Food Security and Nutrition Assessment in Karamoja Sub-Region

August 2018

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ACRONYMS

ARI	Acute Respiratory-tract Infections
BMI	Body Mass Index
CI	Confidence Intervals
DPT	Diphtheria, Pertussis and Tetanus (vaccines)
EBF	Exclusive Breastfeeding
ENA	Emergency Nutrition Assessment
FCS	Food Consumption Score
FSNA	Food Security and Nutrition Assessment
GAM	Global Acute Malnutrition
HDDS	Household Diet Diversity Score
IBFAN	International Baby Food Action Network
ITN	Insecticide Treated Nets
IYCF	Infant and Young Child Feeding
LC	Local Council
M&E	Monitoring and evaluation
MAD	Minimum Acceptable Diet
MAM	Moderate Acute Malnutrition
MCHN	Maternal, Child Health and Nutrition
MDD	Minimum Dietary Diversity
MMF	Minimum Meal Frequency
MUAC	Mid-Upper Arm Circumference
NCHS	National Centre for Health Statistics
NUSAF	Northern Uganda Social Action Fund
RCSI	Reduced Coping Strategy Index
SAM	Severe Acute Malnutrition
SFP	Supplementary Feeding Programme
SMART	Standardised Monitoring and Assessment of Relief and Transition
SPSS	Statistical Package for Social Scientists
TFP	Therapeutic Feeding Programme

TLU	Tropical Livestock Unit
U5MR	Under-five Mortality Rate
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNWFP	United Nations World Food Programme
WASH	Water and Sanitation Hygiene
WHO	World Health Organization
WHZ	Weight-for-Height Z Scores

1. BACKGROUND

1.1: INTRODUCTION

The Karamoja and Teso sub-regions in north-east Uganda have been chronically plagued by food security and nutrition related challenges linked to weather-related fluctuations, poor environmental conditions and weak infrastructure. Through support from development partners, comprehensive Food Security and Nutrition Assessments (FSNA) have been regularly conducted twice a year to monitor the situation in Karamoja sub-region, and to provide basis for timely, objectively verifiable interventions and response. Similar assessment has been conducted in selected districts from the Teso sub-region to provide accurate information for programmatic and policy related decision-making.

In this assessment of July 2018, quantitative household surveys were conducted in all the seven districts in the Karamoja sub-region namely: Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit and Napak. In addition, a qualitative assessment was conducted in Kaabong District to complement and gain better understanding of the findings from the quantitative survey. From the Teso sub-region, quantitative household surveys were conducted in three selected districts namely: Amuria, Bukdea and Katakwi. This report details findings from the **seven districts in Karamoja sub-region**.

1.2: RATIONALE

The purpose of the assessment was to establish the current status as of July 2018, of the key indicators related to food security, nutrition and health, including Water and Sanitation Hygiene (WASH). The geographical scope included all the 7 districts in Karamoja sub-region (Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit and Napak). This was achieved by carrying out the mid-year round of quantitative household-level food security and nutrition assessments using the SMART methodology as well as application of qualitative research methodology in Kaabong district.

The activity is expected to provide current data on selected indicators that reflect the achievements from on-going program interventions. The findings will inform the program planning and decision-making processes and thus contribute towards the continuous program monitoring and evaluation processes.

1.3: OBJECTIVES

The specific objectives of the assessment were as follows:

i) Determine the prevalence of malnutrition (wasting, stunting and underweight) among children aged 6 – 59 months (and/or measuring 65-110 cm in length or height);

ii) Determine the coverage of health interventions such as routine DPT, Measles and polio immunization coverage, and Vitamin A supplementation among children under the age of five years;

iii) Determine the incidence of common diseases (diarrhoea, measles and Acute Respiratory Infections) among the target population, two weeks prior to the assessment and access to/uptake of health services for treatment;

iv) Assess current infant and young child feeding (IYCF) practices;

v) Assess/ Analyse factors associated with malnutrition with special emphasis on Kaabong district;

vi) Assess the current food security status of households, using standard indicators such as food consumption score, dietary diversity core, and coping strategies of the general population in Karamoja sub-region;

vii) Analyse factors that determine household food security status;

viii) Assess community assets through a community questionnaire;

ix) Analyse gender issues affecting household food security and child nutrition status;

x) Assess Early Childhood Development (ECD) related behavioural indicators;

xi) Determine the coverage of food security assistance provided to households;

xii) Determine crop cover using provided tools in the surveyed areas;

xiii) Recommend, through consultations with relevant stakeholders, appropriate course of action by the Government, World Food Programme, UNICEF, and other stakeholders based on the findings of the assessment.

2. METHODOLOGY

2.1: SCOPE

The Karamoja Food Security and Nutrition Assessment comprised of quantitative surveys from 14th July to 1st August 2018, in all the seven districts in the sub-region namely: Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit and Napak. However, to complement the findings from the quantitative survey, a qualitative assessment was also conducted in Kaabong District.

The assessment was designed as a cross-sectional household survey using two-stage cluster sampling that provided representativeness at the district level. It was undertaken based on the internationally recognized SMART (Standardized Monitoring and Assessment of Relief and Transitions) methods for survey design and anthropometric assessments. The results for each indicator include the interval in which the real value among the study population is contained with a 95% confidence. A sensitivity analysis was conducted of indicators by age category, most likely to respond to the gender-specific interventions.

The qualitative assessment in Kaabong explored the supply side from the perspective of community and civic leaders, the health and project managers at district and sub-district levels. The demand side was explored from the perspective of beneficiaries, with focus on mothers of children age 0 – 59 months, their spouses or partners and the community resource persons.

2.2: SAMPLING

In the first stage, a sample of clusters was selected using an updated list of parishes that constitute the district using the probability proportional to population size approach. At the second stage households were selected using the systematic random sampling approach based on a list of village households obtained from the village head. The approach did not include carrying out a listing of the households. More specifically, the approach adapted included the following:

- Where the number of households in the village was less than or equal to the required number, all households in the village were selected;
- Where the required number of households with children was not met in a village, in line with the SMART guidelines the survey team proceeded to the nearest village and randomly selected the additional households to make up the required number;
- Where an individual or an entire household was absent, the teams returned to the household or revisited the absent individual up to two times on the same survey day. If unsuccessful after the subsequent attempts, it was recorded as an absence and not replaced; and
- Where the individual or entire household refused to participate, it was registered as a refusal and not replaced.

The actual parameters taken into consideration during sample size calculation has been summarised in Table 1. Precision needed at various levels of malnutrition prevalence, as outlined in the SMART Guidelines were used.

Table 1: Parameters used for Sample Size Calculation, July 2018 FSNA

	District						
	Abim	**Amudat**	**Kaabong**	**Kotido**	**Moroto**	**Nakapiripirit**	**Napak**
Estimated prevalence (%)	11.1	12.1	11.8	18.5	18.5	11.8	12.7
± Desired precision (%)	3.5	3.5	3.5	4.5	4.5	3.5	3.5
Design Effect	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Children (6 - 59 months) to be included	**505**	**545**	**533**	**467**	**467**	**533**	**568**
Average household size	5	5	5	5	5	5	5
<5 population (%)	20	20	20	20	20	20	20
Non-response households (%)	5	5	5	5	5	5	5
Households for Anthropometry and Health module	**591**	**637**	**610**	**546**	**546**	**623**	**664**
Recommended # households per cluster	18	15	18	18	18	18	18
Number of clusters	33	43	34	31	31	35	37
# children (6 - 59 months) per cluster	**15**	**13**	**16**	**15**	**15**	**15**	**15**
Food Security							
Food Insecure (%)	53	24	45	53	46	43	62
± Desired precision	5	5	5	5	5	5	5
Design Effect	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Households to be included	**574**	**421**	**571**	**574**	**573**	**565**	**543**
Recommended # households per cluster	18	15	18	18	18	18	18
Number of clusters	**32**	**29**	**32**	**32**	**32**	**32**	**31**
IYCF Practices							
Estimated % children 6 - 23 months in population	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Estimated prevalence (%)	50	50	50	50	50	50	50
Estimated District population	156,690	103,432	142,224	181,050	107,966	167,879	105,769
Estimated Population of 6 - 23 months (estimated at 6.4% of population)	10,028	6,620	9,102	11,587	6,910	10,744	6,769
Sample size	384	384	384	384	384	384	384
Sample size after small population correction	364	364	371	372	363	370	369
Number of Children (6-23) per cluster	**11**	**8**	**11**	**12**	**12**	**11**	**10**

The summary of clusters, households, children and women is presented in Table 2.

Table 2: Summary of Selected Clusters and Households, July 2018 FSNA

District	Clusters	Households	Children	Women
Abim	33	659	897	656
Amudat	43	712	955	713
Kaabong	34	585	756	586
Kotido	32	625	787	619
Moroto	34	577	697	577

District	Clusters	Households	Children	Women
Nakapiripirit	35	693	881	675
Napak	37	687	920	681
KARAMOJA	**248**	**4,538**	**5,893**	**4,507**

2.3: Data Collection

An electronic version of the quantitative data collection questionnaire was prepared for use on the ODK platform. It was administered through face-to-face interviews with mothers, caregivers and/or household heads in the home settings using mobile tablets provided by United Nations World Food Programme. The food security module was administered to all the selected households, while health and nutrition module covered children age 0 – 59 months and their mothers. The anthropometric measurements were conducted on children aged 6 – 59 months. In addition, measurements were taken from the pregnant women and mothers of children age 0 to 59 months.

Age determination of children was done preferentially using child health cards but, in their absence, a local events calendar was used following discussions with the mothers. The children with physical disabilities were assessed but findings from anthropometry was excluded from the analysis.

For qualitative data collection, 6 facilitators (two male and four female) were recruited from Kaabong, on basis of fluency in the local language, and prior experience in conducting face-to-face interviews and focus group discussions. The key informant interviews were conducted in English involving the Village Health Teams and Local Council 1 (LC 1) Chairpersons of 4 villages in the selected sub-counties. The focus group discussions were conducted in the local vernacular involving groups of 8 – 12 individuals comprising of: mothers of children age 0 – 59 months, male adults with children age 0 – 59 months, and mothers with malnourished children. The three FGDs were conducted separately. Data collection was done by 6 moderators (2 per FGD) who were attended a one training on the tool and the data collection skills. Data was collected using voice recorders to facilitate accurate documentation of the process and in addition, the team took notes to facilitate the transcription process. There was one person specifically assigned to collect the KI data.

2.4: Data Quality Assurance

Measures put in place to ensure quality of the quantitative data included the following:

- Pre-programming the data-collection tablets to compute nutrition indices and to check for out-of-range values (using WHO-ANTHRO) such that input of wrong measurements raised an alert message and stopped the process till after the correction was done;
- Inclusion of pre-coded skip patterns, ranges and restrictions tailored to reduce errors during data collection and to save time;
- Conducting of standardization exercises during the training in all districts that ensured conducting of valid measurements by the Enumerators;
- Utilisation of the electronic digital weighing scales with higher accuracy and measurements to one decimal point, which eliminated digit piling and bias during the determination of weight;
- Seamless integration of the survey data with other computer programs such as Microsoft Excel for analysis with minimum errors; and

- Establishment of a strong supervision structure comprising of Team Leaders, Supervisors and Co-Investigators alongside the District Coordinator (District Health Officer) and the UNWFP team.

Measures undertaken for the qualitative data included the following:

- Qualitative data was collected using voice recorders that facilitated accurate documentation of the process, complemented by notes from the Enumerators;
- The daily notes were compiled and organized along the questions in the interview guide to accurately link interpretation of the findings from respondents during transcription; and
- Preliminary findings were first discussed among the analysis team for validation and triangulated to ensure accuracy.

2.5: Data Analysis

Figure 1 illustrates the Food Security and Nutrition Conceptual Framework that underpinned the questionnaire design and formed the basis for analysis and reporting of the assessment data.

Quantitative Data

The quantitative data was downloaded from the World Food Programme servers and cleaned before analysis could commence. Thereafter, exportation was done from the database software to the appropriate software used for processing and analysis, namely: Microsoft Excel, SPSS and ENA for SMART.

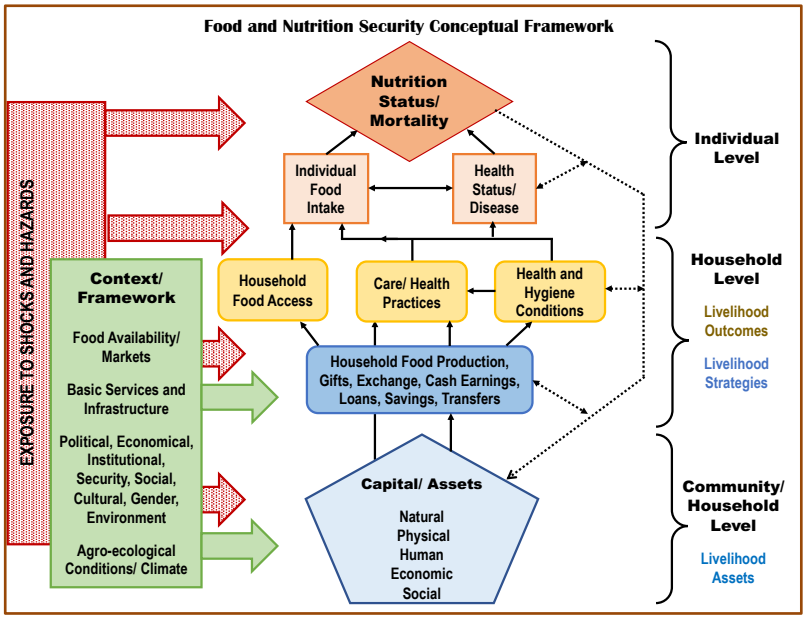

Figure 1: The Conceptual Framework for the July 2018 FSNA

Anthropometric data was exported into ENA for SMART for generation of z-scores used to determine nutritional indicators of Weight for Height (WHZ), Weight for Age (WAZ) and Height for Age (HAZ) z-scores based on the WHO 2006 Standards. Results based on the NCHS references has been reported in the Appendix to enable comparison with previous surveys.

Morbidity and other health-related data was analysed using SPSS and presented in form of descriptive statistics in appropriate tabular and graphical formats. Other data was analysed using IBM Statistics (SPSS) 22. District specific and activity area (outcome area) data has been concurrently presented. As much as possible, data on key indicators was disaggregated by sex and age. Current findings were compared to previous food security, health, and nutrition assessments to establish any positive or negative changes.

Food security data was handled systematically to generate the household wealth index from ownership of household property using the principal components analysis. The factors associated with malnutrition and food security were independently associated with GAM, and assessed using binary logistic regression, being a

dichotomous variable. Multinomial logistic regression was used for analysis of the household food consumption diversity.

Qualitative data

The standard procedure for analysis of qualitative data was employed, which involved identifying key messages in responses from the transcribed data. The transcribed empirical material was reviewed using an open coding procedure to identify the aspects that the respondents emphasized when they talked about undernutrition, food security and infant and young child practices. The key points/themes that emerged were marked with a series of codes, which were extracted from the text. These were read several times and closely related themes put together for a synthesis into specific messages in order to make them more workable for analysis.

Manual coding of key messages and subsequent generation of narratives as recommended by Svarstad (2010)[1] was followed because of its advantages over the available computer programmes. In particularly, was the advantage of ease to alternate between the different fragments of the transcribed material as well as the deeper understanding of the material that could be attained through the process.

2.6: Limitations and Potential Biases

1) Various district officials expressed interest in expansion of scope and increase in number of questions, yet each additional piece of data collected degrades the accuracy of the whole dataset, prolongs and complicates the survey. Deliberate attempts were made to ensure that any additional information to be collected was clearly stated and justified in the objectives and had a realistic prospect of leading to a meaningful intervention;

2) Due to inaccuracies in the determination of the age, infants less than 6 months or children more than 59 months may be included in the survey leading to difficulties related to the accuracy and precision of the measurements. Teams were instructed to make use of the events calendars and to deliberately engage the caregivers in order to ensure appropriate age determination in all such situations;

3) Any inaccuracy in the equipment or measurement technique will lead to systematic bias. Deliberate attempts were made to regularly assess the scales with known weights to ensure consistent measurement. Measurements were consistently done by the Team Leaders in order to limit variations in technique;

4) Inaccurately taken weight and height—even when the inaccuracy is random and evenly distributed between over- and under-measurement—results in systematic overestimation of the prevalence of wasting. The measuring team were selected out of best performers during the standardisation exercise and maintained throughout the exercise.

[1] Svarstad, H. (2010). Why hiking? Rationality and reflexivity within three categories of meaning construction. *Journal of Leisure Research, 42* (1), 91-110.

3. FINDINGS FROM THE QUANTITATIVE SURVEY

3.1: HOUSEHOLD SOCIO-DEMOGRAPHIC PROFILE

3.1.1: Age Distribution of Selected Household Heads

In the sampled population, approximately two-thirds of the selected 4,538 household heads (69%) were within the age-group of 20 – 39 years and 27% in the 40 – 49 years age group (Figure 2). There is evidence that links higher vulnerability to malnutrition of children born to the very young heads of household in age group below 19 years and the very old heads of household in age group above 59 years[2]. Only 0.7% of household heads were within the age group of 14 – 19 years, while 3% were of age 60 60 years and above. Napak and Nakapiripirit districts had comparatively higher proportions of household heads in the age-group of 60 years and above.

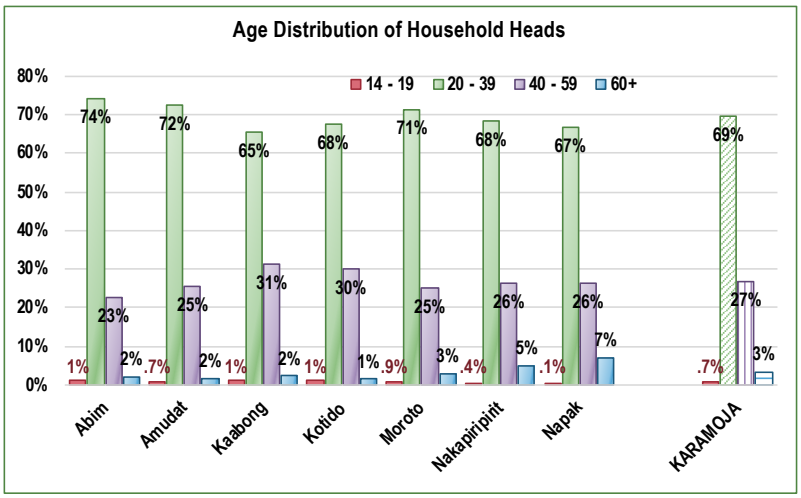

Figure 2: Age Distribution of Selected Household Heads, July 2018

3.1.2: Highest Education Level of Household Heads

There is a positive association between level of education and household income, which could in-turn influence the household food security[3]. Figure 3 shows that one in three heads of household (33% of 4,538) had gone through some formal education, with highest proportion in Abim district (88%). The lowest proportion were in recorded in the districts of Amudat (14%) and Kotido (15%). Overall, 67% of the household heads had no formal education, primary level education was reported by 18%, whilst 10% had ordinary level secondary, 3% advanced secondary and 3% tertiary levels of education. This finding is similar to the one during

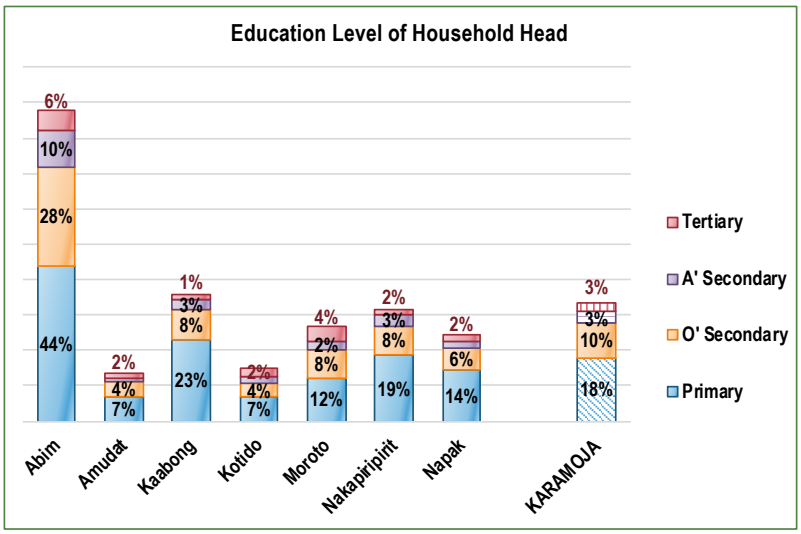

Figure 3: Highest Education Level of Household Heads, July 2018

[2] Yu SH, Mason J, Crum J, Cappa C, Hotchkiss DK. 2016. Differential effects of young maternal age on child growth. Global Health Action 2016, 9: 31171 -http://dx.doi.org/10.3402/gha.v9.31171

[3] Saad AA, and Adam AI. 2015. "The relationship between household income and educational level: South Darfur rural areas, Sudan, Statistical Study". International journal of Advanced Statistics and Probability, 2016

the June 2017 assessment. Disaggregated by gender, there were slightly more female household heads without any formal education (70%) than males (66%). There was a comparable proportion with primary level education (18% and 19%, respectively) but at secondary and higher levels of education, males were 16% compared to 11% females.

3.1.3: Gender of Household Head and Polygamy

Studies have linked vulnerability to malnutrition among children born in female-headed as well as polygamous households[4]. Up to 13% of the 4,538 sampled households in the region were female-headed, more pronounced in Moroto and Kaabong districts but comparatively lower in Amudat and Nakapiripirit districts (Figure 4). This was much lower than 30% reported in the June 2017 assessment. On the other hand, 41% of the household heads were in a polygamous relationship, which was also lower than 46% reported in the previous assessment. Among the selected population in this assessment, household polygamy was lowest in Abim district and highest in Kaabong.

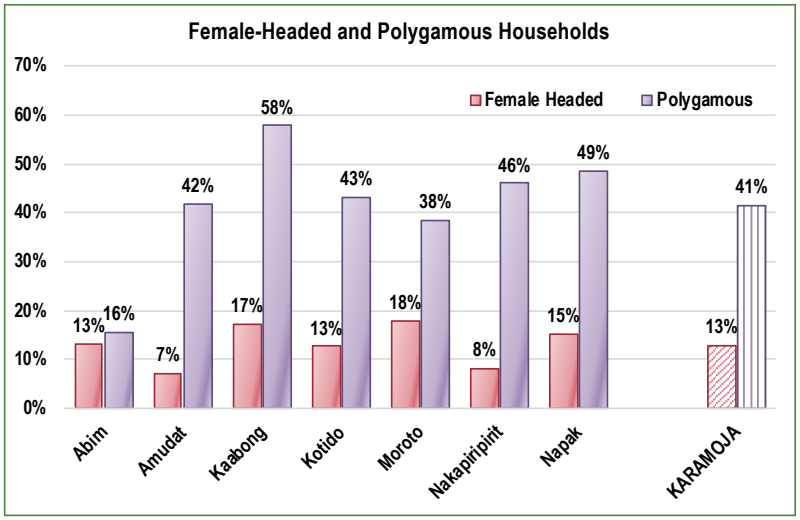

Figure 4: Gender of Household Heads and Polygamy Status, July 2018

3.1.4: Household Family Size[5]

The number of people who eat from the same pot (household) has an influence on food security[6]. As illustrated in Figure 5, the highest proportion of selected households in the sub-region ranged between four and six people (52%). It is worth noting that about one-third of the selected households (31%) reported having seven or more people in the household, particularly prominent in Kaabong, district. Small size households of 1 to 3 people constituted 17% of the selected total,

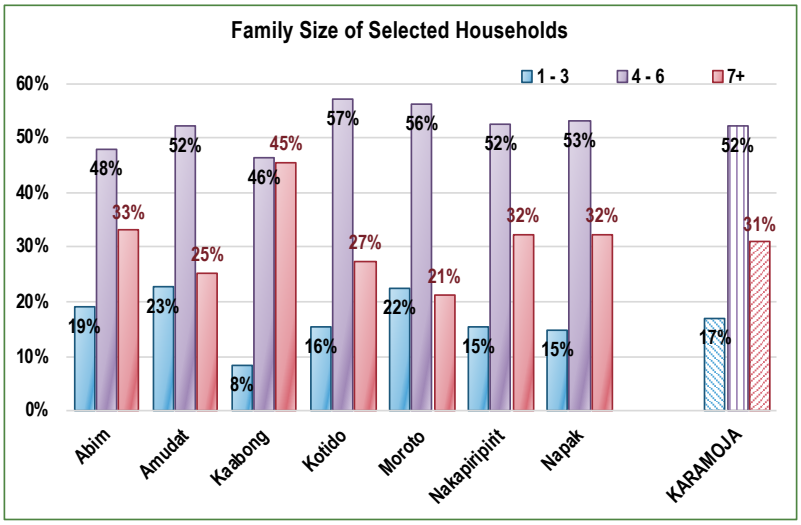

Figure 5: Average Household Family Size, July 2018

[4] International Maize and Wheat Improvement Center. 2014. Food security as a gender issue: Why are female-headed households worse off compared to similar male-headed counterparts?

[5] The UDHS 2016 reported 7.2 as the mean ideal number of children for women age 15 – 49 years in Karamoja region (highest in the country), compared to the national average of 4.8

[6] Ajao KQ, Ojofeitimi EO, Adebayo AA, Fatusi AO, Afolabi OT (2010). Influence of family size, household food security status and child care practices on the nutritional status of under-five children in lie-lfe, Nigeria. US National Library of Medicine National Institutes of Health

observed to be more common in Amudat and Moroto districts but less in Kaabong.

3.1.5: Access to Health Care Services

The majority of selected household members in the region (62%%) utilise the health centre as the first point of access to health care a fact that could be attributed to their relative proximity, especially in Kotido and Nakapiripirit districts. (Figure 6). Village Health Teams (VHT) are the first point of care for 24% of the households, more common in Kaabong and Moroto districts. Only about one in ten households use the main hospital as first point of access to health care, more commonly in Amudat district. The use of herbalists is comparatively more common in Kaabong district while private clinics are relatively important first point of access in Nakapiripirit district (5% of households).

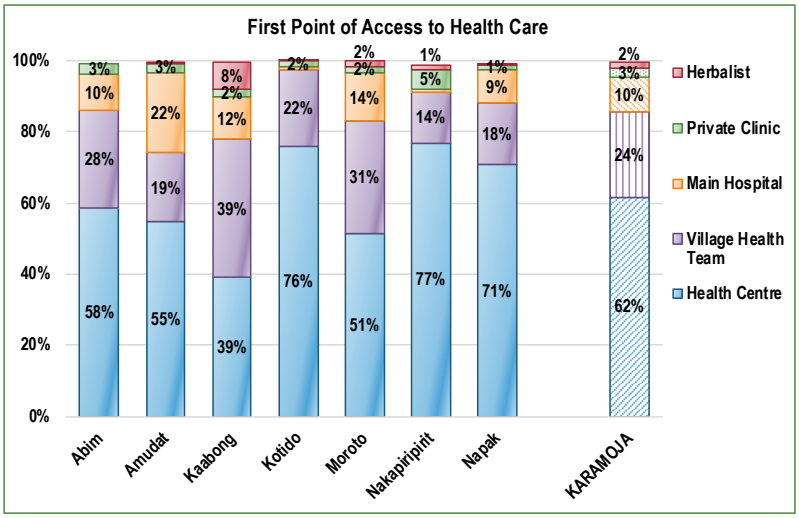

Figure 6: Preferred Access to Health Care by Households, July 2018

The health centre has also been cited by 73% of households in the sub-region as the place where most members mostly go for treatment when sick, especially in Nakapiripirit (94%) and Kotido (86%). Main hospitals are mostly visited by members of 21% of the selected households, more commonly in Amudat (41%) and Moroto (38%). Village Health Teams mostly provide care to members from only 1.3% of the selected households, more commonly in Abim district (3.6%).

3.1.6: Vulnerable Households

Disability and chronic illness are associated with reduced ability to work, which in turn influences the food security level in the household[7]. As illustrated in Figure 7, out of the sampled households in the Karamoja sub-region, 4.2% of the selected households were headed by persons with disability. On the other hand, 1.6% of the household heads were suffering from chronic illness. Disability was comparatively more common in Kaabong and Nakapiripirit districts but less in

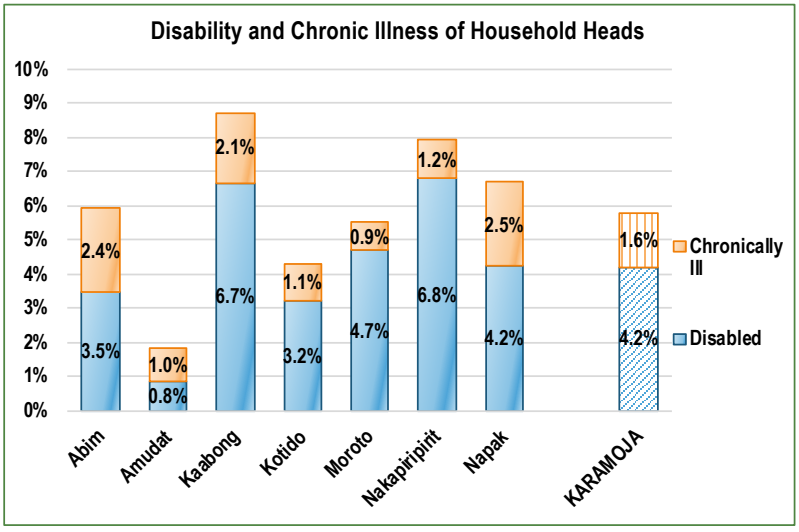

Figure 7: Disability and Chronic Illness in Household Heads, July 2018

[7] Coleman-Jensen A. 2013. "Disability Is an Important Risk Factor for Food Insecurity". ERR USDA, Economic Research Service

Amudat. Chronic illness was more common in Napak and Abim districts, whilst Moroto district had the lowest proportion.

3.2: HOUSEHOLD WATER, SANITATION & HYGIENE

3.2.1: Household Water

Overall, 82% of selected households in the sub-region accessed water from improved water sources such as boreholes fitted with hand pumps, piped water through taps, protected wells and springs (Figure 8). The finding is slightly lower than the 90% reported from the June 2017 assessment. This can be attributed to a higher proportion of households that accessed surface water (14%) particularly in the districts of Kaabong and Amudat. Kotido district registered the highest proportion of households that accessed clean water.

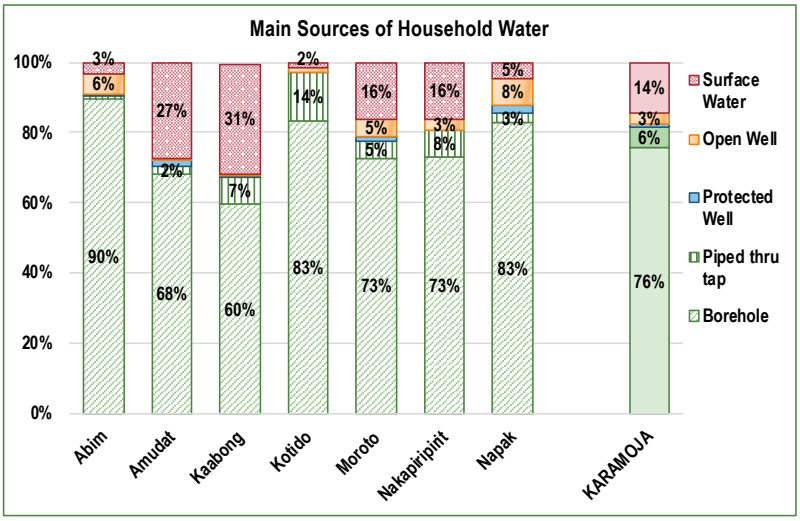

Figure 8: Main Water Sources for Selected Households, July 2018

Table 3 summarises the distance to nearest water source and time taken by household members to collect water. Overall, 45.1% of the households in the sub-region live within less than a kilometre from the nearest water source and 13.7% live more than one kilometre, more commonly in Amudat district (29.9%). It takes less than 30 minutes for about half to the household members to fetch water (51.6%) and about one in ten require more than one hour to collect water, more common in Amudat district 24.2%) and Kaabong (15%).

Table 3: Average Distance to Nearest Water Source and Time Taken to Collect Water by Selected Households

	Distance to Nearest Water Source			Time Taken to Collect Water			Total
	< 0.5 Km n (%)	0.5 Km to 1 Km n (%)	> 1 Km n (%)	< 30 Minutes n (%)	30 minutes to One Hour	> One Hour n (%)	
Abim	283 (42.9%)	325 (49.3%)	51 (7.7%)	338 (51.3%)	294 (44.6%)	27 (4.1%)	**659**
Amudat	136 (19.1%)	363 (51.0%)	213 (29.9%)	181 (25.4%)	359 (50.4%)	172 (24.2%)	**712**
Kaabong	231 (39.5%)	266 (45.5%)	88 (15.0%)	248 (42.4%)	249 (42.6%)	88 (15.0%)	**585**
Kotido	290 (46.4%)	284 (45.4%)	51 (8.2%)	268 (42.9%)	319 (51.0%)	38 (6.1%)	**625**
Moroto	382 (66.2%)	150 (26.0%)	45 (7.8%)	396 (68.6%)	145 (25.1%)	36 (6.2%)	**577**
Nakapiripirit	437 (63.1%)	211 (30.4%)	45 (6.5%)	425 (61.3%)	215 (31.0%)	53 (7.6%)	**693**
Napak	287 (41.8%)	272 (39.6%)	128 (18.6%)	485 (70.6%)	158 (23.0%)	44 (6.4%)	**687**
KARAMOJA	**2,046 (45.1%)**	**1,871 (41.2%)**	**621 (13.7%)**	**2,341 (51.6%)**	**1,739 (38.3%)**	**458 (10.1%)**	**4,538**

Treating of drinking water was only reported by 8% of selected households in the sub-region, with the practice comparatively more common in Abim district (17%) and lowest in Amudat and Napak (4% each). Among the

households that reported water treatment, boiling was the most common method (64%), followed by the method of letting water to stand and settle (19%). Chlorination was used by 12% of households, mainly in Moroto, Napak and Kotido districts.

3.2.2: Household Sanitation

Overall, only 26% of all selected households in the sub-region had their own toilet facilities and an additional 6% had shared toilet facilities (Figure 9). The finding reflects a lower proportion from 34% reported in the July 2017 assessment with own and 8% with shared toilet facilities. Households with toilet facilities were comparatively more common in Abim and Kaabong districts but less common in Amudat and Moroto. The reported sharing of toilet facilities with other households was more common in Kaabong and Abim districts but much less common in Moroto and Amudat. Approximately half of the shared toilets (49%) is used by two households whilst 42% is reportedly used by three or more households. Use of public toilets was reported by 5% of the households sharing toilets and was more common in Moroto, Nakapiripirit and Napak districts.

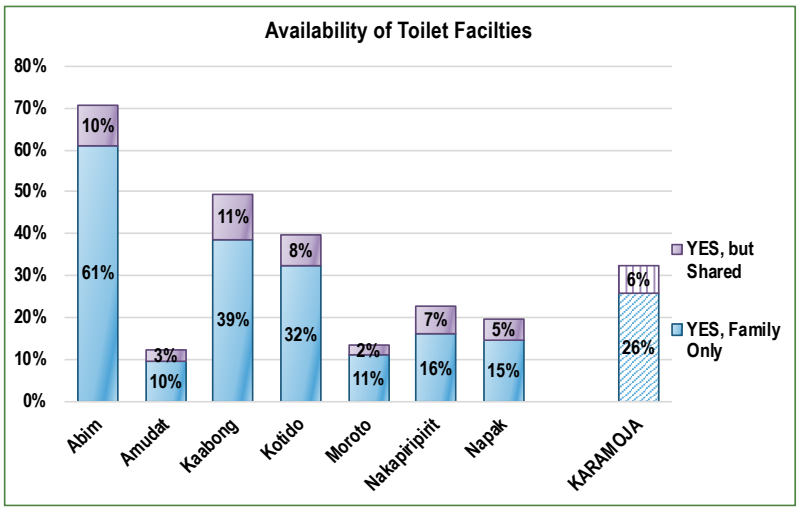

Figure 9: Availability of Toilet Facilities in the Households, July 2018

Figure 10 shows that the open pit without a super structure, which is of a lower quality constituted the more common type of toilet facility in the selected households from Karamoja sub-region (58%). The districts of Abim (92%) and Kotido (64%), had more households with this type of toilet facility than the sub-regional average. Of the households with toilets, Amudat and Napak districts had the greatest proportion with good quality facilities. Whereas households were reporting availability of toilet facilities, members of the assessment team noted that open defaecation was still a relatively common practice in the sub-region. There is therefore continued need to improve latrine coverage as well as promote their use.

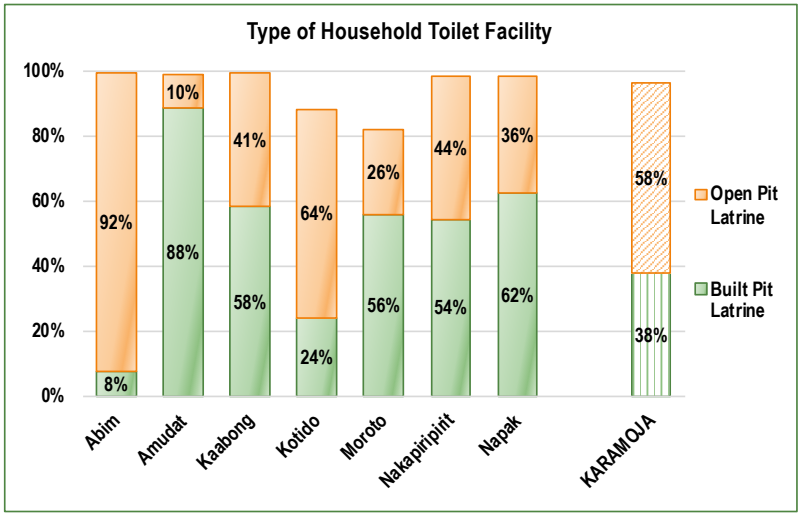

Figure 10: Type of Toilet Facility at the Selected Households, July 2018

3.2.3: Household Fuel for Cooking

The type of cooking fuel reportedly utilised by the selected households is summarised in Figure 11. Firewood is the main type of fuel utilised by 84% of the selected households in the sub-region. Charcoal was reported by only 7% of the households, with comparatively more use by those in Moroto and Kotido districts. The use of straw, shrubs and grass for cooking was a practice reported by 8% of the selected households, more common in Napak and Kaabong districts.

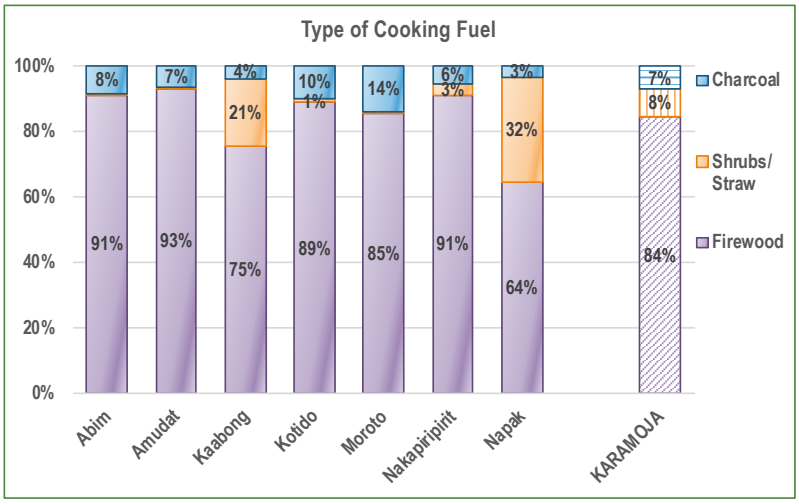

Figure 11: Type of Cooking Fuel Used at Selected Households, July 2018

3.3: MATERNAL HEALTH AND NUTRITION

3.3.1: Age Distribution of Mothers

Age is an important factor since for instance, the teenage mothers are still growing and are nutritionally at higher risk[8]. Most of the 4,498 women sampled during the assessment (87%) were in the age category 20 – 39 years, whilst those in category 40 – 49 years and 15 – 19 years were 7.1% and 5.5%, respectively.

As summarised in Table 4, there were comparatively more teenage mothers in Amudat and Abim districts whilst Kaabong district registered the lowest proportion. On the other hand, Moroto, Abim and Nakapiripirit districts registered higher than the sub-region's average for women above the age of 40 years

Table 4: Age Distribution of the Selected Women, July 2018

District	15 – 19 n (%)	20 – 39 n (%)	40 – 59 n (%)	60 – 65 n (%)	Total (N)
Abim	53 (8.1%)	545 (83.1%)	58 (8.8%)	0	656
Amudat	67 (9.4%)	613 (86.1%)	29 (4.1%)	3 (0.4%)	712
Kaabong	13 (2.2%)	537 (91.6%)	36 (6.1%)	0	586
Kotido	32 (5.2%)	544 (87.9%)	41 (6.6%)	2 (0.3%)	619
Moroto	27 (4.7%)	487 (84.8%)	56 (9.8%)	4 (0.7%)	574
Nakapiripirit	21 (3.1%)	593 (88.2%)	54 (8.0%)	4 (0.6%)	672
Napak	35 (5.2%)	594 (87.5%)	47 (6.9%)	3 (0.4%)	679
KARAMOJA	**248 (5.5%)**	**3,913 (87.0%)**	**321 (7.1%)**	**16 (0.4%)**	**4,498**

[8] Yu SH, Mason J, Crum J, Cappa C, Hotchkiss DK. 2016. Differential effects of young maternal age on child growth. Global Health Action 2016, 9: 31171 -http://dx.doi.org/10.3402/gha.v9.31171

3.3.2: Education Level of Mothers

Several studies have shown a strong relationship between education level of the mother and the child's nutrition status[9]. The highest education level attained by mothers presented in Figure 12, shows that 28% had gone through some formal education. The majority of those with formal education were of primary level (21%) and 5% had ordinary secondary level education. At the sub-regional level, advanced level secondary and tertiary level education had been attained by only 1% each. Abim district registered the highest proportion with of women with formal education whilst Kotido and Amudat had the lowest. The proportion was similar to that reported in the July 2017 assessment, including the finding of Abim district having the highest proportion of women with formal education in the sub-region and Kotido district the lowest.

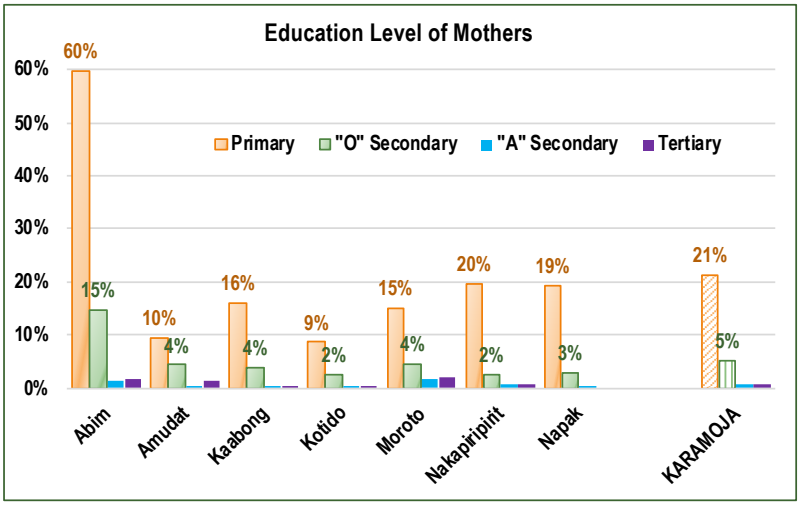

Figure 12: Highest Education Level of Selected Women, July 2018

3.3.3: Live Births

Higher numbers of live births are associated with nutritional and other complications to the mother[10]. The reported number of live-births by the selected women is summarised in Figure 13. It shows that slightly more than half of the selected women from Karamoja sub-region (53%) had given birth to between 1 and 3 children. It is noteworthy that 11% of the women had given birth to 7 or more children, a practice relatively more common in the districts of Kaabong and Abim (14% and 13%, respectively). Data from the assessment shows that Abim mothers tend to begin child-bearing at an earlier age and end up producing many children, possibly due to inadequate family planning. Nakapiripirit district also registered a much higher proportion of mothers with four or more children, compared to the average for the sub-region.

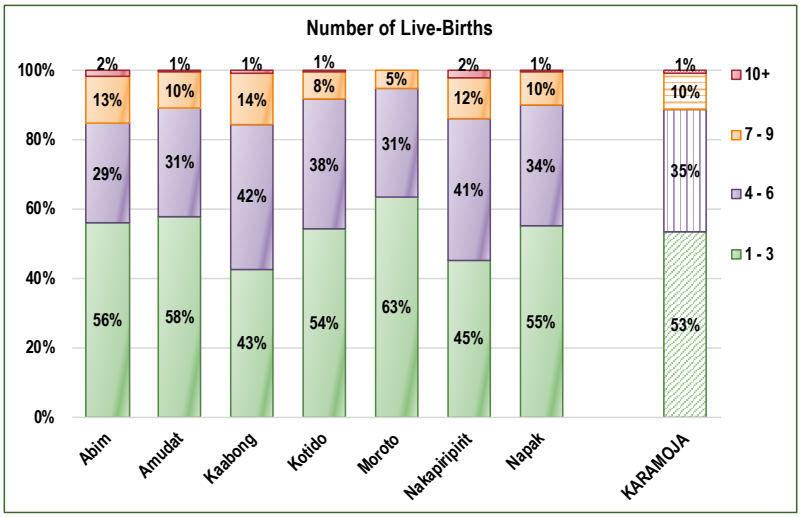

Figure 13: Average Number of Live-Births by the Women, July 2018

[9] Saad AA, and Adam AI. 2015. "The relationship between household income and educational level: South Darfur rural areas, Sudan, Statistical Study". International journal of Advanced Statistics and Probability, 2016

[10] Abuya AB, Ciera J, Kimani-Murage E. 2012. Effect of mother's education on child's nutritional status in the slums of Nairobi. BMC Pediatr. 2012; 12: 80. doi: 10.1186/1471-2431-12-80

3.3.4: Iron and Folate Supplementation

Iron and folic acid supplementation during pregnancy is among the strategies being promoted to reduce prevalence of anaemia. The national guidelines recommend taking iron and folic acid supplements for at least 90 days during the pregnancy. As illustrated in Figure 14, approximately three-quarters (77%) of the selected women in Karamoja sub-region reported taking iron tablets or syrup for ninety days during the last pregnancy. The districts of Kotido, Nakapiripirit and Moroto registered higher proportions of women than average of the sub-region whilst Abim district had the lowest (65%).

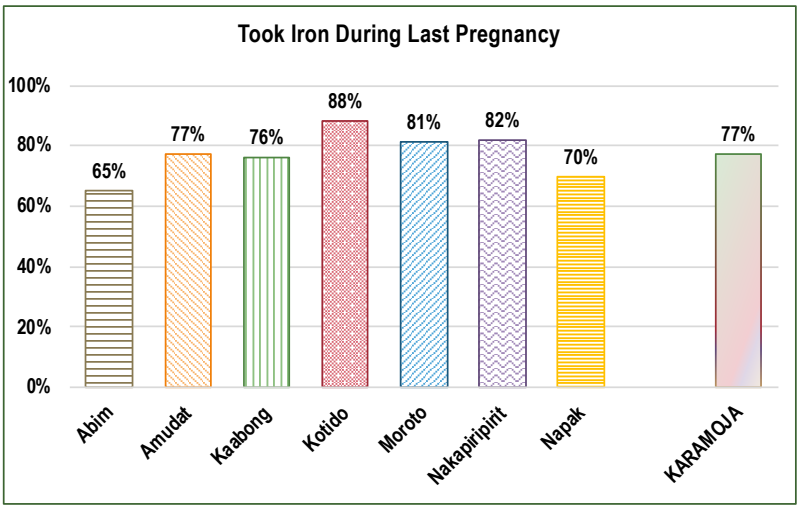

Figure 14: Iron Supplementation during Last Pregnancy, July 2018

3.3.5: Mothers' Nutritional Status

Figure 15 shows that on basis of the Body Mass Index, 7.2% of non-pregnant selected women in Karamoja sub-region were undernourished (severe and moderate acute malnutrition), whilst 3.7% were over-nourished (overweight and obese). The results of the assessment also show that 20% of non-pregnant women were at risk of becoming undernourished. The prevalence of under-nutrition among non-pregnant women was highest in Moroto district (12.7%) and lowest in Abim (4.1%). Amudat district had the highest level of over-nourished non-pregnant women (6.1%), followed by Kotido but the proportion was lowest in Napak district (1.6%).

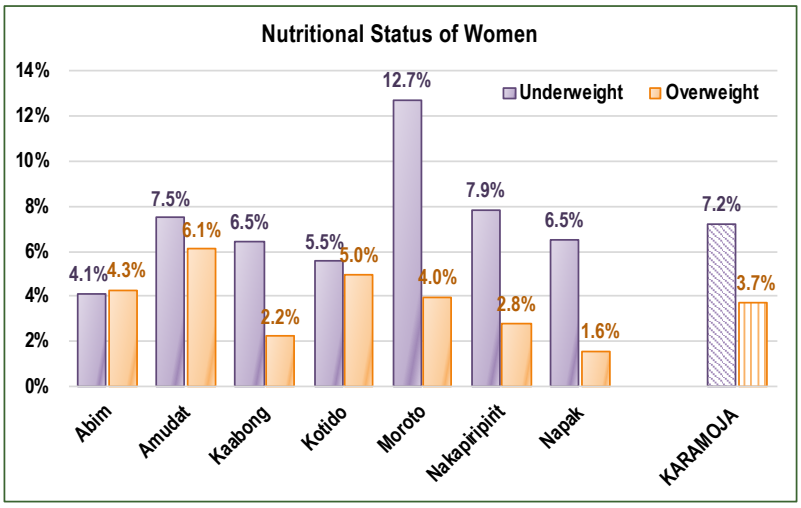

Figure 15: Nutritional Status of Women based on BMI, July 2018

The nutritional status of the selected women (pregnant and non-pregnant) from Karamoja sub-region on basis of Mid-Upper Arm Circumference (MUAC) shows that 7.4% of women in the sub-region were under-nourished (severe and moderate acute malnutrition). The prevalence of malnutrition is highest in Kaabong and Nakapiripirit districts (10.3% each), but lowest in Abim district (2.5%).

3.3.6: Education on Health and Nutrition

Sampled women were asked whether they had received any messages and support on Breastfeeding, Complementary feeding, Maternal Nutrition and Hygiene as well as Sanitation. Of the women assessed in Karamoja sub-region, 81% had received at least one such message and support with the highest proportion from Kotido (98%) and lowest in Amudat (56%). The other districts with lower proportions than sub-region's average include Nakapiripirit (75%), Moroto (79%) and Napak (80%).

Figure 16 shows that 44% of the mothers received messages related to breastfeeding, more common in Kotido and least in Moroto district. Hygiene and sanitation related messages were received by 42% of the mothers, more among those in Kotido district and least in Kaabong. Maternal health messages were received by about one-third of mothers, comparatively more among those in Kotido district and least among those from Kaabong district. Messages on complementary feeding were received by the lowest proportion of mothers in the sub-region (23%), relatively more common in Kotido but least in Nakapiripirit and Kaabong districts. The relatively low proportion of mothers who received health education messages has been mainly attributed to inadequate education materials and tools as well as low staffing levels at the health facilities.

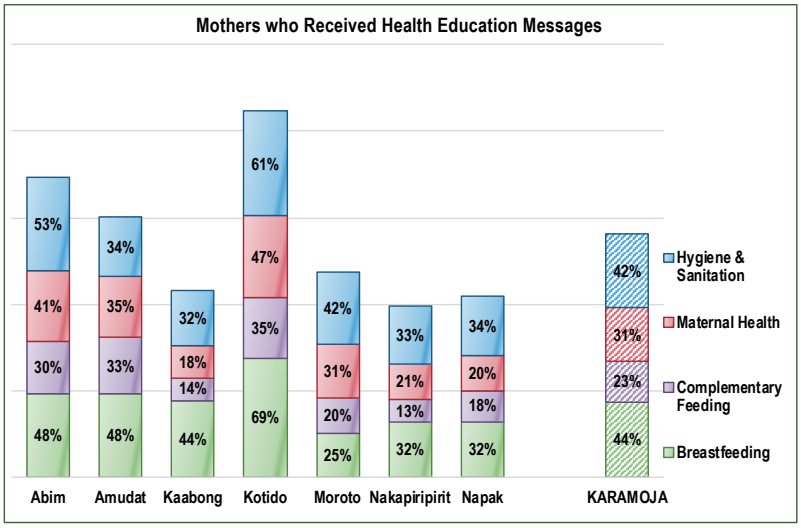

Figure 16: Education Messages for Mothers on Health and Nutrition

3.4: CHILD HEALTH AND NUTRITION

3.4.1: Prevention of Childhood Illness

Table 5: Immunisation of Children in Karamoja Sub-region, by District, July 2018

	DPT 3					MEASLES				
	YES, with Card	YES, without Card	NO, with Card	NO, without Card	TOTAL	YES, with Card	YES, without Card	NO, with Card	NO, without Card	TOTAL
Abim	585 (67.9%)	247 (28.7%)	23 (2.7%)	7 (0.8%)	**862**	527 (67.1%)	236 (30.1%)	16 (2.0%)	6 (0.8%)	**785**
Amudat	599 (68.5%)	241 (27.5%)	20 (2.3%)	15 (1.7%)	**875**	577 (76.3%)	164 (21.7%)	10 (1.3%)	5 (0.7%)	**756**
Kaabong	362 (50.5%)	280 (39.1%)	67 (9.3%)	8 (1.1%)	**717**	308 (49.8%)	263 (42.6%)	38 (6.1%)	9 (1.5%)	**618**
Kotido	694 (90.1%)	56 (7.3%)	19 (2.5%)	1 (0.1%)	**770**	614 (89.4%)	46 (6.7%)	27 (3.9%)	0	**687**
Moroto	446 (66.1%)	214 (31.7%)	4 (0.6%)	11 (1.6%)	**675**	374 (62.6%)	204 (34.2%)	12 (2.0%)	7 (1.2%)	**597**
Nakapiripirit	521 (69.5%)	187 (24.9%)	33 (4.4%)	9 (1.2%)	**750**	450 (68.0%)	180 (27.2%)	27 (4.1%)	5 (0.8%)	**662**
Napak	696 (81.2%)	124 (14.5%)	28 (3.3%)	9 (1.1%)	**857**	590 (81.2%)	99 (13.6%)	28 (3.9%)	10 (1.4%)	**727**
KARAMOJA	**3,903 (70.9%)**	**1,349 (24.5%)**	**194 (3.5%)**	**60 (1.1%)**	**5,506**	**3,440 (71.2%)**	**1,192 (24.7%)**	**158 (3.3%)**	**42 (0.9%)**	**4,832**

The third dose of Pentavalent/ DPT vaccine is given at 14 weeks of age and its coverage reflects effectiveness of the immunisation programme. As summarised in Table 5, overall 95.4% of the children had received DPT3 with verifiable evidence from the Child Health Card available for 70.9% but 24.5% being based on the mother's or caretaker's report. The highest proportion of children was in Moroto district (97.8%) while districts below the sub-regional average include Kaabong and Nakapiripirit.

Measles vaccination is carried out at 9 months of age and overall 95.9% of children in the sub-region were immunised, 71.2% of them with verifiable evidence on the Child Health cards and 24.7% based on the mother's or caretaker's report (Table 5). The range is from 92.4% in Kaabong district to 98.0% in Amudat district. The proportion of children without evidence from Child Health Cards for immunisation was comparatively higher in Kaabong and Moroto districts.

Table 6: Vitamin A and De-worming among Children in Karamoja Sub-region, by District, July 2018

	DE-WORMING					VITAMIN A				
	YES, with Card	YES, without Card	NO, with Card	NO, without Card	TOTAL	YES, with Card	YES, without Card	NO, with Card	NO, without Card	TOTAL
Abim	464 (65.7%)	220 (31.2%)	19 (2.7%)	3 (0.4%)	**706**	578 (69.6%)	244 (29.4%)	6 (0.7%)	3 (0.4%)	**831**
Amudat	448 (63.7%)	204 (29.0%)	29 (4.1%)	22 (3.1%)	**703**	476 (57.8%)	218 (26.5%)	59 (7.2%)	70 (8.5%)	**823**
Kaabong	232 (40.4%)	229 (39.9%)	86 (15.0%)	27 (4.7%)	**574**	291 (43.8%)	263 (39.5%)	96 (14.4%)	15 (2.3%)	**665**
Kotido	554 (90.2%)	47 (7.7%)	12 (2.0%)	1 (0.2%)	**614**	675 (90.6%)	46 (6.2%)	20 (2.7%)	4 (0.5%)	**745**
Moroto	322 (59.1%)	187 (34.3%)	28 (5.1%)	8 (1.5%)	**545**	410 (64.1%)	212 (33.1%)	14 (2.2%)	4 (0.6%)	**640**
Nakapiripirit	400 (66.8%)	176 (29.4%)	14 (2.3%)	9 (1.5%)	**599**	502 (70.7%)	181 (25.5%)	19 (2.7%)	8 (1.1%)	**710**
Napak	496 (74.0%)	94 (14.0%)	69 (10.3%)	11 (1.6%)	**670**	546 (68.1%)	105 (13.1%)	130 (16.2%)	21 (2.6%)	**802**
KARAMOJA	**2,916 (66.1%)**	**1,157 (26.2%)**	**257 (5.8%)**	**81 (1.8%)**	4,411	**3,478 (66.7%)**	**1,269 (24.3%)**	**344 (6.6%)**	**125 (2.4%)**	5,216

Vitamin A supplements is provided every 6 months to children between the age of 6 and 59 months. Out of the selected households, 91.0% of the children aged 6 to 59 months had received vitamin A supplements within the previous six months, 66.7% with the Child Health Cards for verification but 24.3% based on mother's or caretaker's report (Table 6). Abim district had the highest (98.9%) whilst districts below the sub-regional average include Kaabong, Amudat and Napak.

Medicines for treatment of intestinal worms is provided every 6 months to children aged between 12 and 59 months. Overall, 92.3% of the sampled children aged 12 to 59 months had received de-worming medicines within the 6 months preceding the assessment with verifiable evidence for 66.1% (Table 6). Kotido district had the highest (97.9%) and districts below the sub-regional average include Kaabong and Napak. Lack of Child Health Cards was most marked in Kaabong and Moroto districts. In general, districts attributed the high coverage of services to participation in the MCHN programme but low uptake of services to stock outs of medicines such as anti-helminthics and supplies.

3.4.2: Breastfeeding Practices

Early initiation of breastfeeding, within one hour of birth, protects the newborn from acquiring infection and reduces newborn mortality among other benefits. Table 7 shows that 84.3% of sampled mothers with children 0 to 23

months of age put their infants to the breast within the first hour after birth. This finding is comparable to the 82% reported in the June 2017 assessment. The proportion of children initiated within first hour was above the sub-regional average in the districts of Kaabong, Nakapiripirit Moroto and Kotido whilst Abim district had the lowest (68.2%). In the July 2018 assessment, only 0.2% of children did not breastfeed at all, compared to 0.7% during the June 2017 assessment.

Exclusive breastfeeding for the first six months of life confers many benefits to the infant and mother such as protection against gastrointestinal infections, among other benefits[11]. Table 7 shows that 89.2% of infants 0–5 months of age were fed exclusively with breast milk. This finding reflects a decrease from the 94% reported from the June 2017 assessment. Kotido, Abim, Napak and Amudat districts had comparatively higher proportions of children on exclusive breastfeeding, whilst the lowest was in Nakapiripirit district (66.7%). Exclusive breastfeeding in Karamoja sub-region has been consistently higher than the national average[12] of 65.5%.

Table 7: Summary of the Breastfeeding Indicators for Karamoja Sub-region, July 2018

	Timely BF Initiation	Exclusive Breastfeeding	Continued BF at Age 1 Year	Continued BF at Age 2 Years
Abim	612 (68.2%)	65 (98.5%)	76 (89.4%)	34 (44.2%)
Amudat	709 (74.2%)	129 (97.7%)	75 (84.3%)	24 (43.6%)
Kaabong	671 (88.8%)	87 (95.6%)	61 (95.3%)	38 (76.0%)
Kotido	773 (98.2%)	42 (100.0%)	77 (97.5%)	32 (61.5%)
Moroto	664 (95.3%)	51 (89.5%)	60 (90.9%)	37 (62.7%)
Nakapiripirit	809 (91.8%)	114 (66.7%)	80 (98.8%)	18 (46.2%)
Napak	729 (79.2%)	116 (98.3%)	81 (93.1%)	35 (54.7%)
KARAMOJA	**4,967 (84.3%)**	**604 (89.2%)**	**510 (92.6%)**	**218 (55.1%)**

Breast milk provides one half or more of a child's energy needs between 6 and 12 months of age, and one third of energy needs between 12 and 24 months. As summarised in Table 7, about nine out of ten children between ages 12 and 15 months (92.6%) were fed breast milk during the previous day. It shows that comparatively higher proportions than the sub-regional average were attained by Kaabong, Kotido, Napak and Nakapiripirit districts. The finding reflects a slight increase from the 90% reported in the June 2017 assessment. Continued breastfeeding at one year was lowest in Amudat district, which registered 84.3%.

The National Nutrition Policy on IYCF recommends breastfeeding up to 2 years or beyond and assessing breastfeeding among children aged 20–23 months provides a more accurate measure of those receiving the full benefit. Table 7 shows that 55.1% of children 20–23 months of age were fed on breast milk the previous day, which reflects a decrease from 58% reported in the June 2017 assessment. Kaabong district (76%) registered the highest proportions of children 20–23 months of age were fed on breast milk the previous day. Continued breastfeeding at 2 years was lowest in Amudat district.

[11] WHO 2011. Benefits of Exclusive breastfeeding: Statement January 2011. Geneva, Switzerland
[12] Uganda Bureau of Statistics (UBOS) and ICF. 2017. Uganda Demographic and Health Survey 2016: Key Indicators Report. Kampala, Uganda: UBOS, and Rockville, Maryland, USA: UBOS and ICF

3.4.3: Complementary Feeding Practices

Around the age of 6 months, an infant's need for energy and nutrients starts to exceed what is provided by breast milk. Complementary foods are necessary to meet energy and nutrient requirements to promote adequate growth. Figure 17 shows that 81% of the selected infants 6–8 months of age received solid, semi-solid or soft foods during the day prior to the assessment. The districts of Kotido, Kaabong and Abim registered proportions higher than the sub-regions average, while Amudat and Nakapiripirit registered the lowest. The finding reflects an increase from 74% reported in the June 2017 assessment.

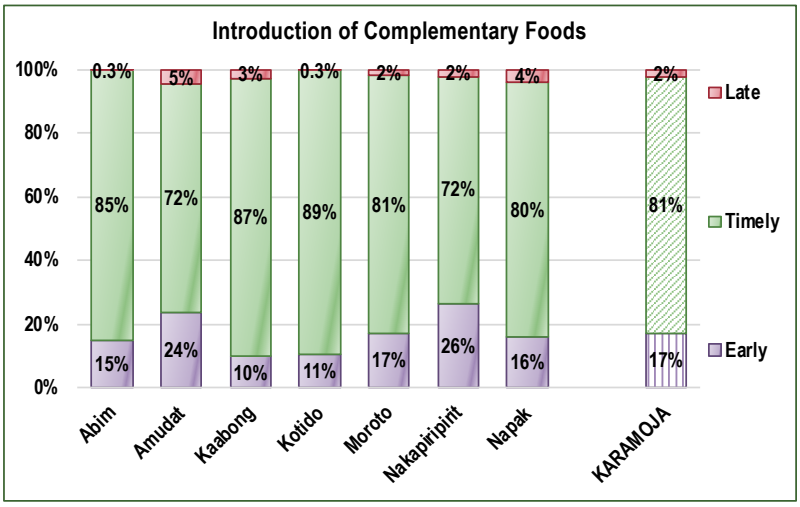

Figure 17: Introduction of Complementary Foods, July 2018

Figure 17 also illustrates that for 17% of the selected children, complementary feeding was introduced before the recommended age (before 6 months of age). The finding reflects a decrease in proportion from the 25% reported in the June 2017 assessment. The practice of early introduction of complementary foods was observed to be more common in the districts of Nakapiripirit and Amudat. Late introduction of complementary foods (after 8 months of age) was reported by only 2% of children in Karamoja sub-region. The practice was noted to be comparatively more prevalent in Amudat district (5%) but lowest in Abim and Kotido districts (0.3% each).

3.4.4: Enrolment in Feeding Programmes

Out of all the 5,881 selected children in Karamoja sub-region, 24% were reportedly enrolled in a feeding programme. The proportion of children enrolled in a feeding program ranged from 16% of the children in Moroto district and 17% in Kaabong district, to 38% in Amudat district. Figure 18 shows that 20% of the children were enrolled in the Targeted Supplementary Feeding Programme (TSFP) where they benefitted from the Super Cereal Plus (CSB++), mainly in districts of Abim and Kotido. Overall, 2% of the children were in the Outpatient Therapeutic Care (OTC) programme, mainly from, Amudat district. It is noteworthy that Amudat district had the highest proportion of children in the feeding programmes, with 13% under the In-patient Therapeutic Care (ITC) programme.

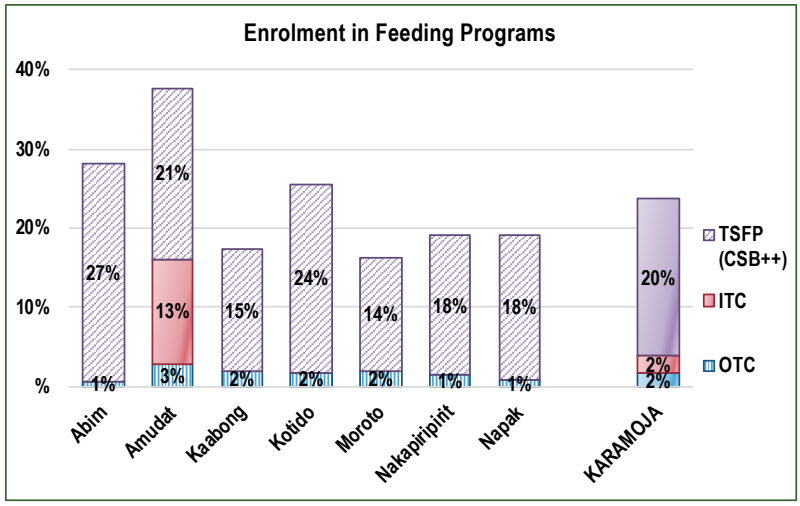

Figure 18: Enrolment in Different Feeding Programmes, July 2018

Enrolment of children into the Maternal, Child Health and Nutrition (MCHN) program[13] is presented in Figure 19. The figure shows that 64% of children aged 6 to 23 months were enrolled in the programme, which was not markedly different from 66% reported in the July 2017 assessment. The highest enrolment was in Nakapiripirit district whilst the lowest was Kaabong district. Some of the possible reasons cited included non-functional health centre facilities, erratic food supply from the World Food Programme and low involvement of men in the programme.

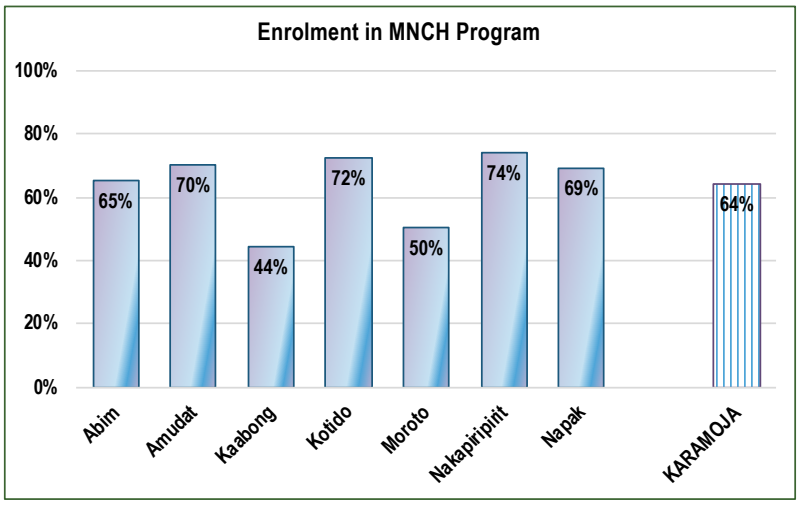

Figure 19: Enrolment of Children in the MCHN Programme, July 2018

3.4.5: Nutritional Status of Children

Table 8 summarises the gender distribution of selected children in each district, which shows that overall sub-region's average was of nearly equal proportion of males and females indicating no sex bias in the study population.

Table 8: Gender Distribution of Sampled Children for Anthropometry, by District July 2018

District	Boys	Girls	Total
Abim	397 (48.0%)	430 (52.0%)	**827 (16.3%)**
Amudat	349 (45.7%)	414 (54.3%)	**763 (15.1%)**
Kaabong	315 (48.9%)	329 (51.1%)	**644 (12.7%)**
Kotido	381 (53.2%)	335 (46.8%)	**716 (14.2%)**
Moroto	305 (48.3%)	327 (51.7%)	**632 (12.5%)**
Nakapiripirit	367 (52.1%)	338 (47.9%)	**705 (13.9%)**
Napak	402 (52.1%)	370 (47.9%)	**772 (15.3%)**
KARAMOJA	**2,516 (49.7%)**	**2,543 (50.3%)**	**5,059**

Acute Malnutrition: The results presented in Table 9 are based on weight-for-height z-scores and the presence of nutritional oedema. For the overall sub-region, the prevalence of Global Acute Malnutrition (GAM) was 10.5% [95% CI: 9.5 – 11.6%] and Severe Acute Malnutrition (SAM) was 1.6% [95% CI: 1.3 - 2.0%]. The finding reflected a decrease from 13.8% and 2.9% respectively, reported from the June 2017 assessment. GAM was highest in

[13] The Maternal, Child Health and Nutrition (MCHN) is a stunting prevention programme, mainly implemented through the health facilities. The programme focuses on prevention of malnutrition through blanket nutrition support to expectant women, lactating mothers and children under 2 years of age.

Kaabong district (14.8%) but lowest in Abim district (7.4%). Among children 6 to 59 months of age, the prevalence of acute malnutrition was higher amongst the boys (12.1%) than girls (9.0%).

When GAM was disaggregated by age-group, children 12 – 23 months and 6 – 11 months had the highest prevalence of malnutrition at 13.3% and 13.1%, respectively. The possible cause of high levels of malnutrition in the 2 age groups could be related to the poor complementary feeding practices.

Table 9: Prevalence of Acute Malnutrition based on Weight-for-Height, by District, July 2018

District	Severe n (%) [95% C.I.]	Moderate n (%) [95% C.I.]	Global n (%) [95% C.I.]	Total (N)
Abim	11 (1.3%) [0.8 - 2.4]	49 (6.0 %) [4.7 - 7.6]	60 (7.4 %) [6.0 - 9.0]	**815**
Amudat	15 (2.0 % [1.2 - 3.3]	63 (8.4 %) [6.4 - 11.1]	78 (10.4 %) [8.0 - 13.5]	**747**
Kaabong	17 (2.7%) [1.6 - 4.4]	77 (12.1 %) [9.2 - 15.8]	94 (14.8 %) [11.6 - 18.7]	**635**
Kotido	6 (0.8%) [0.3 - 2.0]	69 (9.7 %) [7.5 - 12.5]	75 (10.6 %) [8.1 - 13.7]	**709**
Moroto	11 (1.8%) [1.0 - 3.1]	64 (10.2 %) [7.8 - 13.3]	75 (12.0 %) [9.3 - 15.3]	**625**
Nakapiripirit	15 (2.2%) [1.3 - 3.6]	62 (8.9 %) [6.3 - 12.5]	77 (11.1 %) [8.4 - 14.5]	**695**
Napak	6 (0.8%) [0.4 - 1.7]	59 (7.7 %) [5.8 - 10.3]	65 (8.5 %) [6.4 - 11.3]	**762**
KARAMOJA	**80 (1.6%) [1.3 - 2.0]**	**443 (8.9 %) [8.0 - 9.9]**	**523 (10.5 %) [9.5 - 11.6]**	**4,982**

Table 10 summarises the prevalence of acute malnutrition based on the mid-upper arm circumference (MUAC) measurements, which shows that Global Acute Malnutrition was 10.3% [95% CI: 9.2 – 10.3%], and Severe Acute Malnutrition at a level of 2.1% [95% CI: 1.6 – 2.7%]. The disaggregation by age-group confirmed higher prevalence among the 6 – 11 months and 12 – 23 months at 21.0% and 15.0%, respectively.

Table 10: Prevalence of Acute Malnutrition based on MUAC, by District, July 2018

District	Severe n (%) [95% C.I.]	Moderate n (%) [95% C.I.]	Global n (%) [95% C.I.]	Total (N)
Abim	5 (0.6%) [0.3 - 1.4]	44 (5.3%) [3.8 - 7.5]	49 (5.9%) [4.3 - 8.2]	**827**
Amudat	8 (1.0%) [0.5 - 2.4]	49) (6.4%) [4.2 - 9.7]	57 (7.5%) [5.0 - 11.0]	**763**
Kaabong	21 (3.3%) [2.0 - 5.3]	77 (12.0%) [9.4 - 15.1]	98 (15.2%) [12.2 - 18.9]	**644**
Kotido	23 (3.2%) [2.0 - 5.1]	98 (13.7%) [10.6 - 17.5]	121 (16.9%) [13.3 - 21.2]	**716**
Moroto	7 (1.1%) [0.4 - 2.8]	41 (6.5%) [4.3 - 9.7]	48 (7.6%) [5.1 - 11.1]	**632**
Nakapiripirit	20 (2.8%) [1.9 - 4.2]	48 (6.8%) [4.7 - 9.7]	68 (9.6%) [7.3 - 12.7]	**705**
Napak	21 (2.7%) [1.4 - 5.0]	59 (7.6%) [5.5 - 10.5]	80 (10.4%) [7.4 - 14.3]	**772**
KARAMOJA	**105 (2.1%) [1.6 - 2.7]**	**416 (8.2%) [7.4 - 9.1]**	**521 (10.3%) [9.2 - 11.5]**	**5,059**

The trend in prevalence of global acute malnutrition among children between 2010 and 2018 during the June and December assessments, are summarised in Figure 20. It shows the prevalence of malnutrition during the June round of assessments has declined slightly during the period from 11.5% in 2010 to 10.5% in 2018. The trend for the December round of assessments shows an increase from 9.8% to about 13.8% in December 2017.

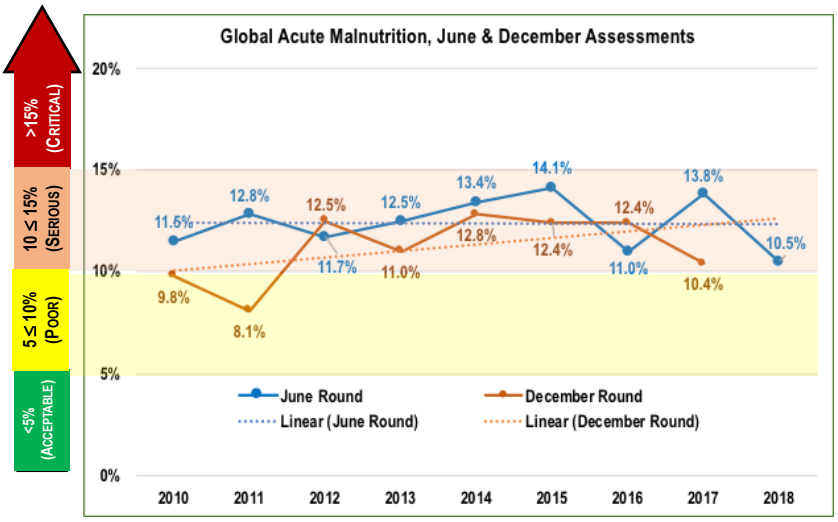

Figure 20: Trend in GAM among Selected Children in Karamoja 2010 – 2018

Underweight: Using the Weight-for-Age index, the prevalence of underweight among children aged 6 – 59 months in sampled children is presented in Table 11. Overall, the prevalence of underweight was 26.0% [95% CI: 24.5 – 27.6%], which is similar to the 27.7% reported in June 2017 assessment. Highest prevalence was in Kaabong district (32.0%), whilst the lowest was in Abim district (17.9%). The most affected age group by underweight was the 12 – 23 months (31.0%).

Table 11: Prevalence of Underweight based on Weight-for-Age z-Scores, by District, July 2018

District	Severe n (%) [95% C.I.]	Moderate n (%) [95% C.I.]	Global n (%) [95% C.I.]	Total (N)
Abim	28 (3.4%) [2.3 - 4.9]	119 (14.5%) [11.8 - 17.6]	147 (17.9%) [14.7 - 21.6]	**822**
Amudat	25 (3.3%) [2.2 - 5.1]	120 (16.0%) [13.2 - 19.2]	145 (19.3%) [16.1 - 22.9]	**751**
Kaabong	59 (9.2%) [7.1 - 12.0]	145 (22.7%) [19.0 - 26.9]	204 (32.0%) [27.3 - 37.0]	**638**
Kotido	53 (7.5%) [5.2 - 10.5]	151 (21.2%) [17.9 - 25.1]	204 (28.7%) [24.5 - 33.3]	**711**
Moroto	57 (9.1%) [6.7 - 12.2]	131 (20.9%) [16.9 - 25.6]	188 (30.0%) [24.6 - 35.9]	**627**
Nakapiripirit	49 (7.0%) [5.4 - 9.1]	150 (21.5%) [18.6 - 24.6]	199 (28.5%) [24.9 - 32.4]	**698**
Napak	61 (7.9%) [5.9 - 10.5]	157 (20.4%) [17.4 - 23.9]	218 (28.3%) [24.4 - 32.6]	**769**
KARAMOJA	**329 (6.6%) [5.9 - 7.3]**	**973 (19.4%) [18.1 - 20.8]**	**1,302 (26.0%) [24.5 - 27.6]**	**5,012**

Stunting: Using the Height-for-Age index, the prevalence of chronic malnutrition (stunting) among children aged 6 – 59 months in sampled population is presented in Table 12. The prevalence of stunting was 36.2% [95% CI: 34.6 – 37.8%], which was much higher than the 32.6% reported in the June 2017 assessment. The highest prevalence was recorded in Kaabong district where severe stunting peaked at 16.9%, whilst the lowest prevalence was in Amudat district. Disaggregated by age-group, the most affected were the children of age groups 12 – 23 months (41.8%) and 24 – 35 months (41.6%).

Table 12: Prevalence of Stunting based on Height-for-Age z-Scores, by District, July 2018

District	Severe n (%) [95% C.I.]	Moderate n (%) [95% C.I.]	Global n (%) [95% C.I.]	Total (N)
Abim	70 (8.6%) [6.4 - 11.3]	175 (21.4%) [18.3 - 24.9]	245 (30.0% [26.4 - 33.8]	**817**
Amudat	57 (7.5%) [5.6 - 10.2]	139 (18.4%) [15.2 - 22.1]	196 (25.9% [21.6 - 30.8]	**756**
Kaabong	107 (16.9%) [13.4 - 21.1]	160 (25.3%) [21.7 - 29.3]	267 (42.2% [37.3 - 47.3]	**632**
Kotido	111 (15.8%) [12.8 - 19.3]	169 (24.0%) [21.3 - 27.0]	280 (39.8% [36.0 - 43.8]	**703**
Moroto	92 (14.8%) [11.4 - 19.0]	145 (23.3%) [19.0 - 28.3]	237 (38.2% [31.9 - 44.8]	**621**
Nakapiripirit	98 (14.1%) [11.1 - 17.6]	177 (25.4%) [22.3 - 28.8]	275 (39.5% [35.0 - 44.1]	**697**
Napak	112 (14.8%) [12.5 - 17.4]	192 (25.4%) [22.6 - 28.3]	304 (40.2% [36.6 - 43.8]	**757**
KARAMOJA	**637 (12.8%) [11.9 - 13.8]**	**1,157 (23.3%) [22.0 - 24.6]**	**1,794 (36.2% [34.6 - 37.8]**	**4,962**

The trend in prevalence of stunting among children between 2012 and 2018 during the June and December food and nutrition assessments, are summarised in Figure 21. It shows that the linear trend from the June round of assessments has been relatively stable over the period whilst the December round's linear trend depicts a slight decline over the same period. .

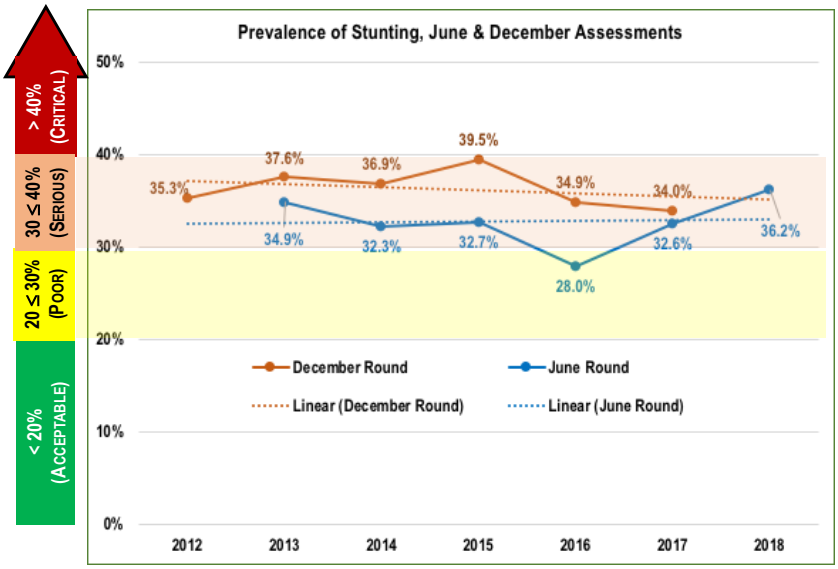

Figure 21: Trend in Stunting among Selected Children in Karamoja 2012 – 2018

Overweight: The prevalence of moderate overweight among children age 6 – 59 months was only 0.3% [95% CI: 0.2 – 0.5%] while severe overweight was 0%. This reflects a decrease from the 1.4% moderate overweight and 0.5% severe overweight reported in the June 2017 assessment. In this assessment, there was more overweight among the boys (0.5%) when compared to the girls (0.1%). The highest proportion of overweight children were in districts of Abim (1.0%) and Amudat (0.7%) while Moroto and Nakapiripirit had the lowest prevalence (0% and 0.1%, respectively). Disaggregated by age-group, overweight was more prevalent among children of age 12 – 23 months and 6 – 11 months (0.6% and 0.4%, respectively.

3.4.6: Common Childhood Illnesses

Illness in a child influences the appetite and normal metabolic processes, thus contributing to causation of malnutrition. Out of all the sampled children, 28% had not suffered from any diseases within the 2 weeks preceding the assessment. Amudat (55%) registered the highest proportion of children without illnesses during that period, while the lowest were Abim and Nakapiripirit districts ((13% and 15%, respectively).

As illustrated in Figure 22, fever/ malaria (47%) was the most common condition reported by mothers in the sub-region, followed by acute respiratory tract infection/ cough (38%) and diarrhoea (16%). At district level, burden of illness was highest in Abim and Kaabong but lowest in Amudat district. In the June 2017 assessment, Kaabong district had the highest burden of illness within the sub-region. Fever/ malaria was most prevalent among children in Abim and Nakapiripirit districts (63% and 59%, respectively), ARI/ cough was more common among children in Kaabong district (55%) while diarrhoea was more common in Kotido district (23%). The prevalence of all these conditions was lowest among the children in Amudat district. The prevalence of skin and eye diseases is influenced by use of water for personal hygiene. Eye disease was more common in Kotido while skin disease was more common in Napak and Kotido districts.

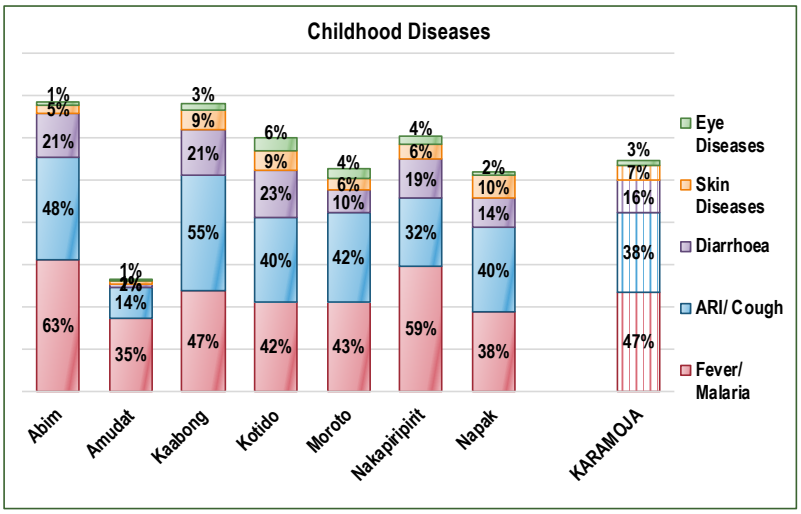

Figure 22: Reported Common Childhood Illnesses, July 2018

3.4.7: Use of Insecticide Treated Nets

The children who reportedly slept under an insecticide treated net the night preceding this assessment has been summarised in Figure 23, which shows use by 84% of the selected children in the sub-region. The finding reflected a decrease from the 94% reported in the June 2017 assessment, when the range was from 92% in Amudat district to 97% in Abim. The reported use of ITN by children in this assessment, was comparatively higher in Kotido and Abim districts but much lower in Moroto district (65%).

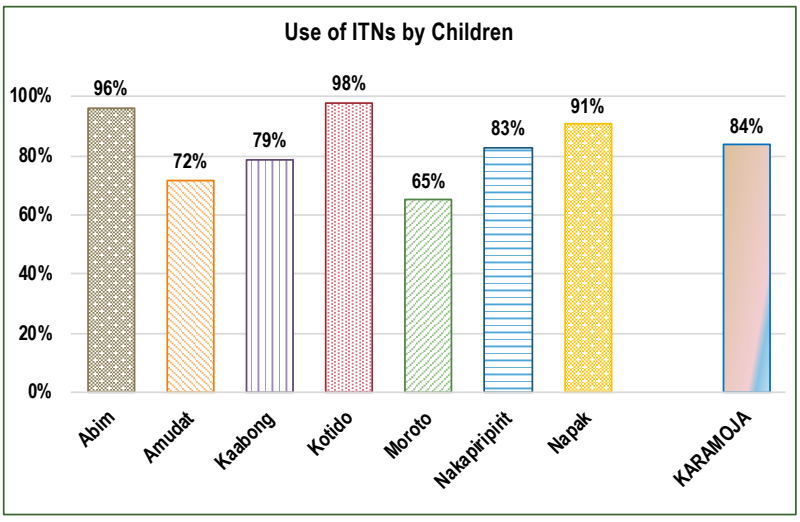

Figure 23: Reported Use of ITNs by Children in Karamoja, July 2018

3.5: Early Childhood Development

3.5.1: Child Playing with Household Objects and Toys

The assessment revealed that 86% of the 1,593 selected children in Karamoja sub-region were reportedly playing with household objects, which should be a normal part of the child's development. This practice ranged from very high proportions in Abim and Kotido districts (97% each) to comparatively low in Amudat (73%), Moroto and Kaabong districts (76% each). As illustrated in Figure 24, the assessment shows that more children across the Karamoja sub-region had access to home-made toys for playing (59%) than the factory-made toys (26%). The child playing with home-made toys was relatively more common in Kotido, Nakapiripirit and Amudat districts but less common in Moroto district. Playing with factory-made toys was comparatively more common Napak, Kotido and Kaabong districts but less common in Moroto district.

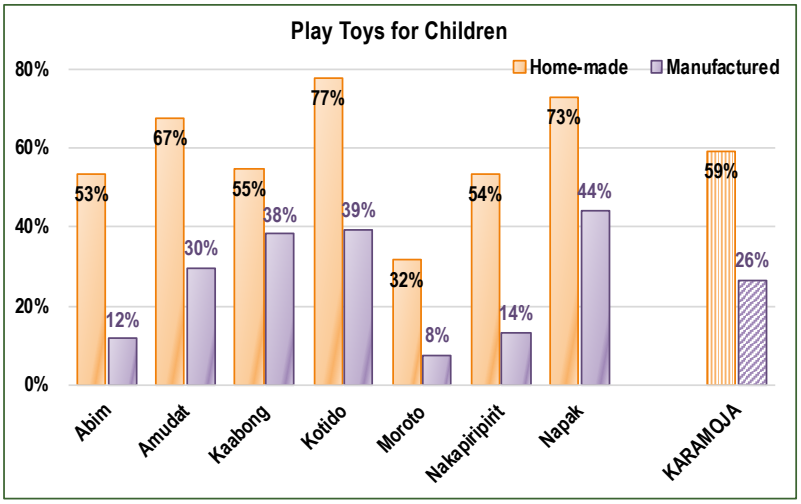

Figure 24: Child's Reported Playing with Toys, July 2018

3.5.2: Children's Access to Books

Of the 1,591 selected children in the sub-region, only 14% were reported to have access to a reading book while the remaining 86% were reported to have no books at all. Figure 25 shows that 4% of all the children had access to two or more reading books while 10% had one at least one reading book. In the current assessment, Amudat and Abim districts had the highest proportion of children with one book (30% and 16%, respectively) while Kotido and Napak districts registered the lowest (0% each). On the other hand, Moroto district registered the highest proportion of children with two or more reading books (12%) and lowest proportion was registered in Kotido and Napak districts.

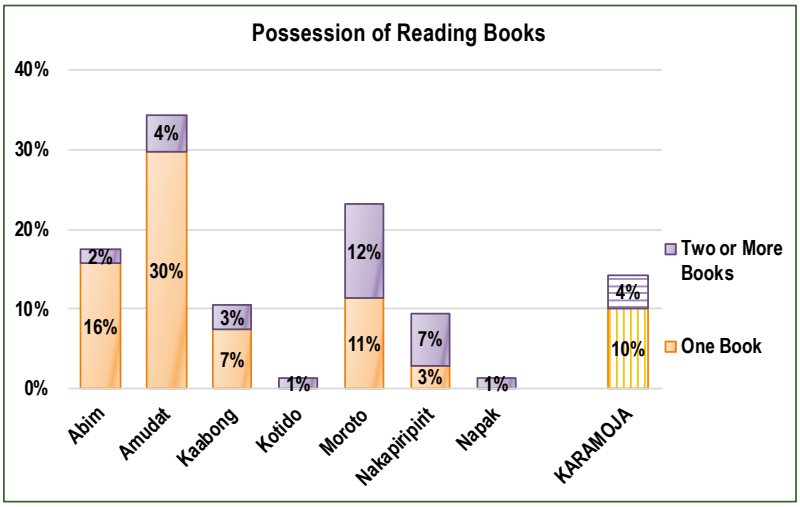

Figure 25: Access to Reading Books by Karamoja Children, July 2018

The low performance in early childhood practices was mainly attributed by the districts to low coverage of ECD centres, which in some cases were temporary structures. In addition, they are of the view that the centres were being managed by un-trained volunteers.

3.5.3: Children Left by Caregivers

Figure 26 illustrates that 57% of the selected children were left alone at home by the caregiver either alone, or with another child below the age of 10 years. This practice was relatively more common in Kaabong, Kotido and Nakapiripirit districts but less common in Moroto district. One of the most common reasons given by mothers for leaving the child at home was in order to fetch water for household use. A child was more likely to be left alone at home in Kotido, Amudat and Nakapiripirit districts, but the practice was less likely in Abim. The practice of leaving the child with another below 10 years of age was more common in Kaabong and Nakapiripirit but comparatively less in Napak and Moroto.

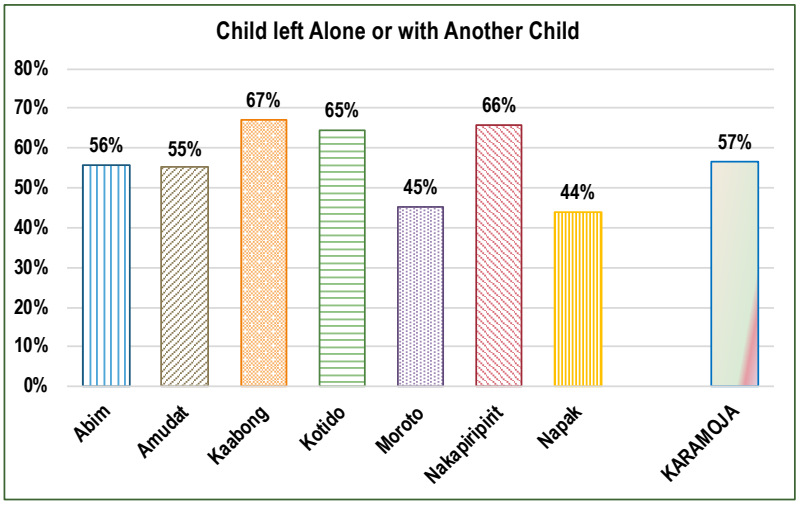

Figure 26: Children Left at Home by Caregivers, July 2018

3.5.4: Primary School Attendance

There were 3,280 boys and 2,945 girls of primary school age in the assessment and as summarised in Figure 27, regular school attendance was reported for 62% and 55%, respectively. Among the boys, regular attendance was highest in Abim district (89%), with proportions above the sub-region's average only registered in Kaabong district (87%), whilst the lowest regular school attendance among boys was registered in Kotido district (48%). Abim district reported the highest regular attendance among girls (88%), followed by the districts of Kaabong (77%) and Amudat (55%). Napak district (32%) had the lowest proportion of girls who regularly attended school.

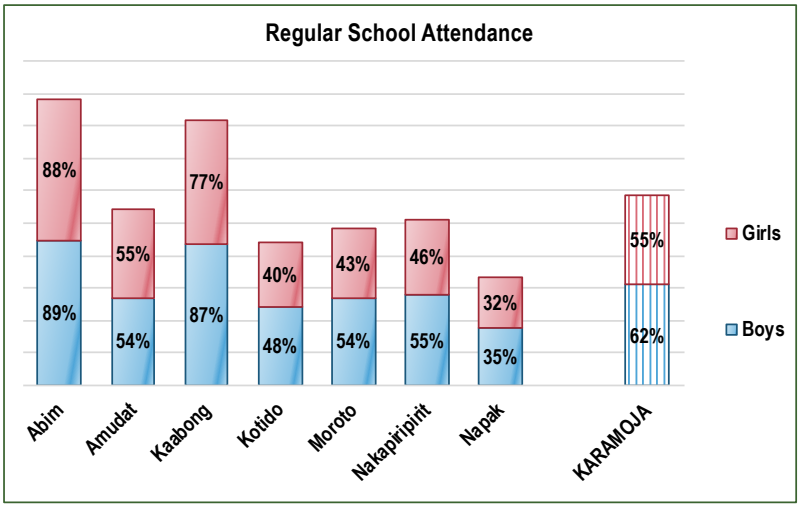

Figure 27: Reported Regular Primary School Attendance, July 2018

The cross-section of district key informants indicated that pupils in primary schools were not expected to pay any fees, the textbooks were provided in schools and uniforms were not compulsory. In their opinion, irregular attendance was related to early child marriages, child labour, lack of sanitary facilities and petty trade. Out migration was cited from Napak district among the reasons. Other reasons included parents' negative attitudes towards education, long distances to the available schools, delayed delivery of food to schools by the World Food Programme, unfriendly school environment and parents' failure to understand their role in the Universal Primary Education (UPE) programme.

The main reasons put forward by respondents for irregular attendance among the primary school age boys are summarised in Figure 28. It shows that the main reason cited for irregular school attendance by boys was related to direct cost of education such as payment of school fees, uniforms, textbooks etc. (41%). This was relatively more common in Amudat and Napak districts but less of a problem in Kaabong district. Lack of interest was cited for 15% of the boys, especially those from Kotido district (36%). Domestic and household chores was cited for 12% of the boys, especially from Kaabong and Amudat districts while illness or handicap was more of a problem in Abim and Nakapiripirit districts.

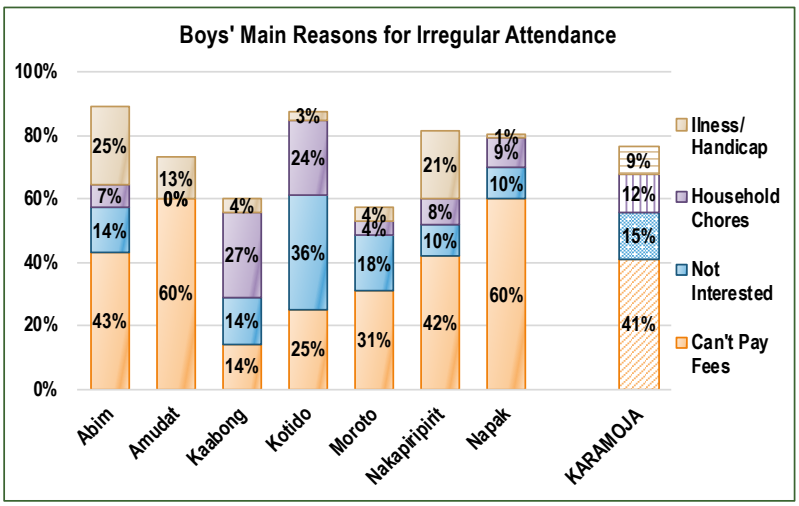

Figure 28: Reasons for School Irregular Attendance by Boys, July 2018

Figure 29 summarises the main reasons from the respondents for irregular attendance among girls of primary school age in Karamoja sub-region. It shows that involvement in domestic household chores was the commonest problem (35%), particularly in Napak and Kaabong districts (39% each). It was followed by the direct cost of education such as payment of school fees, uniforms, textbooks etc. (33%), especially in Amudat Moroto district (53%). Lack of interest was more of a problem for girls in Kotido district (18%) while inability to pay transportation to school or distant location of the school was a main issue in Moroto district.

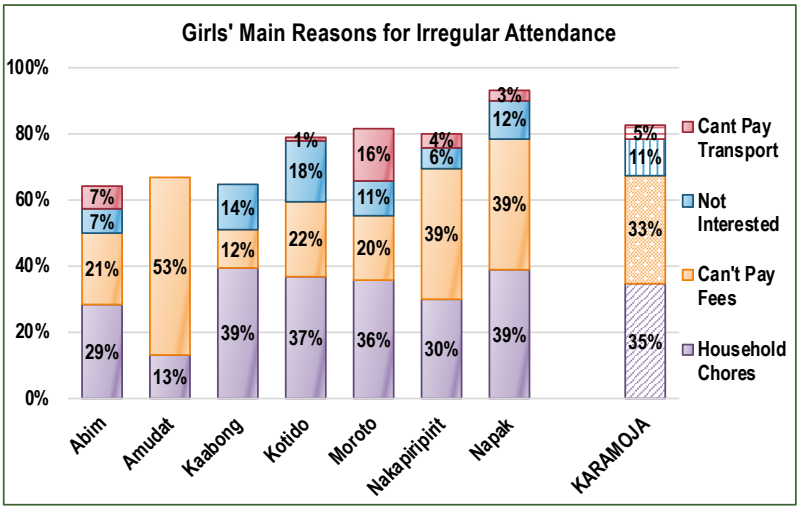

Figure 29: Reasons for School Irregular Attendance by Girls, July 2018

3.6: Food Availability

3.6.1: Most Common Household Assets

Figure 30 illustrates that only 5% of all selected households in Karamoja sub-region owned 10 or more of the 21 enumerated household assets[14], half of the households reportedly owned between 5 – 9 items, whilst 44% owned between 1 and 4 of the listed items. Abim district (80%) registered the highest proportion of households with 5 or more listed items and Moroto district (39%) had the lowest. Only 2% of the households in the sub-region did not own any of the listed items.

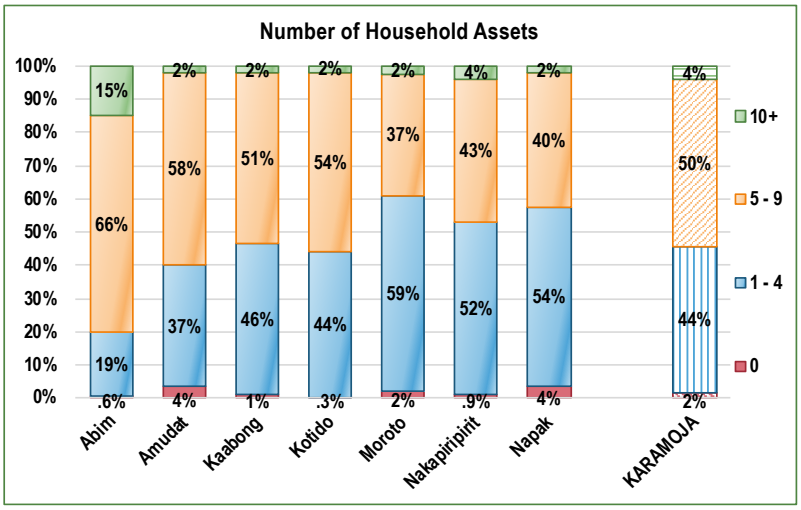

Figure 30: Reported Number of Household Assets Owned, July 2018

As illustrated in Figure 31, the most common household assets owned were the hoe (89%), panga/machete (68%), axe (61%), mattress (39%) and chairs (32%), which was similar to the findings reported from the June 2017 assessment. One quarter of the households reported ownership of cell phones, which is comparable to the 23% reported in the June 2017 assessment. However, at district level, Kotido had the highest proportion of households with cell phones, followed by Abim, Amudat and Napak but it was lowest in Moroto and Kaabong. In June 2017, cell phones were comparatively more common in Amudat (30%) and Abim (28%). Comparatively more households from Abim district had the common assets than the average for Karamoja sub-region. The ox-plough was owned by only 14% of the households and was relatively more common in Kotido (28%), Kaabong (22%) and Nakapiripirit district (19%). Radios were reported in 11% of the households, especially in Abim district (21%). Overall, 12% of households had bicycles, more common in the districts of Abim (25%) and Napak (23%).

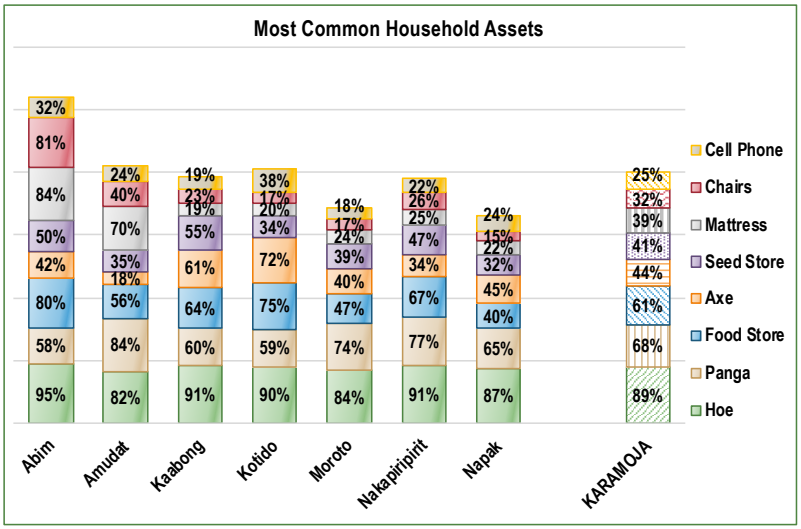

Figure 31: Most Common Assets in Selected Households, July 2018

Food stores were owned by 61% of all households in the sub-region, more common in the districts of Abim (80%) and Nakapiripirit (67%) but less common in Napak district (40%). Ownership of seed stores was reported by 41%

[14] Bed, Table, Chairs, Mattress, Radio/Tape, Cell phone, Sewing machine, Bicycle, Automobile/car, Motorcycle, Television, Axe, Panga/Machete, Hoe, Ox-plough, Water tank, Seed store, Food store, Bee hives, Watering cans, Bucket irrigation equipment.

of the households, more common in Abim district (84%) but least in Kaabong district (19%). It is worth noting that some households reported having a single structure that served as both a food and seed store.

3.6.2: Livestock Ownership

As illustrated in Figure 32, slightly more than half of households (57%) in the Karamoja sub-region owned livestock, which is only slightly higher than the 54% reported in the June 2017 assessment. Ownership of high livestock holding was reported by only 13% of the selected households in the sub-region, with highest proportion of households from Amudat district. Most households in Abim district (35%) reported ownership of negligible livestock holding. Ownership of low livestock holding livestock ranges from 10% in Moroto to 19% in Kaabong district. Slightly high livestock holding ownership ranges from 6% in Abim district to 20% in Kotido.

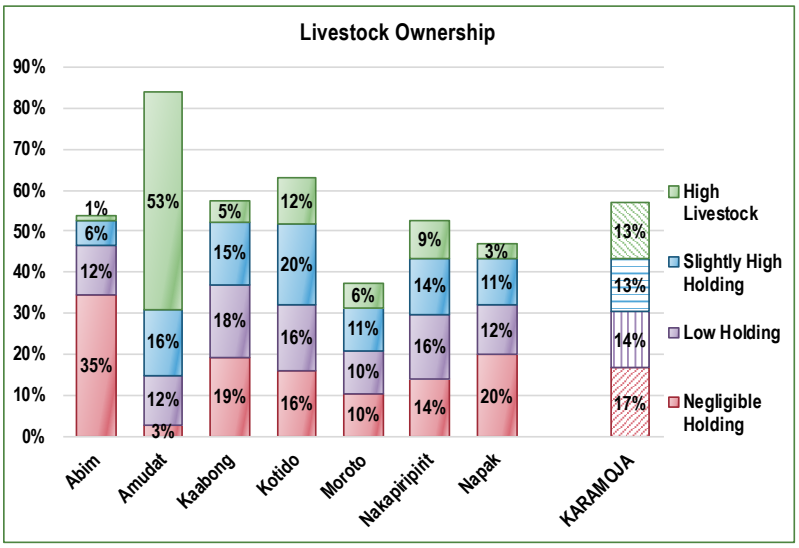

Figure 32: Reported Livestock Ownership by Households, July 2018

Table 13 shows that parasites/ diseases were the most common constraints cited in relation to livestock production, stated by approximately three-quarters of all selected households in the sub-region (73.9%). The finding reflects an increase from 66% reported during the June 2017 assessment. The problem of parasites/ disease ranged from 61.1% of households in Kotido district to 83.4% of households in Kaabong. Problem of inadequate veterinary services was reported by 6.8% of all the selected households, relatively more common in Moroto and Abim districts.

Theft was the third most common problem reported by 5.6% of all selected households but was more prevalent in Kotido and Abim districts. Shortage of pasture or animal feed was reported by 2.3% all households in the sub-region and was more common problem in Kotido district.

Table 13: Most Common Constraints to Livestock Production, by District, July 2018

	Parasites/ Disease n (%)	Lack of Veterinary Services n (%)	Theft n (%)	Shortage of Pasture/ Feed n (%)	Poor breed n (%)	N
Abim	226 (63.1%)	43 (12.0%)	37 (10.3%)	14 (3.9%)	3 (0.8%)	358
Amudat	470 (78.3%)	6 (1.0%)	6 (1.0%)	7 (1.2%)	17 (2.8%)	600
Kaabong	282 (83.4%)	10 (3.0%)	13 (3.8%)	0	3 (0.9%)	338
Kotido	242 (61.1%)	19 (4.8%)	50 (12.6%)	33 (8.3%)	17 (4.3%)	396
Moroto	158 (73.1%)	34 (15.7%)	10 (4.6%)	2 (0.9%)	4 (1.9%)	216
Nakapiripirit	291 (78.0%)	31 (8.3%)	18 (4.8%)	3 (0.8%)	5 (1.3%)	373
Napak	259 (79.0%)	35 (10.7%)	11 (3.4%)	0	5 (1.5%)	328
KARAMOJA	**1,928 (73.9%)**	**178 (6.8%)**	**145 (5.6%)**	**59 (2.3%)**	**54 (2.1%)**	**2609**

3.6.3: Agricultural Production

Reported access by the selected households to land for agricultural production has been summarised in Table 14. It shows that 82.5% of the households had access to land for agriculture production, which was slightly lower than the 87% reported from the June 2017 assessment. Access to land for agriculture was comparatively higher for households in the districts of Kaabong (90.3%) and Abim (89.5%) but lowest for those in Amudat district (69.7%). This was attributed to mountainous floods that had washed away low-lying gardens along the river banks and near swamps.

For those households that owned land, the average size of flat land was 2.2 acres with the range from 1.5 acres in Amudat to 3.0 acres in Moroto district. The average size of upland type for sub-region was 1.9 acres, with a range from 0 acres in Kotido to 2.4 acres in Kaabong district. The average size of swampy land at the sub-region level was 2.1 acres, with a range from 1.8 acres in Napak district to an individual with 15 acres in Moroto district. This type of land was less available with mostly households from Abim and Napak districts reporting ownership of such land.

Table 14: Access, Type and Size of Land for Agricultural Production, January 2018

District	Access to Agricultural Land n (%)	Mean Size of Land Owned [n (Acres)]			
		Flat Land	Up-land	Swampy	Other
Abim	590 (89.5%)	523 (2.5)	9 (2.0)	129 (2.2)	0
Amudat	496 (69.7%)	480 (1.5)	6 (1.5)	6 (2.8)	0
Kaabong	528 (90.3%)	468 (2.4)	44 (2.4)	53 (2.4)	5 (1.6)
Kotido	543 (86.9%)	543 (2.5)	0	1 (2.0)	0
Moroto	451 (78.2%)	345 (3.0)	108 (1.8)	1 (15.0)	0
Nakapiripirit	590 (85.1%)	546 (2.0)	30 (1.8)	28 (2.0)	1 (4.0)
Napak	544 (79.2%)	444 (1.9)	21 (1.5)	115 (1.8)	1 (2.0)
KARAMOJA	**3,742 (82.5%)**	**3,349 (2.2)**	**218 (1.9)**	**333 (2.1)**	**7 (2.0)**

Figure 33 shows that out of 3,742 selected households in the sub-region, 80% reported cultivating legumes and staples with a range from 88% in Kaabong district to 65% of those from Amudat district. Other districts with comparatively lower proportions than the sub-region's average include Moroto and Napak. Low cultivation in Moroto can be related to lower access to agricultural land by selected households coupled with mining activities being blamed for overshadowing cultivation and gardening in the district.

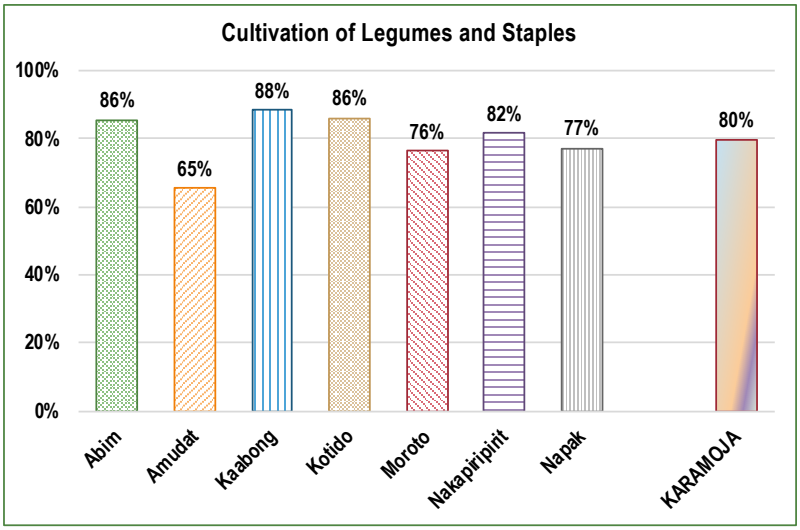

Figure 33: Cultivation of Legumes and Staples by Households, July 2018

As illustrated in Figure 34, the most commonly cultivated crop in the sub-region was sorghum (75%), followed by maize (48%) and beans (29%). Cultivation of millet was reported by only 6% of the selected households and potatoes was grown by only 3%. The finding was similar to the pattern reported from June 2017 assessment of 77%, 57% and 35% for sorghum, maize and beans, respectively. Sorghum was cultivated by most households peaked by Kotido district (95%), the exception being Amudat district where only 3% reported. However, 93% of households in Amudat district reported cultivation of maize compared to 22% in Abim district. Cultivation of beans above the average for sub-region was registered in Napak and Kotido districts but it was lowest in Kaabong (20%). Millet was mainly cultivated by households in districts of Abim and Kotido while potatoes was predominantly cultivated by households in Abim district.

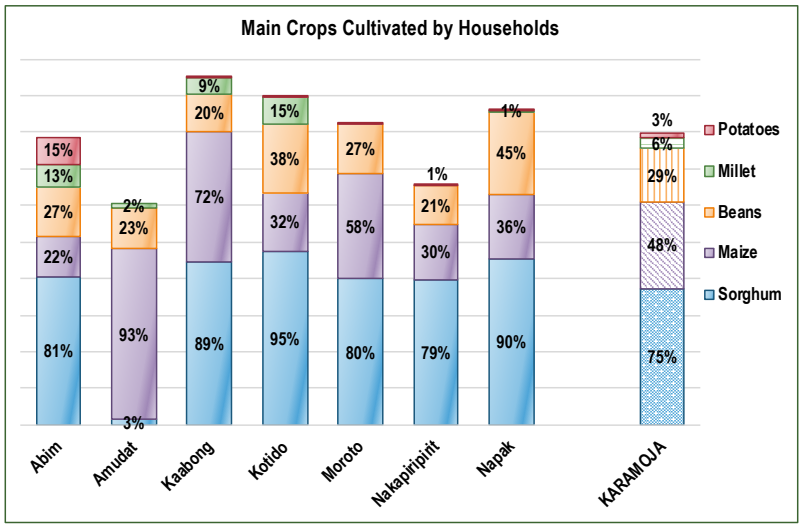

Figure 34: Reported Main Crops Cultivated by Households, July 2018

Figure 35 shows that the decision-making for crop production at household level was reportedly done jointly by both spouses in 42% of the selected households in the sub-region, more common in Moroto (63%) but less common in Amudat district (16%). The male partner was responsible for decision-making at 30% of the households in the sub-region, at district level more common in Nakapiripirit district (46%) but lowest in Moroto district (7%). The assessment shows that females made decision in 27% of the selected households, more common in Amudat district (43%) but least in Kaabong district (17%).

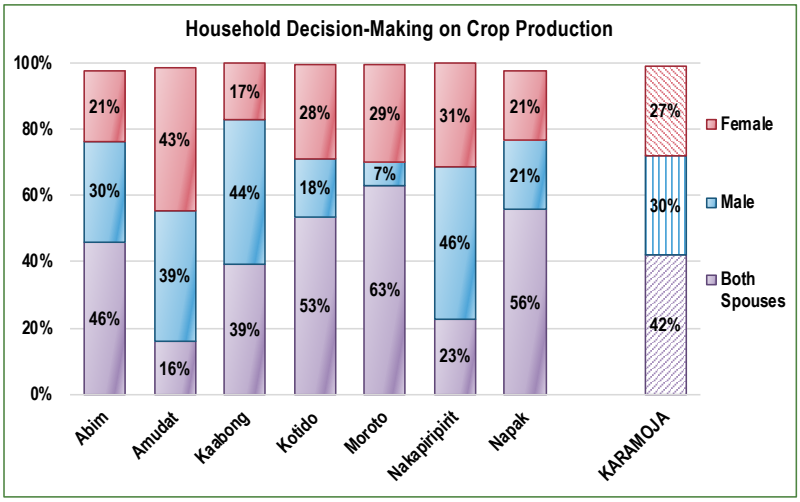

Figure 35: Decision-Making on Crop Production in Households, July 2018

Table 15: Area in Acres Occupied by the Main Crops Cultivated by District, July 2018

		Abim n (%)	Amudat n (%)	Kaabong n (%)	Kotido n (%)	Moroto n (%)	Nakapiripirit n (%)	Napak n (%)	KARAMOJA N (%)
Maize	< 0.5 acres	14 (10.9%)	5 (1.1%)	10 (2.6%)	5 (2.9%)	27 (10.3%)	7 (3.9%)	7 (3.6%)	**75 (4.2%)**
	0.5 - 1.5 acres	109 (84.5%)	341 (73.7%)	290 (76.7%)	148 (85.1%)	171 (65.5%)	132 (74.2%)	174 (89.2%)	**1,365 (76.8%)**
	1.6 - 3.0 acres	6 (4.7%)	110 (23.8%)	70 (18.5%)	18 (10.3%)	56 (21.5%)	33 (18.5%)	13 (6.7%)	**306 (17.2%)**
	3.1 and above	0	7 (1.5%)	8 (2.1%)	3 (1.7%)	7 (2.7%)	6 (3.4%)	1 (0.5%)	**32 (1.8%)**

		Abim n (%)	Amudat n (%)	Kaabong n (%)	Kotido n (%)	Moroto n (%)	Nakapiripirit n (%)	Napak n (%)	KARAMOJA N (%)
Beans	< 0.5 acres	7 (4.4%)	3 (2.7%)	7 (6.5%)	7 (3.4%)	41 (34.2%)	28 (22.4%)	54 (22.0%)	**147 (13.7%)**
	0.5 - 1.5 acres	146 (91.3%)	102 (90.3%)	94 (87.0%)	186 (91.2%)	71 (59.2%)	84 (67.2%)	188 (76.7%)	**871 (81.0%)**
	1.6 - 3.0 acres	7 (4.4%)	7 (6.2%)	7 (6.5%)	10 (4.9%)	7 (5.8%)	11 (8.8%)	3 (1.2%)	**52 (4.8%)**
	3.1 and above	0	1 (0.9%)	0	1 (0.5%)	1 (0.8%)	2 (1.6%)	0	**5 (0.5%)**
Millet	< 0.5 acres	8 (10.7%)	0	8 (17.8%)	0	0	0	0	**16 (7.5%)**
	0.5 - 1.5 acres	65 (86.7%)	10 (100.0%)	33 (73.3%)	71 (87.7%)	0	0	3 (100.0%)	**182 (85.0%)**
	1.6 - 3.0 acres	1 (1.3%)	0	4 (8.9%)	8 (9.9%)	0	0	0	**13 (6.1%)**
	3.1 and above	1 (1.3%)	0	0	2 (2.5%)	0	0	0	**3 (1.4%)**
Sorghum	< 0.5 acres	15 (3.1%)	1 (7.1%)	20 (4.2%)	3 (0.6%)	18 (5.0%)	4 (0.9%)	9 (1.8%)	**70 (2.5%)**
	0.5 - 1.5 acres	393 (82.2%)	13 (92.9%)	341 (72.4%)	345 (67.0%)	175 (48.7%)	288 (61.4%)	423 (86.0%)	**1,978 (70.7%)**
	1.6 - 3.0 acres	66 (13.8%)	0	102 (21.7%)	138 (26.8%)	133 (37.0%)	159 (33.9%)	51 (10.4%)	**649 (23.2%)**
	3.1 and above	4 (0.8%)	0	8 (1.7%)	29 (5.6%)	33 (9.2%)	18 (3.8%)	9 (1.8%)	**101 (3.6%)**

The area of land occupied by the main crops cultivated by selected households has been summarised in Table 15. Sorghum is the most widely grown crop and for 70.7% of households, it covered between 0.5 and1.5 acres of land, while 23.2% of the households had between 1.6 and 3 acres of sorghum. Larger gardens were comparatively more common in Moroto and Nakapiripirit districts. About eight in ten households (81%) had cultivated between 0.5 and 1.5 acres of beans, more commonly in Amudat, Abim and Kotido districts but less in Moroto. The assessment showed that 13.7% of the households had cultivated less than half-acre of beans, more common in Moroto, Nakapiripirit and Napak districts. Maize is extensively cultivated by households in Amudat district and approximately three-quarters (73.7%) had between 0.5 and 1.5 acres of crop while 23.8% of households had between 1.5 and 3 acres of maize.

Table 16: Reported Main Constraints to Agricultural Production, by District, July 2018

	Drought/ Low Rainfall	Inadequate Seeds/ Tools	Insufficient Labour	Sickness/ Physical Inability	Infertile/ Marginal Land
Abim	47 (8.0%)	43 (7.3%)	100 (16.9%)	22 (3.7%)	12 (2.0%)
Amudat	115 (23.2%)	13 (2.6%)	4 (0.8%)	103 (20.8%)	87 (17.5%)
Kaabong	114 (21.6%)	65 (12.3%)	13 (2.5%)	20 (3.8%)	33 (6.3%)
Kotido	140 (25.8%)	110 (20.3%)	72 (13.3%)	26 (4.8%)	83 (15.3%)
Moroto	76 (16.9%)	60 (13.3%)	32 (7.1%)	30 (6.7%)	12 (2.7%)
Nakapiripirit	28 (4.7%)	69 (11.7%)	54 (9.2%)	67 (11.4%)	24 (4.1%)
Napak	50 (9.2%)	6 (1.1%)	41 (7.5%)	10 (1.8%)	9 (1.7%)
KARAMOJA	**570 (15.2%)**	**366 (9.8%)**	**316 (8.4%)**	**278 (7.4%)**	**260 (6.9%)**

The reported main constraints to crop production in the 6 months prior to the assessment is summarised in Table 16. It shows that drought/ low rainfall was the predominant constraint for 15.2% of the households and while still

leading, reflected a big decrease from 71% reported in the June 2017 assessment. Drought or low rainfall was a particularly prominent problem to households in Kotido and Amudat districts but comparatively less to those in Nakapiripirit district. Inadequate seeds and tools was cited most by households in Kotido district, while insufficient labour was mainly of concern in Abim and Kotido districts.

3.6.4: Household Food Stocks

Table 17 shows that approximately one-third of all the selected households (31.2%) had food stock, a finding that reflects an increase from the 25% reported in the June 2017 assessment. This assessment revealed that food stocks were comparatively more available for the households Abim and Napak districts, but less available in Moroto and Amudat. The low proportion of households with food stocks from Moroto district could be related to the lower proportion of households that cultivate staples and legumes. Two-thirds of the households in the sub-region had less than one 50Kg bag of maize or sorghum in stock. The estimated mean duration of available food stock for the sub-region is 27 days, with a range from 13 days in Moroto district to 41 days in Abim district.

Table 17: Household Stock, Quantity and Estimated Duration, July 2018

District	Have Food Stock	No. of 50Kg Bags of Maize/ Sorghum in Stock				Mean Duration (Days)
		<1	1 - 2	3 - 5	>5	
Abim	306 (46.4%)	180 (58.8%)	104 (34.0%)	19 (6.2%	3 (1.0%)	41
Amudat	114 (16.0%)	94 (82.5%)	17 (14.9%)	3 (2.6%	0	25
Kaabong	204 (34.9%)	137 (67.2%)	58 (28.4%)	7 (3.4%	2 (1.0%)	31
Kotido	192 (30.7%)	120 (62.5%)	40 (20.8%)	11 (5.7%	21 (10.9%)	30
Moroto	101 (17.5%)	91 (90.1%)	7 (6.9%)	2 (2.0%	1 (1.0%)	13
Nakapiripirit	184 (26.6%)	112 (60.9%)	58 (31.5%)	11 (6.0%	3 (1.6%)	21
Napak	315 (45.9%)	218 (69.2%)	92 (29.2%)	5 (1.6%	0	17
KARAMOJA	**1,416 (31.2%)**	**952 (67.2%)**	**376 (26.6%)**	**58 (4.1%**	**30 (2.1%)**	**27**

Figure 36 shows that markets were the reported source of food stocks for about half of the selected households, followed by "own production" (46%). The finding was of similar pattern to that of June 2017 when markets accounted for 48% and own production for 36%. Moroto district has the largest proportion of households that utilised markets as source of food stock whilst Abim district has the highest proportion that produced their own food stock. Food distribution from World Food Programme and partners was cited as source of food stock mainly by households from Amudat district.

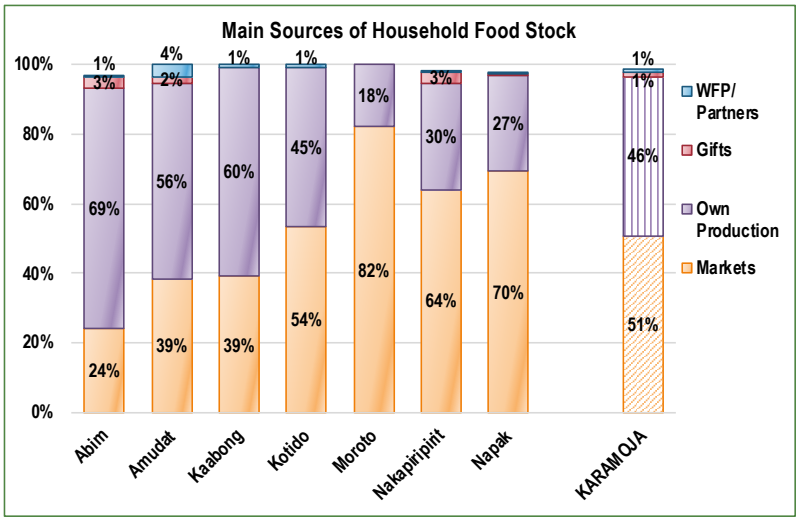

Figure 36: Reported Main Sources of Household Food Stock, July 2018

3.6.5: Current Food and Humanitarian Assistance

As summarised in Table 18, within a period of 6 months preceding the assessment, food aid was received by 9.6% of the sampled households in the sub-region and 3.2% received cash assistance from the World Food Programme. The finding reflects a decline from the 28% who received food aid reported in June 2017 though proportion of those who received cash aid is similar (3%). Beneficiaries of food aid were mainly from Amudat and Kotido districts, while most cash beneficiaries were in Kaabong and Napak districts.

Table 18: Household Food and Humanitarian Assistance, by District, July 2018

District	Food Aid n (%)	Cash n (%)	NONE n (%)	Total (N)
Abim	73 (11.1%)	1 (0.2%)	585 (88.8%)	**659**
Amudat	177 (24.9%)	4 (0.6%)	531 (74.6%)	**712**
Kaabong	24 (4.1%)	98 (16.8%)	463 (79.1%)	**585**
Kotido	107 (17.1%)	3 (0.5%)	515 (82.4%)	**625**
Moroto	41 (7.1%)	4 (0.7%)	532 (92.2%)	**577**
Nakapiripirit	11 (1.6%)	2 (0.3%)	680 (98.1%)	**693**
Napak	3 (0.4%)	35 (5.1%)	649 (94.5%)	**687**
KARAMOJA	**436 (9.6%)**	**147 (3.2%)**	**3,955 (87.2%)**	**4,538**

Of the beneficiaries of food aid, decision-making on what to do with food aid such as whether to sell, lend or share, was by only the women for 94% of households, jointly done by both women and men at 5% and by only men at 1%. The finding reflects a marked change from that reported from the June 2017 assessment where women made decisions in 77% of the households, both men and women in 20% and only the men in 4%. Decision-making in relation to how the cash or voucher should be handled, was reportedly a joint one involving both male and female for only 17% of households, by women only in 54% and by men only in 29% of the households. During the previous assessment in June 2017, women made decisions in 53%, both men and women in 41% and only the men in 6% of the households.

Safety problems during the 2-month period preceding this assessment was reported by 5% of the selected beneficiary households. Most (3%) reported having experienced safety problems while going to the World Food Programme site and 1% while at the programme site. It reflects an improvement from the situation in June 2017 when 6% experienced problems going to the site and 5% while at the programme site.

3.7: FOOD ACCESSIBILITY

3.7.1: *Income Earners and Sources*

The number of income[15] earners by district is summarised and presented in Figure 37. It shows that out of the selected households in the sub-region, 45% and 54% had one income earner and two or more income earners, respectively. The assessment of June 2017 reported 45% of households with one income earner and 40% with two or more income earners. In this assessment, Abim district (71%) registered the highest proportion of households with 2 or more income earners but Amudat and Kaabong districts had the lowest (39% each). At the sub-regional level, only 2% of the selected households had no income earner, relatively more common in Napak and Nakapiripirit districts. The finding reflected a large decrease from 16% reported in the June 2017 assessment. Basing on availability of an income earner, the findings suggest relatively better economic access to food, especially in Abim and Moroto districts.

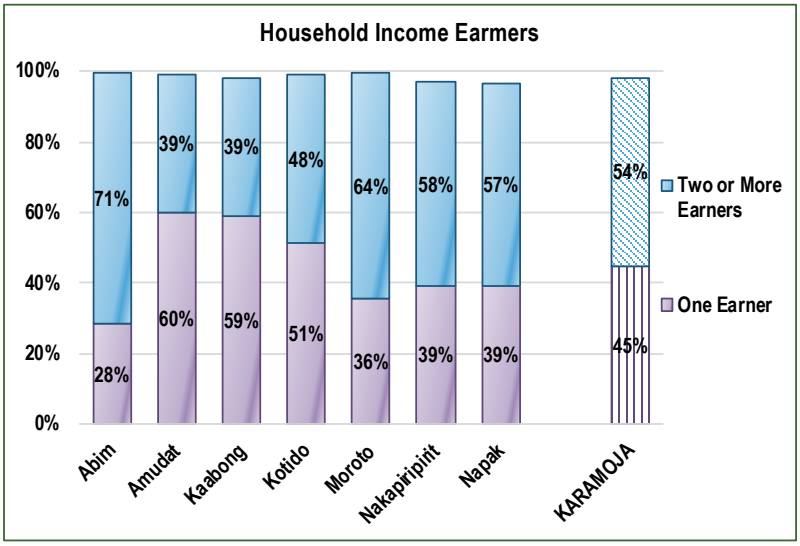

Figure 37: Number of Household Income Earners, July 2018

The district and sub-regional gender dynamics related to involvement of members in the on-farm activities for generation of household income has been presented in Figure 38. It shows that in 45% of selected households, both men and women were engaged in carrying out on-farm activities for income generation. Involvement of both men and women was relatively more common in Abim and Kaabong districts but less common in Amudat. Women were predominantly involved in 42% of the households, more common in Moroto and Amudat districts but least in Kaabong. Men were predominantly involved in generation of income from on-farm activities at 13% of selected households in the sub-region, a practice observed to be more common in Nakapiripirit but least in Abim and Moroto districts (3% each).

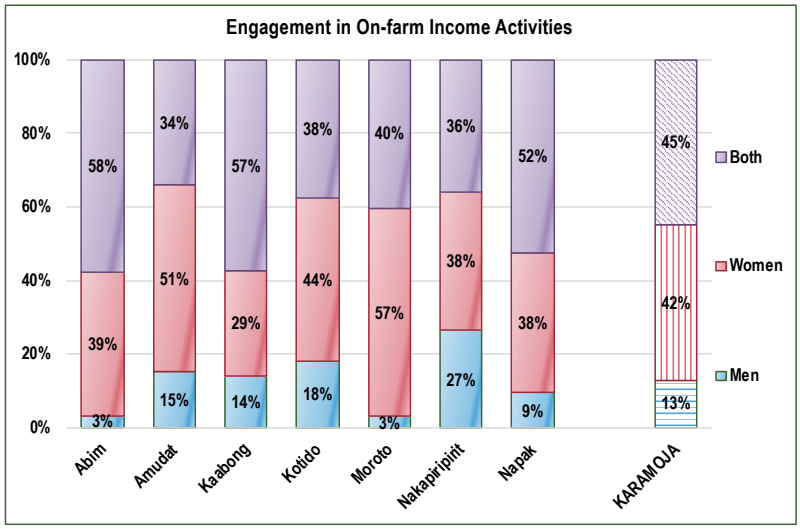

Figure 38: Involvement in the On-farm Activities for Income, July 2018

[15] An income earner refers to a person who obtains money of a specific kind or level in return for labour or services

The gender dynamics related to involvement of members in the off-farm activities for generation of household income has been presented in Figure 39. It shows that in 35% of selected households, both men and women were engaged in carrying out the off-farm activities for income generation. Involvement of both men and women was relatively more common in Napak and Moroto districts but less common in Amudat and Nakapiripirit. Women were predominantly involved in 26% of the households, comparatively more common in Kaabong, Kotido and Napak districts but least in Amudat. Men were predominantly involved in generation of income from on-farm activities at 39% of selected households in the sub-region, a practice that was more common in Amudat district but least in Napak.

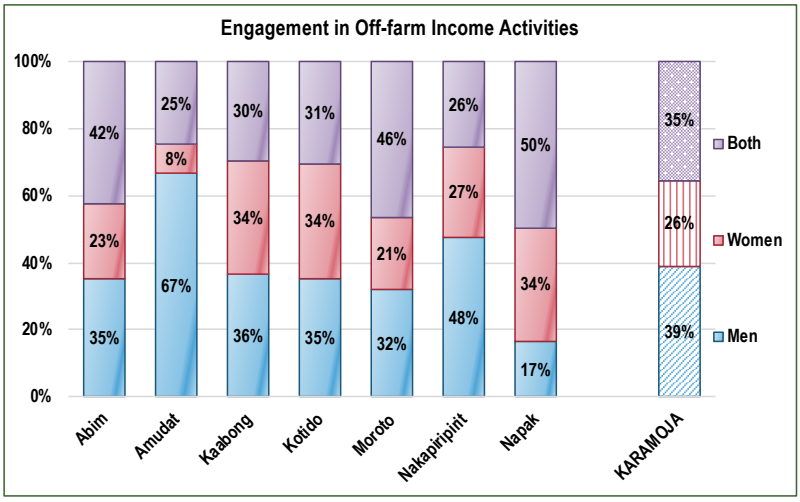

Figure 39: Involvement in the Off-farm Activities for Income, July 2018

The gender dynamics related to decision-making at the household level on the use of generated income has been presented in Figure 40. It shows that in slightly more than half of the selected households (54%), both the men and women are involved in making decisions for the generated income. This practice is comparatively more common in Kotido and Moroto districts, but least in Amudat. In about one-quarter of households (24%), the women were the main decision-makers on the generated income, more common in Napak district but least in Abim. Men were the decision-makers in 22% of selected households, a practice more common in Amudat district but least in Moroto.

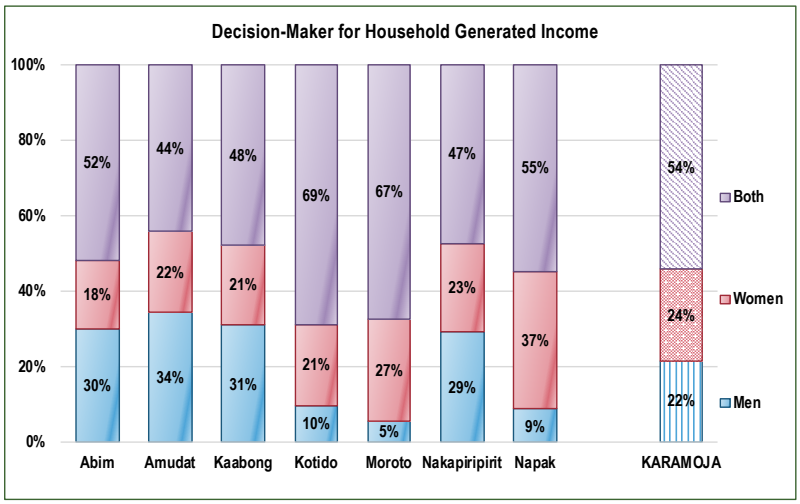

Figure 40: Decision-Making for Generated Household Income, July 2018

According to the respondents from selected households in Karamoja sub-region, the most important source of income was from the sale of natural resources such as firewood and charcoal. (Table 19). This was particularly prominent in households from Napak and Moroto districts. The sale of livestock and/ or animal products constituted the most important source of income for majority of households in Amudat district. Agricultural wage labour was the second most important source of household income in the sub-region, mostly cited by those from Abim, Amudat and Kotido districts. Non-agricultural wage labour was cited as the second most important source of income for the majority of households In Napak and Moroto districts. In Moroto district, this could be related to reported mining activities that were on the increase. The district officials related the petty trade and hawking, mainly done by children, to irregular primary school attendance. At the sub-regional level, agricultural wage labour was the third most important source of household income for majority of households, especially in Abim, Nakapiripirit and Napak districts. Petty trade featured prominently in Amudat, the sale of firewood/ charcoal in Kotido, while gifts and

begging were cited in Kaabong district. The June 2017 assessment reported agricultural wage labour as the most important, followed by sale of firewood/ charcoal and food crop production/ sales in the third place.

Table 19: Most Important Sources of Household Income, by District, July 2018

District	Most Important Source	Second Most Important	Third Most Important
Abim	Agricultural wage labour (36%)	Agricultural wage labour (30%)	Agricultural wage labour (23%)
Amudat	Sale of livestock and/ or animal products (56%)	Agricultural wage labour (24%)	Petty trade (22%)
Kaabong	Brewing (27%)	Brewing (21%)	Gifts/ begging (26%)
Kotido	Brewing (28%)	Agricultural wage labour (34%)	Sale of firewood/ charcoal (24%)
Moroto	Sale of firewood/ charcoal (35%)	Non-agricultural wage labour (construction etc.) (27%)	Non-agricultural wage labour (construction etc.) (42%)
Nakapiripirit	Agricultural wage labour (31%)	Sale of firewood/ charcoal (32%)	Agricultural wage labour (15%)
Napak	Sale of firewood/ charcoal (32%)	Non-agricultural wage labour (construction etc.) (25%)	Agricultural wage labour (22%)
KARAMOJA	**Sale of firewood/ charcoal (19%)**	**Agricultural wage labour (24%)**	**Agricultural wage labour (17%)**

Only 46 out of all the selected households reported having received remittances and these were mainly in districts of Napak (37%), Abim (28%) and (Nakapiripirit (22%). About one-third (33%) of the remittances were from other districts or towns within Uganda, 30% from the main town in the district while 15% were from a neighbouring district. In June 2017, only 22 households received remittances, mainly in Kotido, Napak and Nakapiripirit. In this assessment, remittance accounted for only 0.4% of the most important; 0.8% among 2nd most important and 1.5% among the 3rd most important sources of household income. In terms of origin, 31% were received from main town in the district; 22% from neighbouring district; 33% from other towns or districts within Uganda and 2% from outside the country.

3.7.2: Household Debt

Table 20: Household Debts, by District in July 2018

District	Have Debt	Mean Debt (UGX)	Have Interest	Mean Interest (UGX)
Abim	326 (49%)	87,920	193 (59%)	30,130
Amudat	59 (8%)	86,466	6 (10%)	17,900
Kaabong	207 (35%)	52,005	103 (50%)	10,726
Kotido	237 (38%)	62,851	104 (44%)	22,910
Moroto	268 (46%)	58,191	67 (25%)	19,379
Nakapiripirit	278 (40%)	59,774	87 (31%)	18,305
Napak	275 (40%)	51,695	126 (46%)	16,964
KARAMOJA	**1,650 (36%)**	**64,153**	**686 (42%)**	**21,174**

Debt is not necessarily bad for households but is indicative of stress when used to meet essential household needs, including for purchase of food. Table 20 presents the household debt by district. Current overall debt prevalence is 36%, which is only slightly higher than 34% from the June 2017 report. The highest proportion of households with debt was observed in Abim and Moroto districts while the lowest was in Amudat district. In the June 2017 assessment, Moroto had 43% followed by Napak (39%) and Amudat was lowest with 15%. In the current assessment, 42% of those with debt had to pay interest, more common in Abim district but least in Amudat. The average sub-regional debt was UGX 64,153 with

households in Abim district having registered the highest average amount whilst Napak district had the smallest average amount.

As illustrated in Figure 41, the main sources of credit for all debts and loans were the relatives (37%), Bank/ credit institution/Micro-credit projects (32%), followed by traders and shop-keepers (16%). Relatives were prominently cited as the commonest source of credit for household debt in the districts of Amudat (69%) and Kaabong (49%) but least common in Abim district. Bank/ credit institutions were cited as the most common source of funds by households in Abim (58%) but was virtually non-existent in Amudat. Traders or shop-keepers were a relatively common source of funds for households in Moroto but were less prominent in Nakapiripirit district. Money-lenders were particularly an important source for households in Nakapiripirit district. During the June 2017 assessment, the main sources of credit were relatives (37%), bank / credit institutions (27%) and traders/ shop keepers (18%).

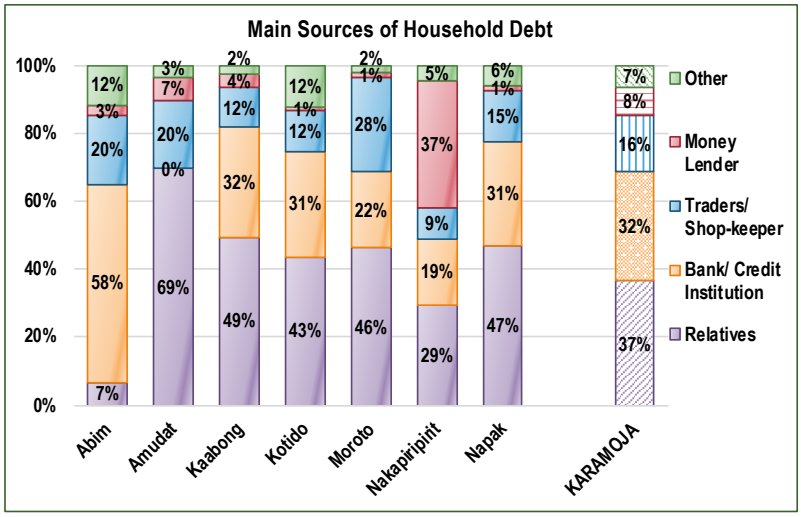

Figure 41: Main Sources of Funds for Household Debt, July 2018

Figure 42 shows that 42% of the households in the sub-region borrowed for purposes of buying food and 25% to cover health expenses, which can be compared to the July 2017 assessment where 56% borrowed to buy food and 19% to cover the health expenses. Borrowing to purchase food was comparatively more common in Kaabong and Moroto districts, but less common Amudat district, which may reflect the stress associated with acquisition of food for household consumption. Borrowing to cover health expenses was relatively more common in Amudat and Kotido districts but lowest in Kaabong (8%). In the sub-region, 11% of the households borrowed for purposes of investing in business, a practice that was relatively more common Moroto, Kotido and Kaabong districts but virtually non-existent in Amudat. Borrowing to cover education costs was relatively more common in Abim and Amudat districts but less common in Moroto and Napak. Borrowing for purposes of purchasing agricultural inputs was more common in Kaabong and Nakapiripirit districts but less common in Kotido and Moroto.

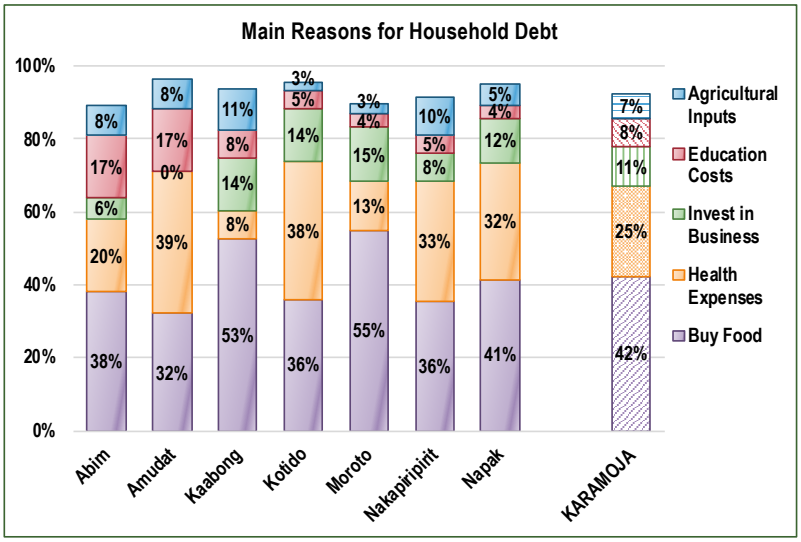

Figure 42: Main Reasons for Incurring Household Debt, July 2018

3.7.3: Household Expenditure

Table 21 shows that the main food items purchased included Cereals, Sugar/ salt, Oil, fat, butter and Pulses. These foods were mainly purchased in the districts of Moroto, Kotido, Napak and Nakapiripirit, which may be related to the higher level of household Income. The findings are similar to what was reported in the June 2017 assessment, in relation to purchased items and the districts.

Table 21: Most Commonly Purchased Food Items by Selected Households, by District, July 2018

Foods Purchased	Abim n (%)	Amudat n (%)	Kaabong n (%)	Kotido n (%)	Moroto n (%)	Nakapiripirit n (%)	Napak n (%)	KARAMOJA (N)
Cereals	408 (61.9%)	605 (85.0%)	515 (88.0%)	557 (89.1%)	561 (97.2%)	656 (94.7%)	633 (92.1%)	**3,935 (86.7%)**
Tubers	180 (27.3%)	46 (6.5%)	141 (24.1%)	273 (43.7%)	228 (39.5%)	181 (26.1%)	378 (55.0%)	**1,427 (31.4%)**
Pulses	547 (83.0%)	151 (21.2%)	338 (57.8%)	573 (91.7%)	493 (85.4%)	524 (75.6%)	448 (65.2%)	**3,074 (67.7%)**
Fruits & Vegetables	165 (25.0%)	115 (16.2%)	230 (39.3%)	153 (24.5%)	232 (40.2%)	277 (40.0%)	109 (15.9%)	**1,281 (28.2%)**
Fish/ Meat/ Eggs/ Poultry	202 (30.7%)	28 (3.9%)	332 (56.8%)	306 (49.0%)	282 (48.9%)	213 (30.7%)	394 (57.4%)	**1,757 (38.7%)**
Oil, Fat, Butter	532 (80.7%)	423 (59.4%)	474 (81.0%)	547 (87.5%)	516 (89.4%)	500 (72.2%)	493 (71.8%)	**3,485 (76.8%)**
Milk, Cheese, Yogurt	12 (1.8%)	72 (10.1%)	177 (30.3%)	79 (12.6%)	300 (52.0%)	345 (49.8%)	197 (28.7%)	**1,182 (26.0%)**
Sugar/ Salt/ Honey	571 (86.6%)	549 (77.1%)	542 (92.6%)	418 (66.9%)	474 (82.1%)	467 (67.4%)	600 (87.3%)	**3,621 (79.8%)**
Tea/ Coffee	50 (7.6%)	450 (63.2%)	48 (8.2%)	49 (7.8%)	101 (17.5%)	134 (19.3%)	52 (7.6%)	**884 (19.5%)**
Other meals/ Snacks consumed	27 (4.1%)	25 (3.5%)	129 (22.1%)	186 (29.8%)	63 (10.9%)	74 (10.7%)	86 (12.5%)	**590 (13.0%)**
Total (N)	**659**	**712**	**585**	**625**	**577**	**693**	**687**	**4,538**

Table 22: Food Expenditure Profiles by District, July 2018

Food Category	KARAMOJA	Highest	Average Monthly Expenditure (UGX)					Lowest
Cereals	35,590	Amudat (63,670)	Kaabong	Nakapiripirit	Kotido	Moroto	Napak	Abim (22,996)
Tubers	7,378	Amudat (9,523)	Abim	Nakapiripirit	Napak	Kaabong	Kotido	Moroto (5,212)
Pulses	15,893	Abim (23,346)	Amudat	Nakapiripirit	Moroto	Kaabong	Kotido	Napak (11,415)
Fruits and vegetables	7,198	Amudat (12,011)	Moroto	Napak	Nakapiripirit	Abim	Kotido	Kaabong (4,671)
Fish/ Meat/ Egg/ Poultry	10,370	Amudat (14,962)	Abim	Moroto	Kaabong	Kotido	Nakapiripirit	Napak (3,985)
Oil/Fat/Butter	6,572	Amudat (10,851)	Kaabong	Nakapiripirit	Moroto	Abim	Kotido	Napak (4,406)
Milk and Milk Products	9,166	Amudat (27,694)	Abim	Kotido	Kaabong	Moroto	Nakapiripirit	Napak (4,394)
All Food	**59,643**	**Amudat (94,607)**	**Nakapiripirit**	**Moroto**	**Kaabong**	**Kotido**	**Abim**	**Kotido (44,474)**

Table 22 shows for all purchased food items, Amudat district had comparatively higher absolute expenditure while Kotido district had the lowest monthly food expenditure. Findings from the July 2017 assessment registered the highest average expenditure in Amudat and Abim districts but the lowest in Kotido and Napak districts. In this assessment, the average monthly expenditure on cereals for the sub-region was UGX 35,590 but households in Amudat spent on average UGX 63,670 whilst those in Abim district spent on average UGX 22,996.

Figure 43 shows that about half (49%) of the selected households heavily depended upon markets to get more than three-quarters of their food, which reflects a decrease from 65% reported in the June 2017 assessment. In the current assessment, this level of dependence was more common in Moroto and Abim districts (68% and 65%, respectively) but less in Amudat. There were 36% of households in the sub-region that depended on markets for 50% - 75%, more common in Nakapiripirit but lowest in Moroto district. Overall, 15% of the households had low dependence on markets for food (less than 50% of their food from the markets), which was comparatively more common in Amudat district (31%).

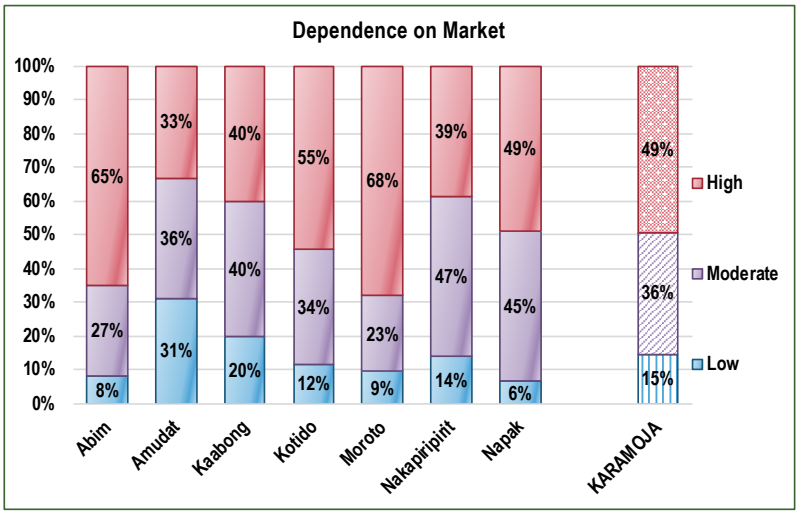

Figure 43: Dependence on Markets by Households, July 2018

The Food Expenditure Share[16] is presented in Figure 44 and shows that about 28% of households in the sub-region were in the categories of moderately food insecure and severely food insecure, which reflects a decrease from 38% reported in the June 2017 assessment. In the current assessment, Napak and Amudat districts registered the highest proportion of households that were moderately and severely food insecure, while Abim district had the lowest proportion. It is noteworthy that households spending proportionately more on food than the other essential non-food items indicate higher likelihood of challenges related to food access.

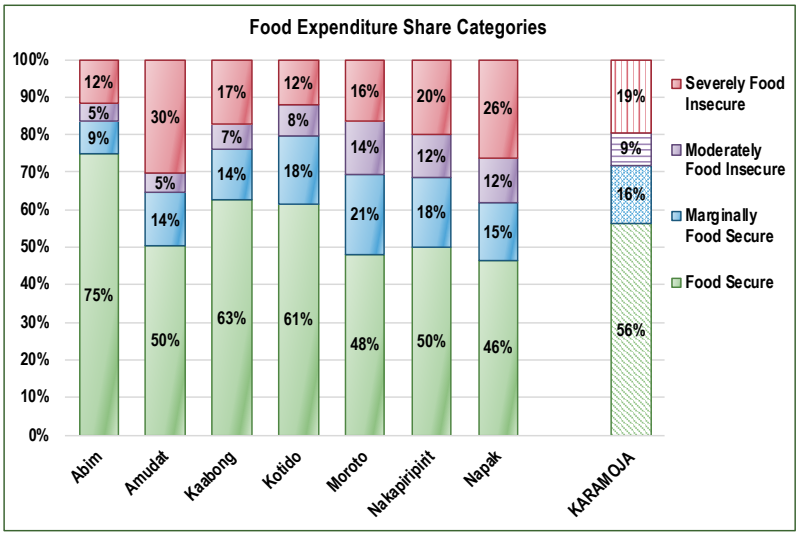

Figure 44: Food Expenditure Share Categories of Households, July 2018

[16] The Food Expenditure Share refers to the percentage of total household expenditure that is allocated to food. The higher the percentage of total expenditure allocated by the household to food, the greater the food insecurity. For instance, households that spent <50% of total household expenditure on food were regarded as food secure; 50 - <65% as marginally food secure; 65 - <75% as moderately food insecure; and >75% as severely food insecure.

3.8: Food Utilisation

3.8.1: Food Consumption

Table 23 summarises the food consumption scores from the assessments done in June 2017 and July 2018. It shows that 57% of households in the sub-region had acceptable Food Consumption Score[17], which was only slightly higher than the 55% reported from June 2017 assessment. Amudat district had the highest proportion of households with acceptable FCS (82%) while Abim district registered the lowest proportion (40%). Comparing the situation from the two assessments, improvements in form of increased proportion of households with acceptable scores alongside decreased proportion of those with poor scores were observed in Kotido, Moroto and Napak districts. Deterioration of the situation was observed in Kaabong district where the proportion of households with acceptable food consumption scores declined while those with poor scores increased.

Table 23: Comparison of Food Consumption Scores in Sub-region for June 2017 and July 2018

	Poor		Borderline		Acceptable	
	2017	2018	2017	2018	2017	2018
Abim	12%	◀▶ 12%	44%	48%	44%	▼ 40%
Amudat	4%	▼ 3%	20%	15%	76%	▲ 82%
Kaabong	5%	▲▲ 23%	33%	33%	62%	▼▼ 44%
Kotido	21%	▼▼ 12%	37%	32%	42%	▲▲ 55%
Moroto	17%	▼▼ 8%	32%	29%	51%	▲▲ 63%
Nakapiripirit	11%	▼ 10%	20%	28%	59%	▲ 63%
Napak	26%	▼▼ 14%	35%	33%	39%	▲▲ 52%
KARAMOJA	**14%**	**▼ 11%**	**32%**	**31%**	**55%**	**▲ 57%**

Figure 45 illustrates the trend in Food Consumption Scores for the lean season (June/July round of assessments) from 2012 to 2018). The linear trend depicts a gradual increase in the proportion of households from the sub-region with acceptable food consumption. On the other hand, the linear trend for poor food consumption score depicts a very slight decline over the period. This could reflect the responsiveness of interventions being made to address challenges faced by households in the Karamoja sub-region.

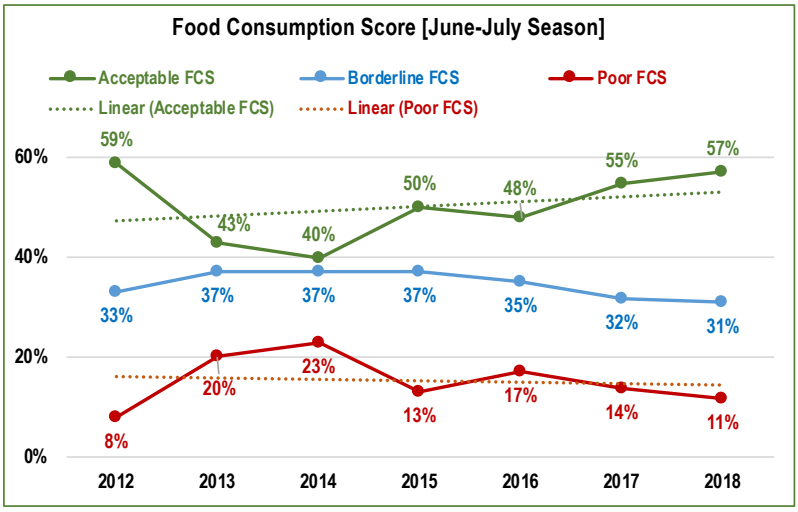

Figure 45: Trend in Food Consumption Score June/July Round 2012 – 2018

[17] The Food Consumption Score (FCS) is a composite score based on dietary diversity, food frequency and relative nutrition importance of different food groups.

3.8.2: Household Dietary Diversity

Figure 46 shows that 47% of the selected households in the sub-region had a low Dietary Diversity Score[18], which reflects an increase from 40% reported in the June 2017 assessment. From the current assessment, households with low dietary diversity scores were comparatively more common in Abim district, but less in Nakapiripirit and Moroto. Only 5% of the selected households in the sub-region had high dietary diversity score, relatively more common in Kaabong and Nakapiripirit districts. It reflects a decline from 10% reported during the June 2017 assessment.

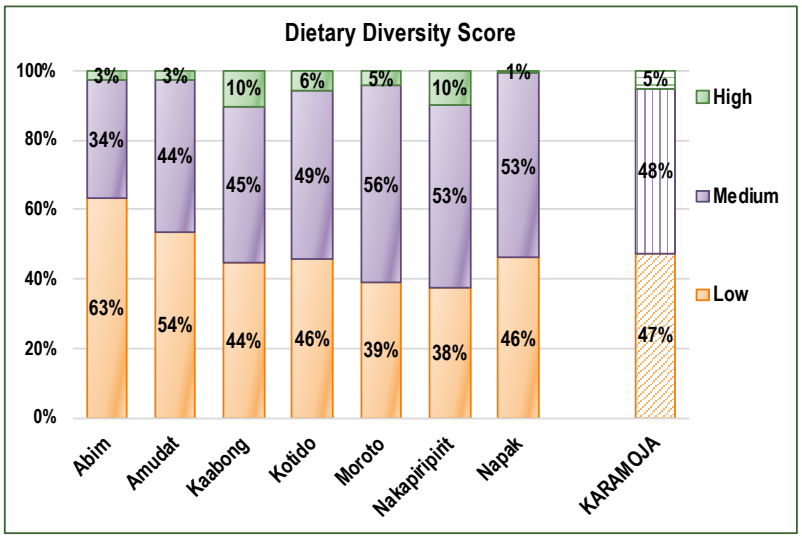

Figure 46: Household Dietary Diversity Scores, July 2018

3.9: STABILITY

3.9.1: Main Shocks to Households

As illustrated in Figure 47, the main shocks to household food security in Karamoja sub-region included Sickness/ Disease (33%), Floods, Heavy Rains (17%) and High Food Prices (15%). The issues were similar but the pattern different from that reported in the June 2017 assessment, where high food prices was 29%, floods and heavy rains 26% and sickness/ disease 25%. Sickness was more common problem to the households in Kotido district but less of a problem in Abim. Floods and heavy rains mostly affected households in Nakapiripirit district but was almost negligible in Kotido. High prices of food mostly affected the households in Abim and Napak districts but was less of a problem in Kaabong. Loss of crops was experienced by more households in Moroto district but was not a common problem in Abim and Nakapiripirit. The other extreme weather experience of drought and dry spells mostly affected the

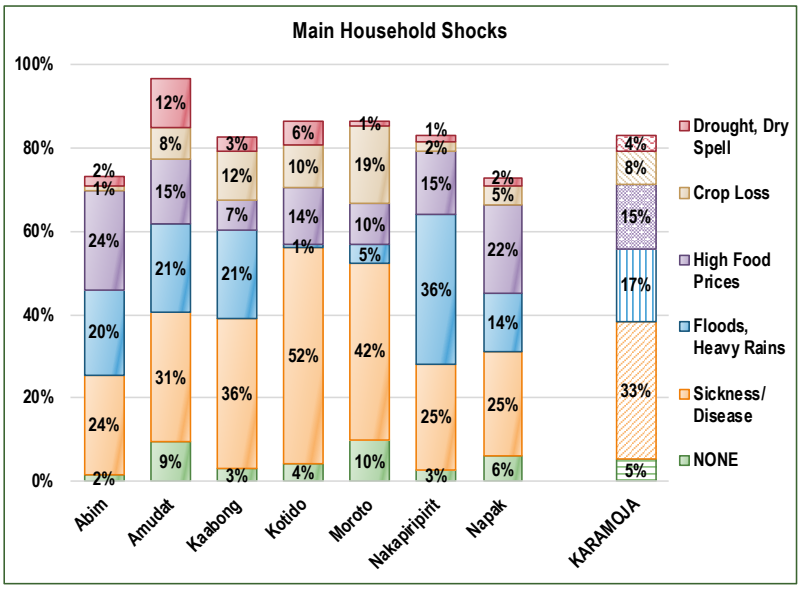

Figure 47: Main Shocks Experienced by Households, July 2018

[18] The Household Diet Diversity Score (HDDS) is a simple count of food categories consumed in the household in the past 7 days, based on 7 food groups which is then classified as Low (HDDS <4.5), Medium (4.5<HDDS<6) or High (HDDS > 6). The higher the HDDS, the more diversified diet is, among households.

households from Amudat district. The second most important difficulty reported by 21% of households was high food prices while sickness and disease were the second most important difficulty for 20% of the households.

3.9.2: Food Consumption Coping Strategies

Table 24 presents a summary of the most commonly applied food consumption coping strategies reported by the selected households in Karamoja sub-region. It includes consumption of less preferred food (75.1%), borrowing of food (54.9%), reducing the number of meals consumed per day (54%), reducing the size of portions consumed (52%) and reducing the quantity of food consumed by adults (48.3%). Abim and Kotido districts had comparatively larger proportion of households that applied the food consumption coping strategies while Amudat district registered the lowest. The June 2017 assessment reported a similar pattern, with more households from Kaabong and Kotido applying the coping strategies, but less from Abim district.

Table 24: Main Household Food Consumption Coping Strategies, July 2018

	Consumed Less Preferred Food n (%)	Borrowed Food n (%)	Reduced Number of Meals n (%)	Reduced Portion Sizes n (%)	Reduced Adult Quantities n (%)	Total (N)
Abim	611 (92.7%)	428 (64.9)	460 (69.8%)	484 (73.4%)	399 (60.5%)	**659**
Amudat	306 (43.0%)	261 (36.7%)	185 (26.0%)	171 (24.0%)	140 (19.7%)	**712**
Kaabong	487 (83.2%)	429 (73.3%)	391 (66.8%)	377 (64.4%)	385 (65.8%)	**585**
Kotido	572 (91.5%)	456 (73.0%)	386 (61.8%)	374 (59.8%)	352 (56.3%)	**625**
Moroto	348 (60.3%)	215 (37.3%)	242 (41.9%)	260 (45.1%)	264 (45.8%)	**577**
Nakapiripirit	478 (69.0%)	468 (67.5%)	422 (60.9%)	406 (58.6%)	400 (57.7%)	**693**
Napak	608 (88.5%)	233 (33.9%)	364 (53.0%)	288 (41.9%)	251 (36.5%)	**687**
KARAMOJA	**3,410 (75.1%)**	**2,490 (54.9%)**	**2,450 (54.0%)**	**2,360 (52.0%)**	**2,191 (48.3%)**	**4538**

The Food Consumption 'Reduced' Coping Strategy Index (RCSI)[19] measures the behaviours adopted by households when they have difficulties covering their food needs. Figure 48 shows that 8% of households employed high coping, which was much lower than 16% reported in the June 2017 assessment. In the current assessment the largest proportion of households were from Abim district whilst Amudat and Moroto districts registered the smallest proportions.

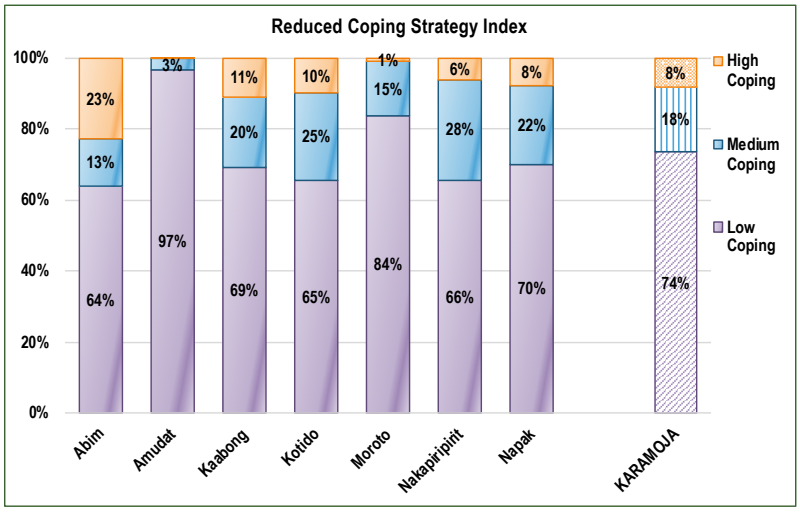

Figure 48: Reduced Coping Strategy Index for Households, July 2018

[19] The reduced coping strategies index (rCSI) is used to compare the hardship faced by households by measuring the frequency and severity of the food consumption behaviours they engage in when faced with shortages of food. It is calculated using standard food consumption-based coping strategies.

3.9.3: Livelihood Coping Strategies

Figure 49 shows that 21% of all the selected households did not apply any livelihood coping strategies[20], which is similar to the finding from the June 2017 assessment. Like in the previous assessment, it was more common for households in Napak district but less in Kaabong. At the sub-region level, 45% of the households were applying emergency coping, slightly lower than 48% reported in the June 2017 assessment. In this assessment, emergency coping was more common in Kaabong households but less in Moroto district.

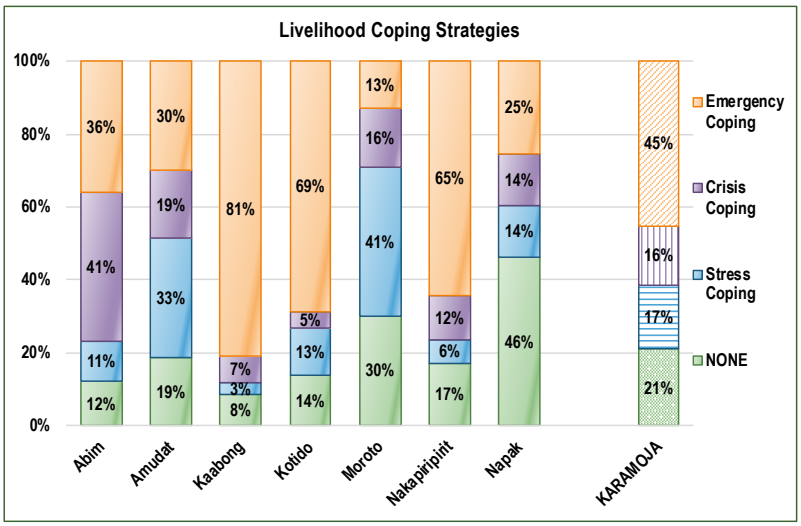

Figure 49: Livelihood Coping Strategies for Households, July 2018

3.10: Final Food Security Classification

The Food Security Index combines the Food Expenditure, Food Consumption Score and Livelihood coping strategies. Figure 50 shows that out of the selected households in Karamoja sub-region, 61% were food secure (Food secure + marginally food secure). The food secure households were more common in Amudat and Moroto districts but less in Kaabong and Abim districts. In the sub-region, 6% of the households were in the category of "severely food insecure", highest in the districts of Kaabong (13%) and Nakapiripirit (10%), but lowest in Amudat (1%).

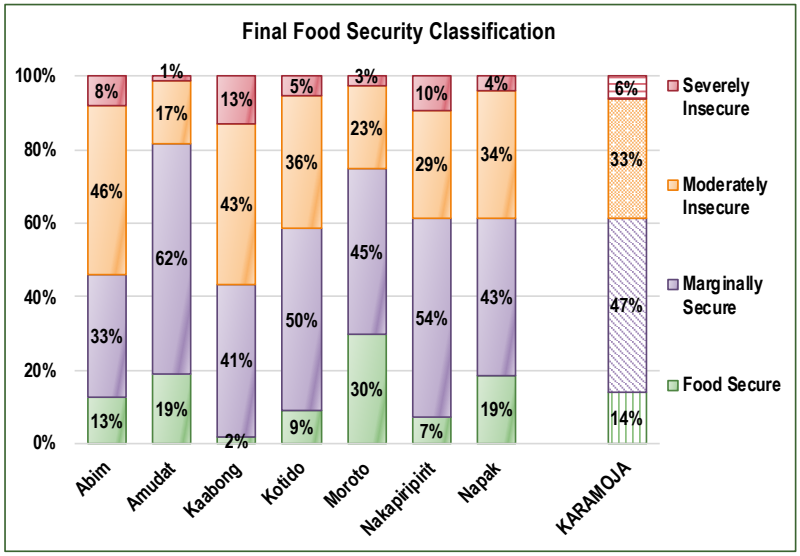

Figure 50: Household Final Food Security Status, July 2018

[20] Livelihoods-based coping strategies reflect longer term coping capacity of households and the various strategies applied can be categorized as 'stress', 'crisis' or 'emergency' coping depending on the severity weights. Stress coping strategies indicate reduced ability to deal with future shocks due to a current reduction in resources or increase in debts, which progresses to crisis coping whilst emergency coping is at the peak. Stress coping strategies include: Sale of household assets/goods; spending savings; sale of more animals than usual; Borrow or purchase of food on credit; Borrow money. Crisis coping strategies include: Sale of productive assets; withdrwal of children from school; Reduce expenses on health and education; Harvest of immature crops; Consumed seed stock; Emergency Coping strategies include: Sale of house or land; Begged; Engaged in illegal income activities such as theft or prostitution.

Table 25 summarises and presents the comparison of final food security classification findings from assessments conducted in June 2017 and July 2018. It shows a general improvement in the situation in the sub-region, as evidenced by increased proportion of food secure households alongside a decline in proportion of food insecure households. At the district level, marked improvements were registered in the districts of Kotido, Moroto and Napak. On the other hand, marked deterioration of the situation was observed Kaabong while Abim district registered a lower level of deterioration.

Table 25: Final Food Security Classification in Karamoja Sub-region for June 2017 and July 2018

District	Food Secure		Food Insecure	
	June 2017	July 2018	June 2017	July 2018
Abim	48%	▼ 46%	53%	▲ 54%
Amudat	76%	▲ 81%	24%	▼ 18%
Kaabong	55%	▼▼ 43%	45%	▲▲ 56%
Kotido	48%	▲▲ 59%	53%	▼▼ 41%
Moroto	54%	▲▲ 75%	46%	▼▼ 26%
Nakapiripirit	58%	▲ 61%	43%	▼ 39%
Napak	39%	▲▲ 62%	62%	▼▼ 38%
KARAMOJA	**54%**	**▲ 61%**	**46%**	**▼ 39%**

4. APPENDICES

APPENDIX 4.1: SUMMARY INDICATOR TABLE

INDICATOR	MOROTO	KAABONG	KOTIDO	NAPAK	NAKAPIRIPIRIT	AMUDAT	ABIM	KARAMOJA JUNE 2018	KARAMOJA JULY 2018
% Disabled or Chronically ill									
% Female headed Households									
% HH Head, no formal education									
% Polygamous households									
% Extremely Vulnerable HHs									
% NUSAF registered									
% Regular school attendance, boys									
% Regular school attendance, girls									
% Accessed care at Health Centers									
% Accessed care from VHTs									
% Accessed safe/clean water sources									
% utilised > 20lpppd									
% HHs with toilet facilities									
% HHs with VIP/Pit Latrine									
% Women without formal Education									
% women with $\geq$ 7 live births									
% took iron/folate in last pregnancy									
% women took iron/folate $\geq$ 3m									
% Women with anemia									
% Women with under-nutrition									
% Women with over-nutrition									
% Measles vaccination (with card)									
% DPT3 vaccination (with card)									
% Vitamin A (with card)									
% De-wormed (with card)									
% Initiating breastfeeding in 1st hour									
% Exclusive breastfeeding									
% Continued BF at 1 year									
% Continued BF at 2 years									
% Timely introduction of CF									
% Minimum Dietary Diversity									
% Minimum Acceptable Diet									
% Minimum Meal Frequency									

INDICATOR	MOROTO	KAABONG	KOTIDO	NAPAK	NAKAPIRIPIRIT	AMUDAT	ABIM	KARAMOJA JUNE 2018	KARAMOJA JULY 2018
% Children with anemia									
% Children with malaria/Fever									
% Children with diarrhoea									
% ITN Usage Coverage									
% Accessing TSFP									
% Accessing OTC									
% Accessing MCHN programme									
% Global Acute Malnutrition									
% Severe Acute Malnutrition (SAM)									
% Stunting in children									
% Underweight									
% Children left alone at home									
% Left with another child <10years									
% Played with home-made toys									
% Played with factory-made toys									
% Children with reading books									
% Access to agricultural land									
% HHs with Food stocks									
% HHs with livestock									
% HHs that cultivated									
% Food Expenditure Share > 65%									
% HHs with debt									
Amount of current debt, UGX (Mean)									
% HHs Borrowed to buy food									
% HHs with 2 and more income earners									
% HHs with Acceptable Food Consumption Score									
% HHs with High Dietary Diversity Score									
% HHs that experienced NO shock									
% HHs on emergency coping									
% HH with NO livelihood coping									
% HHs food secure									
% HHs food Insecure									

APPENDIX 4.2: EXPLAINING THE FOOD SECURITY INDEX

A food security index was calculated, at household level, as an average of the scores obtained from the Food Consumption, Food Expenditure, and livelihood coping indicators. Each household was then assigned to a Food Security Index group viz. Food Secure, Marginally Food Secure, Moderately Food Insecure, and Severely Food Insecure.

The food security index is based on an algorithm, which combines, at the household level, the results for each of the reported food security indicators (Food Consumption Score, Food Expenditure Share, and Livelihood Coping Strategies).

Converting food security indicators into a 4-point scale

A central stage of the methodology involves converting the outcomes of each of the 3 indicators into a standard 4-point classification scale. The 4-point scale assigns a score (1-4) to each category. Once all the indicators have been converted to the 4-point scale, the **overall food security classification** for a household can be calculated as below and as shown in Table 26:

1. The *'summary indicator of Current Status'* was taken to be *the equivalent of the Food Consumption Score* (i.e. the 4-point scale scores) in the **Current Status** domain (CS).
2. Calculate the *'summary indicator of Coping Capacity'* by averaging the household's scores (i.e. the 4-point scale scores) for the Food Expenditure Share and the Livelihood Coping Strategy Index in the **Coping Capacity** domain (CC).
3. Average these results together: (CS+CC)/2.
4. Round to the nearest whole number (this will always fall between 1 and 4). This number represents the household's overall food security outcome.
5. The resulting Food Security Index is categorized as shown in Table 27.

Table 26: Calculation of the Food Security Index

	Current status (CS)	Coping Capacity (CC)		Formula	Final Food security outcome for household	Overall food security classification
	Household Food consumption group*	Food Expenditure Share category**	Livelihood Coping Strategy Categories ***			
Example indicator score	3	1	4	CS = 3 CC = (1+4)/2 = 2.5	(3+2.5)/2 = 2.75; ***Round off to 3***	Moderately Food Insecure

*Acceptable, Borderline or Poor;

** Food Secure, Marginally Food Secure, Moderately Food Insecure or Severely Food Insecure;

*** No coping, Stress coping, crisis coping or Emergency coping.

Table 27: Overall Food Security Classification Categories

	Food Secure	Marginally Food Secure	Moderately Food Insecure	Severely Food Insecure
Food Security Index	Able to meet essential food and non-food needs without engaging in atypical coping strategies	Has minimally adequate food consumption without engaging in irreversible coping strategies; unable to afford some essential non-food expenditures	Has significant food consumption gaps, OR marginally able to meet minimum food needs only with irreversible coping strategies	Has extreme food consumption gaps OR has extreme loss of livelihood assets that will lead to food consumption gaps, or worse.

APPENDIX 4.3: INTERPRETATION OF MORTALITY RATES

In the interpretation of mortality, the guidelines summarised in Table 28 have been used.

Table 28: Guideline for Interpretation of Mortality

CMR = deaths/10,000/day	Mortality Rate forUnder-5 Age Group
<1 = Under control	1 = Normal in a developing country
≤1 = Serious condition	≤2 = Emergency phase: under control
≤2 = Out of control	>2 = Emergency phase: in serious trouble
≥4 = Major catastrophe	>3 = Emergency phase: out of control

APPENDIX 4.4: PLAUSIBILITY CHECKS

Plausibility check for: Abim Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.5 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.251)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.08)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.13)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.01)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.986)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**10** %

The overall score of this survey is 10 %, this is good.

There were no duplicate entries detected.

Plausibility check for: Amudat Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (0.9 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**4** (p=0.019)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.04)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.00)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.15)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.080)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**14** %

The overall score of this survey is 14 %, this is good.

There were no duplicate entries detected.

Plausibility check for: Kaabong Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	**0** (1.4 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0.581)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (5)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (5)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (6)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	**0** (1.06)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (-0.15)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**1** (-0.23)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**1** (p=0.034)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**12** %

The overall score of this survey is 12 %, this is good.

There were no duplicate entries detected.

Plausibility check for: Kotido Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (0.8 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**2** (p=0.086)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (4)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.03)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.07)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.12)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.260)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**12** %

The overall score of this survey is 12 %, this is good.

There were no duplicate entries detected.

Plausibility check for: Moroto Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.1 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.382)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (4)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.07)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.14)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (-0.32)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.099)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**11** %

The overall score of this survey is 11 %, this is good.

There were no duplicate entries detected.

Plausibility check for: Nakapiripirit Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.1 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.275)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (2)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.06)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.11)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.08)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**1** (p=0.022)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**11** %

The overall score of this survey is 11 %, this is good.

There were no duplicate entries detected.

Plausibility check for: Napak Jul 2018.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.2 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.249)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (4)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (0.97)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.11)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.07)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**1** (p=0.028)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**11** %

The overall score of this survey is 11 %, this is good.

There were no duplicate entries detected.