs available in dealers' shops within the sub-counties targeted by the project.

Table 15: Availability and quality of inputs within project targeted sub-counties

	ADJUMANI		MOYO		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Inputs always available in the shops within the sub county								
Crop seeds	33	75.0	12	31.6	8	53.3	53	54.6
Cuttings and vines	19	86.4	4	25.0	3	75.0	26	61.9
Vegetable seeds	41	80.4	18	42.9	4	50.0	63	62.4
Fertilizers	5	100.0	3	50.0	0	0.0	8	72.7
Pesticides	22	81.5	21	67.7	5	83.3	48	75.0
Livestock drugs	48	87.3	35	81.4	18	94.7	101	86.3
Tools	40	85.1	15	68.2	10	76.9	65	79.3

		ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Rating of quality of inputs									
Crop seeds	High	53	73.6	38	42.7	25	53.2	116	55.8
	Moderate	14	19.4	47	52.8	21	44.7	82	39.4
	Low	5	6.9	4	4.5	1	2.1	10	4.8
Cuttings and vines	High	29	64.4	30	46.9	21	56.8	80	54.8
	Moderate	13	28.9	29	45.3	15	40.5	57	39.0
	Low	3	6.7	5	7.8	1	2.7	9	6.2
Vegetable seeds	High	40	75.5	36	56.2	14	60.9	90	64.3
	Moderate	11	20.8	24	37.5	9	39.1	44	31.4
	Low	2	3.8	4	6.2	0	0.0	6	4.3
Fertilizers	High	3	75.0	4	40.0	0	0.0	7	50.0
	Moderate	1	25.0	6	60.0	0	0.0	7	50.0
Pesticides	High	17	73.9	24	75.0	5	83.3	46	75.4
	Moderate	6	26.1	8	25.0	1	16.7	15	24.6
Livestock drugs	High	42	75.0	40	88.9	15	78.9	97	80.8
	Moderate	13	23.2	5	11.1	3	15.8	21	17.5
	Low	1	1.8	0	0.0	1	5.3	2	1.7
Tools	High	40	87.0	18	50.0	14	66.7	72	69.9
	Moderate	5	10.9	17	47.2	7	33.3	29	28.2
	Low	1	2.2	1	2.8	0	0.0	2	1.9
Rating knowledge on use of the inputs									
Crop seeds	Good	68	48	25	26	6	12	99	34
	Fair	66	47	54	56	35	67	155	53
	Poor	8	6	18	19	11	21	37	13
Vegetable seeds	Good	49	40	22	26	3	8	74	30
	Fair	61	49	44	52	26	70	131	53
	Poor	14	11	19	22	8	22	41	17
Cuttings & vines	Good	59	50	13	18	2	5	74	33
	Fair	53	45	41	57	25	68	119	52
	Poor	7	6	18	25	10	27	35	15
Fertilizers	Good	1	1	4	10	0	0.0	5	4
	Fair	8	11	13	33	1	6	22	17
	Poor	67	88	23	58	16	94	106	80
Pesticides/herbicides	Good	8	9	12	22	0	0.0	20	12
	Fair	19	22	23	42	6	27	48	29
	Poor	60	69	20	36	16	73	96	59
Livestock drugs	Good	20	21	12	19	3	10	35	19
	Fair	33	35	28	44	11	38	72	39
	Poor	41	44	24	38	15	52	80	43
Tools	Good	51	52	12	23	6	19	69	38
	Fair	28	29	24	45	18	56	70	38
	Poor	19	19	17	32.1	8	25	44	24
Source of information on ways of using inputs									
Input dealer		42	27.8	18	18.4	10	18.9	70	23.2
Government agricultural extensionist		40	26.5	30	30.6	13	24.5	83	27.5
Development partner extensionist		42	27.8	17	17.3	5	9.4	64	21.2
Friends		76	50.3	31	31.6	17	32.1	124	41.1
Relative		79	52.3	27	27.6	18	34.0	124	41.1

	ADJUMANI		MOYO		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Radio	67	44.4	53	54.1	23	43.4	143	47.4
Others	6	4.0	4	4.1	7	13.2	17	5.6

However, self-assessment and rating of knowledge on use of improved agricultural inputs for all surveyed HHs revealed low knowledge levels. Majority either rated their knowledge to be just fair or poor. For instance, on knowledge of how to use pesticides, 59% of the HHs surveyed said they had poor knowledge on their use. Similarly, on livestock drugs, only 19% felt they had good knowledge on how to use the drugs; 39% reported having fair knowledge while 43% felt it was poor. Fertilizers, 80% reported having poor knowledge on how to use; 17% fair and only 4% had good knowledge on use of fertilizers.

Information/knowledge on how to use improved inputs was mostly disseminated to farmers through Radio, friends, and relatives. Over 40% of HHs for nationals surveyed had got information on use of inputs from radio, friends, and relatives. Those that got it directly from Government agricultural extensionist were 27.5% and 23.2% from Input dealers (see Table 15 above).

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

This baseline sought to establish the crops predominantly produced by HHs of Nationals across the three districts of Adjumani, Moyo and Obongi, the quantities produced vis-à-vis the land acreage allotted. The crops are categorized into two i.e. strategic and non-strategic crops where the former comprise crops targeted by the project for promotion.

Results show that among the strategic crops, maize and sesame were grown by more HHs of Nationals in 2019 than any other crop. Of the 302 HHs surveyed, 256 grew maize and 202 Sesame during the 2019 seasons producing 485 mean Kgs and 201 mean Kgs per acre respectively. Data for four other strategic crops i.e. beans, soybean, sunflower and rice, were also obtained but these were grown by very few HHs and in some districts, grown by no HH at all. For instance, sunflower was reported grown by only 2 HHs in the entire project target area i.e. 1 in Adjumani and another in Obongi. Similarly, rice was grown by only 32 HHs, 21 of which were from Adjumani and 11 from Moyo; Obongi had none despite the fact that the yield per acre for rice was higher than maize and Sesame. Results show that HHs in Adjumani and Moyo that grew rice in 2019, got almost

twice the yield per acre got by those that planted maize. In Adjumani, the Sunflower grower got the highest yield per acre for all the strategic crops that were grown in 2019 (see Table 16).

Table 16: Mean yields per acre for strategic and non-strategic crops grown by Nationals in 2019

	ADJUMANI		MOYO		OBONGI		Total	
	HHs	Mean Kgs	HHs	Mean Kgs	HHs	Mean Kgs	HHs	Mean Kgs
A) Strategic crops								
Sesame	111	202	49	216	42	182	202	201
Beans	28	342	17	268	2	340	47	315
Maize	133	480	83	522	40	426	256	485
Soybeans	20	380	8	313			28	361
Sunflower	1	1,040			1	167	2	603
Rice	21	748	11	1,010			32	838
B) Non-strategic crops								
Groundnuts	72	505	69	483	21	315	162	471
Cassava	54	3,981	34	1,745	16	1,369	104	2,848
Sorghum	24	351	31	821	12	237	67	548
Millet	4	241	4	578	3	102	11	326
Pigeon Peas	29	1,186	19	1,467	10	651	58	1,186
Sweet Potatoes	71	4,666	42	1,993	20	3,109	133	3,588
Irish Potatoes	3	237					3	237
Onions	11	893	16	1,234	1	750	28	1,083
Banana	8	1,280	1	1,280	1	1,200	10	1,272
Others	21	601	37	1,132	20	276	78	770

Among non-strategic crops grown during 2019, Groundnuts were the most dominant, grown by 162 HHs. This (G.nuts) was followed by Sweet potatoes, grown by 133 HHs with a mean kg per acre of 3,588 kgs and Cassava (2,848 kgs) grown by 104 HHs. The least grown crop was Irish potatoes, grown by only 3 HHs in Adjumani, bananas and millet grown by 10 and 11 HHs respectively (see Table 16 above).

Comparison between mean yield per acre and quantity of seed planted, reveals mixed results on the productivity of the seeds planted, some exhibited high productivity and others low productivity. For instance, HHs in Adjumani who planted maize in 2019, planted 27.2 mean kgs per acre and harvested 480 mean kgs per acre, in Obongi 19.5 mean kgs yielded 426 mean kgs per acre while those in Moyo planted 12.7 mean kgs of maize per acre and harvested 522 mean kgs per acre. Farmers in Moyo used less seed but got higher yields than those in Adjumani and Obongi. These variations in quantity of seed planted per acre also point to non-use of standard spacing for the crops. As highlighted above, HHs that planted maize in Adjumani, used 27.2 mean kgs per acre while those in Obongi used 19.5 and in Moyo 12.7 mean kgs per acre. Use of varying spacing was

not limited to maize growers but even other crops for instance, farmers in Moyo who planted Cassava in 2019 used nearly twice as many kgs per acre compared to farmers in Adjumani i.e. 513.2 and 275.3 mean kgs respectively (see Table 17).

Table 17: Average quantity of seed (Kgs) used per acre

	ADJUMANI		MOYO		OBONGI		Total	
	HHs	Mean kgs	HHs	Mean kgs	HHs	Mean kgs	HHs	Mean kgs
Strategic crops								
Sesame	113	12.7	52	11.5	43	11.0	208	12.1
Beans	30	48.9	18	16.4	2	14.0	50	35.8
Maize	133	27.2	82	12.7	42	19.5	257	21.3
Soybeans	19	39.3	8	9.4	1	2.0	28	29.5
Sunflower	1	40.0	0	0	1	0.7	2	20.3
Rice	21	45.6	11	47.0	0	0	32	46.1
Non-Strategic								
Groundnuts	72	63.8	71	77.0	21	92.3	164	73.1
Cassava	83	275.3	55	513.2	28	328.7	166	363.1
Sorghum	23	10.4	35	77.8	14	6.1	72	42.3
Millet	4	4.3	4	19.2	3	2.3	11	9.2
Pigeon Peas	31	8.2	19	9.9	10	105.7	60	25.0
Sweet Potatoes	76	414.9	43	302.7	20	260.3	139	357.9
Irish Potatoes	3	31.9	0	0	0	0	3	31.9
Onions	11	929.9	16	9.4	1	0.5	28	370.7
Banana	7	179.1	2	42.0	1	100.0	10	143.8

The variation in productivity of some of the seeds planted in 2019 could be attributed to the type planted. As can be seen in Table 18 below, for both strategic and non-strategic crops, majority of HHs used local seeds compared to improved seeds. For instance, among HHs that planted Sesame in 2019, 77.9% used local seed. Similarly, 81.9%, of those who planted maize, used local seed, only 19.6% used the improved maize seed to plant. No variations are observed across the three districts for both strategic and non-strategic crops. For example, among farmers who planted cassava, results show that 92.9% in Moyo, 86.2% in Obongi and 85.7% in Adjumani, all used the local variety; only about a tenth used the improved variety (see Table 18).

Table 18: Types of Seeds planted by National Farmers in 2019

Crop	Variety type of	ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Sesame	Local	85	75.2	45	86.5	32	74.4	162	77.9
	Improved	28	24.8	7	13.5	11	25.6	46	22.1
Beans	Local	25	83.3	15	78.9	1	50.0	41	80.4
	Improved	5	16.7	4	21.1	1	50.0	10	19.6
Maize	Local	106	79.1	72	86.7	35	81.4	213	81.9
	Improved	28	20.9	11	13.3	8	18.6	47	18.1
Soybeans	Local	15	68.2	6	66.7	2	100.0	23	69.7
	Improved	7	31.8	3	33.3	0	0.0	10	30.3
Sunflower	Local	1	100.0	0	0.0	0	0.0	1	100.0

Crop	Variety type of	ADJUMANI		MOYO		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Rice	Local	17	81.0	9	81.8	0	0.0	26	81.2
	Improved	4	19.0	2	18.2	0	0.0	6	18.8
Groundnuts	Local	66	89.2	65	92.9	20	90.9	151	91.0
	Improved	8	10.8	5	7.1	2	9.1	15	9.0
Cassava	Local	72	85.7	52	92.9	25	86.2	149	88.2
	Improved	12	14.3	4	7.1	4	13.8	20	11.8
Sorghum	Local	19	82.6	35	94.6	13	92.9	67	90.5
	Improved	4	17.4	2	5.4	1	7.1	7	9.5
Millet	Local	4	100.0	3	75.0	3	100.0	10	90.9
	Improved	0	0.0	1	25.0	0	0.0	1	9.1
Pigeon Peas	Local	29	90.6	21	100.0	9	90.0	59	93.7
	Improved	3	9.4	0	0.0	1	10.0	4	6.3
Sweet potato	Local	68	87.2	39	92.9	21	100.0	128	90.8
	Improved	10	12.8	3	7.1	0	0.0	13	9.2
Irish Potato	Local	3	100.0	0	0.0	0	0.0	3	100.0
Onions	Local	6	54.5	9	52.9	0	0.0	15	53.6
	Improved	5	45.5	8	47.1	0	0.0	13	46.4
Banana	Local	7	87.5	2	100.0	1	100.0	10	90.9
	Improved	1	12.5	0	0.0	0	0.0	1	9.1

Participants in the FGDs also acknowledged that majority of HHs for Nationals in Adjumani, Moyo and Obongi plant the local type of seed.

Here, we grow mostly maize and use locally available seeds...when you plant on 2 acres, you can get about 4 bags (FGD with Ebeamaku Women's Group, Itirikwa S/C, Adjumani).

Further, results show that in all the three districts, most crop produce is grown for home consumption. Comparison between quantity of produce harvested and the quantity sold, shows that most produce is just eaten in the homes of the farmers. For both strategic and non-strategic crops, not all HHs sold their harvest for money. Even among those that sold, they did not sell all but part of the produce. For instance, of the 111 HHs in Adjumani that grew Sesame, 84 sold part of their produce (an average of 56%). In Moyo, out of 83 HHs that grew maize, 32 sold part of their produce. Similarly, in Obongi 15 of the 40 HHs that grew maize in 2019 sold an average of 48%. Similar trends were recorded with non-strategic crops i.e. not all HHs sold their produce, but even among those that sold, they only sold part not all, in most instances not exceeding 60% of the produce with the exception of crops like soybeans, sunflower and onions (see Table 19).

Table 19: Average percentage of crop yields sold by HHs of Nationals in 2019

	ADJUMANI		MOYO		OBONGI		Total	
	HHs	Percentage	HHs	Percentage	HHs	Percentage	HHs	Percentage
A) Strategic crops								
Sesame	84	56	36	54	33	63	153	57
Beans	19	59	6	35	1	50	26	53
Maize	67	56	32	44	15	48	114	52

	ADJUMANI		MOYO		OBONGI		Total	
	HHs	Percentage	HHs	Percentage	HHs	Percentage	HHs	Percentage
Soybeans	18	78	3	67	0	0	21	76
Sunflower	1	77	0	0	1	100	2	88
Rice	16	70	11	61	0	0	27	66
B) Non-strategic crops								
Groundnuts	54	50	47	47	10	185	111	61
Cassava	36	53	31	61	10	48	77	56
Sorghum	9	76	14	46	3	31	26	55
Millet	2	94	2	60	1	32	5	68
Pigeon Peas	12	58	7	44	7	31	26	47
Sweet Potatoes	20	53	11	46	5	24	36	47
Irish Potatoes	3	68	0	0	0	0	3	68
Onions	9	72	15	81	0	0	24	78
Banana	7	62	1	88	1	67	9	65
Others	18	71	37	78	12	61	67	73

Participants in the FGDs explained that selling of crop produce by farmers is on a small scale because they only sell off to raise money for other basic needs other than food.

We sell some of our produce but not as a business, we sell when we get problems, like if someone is sick or when you need money for school fees, burial or money to buy basic that you do not have at home (FGD with Bavule Fal Group, Ukusijoni S/C, Adjumani).

We do not grow much maize because of the poor soils; in 2 acres of land, you can get 2 bags, so you sell off 1 bag and keep the other one for home consumption...we grow cassava for mainly home consumption, if we are to sell, we sell the dry chips at UGx 120,000/= for a sack (FGD with Anzoa Farmers Group, Pakelle S/C, Adjumani).

3.2.7 Access to Markets, Marketing and Communication

This baseline sought to establish the quantity and value of both strategic and non-strategic crops marketed/sold. Using 2019 as the base year, results show that on average HHs for nationals harvested produce worth UGx 2,019,500/= of which, produce worth UGx 939,248/= was sold, comprising 46.5% of all produce harvested. This means slightly over half (53.5%) of the produce was consumed by the farmers. In terms of value, the quantity HHs for nationals consumed was worth an average of UGx 1,012,300/=. On average HHs in Obongi consumed more of their produce (53.8%) compared to HHs in Adjumani (50%) and Moyo (50%). See Table 20.

Table 20: Average value of total crop production, consumption, and marketing per household

District	Produced	Consumed	Sold	% sold	% consumed
ADJUMANI	2,044,000	1,013,200	1,004,200	50%	50%
MOYO	2,403,100	1,197,300	1,094,300	50%	50%
OBONGI	1,240,400	667,268	467,581	46.2%	53.8%
Total	2,019,500	1,012,300	939,248	46.5%	53.5%

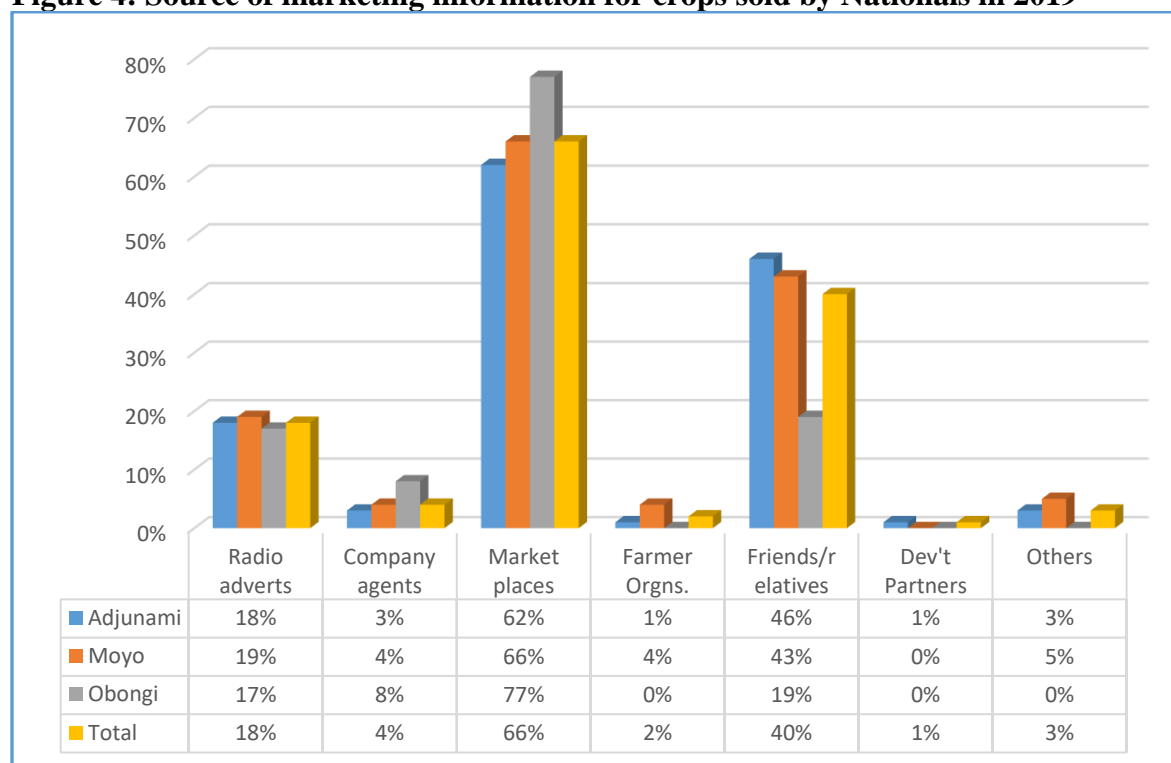
The results show that the value for strategic crops grown in 2019 ranged between UGx 243,500/= for Sunflower and UGx 2,143,700/= for rice, although rice was planted by only 32 HHs. For maize, which is the most grown crop in 2019, the quantity produced by each HH was valued at an average of UGx 348,002/=. On average, HHs in Moyo obtained more income from maize (UGx 405,614/= per HH) than Adjumani (UGx 345,263/= per HH) and Obongi (UGx 237,563/= per HH). But comparison of the monetary value of the various crops produced in 2019 shows that in Adjumani, rice was rated highest followed by beans, banana, cassava, and groundnuts. In Moyo, rice was ranked highest followed by banana, groundnuts, and sesame while in Obongi the highest value was recorded on pigeon peas followed by cassava and sesame (see Table 21).

Table 21: Average value of crop production per household for different crops

	ADJUMANI		MOYO		OBONGI		Total	
	HHs	Mean	HHs	Mean	HHs	Mean	HHs	Mean
Strategic crops								
Sesame	111	482,243	49	801,531	42	569,048	202	577,743
Beans	28	853,929	18	244,250	2	180,000	48	597,219
Maize	133	345,263	83	405,614	40	237,563	256	348,002
Soybeans	22	406,364	9	334,000			31	385,355
Sunflower	1	312,000			1	175,000	2	243,500
Rice	21	1,923,000	11	2,564,900			32	2,143,700
Non-Strategic crops								
Groundnuts	73	722,538	69	996,099	22	376,200	164	791,173
Cassava	54	782,864	34	694,935	16	604,034	104	726,606
Sorghum	24	89,550	33	215,455	12	204,500	69	169,757
Millet	4	349,125	4	520,500	3	109,000	11	345,955
Pigeon Peas	30	373,267	20	656,550	10	729,000	60	526,983
Sweet Potatoes	71	245,370	42	164,071	21	166,871	134	207,587
Irish Potatoes	3	93,333					3	93,333
Onions	11	160,284	17	240,529	1	45,000	29	203,349
Banana	8	802,500	1	1,280,000	1	240,000	10	794,000

Market information for both strategic and non-strategic crops sold by Nationals in 2019 was mostly obtained from the marketplaces (66%). Friends and/or relatives was the other notable source of learning about the market for crops to be sold especially for Nationals in Adjumani (46%) and Moyo (43%). Radio adverts were reported as source of market information in all the three districts by less than 19% of the HHs that sold produce. Development Partners, Farmers' organizations, and Company agents as sources of marketing information were largely unknown, reported by less than 4% of HHs that sold produce in 2019 (see Figure 4).

Figure 4: Source of marketing information for crops sold by Nationals in 2019



Regarding mode of sale of crop produce, nearly all farmers sold their produce individually. Table 22 shows that only 13 HHs of those that planted sesame in 2019 marketed their produce collectively and sold only 0.02% of their harvest. Similarly, 10 HHs collectively sold only 0.05% of the maize produced while no HH sold beans nor sunflower collectively. Overall, collective selling of produce was associated with only four crops namely Sesame, maize, soybeans, and rice.

Table 22: Percentage of crop produced that was marketed collectively

Crop	ADJUMANI		MOYO		OBONGI		Total	
	HHs	Mean %	HHs	Mean %	HHs	Mean %	HHs	Mean %
Sesame	12	0.02			1	0.02	13	0.02
Beans								
Maize	8	0.06	2	0.04			10	0.05
Soybeans	2	0.05					2	0.05
Sunflower								
Rice			1	0.02			1	0.02

Participants in FGDs also confirmed the practice of selling individually, noting that it was only HHs that planted rice who sold as a group.

It was only rice farmers who sold their produce jointly to a company that came from Adjumani. Most farmers for maize and other crops sold individually at the household

level...there was lack of transport to take produce to the market, so sold it from home (FGD with Ujekogwe Youth Farmers Group, Laropi S/C, Moyo).

In the entire sub-county, there is no store where farmers can keep their produce if there is no market or when the prices are low, so we end up selling our produce cheaply (FGD with Ebeamaku Women's Group, Itirikwa S/C, Adjumani).

We have different needs as families, some families were not interested in pooling their maize and simsim to sell collectively (FGD with Obikitri Farmers Group, Itula S/C, Obongi).

Farmers who sold some of their produce in the markets reported facing various challenges. The common challenges faced in marketing agricultural produce in 2019 were high transport costs, poor roads, price fluctuations, absence of bulk buyers, high market dues charged on farmers and absence of good storage facilities for especially perishable food crops such as tomatoes.

Transportation means are hard to get...Taxes in the market were high; UGx 5,000/= is levied per sack of any produce... Low price during harvest... No bargaining power because sold as an individual... No transport means to take to better places like Kitgum where price of a bag is UGx 200,000 (New national farmers).

3.2.8 Household participation in VSLA

This project intends to promote HHs to increase participation in VSLA activities in the project areas. Thus, the baseline study sought to establish the level of participation of Nationals in VSLA activities to provide benchmark data that will be used at evaluation. The study results in table 23 below show that nearly all HHs for Nationals (94%) participated in VSLA activities the 2019. Adjumani had the highest proportion (97%) of all HHs surveyed reported participating in VSLA activities in 2019 and Obongi district had the least proportion (85%). About 94% of HHs in Moyo participated in VSLA activities. Results further reveal that among those HHs that participated in VSLA activities, 91% had ever received training on VSLA. Adjumani had slightly more member HHs who were not trained on the VSLA methodology than the other two districts (see Table 23).

Table 23: Participation in VSLA activities by Nationals in 2019

	ADJUMANI		MOYO		OBONGI		Total		
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	
Household participated in any VSLA activities in 2019	147	97.4	92	93.9	45	84.9	284	94.0	
Household received training on VSLA methodology	130	88.4	85	92.4	41	93.2	256	90.5	
Entity that provided the training on VSLA methodology									
NGO	85	65.4	28	32.9	17	41.5	130	50.8	
Community Based Organization:	38	29.2	45	52.9	15	36.6	98	38.3	
Learnt from another group:	22	16.9	20	23.5	10	24.4	52	20.3	
Rating participation of youth of 18 - 28 years in VSLA activities	High	46	30.5	20	20.8	12	24.0	78	26.3
	Medium	53	35.1	27	28.1	22	44.0	102	34.3
	Low	52	34.4	49	51.0	16	32.0	117	39.4
Ways of accessing money to finance agricultural production activities in 2019									
VSLA	92	60.9	74	75.5	37	69.8	203	67.2	
Micro-finance (SACCOs)	4	2.6	18	18.4	5	9.4	27	8.9	
Bank	1	0.7	2	2.0	2	3.8	5	1.7	
Individual household savings	45	29.8	43	43.9	26	49.1	114	37.7	
Borrowing from family/friends	3	2.0	1	1.0	2	3.8	6	2.0	
Gifts	0	0.0	0	0.0	1	1.9	1	0.3	
Sale of agricultural produce	72	47.7	33	33.7	18	34.0	123	40.7	

NGOs trained majority of the households (51%) on the VSLA methodology. Community based organizations and other groups as sources of learning/training on the VSLA methodology were reported by 38% and 20% of HHs trained on VSLA, respectively.

Most HHs (75%) participating in the study rated participation of youth aged 18-28 years in VSLA activities as being low (39%) or moderate (34%). Only 26.3% felt that participation of the youth in VSLA activities was high. Slight variations in opinion were observed across the three districts. The main highlighted reason for low rating of youth participation in VSLA was because youth rarely attended the weekly meetings for VSLA members. This was mainly due to most youth failing to raise the money for personal weekly saving in VSLA. So, to save themselves from the embarrassment and pressure from other group members, they skip the meetings inadvertently making their participation in VSLA activities low.

Problem of money, you know saving is done on weekly basis, so it is very hard for the youths... It was hard for majority of the youth to get the weekly money to save (New national farmers).

The youth got motivated to join farmers' groups and VSLAs because they heard that Government was going to support only people in SACCOs (FGD with Ujekogwe Youth Farmers Group, Laropi S/C, Moyo).

It was also reported that the youth believe that VSLA's are meant for old people, women, and people with a steady source of income; therefore, a youth with no opportunities for earning money would have no place in a VSLA which emphasizes weekly contributions towards group's savings.

Some are saying VSLA activities are not for youths... No sensitization and awareness given to the youths on the benefits of VSLA activities... Most of the youth do not have the patience to wait until the distribution day (New national farmers).

The baseline study also sought to establish how HHs for Nationals obtained money to finance their agricultural production activities for the year 2019. Participants cited various sources of funding ranging from taking loans from VSLAs to sale of agricultural produce. Although the sources of funding for the 2019 agricultural production activities varied, and in most instances used in combination, majority obtained funding from VSLAs (67.2%). Other sources cited in order of importance include sale of agricultural produce and individual HH savings cited by 40.7% and 37.7% of HHs for Nationals, respectively. Very few HHs reported Commercial Banks (1.7%), borrowing from family and friends and Micro-finance institutions such as SACCOs as sources of funding for their 2019 agricultural production activities.

The money received from the above sources was used for a multiplicity of purposes including but not limited to agricultural production. HHs that borrowed money from VSLAs' on average received UGx 278,750/=. The HHs in Adjumani received slightly higher loan amounts (UGx 318,552/=) than those in the other two districts of Moyo (UGx 212,500/=) and Obongi (UGx 286,279/=). The loans obtained from VSLA were mainly used in agricultural production (65%), others petty trade (58%), buying school requirements (59%), construction (54%), acquiring household assets and paying for health services. (see Table 24 below).

Table 24: Amount of money received in VSLA loan and how it was used by Nationals

	ADJUMANI			MOYO			OBONGI			Total		
	HHs	Mean amount (Ugshs)	Percent (%)	HHs	Mean amount (Ugshs)	Percent (%)	HHs	Mean amount (Ugshs)	Percent (%)	HHs	Mean amount (Ugshs)	Percent (%)
Amount of money got as a loan from VSLA	145	318,552		92	212,500		43	286,279		280	278,750	
Ways the loan was used												
Agricultural production	103	203,029	65.4	60	144,717	68.9	21	154,048	53.9	184	178,424	65.2
Petty trade	20	111,450	44.8	12	133,333	67.5	16	146,250	65.4	48	128,521	57.6
School requirements	67	205,806	56.2	34	161,176	62.6	16	174,375	62.3	117	188,538	58.9
Health	40	91,925	39.3	22	90,500	47.0	6	61,667	30.6	68	88,794	41.0
Construction	9	146,667	33.5	6	110,000	62.8	3	166,667	100.0	18	137,778	54.4
Household asset	21	148,571	40.9	11	95,091	39.6	9	313,889	57.1	41	170,512	44.4

3.2.9 Gender and Youth Participation in Agricultural Production

Baseline data obtained on division of labor in National farmers' HHs reveals involvement of all Household members in the various stages of agricultural production. Although some variations are reported at HH level, data shows that generally, reasonable proportions of households reportedly involved all HH members irrespective of gender and age in land opening and preparation, planting, weeding, pest and disease management, harvesting, post-harvest handling, and using the incomes from sale of produce. For instance, data shows that 44.3% of HHs all members (*i.e. adult males and females as well as children both female and male*) get involved in opening of the land and preparing it for planting. But there are also 20.5% of HHs where land opening and preparation is only the preserve of adults. Similarly, whereas 50.7% of HHs work with everyone in the HH to plant, there were 18.8% that engaged only adult males and females, 16.8% that engaged adult females and children only to do the planting. Households that engaged only children to do the planting were very few (1%) and nearly non-existent in activities like marketing and planning for the new season. Marketing and planning for the new season was reported to be a preserve of adult males and females (see Table 25).

Table 25: Level of participation of household members in various agricultural production

	Adult Female	Adult Male	Children	Adult female & male	Adult female & children	Adult male & children	All*	No HH members involved
	%	%		%	%	%		%
Land opening and preparation	4.4	5.7	2.0	20.5	14.8	3.0	44.3	5.4
Planting	5.7	4.4	1.0	18.8	16.8	1.7	50.7	1.0
Weeding	18.4	1.7	0.7	12.0	30.1	1.0	33.4	2.7
Pest and disease management	15.2	31.5	3.9	18.3	9.7	1.6	15.2	4.7
Harvesting	16.7	2.0	1.0	15.3	29.7	1.0	34.0	0.3
Post-Harvest handling	24.3	1.7	1.0	16.0	30.7	1.0	25.3	0.0
Marketing	54.0	9.6	0.3	24.1	6.5	0.3	3.8	1.4
Planning for new season	16.3	13.7	0.3	53.7	7.0	0.3	8.3	0.3
Use of income received from production	22.4	10.3	0.3	48.3	4.8	0.0	13.1	0.7

* -All comprises of *adult male, adult female and children*

Households that did not use family labor in the various stages of agricultural production were extremely few. The stages of agricultural production where notable numbers of “no HH member involved” included only land opening and preparation cited by 5.4% and pest and disease management (4.7%). The rest of the stages relied heavily on labor from HH members.

Mobilization of labor to perform the various tasks was mostly done by adult males and in a few instance adult females. This is explained by the fact that majority of surveyed HHs for Nationals were male headed (76.7%). Female headed HHs were 16.3% while child headed HHs comprised only 1.7% of the sample. Adult males were in charge of mobilizing labor for mostly opening the land, preparing for planting and planting itself while adult females took charge of mobilizing labor for weeding, harvesting, post-harvesting and marketing of the produce (see Table 26).

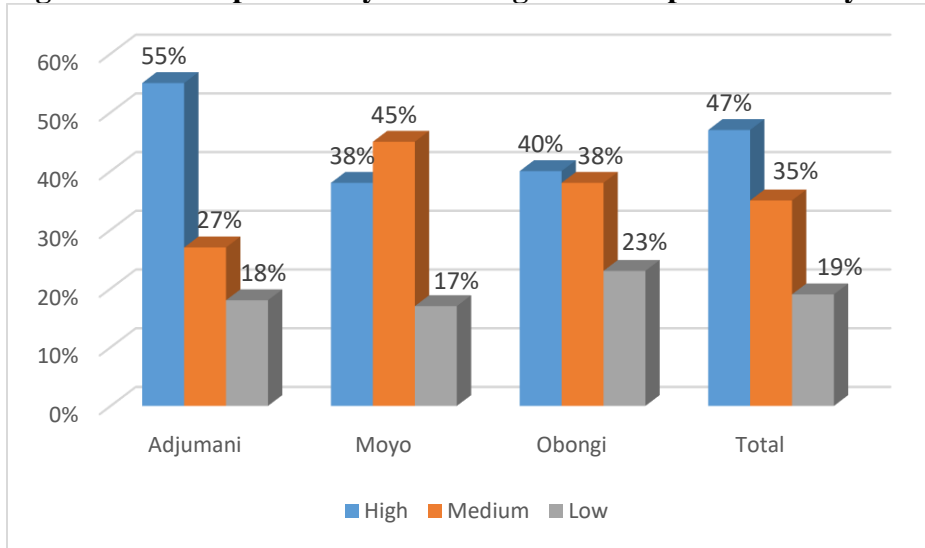
Table 26: Responsibility of mobilizing labor for various production activities

	Adult Female	Adult Male	Children	Adult female & male	Adult female & children	All*	No HH members involved
	%	%	%	%	%	%	%
Land opening and preparation	28.4	61.9	0.7	8.4	0.7		
Planting	32.4	58.2	0.3	8.7	0.3		
Weeding	65.0	30.0	0.3	4.4	0.3		
Pest and disease management	31.2	53.1	2.7	9.4	0.4	0.4	2.7
Harvesting	60.8	31.9	0.7	6.0	0.3	0.3	
Post-Harvest handling	68.4	24.3	0.3	6.0	0.3	0.7	
Marketing	56.7	30.9	0.3	10.3	0.3		1.4
Planning for new season	28.9	50.2	0.3	19.6	0.7		0.3
Use of income received from production	30.6	48.5	0.3	19.6	0.3		0.7

* -All comprises of *Adult Male, adult female, and children*

On participation of the youth (18-28 years) in agricultural production, nearly half (47%) of the households rated it as high. Very few households thought that participation of the youth in agricultural production was low (19%). The rest rated youth's participation as medium. Disaggregation of data by district shows, it was mostly respondents from Adjumani and Obongi that rated the youths' participation as high (55% and 40% respectively). In Moyo, although the bigger proportion of households rated youth participation as medium (45%), but those who felt it was high were also notably high (38%). Overall, youth participation in agricultural production was considered high (see Figure 5).

Figure 5: Participation of youths in agricultural production by district



3.2.10 Sexual Reproductive Health and Rights

Awareness about sexual and reproductive health and rights (SRHR) was nearly universal (97%) in the three districts. Results show that everyone (100%) in Moyo, 96.2% in Obongi and 95.4% in Adjumani had heard about SRHR. The few households (3.8% in Obongi and 4.6% in Adjumani) that did not know about SRHR, indicated that they had never attended any training on SRHR, nor did they have a Radio through which they could have accessed the information.

About 85% of Nationals acknowledged having received training and/or information to raise their awareness about SRHR. Health facilities were reported as the main source of SRHR information for the nationals (92.7%). Within the three districts, Obongi recorded the highest number of Nationals (94.1%) who had received the training on SRHR. Moyo and Adjumani had equally high proportions at 83.7% and 81.8% respectively.

People do not come to our villages to sensitize us about family planning, it is done at the health centre (FGD with Anzoa Farmers Group, Pakelle S/C, Adjumani).

Small proportions mentioned NGOs/Development Partners or Government Officials as their source of learning about SRHR (see Table 27).

Table 27: Levels of awareness about SRHR and use of family planning methods

	ADJUMANI		MOYO		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Ever heard about SRHR	144	95.4	98	100.0	51	96.2	293	97.0
Received training about SRHR	117	81.8	82	83.7	48	94.1	247	84.6
Providers of training								
Development partner/NGO	8	6.8	5	6.1	3	6.2	16	6.5
Health facility	109	92.4	78	95.1	43	89.6	230	92.7
Family/Friends	3	2.6	1	1.2	1	2.1	5	2.0
Government official	9	7.7	10	12.2	3	6.2	22	8.9
Ever used any FP methods	52	36.1	37	37.8	14	27.5	103	35.2
Source of FP services used								
Health facility	49	92.5	35	94.6	13	92.9	97	93.3
Family/friends	4	7.7	1	2.7	0	0.0	5	4.9
Development partner center	3	5.8	1	2.7	0	0.0	4	3.9
Other	3	5.8	0	0.0	0	0.0	3	2.9

The baseline also sought to establish the proportion of nationals who had ever used any method of family planning (FP). As can be seen in Table 27 above, among all nationals who knew about SRHR, slightly over a third (35.2%) had ever used any FP method, majority of whom (93.3%) cited health facilities as the place where they obtained the FP method. This is consistent with the national level statistics on use of FP. According to the Uganda Demographic and Health Survey of 2016, the contraceptive prevalence rate (CPR) for all women (both married and unmarried) was 39%.

Various reasons were given for not ever using FP methods ranging from fear of side effects, reliance on use of traditional methods of birth spacing to cost of modern methods. Some of the reasons are presented here below verbatim.

- Fear of negative effects seen from other people who have used family planning
- I thought such things would cause an effect on my body, besides in our religion it is not allowed
- People talk bad about it that it makes you bleed excessively during menstruation
- I used natural child spacing because I don't trust family planning methods
- I breast feed for 2½ years before my first period returns.
- I think it causes cancer
- My husband does not want to hear about family planning
- Just not interested at all
- Natural methods are cheaper in the long run
- Health workers avoid patients when you intend to remove, and I heard it disappears in the body leading to permanent infertility

- Long distance to the health facility

3.3 BASELINE INDICATORS FOR THE REFUGEE COMMUNITY

3.3.1 Household Income

The refugee households covered in the baseline study reported having various sources of income. They include agricultural related sources such as sale of produce grown by the HH and non-agricultural sources such as petty trade. The category of non-agricultural sources generate slightly more income than agricultural related sources. Results show that in 2019, mixed refugee HHs earned an average of UGx 512,778/= from non-agricultural sources compared to UGx 359,264/= from agricultural related sources. Similarly, women refugee HHs earned more income from non-agricultural sources (UGx 343,773/= on average) than from agricultural sources (UGx 288,204/=).

However, majority of refugee Households (*both women and mixed refugee HHs*) are low-income earners. Results show that nearly 90% did not earn more than UGx 600,000/= in 2019. Among mixed refugee HHs, 57% earned a maximum of UGx 200,000/= on average, 29% earned between UGx 200,001 – 600,000/=, only 15% earned more than UGx 600,000/=. Similarly, 49% of the women refugee HHs earned between UGx 0-200,000/=, 40% earned between UGx 200,001 – 600,000/= meaning only 11% earned more UGx 600,000/= that year (see Table 28).

Table 28: Average HH Income and the Sources for Refugees in 2019

Income Sources (Amounts in Uganda shillings)		Women Refugee Households						Mixed Refugee Households					
		ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Agriculture related HH income	0- 200,000	17	31	38	66	55	49	26	51	33	62	59	57
	200,001-600,000	28	51	17	29	45	40	15	29	15	28	30	29
	600,001-100,0000	8	15	3	5	11	10	5	10	4	8.0	9	9.0
	1,000,001-1,400,000	1	2.0	0	0.0	1	1.0	1	2.0	0	0.0	1	1.0
	1,400,001-1,800,000	1	2.0	0	0.0	1	1.0	1	2.0	0	0.0	1	1.0
	1,800,001-2,200,000	0	0.0	0	0.0	0	0.0	1	2.0	0	0.0	1	1.0
	2,200,001-2,600,000	0	0.0	0	0.0	0	0.0	0	0.0	1	2.0	1	1.0
	2,600,001+	0	0.0	0	0.0	0	0.0	2	4.0	0	0.0	2	2.0
Average income		402,064		180,234		288,204		455,490		266,670		359,264	
Non-agriculture related HH income	0- 200,000	19	36	34	62	53	49	19	37	31	66	50	51
	200,001-600,000	24	45	14	26	38	35	13	25	10	21	23	23
	600,001-100,0000	8	15	3	6.0	11	10	10	19	3	6	13	13

Income Sources (Amounts in Uganda shillings)	Women Refugee Households						Mixed Refugee Households					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
1,000,001-1,400,000	1	2.0	2	4.0	3	3.0	4	8.0	0	0.0	4	4.0
1,400,001-1,800,000	0	0.0	2	4.0	2	2.0	2	4.0	1	2.0	3	3.0
1,800,001-2,200,000	0	0.0	0	0.0	0	0.0	1	2.0	1	2.0	2	2.0
2,200,001-2,600,000	0	0.0	0	0.0	0	0.0	2	4.0	0	0.0	2	2.0
2,600,001+	1	2	0	0.0	1	1.0	1	2.0	1	2.0	2	2.0
Average income	421,670		268,709		343,773		672,500		336,064		512,778	

3.3.2 Food security

Overall, majority of refugee HHs surveyed were food secure. Over 96% and 97% of women and mixed refugee HHs respectively consumed either 2 or 3+ meals per day in 2019. Only less than 4% among women refugee HHs and mixed refugee HHs reported to have eaten 1 meal per day in 2019. However, the number of meals consumed per day varied by type of refugee HH and district. Results show that on average, more Households (more than 61%) in Adjumani consumed 2 meals per day while in Obongi most of the households (over 57%) consumed at least 3 meals a day for both women and mixed refugees. Similarly, comparison between women refugee and mixed refugee HHs shows that more HHs in the latter reported eating 2 meals per day (51.4%) compared to 47.5% in the former. The higher proportion (49.2%) in the former (women refugee HHs) reported eating 3 meals and more. (see Table 29).

Table 29: Food security situation in HHs for Refugees during 2019

	Women Refugee Households						Mixed Refugee Households					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Average number of meals consumed per day												
1	3	5.0	1	1.6	4	3.3	3	5.6	0	0.0	3	2.7
2	38	63.3	20	32.3	58	47.5	33	61.1	24	42.1	57	51.4
3+	19	31.7	41	66.1	60	49.2	18	33.3	33	57.9	51	45.9
Months during which food shortage was experienced												
January	6	10.0	4	6.5	10	8.2	4	7.3	2	3.5	6	5.4
February	3	5.0	6	9.7	9	7.4	5	9.1	3	5.3	8	7.1
March	4	6.7	5	8.1	9	7.4	8	14.5	6	10.5	14	12.5
April	5	8.3	11	17.7	16	13.1	12	21.8	10	17.5	22	19.6
May	19	31.7	24	38.7	43	35.2	23	41.8	26	45.6	49	43.8
June	50	83.3	51	82.3	101	82.8	49	89.1	44	77.2	93	83.0
July	25	41.7	27	43.5	52	42.6	18	32.7	25	43.9	43	38.4

	Women Refugee Households						Mixed Refugee Households					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
August	2	3.3	8	12.9	10	8.2	1	1.8	9	15.8	10	8.9
September	2	3.3	3	4.8	5	4.1	1	1.8	7	12.3	8	7.1
October	1	1.7	2	3.2	3	2.5	1	1.8	3	5.3	4	3.6
November	1	1.7	1	1.6	2	1.6	0	0.0	1	1.8	1	0.9
December	3	5.0	2	3.2	5	4.1	0	0.0	1	1.8	1	0.9

Most refugee HHs (women refugee and mixed refugee HHs) experienced food shortage in the months of May, June, and July in both Adjumani and Obongi. The climax of the food shortage was registered in the month of June. It was observed that women refugee HHs that reported food shortage of 35.2% in May 2019, the proportion rose to 82.8% in June 2019 and dropped to 42.6% in July. Similarly, among mixed refugee group, the households that reported food shortage in May 2019 were 43.8% but in June 2019 the figure nearly doubled rising to 83% and reduced to 38% in July 2019. The main causes of food shortage, among both women refugee and mixed refugee HHs were reduction in food rations distributed by World Food Programme (WFP) and UNHCR to refugee HHs, delays in food distribution, sale of the received food rations and weather vagaries.

Food shortage came because of drought which destroyed the crops that I had planted in 2018... These are months of a new season and they found our food rations finished and the crops in the gardens were not ready (Mixed Refugee HHs).

There was a delay in distribution of food ration in 2019...Reduction in the ration given by WFP is another reason... quantity of the ration given reduced completely (Mixed Refugee HHs).

Delay in distribution of food... Sale of food distributed by UNHCR to solve other problem (Women Refugee HHs).

Participants in the FGDs shared similar views and opinions on the cause of food shortage.

Sometimes the food rations are delivered late, and you cannot even look for casual work of digging in people's gardens to get money because those months of June are usually very dry (FGD with Oriodeni Farmers Group, Maaji I Settlement, Adjumani).

We over relied on food distribution by WFP, many refugees did not plant enough food for their households (FGD with Ringinangun Farmers Group, Palorinya Settlement, Obongi).

Shortage was cause by the cancelation of the food rations...before things were better, but when they reduced the budget survival became hard, we get only UGx 22,000/= (FGD with God is with us Farmers Group, Mungula I Settlement, Adjumani).

To cope with food shortage, some of the refugee HHs resorted to taking loans from their VSLA while others sold some of the food items received from WFP.

We survived on greens...we sold some of the food items distributed by WFP in order to get money to buy food (FGD with Ejete Farmers Group, Palorinya Settlement, Obongi).

We have a savings group, so when you have shortage of food, you get your savings from the group or you borrow to buy food (FGD with Amesuara Farmers Group, Maaji III Settlement, Adjumani).

The baseline study also sought to establish the different food categories refugee HHs consumed in 2019, the frequency of consumption and source of the food. Results show that the food categories that were consumed daily in 2019 by most households for both women refugee and mixed refugee HHs included cereals, oils, fats and butter, vegetables, pulses, and tubers. For instance, in Adjumani, all women refugee HHs consumed cereals daily. Equally big proportions among mixed refugee HHs in Adjumani (95%) and Obongi (98%) consumed cereals daily. Refer to Table 30 for the detailed analysis.

The assessment results in table 31 show varied sources of the food consumed namely produced by Household, bought from market, distributed by Development Partners, borrowed and gifts. The source of the depends on the type of refugee household (women or mixed refugee) and location. Nearly three quarters (73%) of women refugee HHs in Adjumani obtained their cereals from Development Partners, while only 42% of their counterparts from mixed refugee HHs got their supply from Development Partners. In Obongi district, high proportion of women refugee (76%) and mixed refugee households (84%) got their cereals mostly from Development Partners. In Adjumani, notable proportions of refugee HHs either bought their cereals from the market or consumed those grown by the Households. Same observations were made for the food items namely pulses, oils, fats, and butter (see Table 31).

Most refugee HHs (over 50%) got tubers/roots and vegetables from their gardens while other food categories were bought from the market. Fruits, Meat, fish, eggs, and sugar were bought from the market and very few HHs reported to have received these food items from Development Partners.

Table 30: Food categories consumed in refugee HHs in 2019

	Women Refugee Households								Mixed Refugee Households							
	ADJUMANI				OBONGI				ADJUMANI				OBONGI			
	Daily	Weekly	Monthly	Not at all	Daily	Weekly	Monthly	Not at all	Daily	Weekl y	Month ly	Not at all	Daily	Weekl y	Month ly	Not at all
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Cereals	100	0	0	0	79	18	3	0	95	6	0	0	98	2	0	0
Tubers & roots	15	63	20	2	4	24	61	11	26	64	11	0	0	29	62	9
Vegetables	60	37	3	0	48	52	0	0	51	47	2	0	68	32	0	0
Fruits	7	8	80	5	2	10	64	25	4	22	73	2	2	6	66	26
Meat	2	8	75	15	0	5	48	47	0	9	76	15	0	5	50	45
Eggs	0	12	40	48	0	10	36	55	0	13	43	43	0	7	32	61
Fish	0	42	55	3	3	16	50	31	0	44	49	7	0	21	35	44
Pulses	58	38	3	0	47	15	2	37	69	26	6	0	47	2	15	36
Milk & milk products	2	5	7	86	3	2	23	73	4	4	12	81	5	2	20	73
Oils, fats & butter	90	10	0	0	60	21	7	13	91	9	0	0	60	15	15	11
Sugar	31	46	12	12	15	21	32	32	36	44	11	9	13	22	29	36

Table 31: Sources of food consumed by refugee HHs in 2019

	Women Refugee Households										Mixed Refugee Households									
	ADJUMANI					OBONGI					ADJUMANI					OBONGI				
	A*	B*	C*	D*	E*	A*	B*	C*	D*	E*	A*	B*	C*	D*	E*	A*	B*	C*	D*	E*
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Cereals	14	14	73	0	0	21	3	76	0	0	26	33	42	0	0	14	2	84	0	0
Tubers & roots	36	64	0	0	0	64	30	2	0	4	53	47	0	0	0	68	30	0	3	0
Vegetables	90	7	3	0	0	79	5	16	0	0	86	15	0	0	0	73	2	25	0	0
Fruits	39	57	0	4	0	18	73	7	0	2	38	60	0	2	0	14	61	6	14	6
Meat	0	98	2	0	0	5	90	5	0	0	0	96	2	2	0	5	85	10	0	0
Eggs	12	82	0	6	0	15	79	6	0	0	9	82	0	9	0	13	77	10	0	0
Fish	4	93	2	0	2	4	89	7	0	0	0	100	0	0	0	5	84	11	0	0
Pulses	7	19	75	0	0	18	8	74	0	0	13	44	44	0	0	3	9	89	0	0
Milk & milk products	0	73	0	27	0	8	88	4	0	0	23	54	0	23	0	11	70	15	0	4
Oils, fats & butter	2	20	78	0	0	4	7	89	0	0	13	44	44	0	0	2	10	88	0	0
Sugar	2	96	2	0	0	0	82	11	5	2	0	96	2	2	0	0	100	0	0	0

Column A: Produced by Household **B:** Bought from market **C:** Distributed by DPs **D:** Borrowed **E:** Gifts

3.3.3 Access to Land for Refugee Households

Refugee HHs had limited access to land for agricultural production in 2019. Results show that the mean acreage of land cultivated per refugee HH was less than an acre. The largest mean acreage cultivated was 0.67 acres among mixed refugee HHs and 0.61 acres among women refugee HHs in Adjumani. Both women refugee and mixed refugee HHs in Obongi cultivated smaller pieces of land in 2019 compared to those in Adjumani. Results show that the mean acreage of land cultivated by women refugee HHs in Obongi was 0.43 acres while mixed refugee HHs reported 0.56 acres. The land cultivated was mostly obtained through allocation by the Office of the Prime Minister (OPM), ranging between 0.18–0.23 mean acres. Refugee HHs that reported cultivating slightly larger portions of land ranging between 0.44 – 0.83 mean acres hired it from non-group members within the host community (see Table 32).

Table 32: Land cultivated (in acres) by Refugee HHs in 2019 and mode of acquisition

	Women Refugee Households						Mixed Refugee Households					
	ADJUMANI			OBONGI			ADJUMANI			OBONGI		
	HHs	Mean Land size	%	HHs	Mean Land size	%	HHs	Mean Land size	%	HHs	Mean Land size	%
Allocated by OPM	53	0.18	88	59	0.23	95	44	0.21	80	51	0.23	89
Borrowed through mixed groups							1	0.08	2	4	0.47	7
Borrowed from non-group members	7	0.21	12	4	0.44	6	14	0.47	25	11	0.33	19
Hired from group members							4	0.29	7	1	0.09	2
Hired from non-group members	38	0.60	63	18	0.44	29	25	0.72	45	17	0.83	30
Family owned										1	0.12	2
Total land cultivated	52	0.61	87	54	0.43	87	50	0.67	91	56	0.56	98

Some of the experiences of participants in the FGDs on accessing land for production are shared.

I hired 20x40 meters of land at UGx 20,000/=...I had a good relationship with a national, so hired from him 10x40 meters at UGx 20,000/= from which I managed to harvest 4 basins of rice and 1 sack of simsim (FGD with Unity Farmers Group, Palorinya Settlement, Obongi).

I had no money so I failed to hire land from the nationals...we cultivated small pieces of land of 30x30 meters which OPM allocated to us, we could not get much produce from them (FGD with Ejete Farmers Group, Palorinya Settlement, Obongi).

Some landlords were greedy, they used to hire the same piece of land to more than one person...some nationals with land were greedy, they would hire you the land but also

harvest your crops when they are ready (FGD with Ringinangun Farmers Group, Palorinya Settlement, Obongi).

Some people are good but others are bad, when they give you land, they tell you to use it for only 1 year, then they restrict you on the crops to plant, they tell you do not plant cassava (FGD with Oriodeni Farmers Group, Maaji I Settlement, Adjumani).

Land is available and you can hire even up to 2 acres but the challenge land here belongs to a family, in the past one member would give you the land without the knowledge of other family members, so they would take it away from you (FGD with Fogono Farmers Group, Mungula I Settlement, Adjumani).

To improve land access, both women refugee and mixed refugee HHs made various proposals. Some refugees proposed that Government of Uganda through OPM and UNCHR could either allocate them more land within the settlement, buy for them land from the nationals or negotiate with Nationals in Host communities to hire them land.

OPM should request nationals to give us land for cultivation, because hiring is expensive...Let OPM negotiate with the nationals on our behalf for farming because they will lend you the land but after making it productive, they take it away (Mixed Refugee HHs).

UNHCR could give us extra land for production in the settlement... OPM should allocate us more land (Women Refugee HHs).

The best option is to ask from host communities or even purchase it...Land for cultivation can be increased by buying land for refugee households who are in the program (Women Refugee HHs).

3.3.4 Access and Use of Improved Agricultural Inputs

Although the mean land acreage cultivated in 2019 was small, notable proportions of refugee HHs used improved agricultural inputs for production that year. Results show that more than half (58.9%) the mixed refugee HHs and 55.7% of women refugee HHs used improved agricultural inputs in 2019. Comparison between districts, shows that more refugee HHs in Obongi (67.7%) than Adjumani (43.3%) used improved agricultural inputs in 2019.

About source of the improved agricultural inputs used in 2019 for production, results reveal two (2) major sources namely Development Partners (over 57%) and the Open Market (over 39%) for the 2 refugee groups in the two districts. Other sources cited include Input dealers within the settlements as well as family and/or friends. However, (see Table 33).

Table 33: Use of improved agricultural inputs by refugee HHs in 2019

	Mixed Refugee Households						Women Refugee Households					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)
Used improved agric. inputs	29	52.7	37	64.9	66	58.9	26	43.3	42	67.7	68	55.7
Source of the inputs												
Input dealer in the settlement	3	10.3	4	10.8	7	10.6	6	23.1	9	21.4	15	22.1
Open market	10	34.5	16	43.2	26	39.4	16	61.5	13	31.0	29	42.6
Friends/family	4	13.8	1	2.7	5	7.6	0	0.0	7	16.7	7	10.3
Given by development partner	17	58.6	28	75.7	45	68.2	8	30.8	31	73.8	39	57.4

Refugee HHs that used improved agricultural inputs for production in 2019 were asked to rate the quality of seeds and pesticides/fertilizers received from the different sources. For seeds rating was based on ability to germinate and cleanliness while the rating for pesticides and fertilizers depended on their effectiveness.

Results show that seeds from Development Partners and Input dealers were generally of good quality; 81.1% of women refugee HHs and 74.5% of mixed refugee HHs rated the seeds obtained from Development Partners as being of high quality. Similarly, 82.1% of women refugee and 78.6% of mixed refugee HHs rated the seeds from Input dealers as being of high quality. None of the HHs rated seeds from Input dealers as being of low quality. All (100%) mixed refugee HHs and majority (over 67%) of women refugee HHs reportedly perceived the quality of pesticide/fertilizers obtained from all sources except development partners as medium. The development partners provided high quality pesticides/fertilizers as perceived by all the mixed refugee HHs (100%) and majority (over 55%) of women refugee HHs (see Table 34).

Table 34: Quality of inputs used by refugee HHs for production in 2019

		Women Refugee Household				Mixed Refugee Household			
		HHs	High	Medium	Low	HHs	High	Medium	Low
		(n)	(%)	(%)	(%)	(n)	(%)	(%)	(%)
Input dealer	Seeds	28	82.1	17.9	0.0	14	78.6	21.4	0.0
	Pesticide/fertilizer	9	33.3	66.7	0.0	2	0.0	100.0	0.0
Open market	Seeds	60	45.0	51.7	3.3	47	57.4	42.6	0.0
	Pesticide/fertilizer	9	33.3	66.7	0.0	3	0.0	100.0	0.0
Friends/family	Seeds	30	33.3	66.7	0.0	18	44.4	55.6	0.0
	Pesticide/fertilizer	9	11.1	77.8	11.1	2	0.0	100.0	0.0
Development partner	Seeds	53	81.1	17.0	1.9	47	74.5	21.3	4.3
	Pesticide/fertilizer	9	55.6	44.4	0.0	2	100.0	0.0	0.0

3.3.5 Agricultural Enterprise Production on Households' Land

Refugee HHs planted a wide range of strategic and non-strategic crops in 2019. The strategic crops grown were Sesame, maize, and beans while soya beans, groundnuts, cassava, sorghum, millet, pigeon peas, sweet potato and vegetables were the non-strategic crops grown. In Adjumani, maize and beans were the most grown strategic crops while in Obongi, maize and Sesame. In Obongi, there were only two (2) HHs that reported growing beans in 2019. In terms of crop yield, maize was the most productive strategic crop among the refugee HHs in the 2 districts. For instance, mixed refugee HHs in Adjumani got 1,081 mean kgs of maize per acre compared to those that planted beans (667 mean kgs/acre) and Sesame (398 mean kgs/acre). Among women refugee HHs in the same districts, the yield for maize (894 mean kgs per acre) was more than doubled that of beans (304 mean kgs per acre) and Sesame (320 mean kgs per acre). In Obongi, however, mixed refugee HHs got more yields from maize (991 mean kgs per acre) while women refugee HHs got most from Sesame (816 mean kgs per acre). See Table 35 below.

Among the non-strategic crops, sweet potatoes, cassava, and sorghum were associated with higher yields/acre. For instance, in Adjumani, mixed refugee HHs that planted sweet potatoes got 9,598 mean kgs/acre, 6,608 mean kgs/acre in Obongi while the women refugee HHs in Adjumani got 3,532 mean kgs/acre while those in Obongi got 2,545 mean kgs/acre. Non-strategic crops that produced the least yields per acre were soyabean and pigeon peas while millet was grown by only 5 women refugee HHs in Obongi.

Assessment of proportion of crop produce sold reveals that not every HHs was engaged in selling produce, and even among those that sold, they did not sell all but part of the produce. Table 35 indicates that only 13 of the 46 women refugee HHs in Adjumani and 25 of 52 HHs in Obongi sold some Maize produce. In those HHs, women refugee HHs in Adjumani sold less than half (an average of 45%) of the maize produce while in Obongi sold only 44% of their maize produce. Similar trends were observed among mixed refugee HHs in both Adjumani and Obongi; especially for maize where less than half engaged in selling of produce. Even among non-strategic crops, HHs both from women refugee and mixed refugee HHs mostly sold about half of the produce.

The crops we grow are mostly for home consumption, I have not seen any for sale apart from vegetables and tomatoes but cabbage and beans, they don't sell...others sell only what they cannot store (FGD with Amesuara Farmers Group, Maaji III Settlement, Adjumani).

In addition, participants acknowledged selling produce individually as opposed to selling as a group of farmers.

We did not produce in large quantities to attract bulk buyers, so we sold our harvest in our homes...we produced on a small scale and sold our produce individually (FGD with Ringinangun Farmers Group, Palorinya Settlement, Obongi).

We do not have transport for the little we produce, we can't take it to the market so we have to sell it here cheaply (FGD with God is with us Farmers Group, Mungula I Settlement, Adjumani).

Comparison between mean yield per acre and quantity of seed planted, reveals high productivity of some of the seeds planted. For instance, mixed refugee HHs in Adjumani who planted maize in 2019, they planted 24.1 mean kgs per acre and harvested 1,081 mean kgs per acre while those in Obongi (mixed refugee HHs) planted 39.9 mean kgs of maize per acre and harvested 991 mean kgs per acre. Similar observations are made among women refugee HHs; those in Adjumani planted 51.9 kgs of maize per acre on average and got 894 kgs of maize per acre on average. The women in Obongi planted 35.2 kgs of maize per acre on average and harvested 776 kgs per acre on average (see Table 36 alongside Table 35).

Table 35: Average yield per acre for crops produced by refugee HH in 2019

	Women Refugee Households								Mixed Refugee Households							
	ADJUMANI				OBONGI				ADJUMANI				OBONGI			
	Yield		Crops sold		Yield		Crops sold		Yield		Crops sold		Yield		Crops sold	
	HHs	Mean kgs	HHs	%age	HHs	Mean kgs	HHs	%age	HHs	Mean kgs	HHs	%age	HHs	Mean kgs	HHs	%age
Strategic crops																
Sesame	13	320	4	53	34	816	26	55	15	398	5	44	34	714	24	51
Beans	25	304	10	49			0	0	25	667	13	50	2	573	2	50
Maize	46	894	13	45	52	776	25	44	37	1,081	12	42	49	991	15	50
Non-strategic crops																
Soya beans	4	264	1	80	5	184	3	53	5	240	1	83	1	25	1	100
Groundnuts	16	503	4	49	15	1,141	6	47	12	569	4	48	31	483	18	39
Cassava	6	4,017	3	48	3	2,250	3	47	12	3,081	6	60	1	667	2	38
Sorghum	12	2,193	4	52	20	1,196	9	48	12	897	1	34	8	545	2	45
Millet					5	1,820	3	42			0	0	2	4,000	2	29
Pigeon Peas	9	499	3	42	20	603	7	51	9	832	2	40	14	522	2	71
Sweet potato	26	3,532	6	58	23	2,545	8	29	19	9,598	6	31	28	6,608	10	43
Vegetables	26	426	15	74	36	955	20	48	28	546	10	54	45	1,465	18	56

Table 36: Average quantity of seed (kgs) planted per acre by refugee HHs in 2019

Crop	Mixed Refugees						Women Refugees					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	HHs	Mean kgs	HHs	Mean kgs	HHs	Mean kgs	HHs	Mean kgs	HHs	Mean kgs	HHs	Mean kgs
Strategic crops												
Sesame	17	16.5	35	25.3	52	22.4	14	27.1	34	29.2	48	28.6
Beans	25	66.7	2	11.0	27	62.6	27	57.5			27	57.5
Maize	38	24.1	49	39.9	87	33.0	46	51.9	52	35.2	98	43.0
Non-Strategic crops												
Soybeans	5	9.7	1	11.1	6	9.9	4	27.9	5	6.8	9	16.2
Groundnuts	12	106.5	34	73.9	46	82.4	16	73.6	15	390.6	31	227.0
Cassava	28	338.5	2	41.7	30	318.7	18	564.3	4	1,687.8	22	768.6
Sorghum	12	17.6	8	36.8	20	25.3	12	61.2	21	33.7	33	43.7
Millet			1	200.0	1	200.0			6	1.3	6	1.3
Pigeon Peas	11	22.8	14	10.2	25	15.7	9	8.9	21	18.0	30	15.2
Sweet Potatoes	19	672.1	28	373.0	47	493.9	25	600.0	25	358.7	50	479.4
Vegetables	28	108.2	45	112.7	73	111.0	27	73.8	39	13.0	66	37.9

Table 37: Variety of seeds planted by mixed and women refugee HHs in 2019

Crop	Type of farming	Mixed Refugees						Women Refugees					
		ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
		HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)
Sesame	Local	8	47.1	6	16.7	14	26.4	7	50.0	12	32.4	19	37.3
	Improved	9	52.9	30	83.3	39	73.6	7	50.0	25	67.6	32	62.7
Beans	Local	17	68.0	0	0.0	17	63.0	17	63.0	0	0.0	17	63.0
	Improved	8	32.0	2	100.0	10	37.0	10	37.0	0	0.0	10	37.0
Maize	Local	28	73.7	24	48.0	52	59.1	30	66.7	30	54.5	60	60.0
	Improved	10	26.3	26	52.0	36	40.9	15	33.3	25	45.5	40	40.0
Soybeans	Local	5	100.0	1	100.0	6	100.0	4	66.7	5	100.0	9	81.8
	Improved							2	33.3	0	0.0	2	18.2
Groundnuts	Local	10	83.3	16	45.7	26	55.3	8	53.3	7	46.7	15	50.0
	Improved	2	16.7	19	54.3	21	44.7	7	46.7	8	53.3	15	50.0
Cassava	Local	19	67.9	1	33.3	20	64.5	9	50.0	6	85.7	15	60.0
	Improved	9	32.1	2	66.7	11	35.5	9	50.0	1	14.3	10	40.0
Sorghum	Local	6	50.0	7	70.0	13	59.1	9	75.0	13	65.0	22	68.8
	Improved	6	50.0	3	30.0	9	40.9	3	25.0	7	35.0	10	31.2
Millet	Local	0	0.0	1	33.3	1	33.3	0	0.0	5	71.4	5	71.4
	Improved	0	0.0	2	66.7	2	66.7	0	0.0	2	28.6	2	28.6
Pigeon Peas	Local	4	33.3	1	7.1	5	19.2	0	0.0	5	22.7	5	16.1
	Improved	8	66.7	13	92.9	21	80.8	9	100.0	17	77.3	26	83.9
Sweet potato	Local	0	0.0	4	13.8	4	8.2	3	11.5	4	15.4	7	13.5
	Improved	20	100.0	25	86.2	45	91.8	23	88.5	22	84.6	45	86.5
Vegetables	Local	11	37.9	9	19.1	20	26.3	14	46.7	12	27.3	26	35.1
	Improved	18	62.1	38	80.9	56	73.7	16	53.3	32	72.7	48	64.9

To understand productivity levels and monitor progress over the years, this baseline sought to document the value of crop production at project onset. Using 2019 as the base year, the average total value of strategic crops per household observed was UGx246,894 for mixed refugee groups and UGx178,275 for women refugee groups. However, results show low productivity per crop for refugee HHs especially in Adjumani. For instance, among women refugee HHs, the average value of their maize produce per household was UGx 129,890/= and UGx 204,730/= for mixed refugee HHs. For Sesame in Adjumani, the total value of the harvest was worth UGx 161,540/= for women refugee HHs and UGx214,000/= for mixed refugee HHs. Even among the non-strategic crops, results show the highest average value of crop produced in 2019 standing at UGx 331,708/= for Pigeon peas among mixed refugee HHs and UGx173,750/= for groundnuts among women refugee HHs (see Table 38).

Table 38: Average value of crop production per refugee HH in 2019

Crop	Women refugees						Mixed Refugees					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean
Strategic crops												
Sesame	13	161,540	37	333,990	50	289,150	15	214,000	35	470,286	50	393,400
Beans	25	220,560			25	220,560	25	288,600	2	540,000	27	307,222
Maize	46	129,890	55	98,727	101	112,920	37	204,730	51	101,912	88	145,142
Non-Strategic crops												
Soybeans	4	124,120	5	143,400	9	134,830	5	56,400	1	270,000	6	92,000
Groundnuts	16	234,610	17	116,470	33	173,750	12	300,875	31	268,806	43	277,756
Cassava	6	91,950	6	22,167	12	57,058	12	175,075	2	28,000	14	154,064
Sorghum	12	85,250	21	99,371	33	94,236	12	53,350	10	56,040	22	54,573
Millet			6	43,750	6	43,750			3	41,250	3	41,250
Pigeon Peas	10	54,600	20	213,300	30	160,400	10	117,500	14	484,714	24	331,708
Sweet Potatoes	26	117,480	25	67,722	51	93,091	19	145,441	29	108,729	48	123,261
Vegetables	30	77,083	42	100,140	72	90,535	29	58,793	45	142,000	74	109,392

About value of crop produce sold findings reiterate and corroborate FGD participants that little of the produce is sold but rather consumed in the homes of the refugees. For nearly all crops that were grown in 2019 by both mixed refugee and women refugee HHs, the value of crops sold is smaller than that consumed

Table 39 a: Value of crop production sold per HH among mixed refugees in 2019

Crop	Mixed Refugee HHs																	
	ADJUMANI						OBONGI						Total					
	Produced		Consumed		Sold		Produced		Consumed		Sold		Produced		Consumed		Sold	
	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean
Strategic crops																		
Sesame	15	214,000	15	162,000	5	156,000	35	470,286	35	246,286	24	326,667	50	393,400	50	221,000	29	297,241
Beans	25	288,600	25	183,000	13	203,077	2	540,000	2	225,000	2	315,000	27	307,222	27	186,111	15	218,000
Maize	37	204,730	37	147,541	12	158,333	51	101,912	50	84,750	15	65,000	88	145,142	87	111,454	27	106,481
Non-Strategic																		
Soybeans	5	56,400	5	41,400	1	75,000	1	270,000	0	-	1	270,000	6	92,000	5	41,400	2	172,500
Groundnuts	12	300,875	12	199,625	4	303,750	31	268,806	29	195,828	18	134,444	43	277,756	41	196,939	22	165,227
Cassava	12	175,075	12	123,775	6	102,900	2	28,000	2	15,750	2	12,250	14	154,064	14	108,343	8	80,238
Sorghum	12	53,350	11	51,109	1	26,400	10	56,040	10	53,040	2	15,000	22	54,573	21	52,029	3	18,800
Millet			0	-	0	-	3	41,250	3	32,500	2	13,125	3	41,250	3	32,500	2	13,125
Pigeon Peas	10	117,500	10	104,500	2	65,000	14	484,714	14	449,357	2	247,500	24	331,708	24	305,667	4	156,250
Sweet Potatoes	19	145,441	19	127,488	6	56,825	29	108,729	29	79,691	10	49,560	48	123,261	48	98,611	16	52,284
Vegetables	29	58,793	27	48,981	10	37,125	45	142,000	45	70,733	18	179,833	74	109,392	72	62,576	28	128,866

Table 40 b: Value of crop production sold per HH among women refugee HHs in 2019

Crop	Women refugees																	
	ADJUMANI						OBONGI						Total					
	Produced		Consumed		Sold		Produced		Consumed		Sold		Produced		Consumed		Sold	
	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean	HH	Mean
Strategic crops																		
Sesame	13	161,540	12	142,500	4	91,875	37	333,990	36	175,900	26	225,960	50	289,150	48	167,550	30	208,080
Beans	25	220,560	25	124,560	10	240,000			-	-	-	-	25	220,560	25	124,560	10	240,000
Maize	46	129,890	46	92,500	13	132,310	55	98,727	54	77,167	25	49,770	101	112,920	100	84,220	38	78,007
Non-Strategic																		
Soybeans	4	124,120	4	34,125	1	360,000	5	143,400	5	98,400	3	75,000	9	134,830	9	69,833	4	146,250
Groundnuts	16	234,610	16	171,330	4	253,120	17	116,470	17	84,824	6	83,333	33	173,750	33	126,770	10	151,250
Cassava	6	91,950	5	62,160	3	88,100	6	22,167	6	14,000	3	16,333	12	57,058	11	35,891	6	52,217
Sorghum	12	85,250	11	60,845	4	88,425	21	99,371	21	67,029	9	76,800	33	94,236	32	64,903	13	80,377
Millet			-	-	-	-	6	43,750	6	33,125	3	21,250	6	43,750	6	33,125	3	21,250
Pigeon Peas	10	54,600	10	45,800	3	29,333	20	213,300	20	167,850	7	136,290	30	160,400	30	127,170	10	104,200
Sweet Potatoes	26	117,480	26	111,620	6	27,400	25	67,722	25	56,226	8	21,412	51	93,091	51	84,468	14	23,979
Vegetables	30	77,083	23	38,967	15	93,917	42	100,140	42	60,964	20	81,525	72	90,535	65	53,181	35	86,836

3.3.6 Refugee Households' participation in VSLA

Using 2019 as the base year, the study also sought to establish the level of participation of refugees in VSLA activities. Results show that among both women refugee and mixed refugee HHs over 60% of women refugee HHs and 63% of mixed refugee HHs participated in the 2019 VSLA activities. Adjumani had bigger proportions of refugee HHs that participated in VSLA activities in 2019 than Obongi. Results show that among both women refugee and mixed refugee HHs, 73% in Adjumani, participated in VSLA activities compared to 47.5% and 53.6% in Obongi. About half the refugee HHs in Obongi (52.5%) of women and 46.4% of mixed refugee HHs did not participate in any VSLA activities (see Table 40). Varied reasons were given by the refugees for not participating in VSLA activities; some participants from the women refugee HHs were either too busy with other activities or lacked the money for the weekly savings so they kept away from VSLA activities while a few did not participate because they were not members of the existing groups. Similar reasons were given by respondents from mixed refugee HHs who did not participate in any VSLA activities in 2019.

I had no source of income for VSLA savings on weekly basis... I joined late after the rest were trained...Lack of knowledge about VSLA...I was not aware about the benefits of saving (Mixed Refugee HHs).

Table 41: Participation of refugee HHs in VSLA activities for 2019

	Women Refugee Household						Mixed Refugee Households					
	ADJUMANI		OBONGI		Total		ADJUMANI		OBONGI		Total	
	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)	HHs	(%)
Participated in VSLA activities	43	72.9	29	47.5	72	60.0	38	73.1	30	53.6	68	63.0
Ever-received training on VSLA	29	67.4	15	51.7	44	61.1	30	78.9	23	76.7	53	77.9
Provider of training on VSLA												
NGO	26	89.7	7	46.7	33	75.0	25	83.3	13	56.5	38	71.7
Community Based Organization	1	3.4	9	60.0	10	22.7	2	6.7	7	30.4	9	17.0
Learnt from another group	5	17.2	0	0.0	5	11.4	3	10.0	3	13.0	6	11.3
Church based organization	0	0.0	0	0.0	0	0.0	0	0.0	3	13.0	3	5.7
Participation of youth (18-28) in VSLA												
High	9	16.4	5	11.1	14	14.0	8	15.7	5	10.2	13	13.0
Medium	10	18.2	11	24.4	21	21.0	14	27.5	13	26.5	27	27.0
Low	36	65.5	29	64.4	65	65.0	29	56.9	31	63.3	60	60.0
Ways HHs accessed money to finance												
VSLA	20	33.3	19	30.6	39	32.0	17	30.9	20	35.1	37	33.0
Micro-finance institutions (SACCOs)	0	0.0	0	0.0	0	0.0	1	1.8	0	0.0	1	0.9
Bank	0	0.0	1	1.6	1	0.8	0	0.0	0	0.0	0	0.0
Individual household savings	32	53.3	31	50.0	63	51.6	34	61.8	37	64.9	71	63.4
Borrowing from family/friends	2	3.3	5	8.1	7	5.7	1	1.8	4	7.0	5	4.5
Gifts	2	3.3	2	3.2	4	3.3	1	1.8	2	3.5	3	2.7
Sale of agricultural produce	17	28.3	17	27.4	34	27.9	14	25.5	19	33.3	33	29.5
Average amount of money borrowed per HH	235,000		76,000		183,000		213,684		107,000		172,000	
Ways VSLA loan was used per household												
Agricultural production	150,783	54	23,700	40	136,000	52	120,000	59	80,500	55	104,000	57
Petty trade	122,895	53	77,900	91	104,000	69	183,438	79	65,000	61	135,000	72
School requirements	137,500	54	81,700	82	130,000	58	131,053	56	65,600	73	112,000	61
Health	52,000	32	19,000	78	45,400	41	77,500	41	50,700	49	60,500	46
Construction	52,500	13	41,500	42	47,000	27						
Household asset	52,500	32	30,000	60	50,500	35	50,000	44	25,000	50	40,000	46

Results further reveal that among refugee HHs that participated in VSLA activities, over 61% of the women refugee and about 78% of mixed refugee HHs had ever received training on VSLA. Of these, 75% of women refugee and about 72% of the mixed refugee HHs were trained development partners/NGOs. Other providers of VSLA training included Community based Organizations, members of other VSLA groups and Church based Organizations (see Table 40 above).

Most refugee HHs (51.6% for women refugee and 63.4% for mixed refugee) used individual HH savings to finance agricultural production activities for the year 2019. One of every three women refugee (32%) and mixed refugee HHs (33%) obtained funding from VSLAs. The third main financial source for agricultural production was sale of agricultural produce.

The average amount on money borrowed per refugee HH from VSLAs was UGx 183,000/= for women refugee and UGx 172,000/= for mixed refugee HHs. Refugee HHs in Adjumani (both women and mixed refugee HHs) borrowed more than two times the amount refugee HHs in Obongi borrowed from VSLAs in 2019. The money borrowed was used to fund agricultural production, petty trade, buy school requirements, pay for health, construction as well as HH assets (see Table 40 above).

3.3.7 Participation of household members in Agricultural Production

Results of the baseline study show that among the women refugee HHs in 2019, agricultural production was a responsibility for all HH members including both adults and children. No single stage of production was entirely left to hired labor nor a particular category of HH members. Right from land opening and preparation, through planting, weeding, disease management to marketing produce, various HH members were involved. Mobilization of labor for the various tasks was assigned to the adults in the HH who in this case were mostly female adults (see Table 41).

Table 42: Participation of women refugee HH members in agricultural production

	Women Refugee Households								
	HHs	Adult Female	Adult Male	Children	Adult Female and Adult Male	Adult Female and children	Adult Male and children	All (Adult male, Adult Female and Children)	No HH members involved
Stage of Production	(n)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Land opening and preparation	122	13	2	4	12	42	2	24	3
Planting	122	16	1	3	12	44	2	23	0
Weeding	122	21	2	2	9	46	1	19	1
Pest and disease management	102	31	5	1	10	23	1	16	14
Harvesting	122	22	0	2	10	48	1	18	0
Post	122	28	3	1	8	42	1	17	0
Marketing	115	64	2	2	7	8	1	7	10
Planning for new season	122	48	4	1	21	16	1	7	2
Use of income received from production.	116	50	1	0	16	16	0	9	9
HH member in charge of mobilizing									
Land opening and preparation	122	73	21	4	3	0	0	0	0
Planting	122	75	21	3	3	0	0	0	0
Weeding	122	82	14	3	2	0	0	0	0
Pest and disease management	100	68	17	1	4	0	0	0	10
Harvesting	121	87	8	1	3	1	0	0	0
Post	122	84	12	0	3	2	0	0	0
Marketing	114	78	10	2	2	0	0	0	9
Planning for new season	122	72	17	1	7	1	0	0	2
Use of income received from production	116	74	13	0	4				9

Similarly, among mixed refugee HHs in 2019, agricultural production was a duty for all HH members. As can be seen in Table 42 below, right from land opening and preparation, through planting, weeding, disease management to marketing produce, all HH members were involved.

Table 43: Participation of women refugee HH members in agricultural production

	Mixed Refugee Households								
	HHs	Adult Female	Adult Male	Children	Adult Female and Adult Male	Adult Female and children	Adult Male and children	All (Adult male, Adult Female and Children)	No HH members involved
Stage of Production	(n)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Land opening and preparation	111	13	5	2	16	17	0	41	6
Planting	110	11	2	1	17	23	1	44	2
Weeding	112	20	2	2	12	23	0	41	1
Pest and disease management	92	20	21	2	9	9	0	16	24
Harvesting	111	18	2	1	12	30	0	37	1
Post	111	26	1	1	12	28	0	32	0
Marketing	103	58	7	0	16	7	0	9	4

	Mixed Refugee Households								
	HHs	Adult Female	Adult Male	Children	Adult Female and Adult Male	Adult Female and children	Adult Male and children	All (Adult male, Adult Female and Children)	No HH members involved
	(n)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Stage of Production									
Planning for new season	109	34	9	1	40	3	0	11	2
Use of income received from	103	38	12	0	31	5	0	12	3
HH member in charge of mobilizing resources									
Land opening and preparation	112	55	41	1	3	0	0	0	0
Planting	111	55	41	1	3	0	0	0	0
Weeding	112	71	26	1	2	0	0	0	0
Pest and disease management	89	39	43	2	2	0	0	1	12
Harvesting	111	78	16	1	3	1	0	0	1
Post	111	79	14	1	4	2	0	0	0
Marketing	103	72	22	0	2	0	0	0	4
Planning for new season	109	50	39	1	9	0	0	0	2
Use of income received from	103	52	38		8				3

3.3.8 Sexual Reproductive Health and Rights

Awareness about SRHR among women refugee and mixed refugee HHs was nearly universal, 98.4% and 96.4% respectively. Of these, more than 84% of the refugees had received training or awareness raising about SRHR. The most predominantly cited sources of learning was sensitization from health facilities and development partners/NGO (see Table 43).

Table 44: Awareness and use of family planning services among refugee HHs

	Women Refugee Household						Mixed Refugee Households					
	ADJUMANI		OBONGI		TOTAL		ADJUMANI		OBONGI		TOTAL	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Ever heard about SRHR in the community	59	98.3	61	98.4	120	98.4	52	94.5	56	98.2	108	96.4
Received any training/awareness raising about SRHR	50	84.7	55	90.2	105	87.5	44	84.6	47	83.9	91	84.3
Place/person that provided training on SRHR												
Development partner/NGO	11	22.0	18	32.7	29	27.6	13	29.5	10	21.3	23	25.3
Health facility	45	90.0	50	90.9	95	90.5	34	77.3	41	87.2	75	82.4
Family/Friends	4	8.0	0	0.0	4	3.8	2	4.5	2	4.3	4	4.4
Government official	1	2.0	1	1.8	2	1.9	0	0.0	0	0.0	0	0.0
Ever used any family planning methods	10	16.9	21	34.4	31	25.8	14	25.9	11	19.6	25	22.7
Place/person that provided FP service												
Health facility	10	100	19	90.5	29	93.5	12	85.7	9	81.8	21	84.0
Family/friends	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Development partner center	0	0.0	4	19.0	4	12.9	0	0.0	0	0.0	0	0.0

Family planning (FP) use among refugees was reportedly low. Only 25.8% of women refugee HHs had ever used FP while nearly the same proportion of mixed refugee HHs (22.7%) had ever used any FP method.

3.3.9 Refugees' Relationship with host Communities

This baseline sought to establish the nature of relationship that existed between refugees and the host communities. Specifically, it sought to establish the proportion of mixed refugee HHs that were interacting with national farmers' groups prior to joining the NURI programme. In the sample of 112 mixed refugee HHs, 89.3% had been interacting with national farmers before joining the NURI programme. The level of interaction varied from individual to individual. For some people, it was limited to casual interactions at water points, in the market and health facilities while others enjoyed an extensive relationship and interaction that even involved sharing tips for improved agricultural productivity, land for cultivation and meetings.

The nature and level of interaction between national farmer HHs and refugees changed for the majority (about 83%) of mixed refugee HHs upon joining the NURI programme. Obongi district had a higher proportion (96.4%) of refugees whose interaction between national farmer HHs and refugees reportedly changed than those in Adjumani (69%). See Table 44 for details.

Table 45: Level of interaction between mixed refugee households and national farmers

	Mixed Refugee Households					
	ADJUMANI		OBONGI		Total	
	(n)	(%)	(n)	(%)	(n)	(%)
Refugee HHs that interacted with national farmers prior to joining NURI	53	96.4	47	82.5	100	89.3
Interaction with national farmers changed upon joining NURI programme	38	69.1	54	96.4	92	82.9
Description of the relationship between the national farmer households						
Very good	17	34.0	20	37.7	37	35.9
Good	28	56.0	28	52.8	56	54.4
Fair	3	6.0	5	9.4	8	7.8
Poor	2	4.0	0	0.0	2	1.9
Nature/kind of production related support received;						
Land for production	47	85.5	53	93.0	100	89.3
Animal traction	4	7.3	6	10.5	10	8.9
Seed for production	18	32.7	20	35.1	38	33.9
Tools (hoes)	2	3.6	4	7.0	6	5.4
Opportunities for casual work to earn income	16	29.1	21	36.8	37	33.0
Others	1	1.8	13	22.8	14	12.5

At the time of the baseline, majority of the mixed refugees (90%) rated their relationship with the national farmer HHs as good (54.4%) or very good (35.9%). As a result of the interaction with national farmer HHs, a high percentage (89%) of the mixed refugee HHs gained access to land for agricultural production. Other refugees received seeds for production (about 34%), got planting materials especially potato vines and/or opportunities for casual work to earn an income (33%). Several refugees became friends with national farmers leading to peaceful co-existence after joining NURI.

Yes, it has changed completely compared to the past... We are now in the same group with them and we are even more peaceful with them... I have acquired more land for production...we are farming together...we are sharing cuttings like potato vines (Mixed Refugee HHs).

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

- The average annual agricultural cash income in 2019 was Ugx1,079,340 for new national farmers in the three districts, UGx359,264 for mixed refugee groups and UGx288,204 for women refugee groups in the districts of Adjuman and Obongi. While nationals earned more income from Non-agricultural sources than agricultural sources, the livelihood for refugees in the districts of Adjumani and Moyo were mostly dependent on income from agricultural sources compared to non-agricultural sources.
- Generally, over 94% of the households among new nationals and refugees consumed at least 2 meals per day on average. The proportion of households that had at least 3 meals per day on average was 43% for new nationals, about 49% for women refugees and about 46% among mixed refugee groups. However, about 80% of the households for new nationals, women refugees and mixed refugee groups experienced food shortage during the month of June 2019. The period of food shortage reportedly stretched from May to July 2019 in over 30% of the households in the three groups.
- For national farmers, the yield (kgs per acre) of strategic crops varied widely across the three districts ranging from 182 to 216 for Sesame, 268 to 342 for beans, 426 to 522 for maize, 313 to 380 for Soyabeans, 167 to 1040 for sunflower and 748 to 1010 Rice. The variation of crops yield (kgs) per acre among refugees across districts was sesame (320 to 816), beans (306 to 667), and maize (776 to 1081).
- About 50% of the strategic crops namely sesame, beans and maize were marketed by all the three groups while 66-88% of the quantity produced for soyabeans, rice and sunflower were sold by national farmers to generate household income. No significant variation across districts in the percentage of crops sold.
- Households for Nationals had a wide range of production assets in 2019 valued at an average of UGx 2,430,000/= for the 3 districts. The most commonly owned assets were hand-hoes (98%) and a panga (85%) and the least owned assets included motorcycle, spray pump and sheep.
- Wide variation in the average total value of strategic crops across type of household group was observed with UGx552,523 for new nationals, UGx246,894 for mixed refugee groups and UGx178,275 for women refugee groups. While the new national farmers grew more strategic crops (6 crops), the refugee groups planted only 3 crops.

- In 2019, nearly all households for Nationals (94%) participated in VSLA activities and over 90% of these received training on VSLA. The money borrowed from VSLA was reportedly used in agricultural production (65%), petty trade (57%). For refugee households, slightly over 60% of women refugee households and mixed refugee households participated in VSLA.
- Awareness about sexual and reproductive health and rights (SRHR) was nearly universal (97%) in the three districts for the national households. However, there was low utilization of family planning among the new nationals. Similarly, whereas awareness about SRHR among refugee households was very high (Over 96%), FP utilization was extremely low (slightly over 23%).

4.2 Recommendations

Drawing from the findings of the following recommendations are made to improve the farming practices and livelihoods of both national farmer groups and the refugee HHs:

- Train both nationals and the refugees in modern farming practices including using improved crop seeds
- Organize exchange learning visits for members of the targeted groups of national farmers and refugees
- Support both nationals and refugees to form marketing groups through which produce can be marketed
- Train groups of national farmers and refugees in post-harvest handling and marketing
- Construct silos in a central location where farmers groups can store their produce when market prices are not favorable
- Train all targeted groups of national farmers and refugees on the VSLA methodology paying particular emphasis on saving
- Targeted sensitization on family planning to dispel all myths, fears and misconceptions associated with family planning such as infertility, cancer

ANNEXES

Annex 1: Baseline Tools