



FOOD SECURITY & NUTRITION ASSESSMENT

Karamoja, Uganda
July 2016

Analysis conducted by the Analysis, Monitoring & Evaluation Unit,
WFP Uganda

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With support from:



ACRONYMS

ARI – Acute Respiratory Infection

DDS – Dietary Diversity Score

EVH – Extremely Vulnerable Household

FCS – Food Consumption Score

FES – Food Expenditure Share

FHH – Female Headed Households

GAM – Global Acute Malnutrition

MAD – Minimum Acceptable Diet

MAM – Moderate Acute Malnutrition

MCHN – Maternal Child Health and Nutrition

NUSAF – Northern Uganda Social Action Fund

RCSI – Reduced (or 'Food Consumption) Coping Strategy Index

SAM – Severe Acute Malnutrition

SMART – Standardized Monitoring and Assessment of Relief and Transitions

TLU – Total Livestock Units

WASH – Water, Sanitation and Health

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Executive Summary

1.1 Food security situation

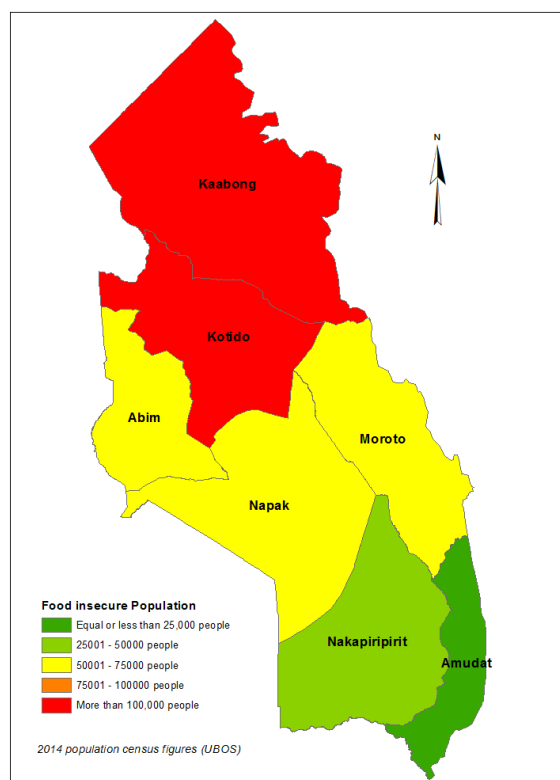
Overall food security classification shows that half of the population in Karamoja (50%) is food insecure, of which 12% were found to be severely food insecure. While these findings suggest a marginal increase in food insecurity at regional (Karamoja) level since June 2015, there were marked district level variations:

- ☐ Significant deterioration in Kaabong, Kotido, Napak & Abim districts;
- ☐ Marked improvement in Moroto & Nakapiripirit districts;
- ☐ Relatively stable in Amudat district.

E 1: Overall Food Security Classification

Domain		Indicator	Food Secure	Marginally Food Secure	Moderately Food Insecure	Severely Food Insecure
Current status	Food Consumption Score	Food Consumption Score	47%	-	35%	17%
	Economic Vulnerability	Food Expenditure Share	36%	17%	13%	34%
Coping Capacity	Asset depletion	Livelihood Coping Strategy Categories	34%	15%	12%	39%
	Food Security Index		13%	37%	38%	12%

Food Insecure Population: Karamoja FSNA June 2016

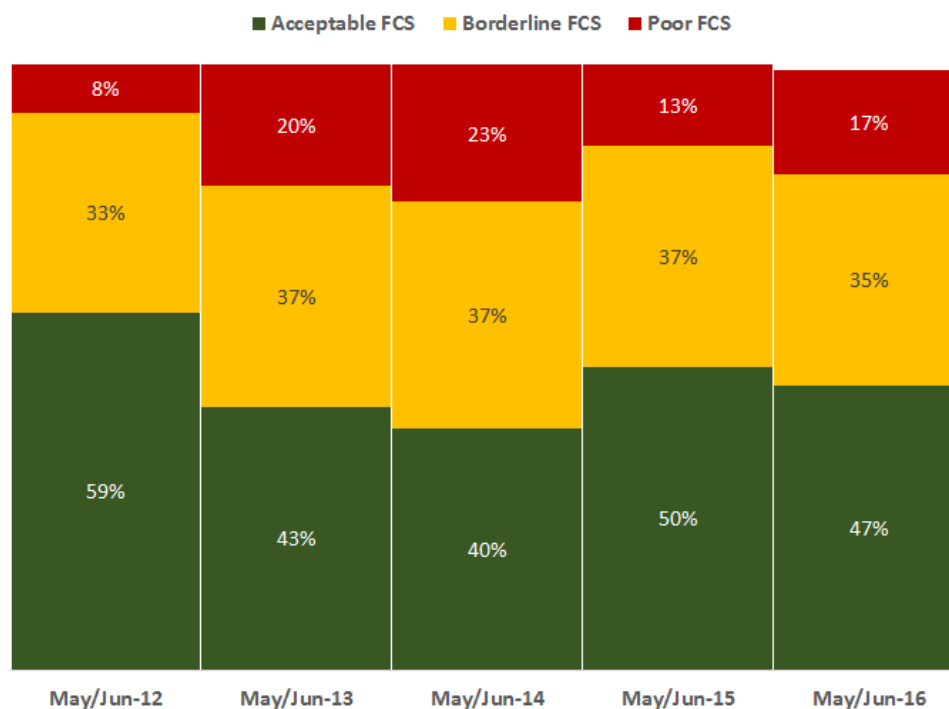


The major factors driving food insecurity in the region are:

- ☐ Increased weather (particularly rainfall) variation that has led to poor harvests for the last three consecutive seasons. Consequently, there is **reduced household food availability** in the region with only 24% of households that reported having any food stocks.
- ☐ The general decrease in availability of food stocks has meant that most food available on the market is sourced from neighboring regions. This has led to an **unprecedented increase in staple food prices** that are now at the highest levels in the last three years. This has significantly impacted household access to food given that three-quarters of the population derive more than 50% of food consumed from markets, amidst low incomes traditionally earned from agriculture (produce sales and wage labour) as well as charcoal burning.

1.2 Trends in food security

Despite the fact that the 2015 harvest in the region was below expected due to unfavorable weather conditions, and the fact that the 2015 season failure was the third consecutive one, a trends analysis shows that food consumption only slightly declined between June 2015 and 2016 with up to 17% having poor food consumption score this year. This is believed to be due to an increase in the level of humanitarian assistance over the 6-12 month period since 2015 in response to rising food insecurity.

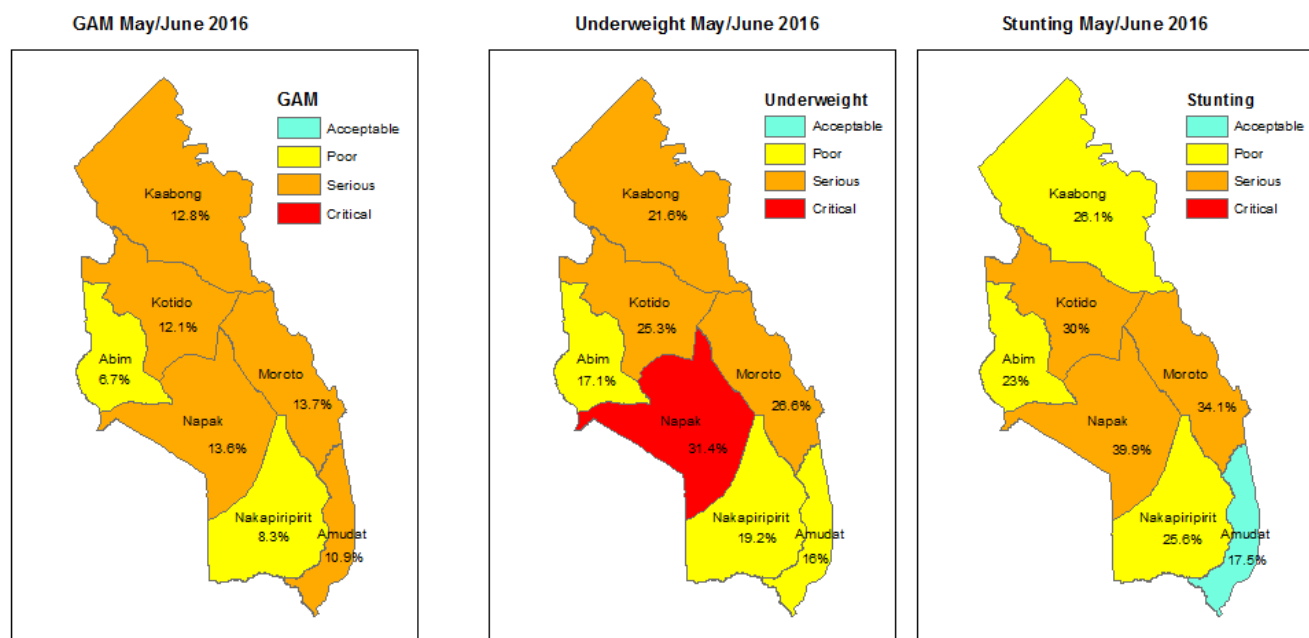


E 2: Food consumption trends in Karamoja (2012 – 2016)

1.3 Nutrition situation

Despite the fact that the food security situation has generally declined in the region, the prevalence of Global Acute Malnutrition (GAM) has declined from 14.1% in June 2015 to the current 11%, nonetheless remaining at serious level. GAM prevalence is at serious levels in 5 of 7 districts in the region, and is classified as poor in the other two districts.

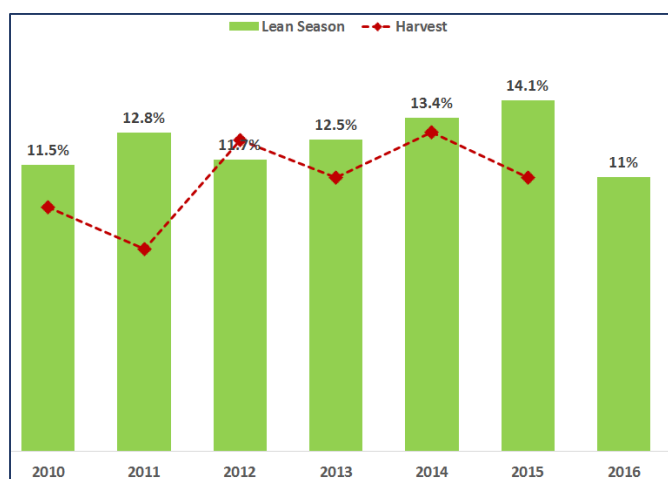
The main contributing factor to improved GAM rates is the scale up of food and nutrition assistance by the government and humanitarian partners starting from the last two quarters of 2015, following a deterioration in the food security situation and an anticipated poor harvest due to rainfall failure during the 2015 planting season.



E 3: Prevalence of malnutrition in Karamoja

Malnutrition rates nonetheless remain high in the region mainly due to:

- ☐ Poor household food security situation that has a cascading effect on infant and young child feeding practices, including the ability of mothers/care givers to provide meals of an adequate diversity and at an acceptable frequency;
- ☐ Poor water, sanitation and hygiene situation with marked levels of utilization of unsafe water sources, limited treatment of water before use, and the absence of sanitary facilities in majority of households. In consequence, the disease prevalence in the region is high, with 24% of children not having suffered an illness in the 30 days preceding the survey.



E 4: Lean season GAM prevalence in Karamoja (2010 – 2016)

1.4 Trends in acute malnutrition

Overall lean season GAM prevalence declined for the first time since 2012 from 14% to 11% (**Figure 11-1**). This decline could be due to the finding that nearly half the population in Karamoja is on food assistance and the fact that in-kind assistance to households was increased following the failed harvest in 2015. Sustained multi-sectoral efforts will be necessary to continue this trend in the region.

1.5 Gender, food security and nutrition in Karamoja - Key findings

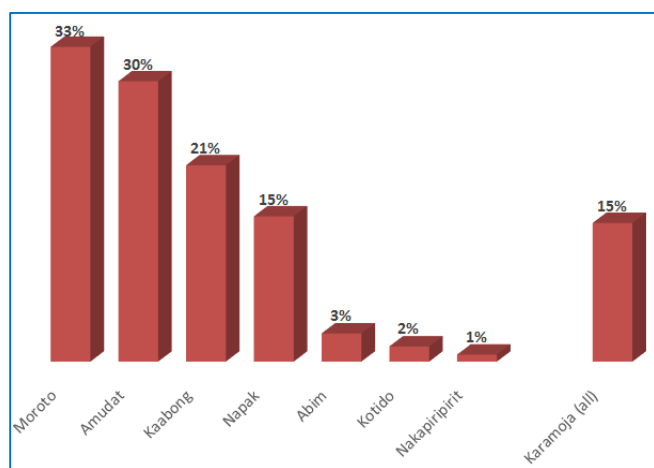
E 5: Comparison between male and female headed households

		Male Headed Households	Female Headed Households
Household head demographic characteristics	Disabled or chronically ill	7%	17%
	No Education	62%	83%
	Participated in at least one development programme	48%	49%
Household asset ownership	Household Asset Score (Mean)	4.7	3.8
	Own Radio	14%	9%
	Own Cellphone	22%	13%
	Own Axe	56%	52%
	Own panga	75%	71%
	Own Hoe	93%	88%
	Own Oxplough	18%	12%
	Own Seed store	22%	15%
	Own Food store	31%	25%
Food availability	Have no Livestock	48%	59%
	Have access to agricultural land	92%	87%
	Have Food Stocks	28%	17%
Access to food	Have no income earner	24%	47%
	Food crop production/sales	17%	10%
	Agricultural wage labor	24%	12%
	Sale of firewood/ charcoal	19%	25%
	Have debt	38%	32%
	Food Expenditure Share	58	64
	> 50% of food consumed from markets	79%	70%
Utilization	Acceptable FCS	48%	46%
	Borderline FCS	37%	32%
	Poor FCS	15%	22%
	Dietary Diversity Score (Mean)	4.7	4.6
Stability	rCSI (Mean)	18.0	19.0
	Did not adopt livelihood coping strategies	31%	40%
Overall Food Security Classification	Food Secure	14%	12%
	Marginally Food Secure	39%	36%
	Moderately Food Insecure	37%	39%
	Severely Food Insecure	11%	13%

Female household heads were significantly less likely to have attained any formal education, and were more than twice as likely to be either disabled or chronically ill, suggesting high vulnerability to food insecurity.

Female headed households were significantly less likely to own any household assets. In particular, ownership of radio or cell phone was limited, suggesting inequalities in access to information. This is critical and systematically reduces their ability to receive messages on food security early warning as well as agricultural advisories.

There's equal potential to practice agriculture with almost equal access to agricultural land among male and female headed households. Nonetheless, female headed households are less likely to own livestock and had lower food stocks compared to their male counterparts.



E 6: Female Headed Households with no education and no income earner

Female headed households had significantly lower incomes with up to 47% having no income earner compared to 24% among male headed households. Moreover, female headed households are more dependent on sporadic & informal income sources such as sale of firewood/charcoal.

Data analysis showed no significant difference between male and female headed households with regard to food consumption score. However, significant difference was found with regard to dietary quality (dietary diversity

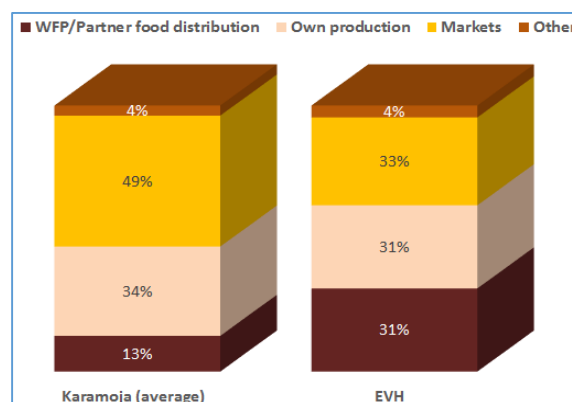
score) with female headed households having significantly lower dietary diversity score. This suggests therefore that children in female headed households are less likely to consume quality diets, therefore predisposing them to malnutrition.

Overall analyses show that disability and/or chronic illness; lack of formal education; absence of income earners in the household; and gender of the household head are predisposing factors to food insecurity and malnutrition. This suggests that female household households with i) no education and ii) no income earners should be regarded as highly vulnerable to food insecurity.

Analysis shows that up to 15% of households meet this criteria as shown in E6. The majority of these households are located in Moroto (*Nadunget, Tapac & Katikekile* sub-counties); Amudat (*Loroo & Karita* sub-counties); Kaabong (*Kawalakol & Kathile* sub-counties); and Napak (*Lopeei* sub-county). Therefore, food security interventions should necessarily target these sub-counties and should be gender sensitive.

1.6 Summary on Extremely Vulnerable Households¹

		Karamoja Average	EVH
Household head demographic	Disabled or chronically ill	11%	38%
	No Education	70%	86%
	Household Asset Score (Mean)	4.4	4.0
Household asset ownership	<i>Own Radio</i>	12%	7%
	<i>Own Cellphone</i>	19%	9%
	<i>Own Axe</i>	55%	57%
	<i>Own panga</i>	74%	73%
	<i>Own Hoe</i>	91%	91%
	<i>Own Oxplough</i>	16%	20%
	<i>Own Seed store</i>	19%	24%
	<i>Own Food store</i>	29%	35%
Food availability	Have no Livestock	52%	54%
	Have access to agricultural land	90%	86%
	Have Food Stocks	24%	20%
Access to food	Have no income earner	32%	35%
	<i>Food crop production/sales</i>	15%	7%
	<i>Agricultural wage labor</i>	20%	13%
	<i>Sale of firewood/ charcoal</i>	21%	24%
	Have debt	36%	32%
	Food Expenditure Share	60%	67%
	> 50% of food consumed from	76%	64%
Utilization	Acceptable FCS	47%	41%
	Borderline FCS	35%	38%
	Poor FCS	17%	21%
	Dietary Diversity Score (Mean)	4.7	4.5
Stability	rCSI (Mean)	18.5	18.9
	Did not adopt livelihood coping	34%	28%
Overall Food Security Classification	Food Secure	13%	7%
	Marginally Food Secure	37%	32%
	Moderately Food Insecure	38%	42%
	Severely Food Insecure	12%	19%



Overall food security classification showed that Extremely Vulnerable Households (EVHs) were significantly more likely to be food insecure (61%) compared to the Karamoja average of 50% food insecure.

Overall, main factors contributing to higher food security include:

- Disproportionately higher prevalence of disability/chronic illness suggesting no labor capacity and thus limited income earning ability;

¹ The Extremely Vulnerable Households (EVH) programme was designed with the objective to ensure adequate food consumption of households without able-bodied adults and therefore unable to benefit from labour based safety nets programmes.

- ❑ A higher percentage of EVH household heads have no education predisposing them to poorer food security and nutrition outcomes and are therefore more dependent on less lucrative income sources such as sale of firewood/charcoal;
- ❑ Given limited incomes among the households, these households are unable to source enough food from the markets and depend much more on food assistance.

The above findings indicate that given a failed harvest and increasing food prices, Extremely Vulnerable Households will remain heavily reliant on food assistance, short of which food insecurity among these households is likely to increase.

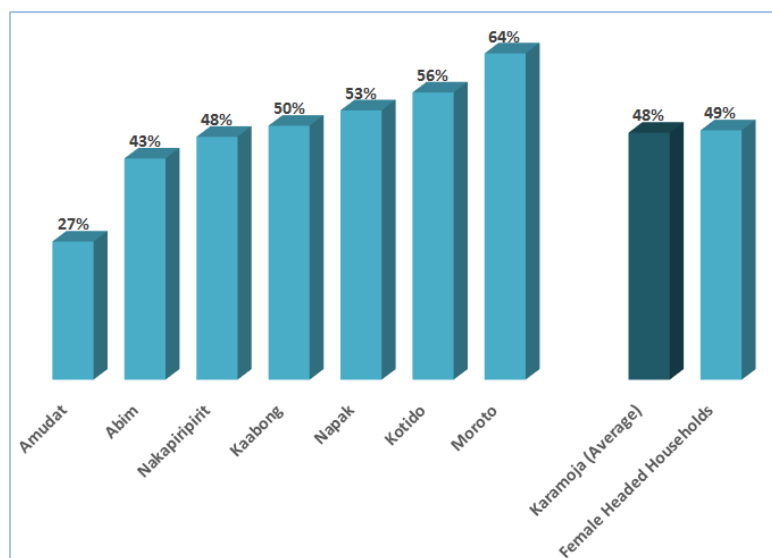
1.7 Summary on NUSAF beneficiaries

		Karamoja Average	NUSAF
Household head demographic	Disabled or chronically ill	11%	13%
	No Education	70%	81%
Household asset ownership	Household Asset Score	4.4	4.4
	<i>Own Radio</i>	12%	8%
	<i>Own Cellphone</i>	19%	16%
	<i>Own Axe</i>	55%	65%
	<i>Own panga</i>	74%	75%
	<i>Own Hoe</i>	91%	94%
	<i>Own Oxplough</i>	16%	23%
	<i>Own Seed store</i>	19%	24%
	<i>Own Food store</i>	29%	35%
Food availability	Have no Livestock	52%	47%
	Have access to agricultural	90%	94%
	Have Food Stocks	24%	27%
Access to food	Have no income earner	32%	34%
	<i>Food crop</i>	15%	9%
	<i>Agricultural wage labor</i>	20%	14%
	<i>Sale of firewood/ charcoal</i>	21%	33%
	Have debt	36%	40%
	Food Expenditure Share	59.8	59.0
	> 50% of food consumed	76%	75%
Utilization	Acceptable FCS	47%	40%
	Borderline FCS	35%	39%
	Poor FCS	17%	21%
	Dietary Diversity Score	4.7	4.5
Stability	rCSI (Mean)	18.5	19.3
	Did not adopt livelihood	34%	28%
Overall Food Security Classification	Food Secure	13%	9%
	Marginally Food Secure	37%	34%
	Moderately Food Insecure	38%	43%
	Severely Food Insecure	12%	14%

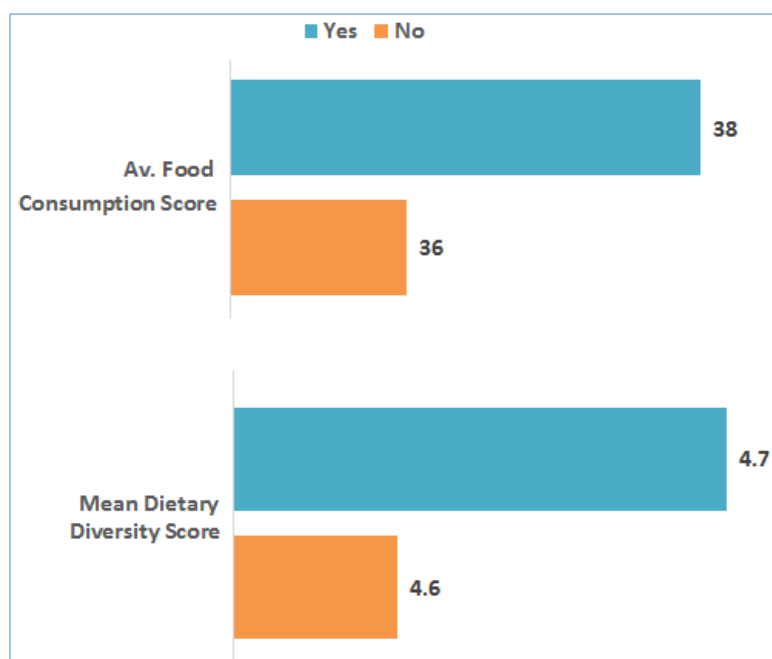
Overall food security classification showed that 57% of NUSAF beneficiary households were food insecure compared to 50% for the region as whole.

Given that overall food insecurity in the region increased, findings suggest that support provided to NUSAF beneficiaries may be inadequate given significantly low food availability in the region.

1.8 Role of development assistance in food security



E 8: Participation in at least one development programme



E 7: Differences in Food Consumption between beneficiaries and non-beneficiaries

Nearly half (48%) of all the households assessed reported having been beneficiaries of at least one development programme² in the six months prior to the survey. The highest percentage of beneficiaries among the randomly sampled households was found in Moroto and Kotido districts.

Further analysis showed that households that had participated in at least one development programme had higher dietary diversity and Food Consumption Scores.

Findings suggest that while the food security situation has deteriorated in most areas in the region, the assistance provided through various interventions has contributed to enabling acceptable household food consumption and therefore better food security and nutrition outcomes.

Scaling up of development programmes would therefore contribute significantly to ensuring household food security in the short to medium term.

²Development programs enumerated included Food aid rations, NUSAF, MCHN, Farmer field schools, school feeding, adult literacy programmes etc.

1.9 General recommendations for food security and nutrition

- i) Given the established vulnerability of female headed households, it is essential that systematic mechanisms to target female headed households are developed across development programmes in the region. Priority should be given to Moroto, Amudat & Kaabong that were found to have the highest percentages of female household heads with no education or income earners
- ii) Introduce micronutrient supplementation and promote production of bio-fortified, short cycle crops such as the high iron beans to help reduce stunting levels in the region
- iii) In view of funding shortfalls for the EVH programme in Karamoja, it is recommended to explore mechanisms to integrate these households into existing programmes as findings suggest high dependence on food assistance among them. This will be especially important in Kotido, Moroto and Napak that had the highest percentage of disabled and/or chronically ill household heads.
- iv) Further to the above, findings showed that about 65% of households currently classified as EVH have at least one income earner. This is inconsistent with the criterion that EVHs lack labor capacity. Thus, prior to any future interventions, there is need to review the EVH framework and to conduct an in-depth profiling and targeting exercise to ensure the most vulnerable are protected/provided with assistance.
- v) Findings suggest that majority of households are unable to store enough food for longer periods even when there is above average harvest, perhaps compelling households to consume or sell off all produce before spoilage. Efforts to improve agricultural production should therefore go hand in hand with post-harvest handling practices, including but not limited to establishment of improved storage units at household/manyatta level, particularly in Napak and Amudat districts.
- vi) There is need for interventions to promote Good Agricultural Practices among households through extension and training, particularly in Kaabong and Kotido districts.
- vii) Undertake feasibility studies to explore the possibility to implement cash/voucher transfer programmes in the region, especially in Amudat, Kaabong and Moroto districts that had the highest percentage of households without income earners.

2. District specific recommendations

District	Key recommendations
Amudat	1. Implement community based livestock health programmes and step up livestock surveillance to check the prevalence of livestock diseases and improve livestock productivity in all sub-counties; 2. Implement livelihood income support specific to apiculture, crop and livestock production to enable diversification of incomes; 3. Through post-harvest loss reduction programmes, introduce community managed grain stores and related extension services to facilitate longer storage of maize grain that is widely cultivated; 4. Promote financial literacy and group savings through Village Savings and Livelihoods Associations, VSLAs in <i>Karita</i> and <i>Amudat</i> sub-counties 5. Tap into indigenous community early warning systems to sensitize communities on climate change and crop production, e.g. encouraging utilization of the second rainfall peak for crop production; 6. Scale up WASH programmes, necessarily including access to safe and clean water, as well as sensitization on good hygiene practices. District leadership should take the lead role in promoting latrine construction and use, and encourage other methods like CAT for those without in all sub-counties; 7. Implement sensitization programmes to foster IYCF practices with emphasis on the composition of a balanced diet for children; 8. Expand coverage of MCHN programmes e.g. currently excluded HC II facilities like <i>Lokales</i> & <i>Achorchor</i>. 9. Sustain protective rations to families of children affected by MAM until the 2016 harvest, and scale them up to cover families of children affected with SAM
Abim	1. Reactivate District Disaster Management Committees, DDMCs, for close monitoring of the food security situation in the district to facilitate early response in case of further deterioration; 2. Implement food for work programmes in the worst affected sub-counties especially in <i>Nyakwae</i>, <i>Morulem</i>, <i>Awach</i> and <i>Alerek</i> sub-counties; 3. District Local Government should develop and implement by-laws to govern production, post-harvest handling and sale of produce at the household level; 4. Relatedly, encourage resettlement of households in the green belt to facilitate increased production; 5. Given high food insecurity in the district, sustain nutrition programmes, providing a protective ration to households with malnourished children up until the 2016 harvest. This assistance should prioritize <i>Nyakwae</i>, <i>Morulem</i> and <i>Lotuke</i> sub-counties; 6. Any Food for Work programmes implemented should be mainstreamed with nutrition to include nutrition messaging as a first step to improving IYCF practices. 7. Conduct nutrition education, including food demonstrations at community (not health facility) level;

District	Key recommendations
Kaabong	1. Implement food for assets programmes to facilitate household access to food for the period between July 2015 and the 2016 harvest season. These interventions should prioritize <i>Loyoro, Lodiko, Kaabong West & Kaabong East</i> sub-counties that are worst off; 2. Longer term initiatives to boost production and productivity must include introduction of irrigation technologies, quick maturing crops, and post-harvest handling practices 3. Provide in-kind assistance to the extremely vulnerable households to enable them achieve and/or sustain acceptable food consumption levels; 4. Sustain nutrition interventions such as supplementary feeding & provision of the protective rations to households with malnourished children until the next harvest season to ensure GAM rates are contained; 5. Strengthen community based health and nutrition education programmes and, as well, strengthen community care groups in the district. 6. Expand coverage of safe water sources, prioritizing <i>Kaabong East, Sidok, Lokori, & Kathile</i> sub-counties to help reduce prevalence of diseases. 7. Expand the MCHN programme to cover lower level health facilities (HC IIs) that now have MCH services
Kotido	1. Implement food for assets programmes to facilitate household access to food for the period between July 2015 and the 2016 harvest season. These interventions should prioritize <i>Kacheri</i> sub-county that is not currently covered by NUSAF; 2. Scale up supplementary feeding programmes and, simultaneously, the protective ration until the harvest season, to help improve cure rates for children admitted; 3. Relatedly, explore possibilities to introduce water harvesting facilities including a dam along Dopeth river, and rock catchments in order to support fast growing vegetables and boost household incomes 4. Provide clean water and sanitary facilities at village level, including through food for assets programmes, coupled with sensitization on good hygiene and nutrition practices. 5. Promote good hygiene and sanitary practices by encouraging exemplary leadership through sensitization of local community leaders and ordinances on sanitation.
Moroto	1. Closely monitor the food security situation in the district with special emphasis on <i>Katikekile, Nadunget, and Rupa</i> sub-counties; 2. Sustain in-kind transfers to extremely vulnerable households as they are unable to engage in productive work to facilitate access to food; 3. Sustain food for assets programmes for food insecure households to boost access to food especially in <i>Nadunget</i> sub-county; 4. Expand coverage of sanitation programmes with emphasis on good hygiene practices and introduce ordinances on latrine ownership; 5. Mainstream nutrition into development interventions in the district, particularly targeting IYCF practices; 6. Sustain nutrition support to malnourished children and their households until the 2016 harvest, with monitoring, to prevent any deterioration;

District	Key recommendations
	7. Conduct a follow up investigation to help understand the declining cure rates in supplementary feeding programmes and facilitate further action.
Nakapiripirit	1. Given observed crop failure, closely monitor food security situation in the district, particularly in <i>Lorengedwat</i>, <i>Kakomongole</i> and <i>Loregae</i> sub-counties that had above average prevalence of food insecurity; 2. Implement targeted food assistance programmes in the district to reach the extremely vulnerable; 3. Strengthen disease surveillance and curative mechanisms among communities to help reduce morbidity among children that negates gains in nutrition; 4. Implement/scale up interventions to encourage mosquito bed net use especially for children under 5 years; 5. Expand coverage of SFPs in the district to ensure the highest possible number of malnourished children are enrolled, especially in <i>Nabilatuk</i>, <i>Lolachat</i>, and <i>Namalu</i> sub-counties.
Napak	1. In view of a failing 2016 cropping season, closely monitor the food security situation in the district to facilitate early response, particularly in the worst off sub-counties of <i>Lokopo</i>, <i>Lotome</i> and <i>Ngoleriet</i>; 2. Implement food for assets programmes in the interim – until the next harvest – targeting the most vulnerable especially in the aforementioned sub-counties; 3. Scale up household income support programmes to build resilience at household level. Relatedly, encourage production of drought resistant crops such as cassava; 4. Encourage small scale irrigation at household level to facilitate vegetable growing; 5. Expand coverage of nutrition programmes, especially MCHN, to cover all HC IIs that provided MCH services; 6. Investigate the reasons for declining cure rates among current beneficiaries of supplementary feeding programmes as well as Intensive and out-patient therapeutic care to facilitate further action; 7. Mainstream nutrition into on-going food for assets programmes with emphasis on IYCF practices and production of bio-fortified crops; 8. Step up social mobilization activities for social behavior change to address malnutrition, hygiene and sanitation; 9. Reactivate Health and Nutrition sector working groups to provide a platform for discussions on nutrition/health interventions and review of progress.

METHODOLOGY

Scope

The assessment covered all 7 districts of Karamoja viz. Napak, Moroto, Kaabong, Nakapiripirit, Kotido, Abim, & Amudat. A two stage cross-sectional cluster sampling methodology³ was used, with the village as the geographical unit, based on the SMART methodology and Sampling guidelines.

Sampling

At the first stage a probability sample of clusters was selected using an updated list of parishes that constitute a district (probability proportional to population size approach); at the second stage, households were selected using systematic random sampling methodology. Representative samples of households were therefore selected at district level.

Data collection

Quantitative data was collected using a standardized questionnaire uploaded on mobile tablets (ODK). The Food Security module was administered to all household heads (or adult person present at time of interview) through face-to-face interviews while the Nutrition module was administered to mothers/caregivers of children under 5 years.

Note:

- i) Age determination of children was done preferentially using child health cards. However, in their absence, discussions with the mothers/caregivers using a local events calendar were used.
- ii) Children with physical disabilities were assessed but findings on anthropometry excluded.

Quality assurance

- i) **Pre-coded skip patterns** were pre-programmed into ODK to prevent the need for removing irrelevant fields at the analysis stage
- ii) **Pre-coded ranges and restrictions** were also used, tailored to the assessment, in order to reduce errors during data collection.
- iii) **Seamless integration with excel:** Data from the tablets converts easily to an Excel file and can then be exported to analysis software, eliminating data entry errors.

Data analysis

Data was exported from ODK to excel and subsequently to ENA for SMART (Nutrition analysis) and SPSS (Food Security analysis).

³ Methodology used was consistent with previous Food Security and Nutrition Assessments in the region

1. Household demographic profile

Gender of household head

Up to 36% of households were female headed, particularly in Moroto, Napak and Amudat. Additionally, more than half of households in Kaabong, Amudat and Moroto were polygamous, against an average of 39% for the region (**Figure 1-1**). Given the higher vulnerability to food insecurity among female headed households e.g. with significantly lower incomes as shown in proceeding sections, targeted assistance may be necessary.

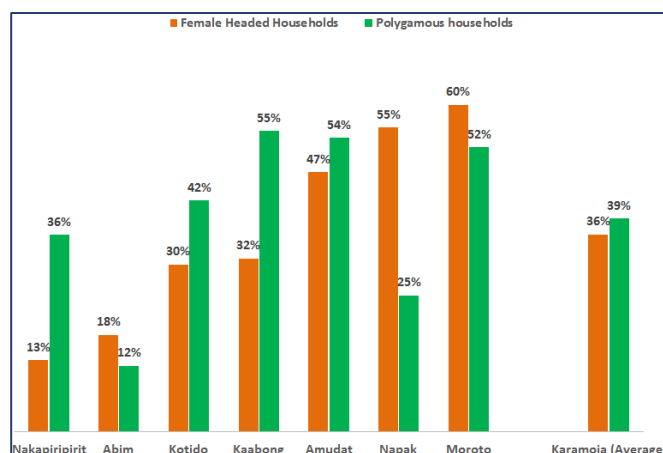


Figure 1-1: Household head gender and polygamy status

Physical condition of household head

Up to 11% of household heads were either disabled or chronically ill in the region (**Figure 1-2**). Kotido, Moroto and Napak had the highest percentage of disabled and/or chronically ill household heads. Disability/chronic illness renders households unable to produce enough food through agriculture, and reduces their ability to participate in income earning activities. It is thus a strong predisposing factor for food insecurity rendering households highly vulnerable to food insecurity (see Section 10).

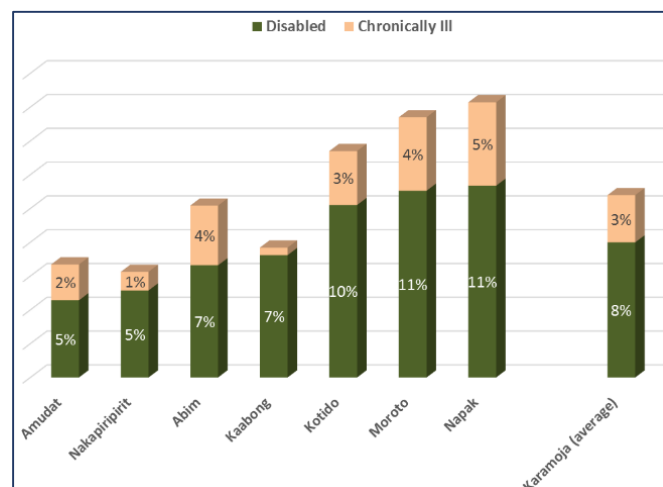


Figure 1-2: Prevalence of disability and chronic illness among household heads

Education level of household head

Similar to findings in previous assessments, the majority of household heads (70%) had never attended formal school (**Figure 1-3**). The highest percentage of uneducated household heads was found in Kotido, Moroto and Amudat.

Close linkages between the household head education level and the Food Security/Nutrition status (see **Section 10**) suggests households in Abim are more likely to be food secure compared to their counterparts in other districts.

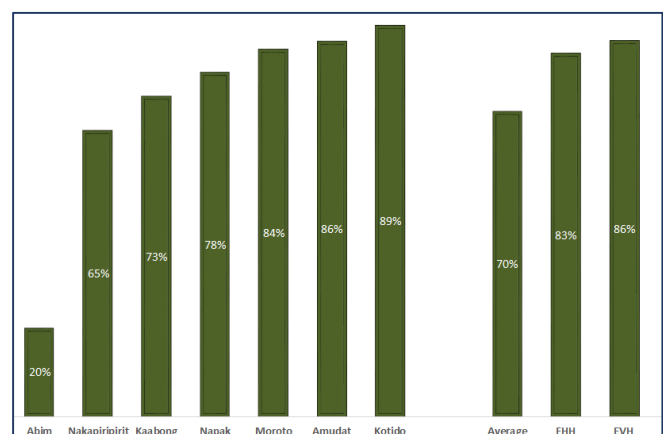


Figure 1-3: Education level of the household head

Factors affecting child education

Almost equal percentages of households reported having at least one boy or girl that did not regularly attend school in the previous academic year (21%). As shown in **Figure 1-4**, there was no significant difference in irregular attendance between boys and girls. The highest percentage of boys and girls that did not attend school was in Kotido, Amudat and Napak districts.

Main reasons for not attending school

The two main reasons for irregular school attendance among both boys and girls were as shown in **Figure 1-5** and include;

- i) Direct costs of school i.e. Inability to pay for fees, uniform, books, etc. especially for boys;
- ii) Opportunity costs i.e. domestic chores, especially for girls.

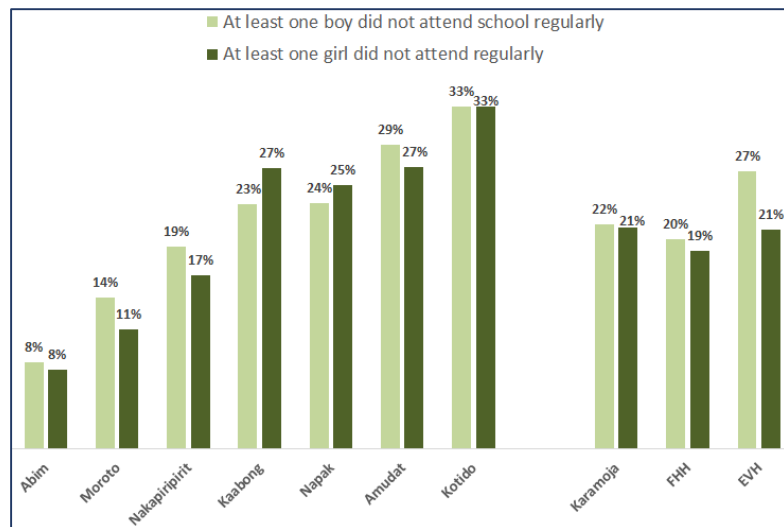


Figure 1-4: Irregular school attendance among children

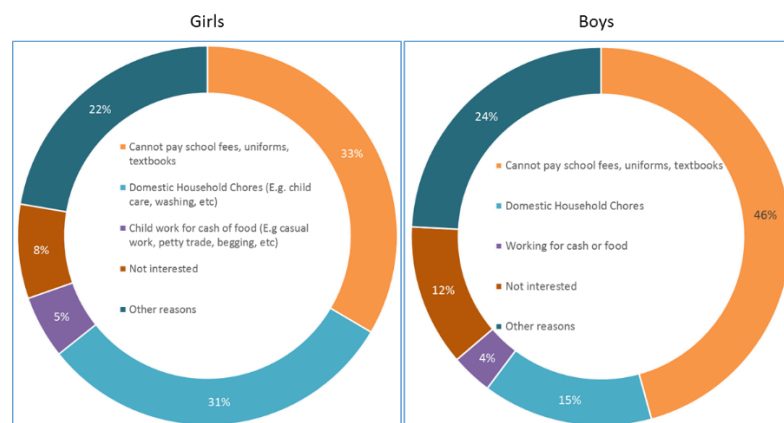


Figure 1-5: Reasons for irregular school attendance among boys and girls

Findings show that gender roles are an important determining factor in education opportunities for children; girls are kept out of school due to 'responsibilities' and boys due to 'resources' (e.g. school fees). This should be a consideration when intervention is made in strengthening the universal primary education programme.

Household asset ownership

The majority of households across the region owned at least one of the 16 enumerated household assets⁴. However, nearly 60% owned four or less assets (**Figure 1-6**). The four most commonly owned assets in the region were the hoe (91%), the panga (74%), the axe (55%), and a chair (30%). This asset profile is typical of subsistence livelihoods that are reliant on small scale agriculture and natural resources (wood felling).

Ownership of seed and food stores

Further analysis showed that 29% of the households owned a food store e.g. granary, and 19% owned a seed store (**Figure 1-7**). The highest ownership level of food stores was observed in in Kotido and Nakapiripirit at 47% and 46% respectively, while seed stores were most common in Nakapiripirit (38%) and Moroto (33%).

There was a significant relationship⁵ between ownership of food stores at household level, and the presence of food stocks in the household. Findings suggest that majority of households are unable to store enough food for longer periods even when there is above average harvest, perhaps compelling households to consume or sell off all produce before spoilage. Efforts to improve agricultural production should therefore go hand in hand with post-harvest handling practices, including but not limited to establishment of improved storage units at household/manyatta level, particularly in Napak and Amudat districts.

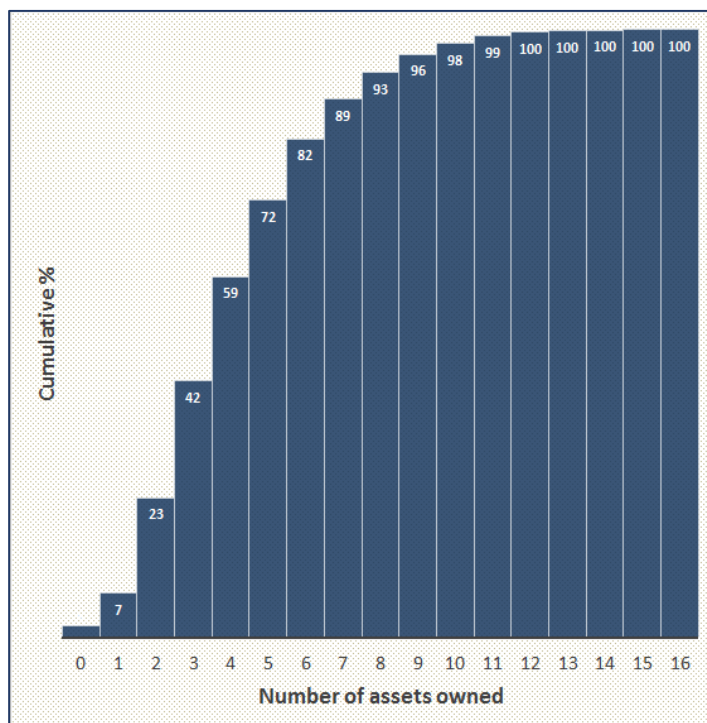


Figure 1-6: Household asset ownership

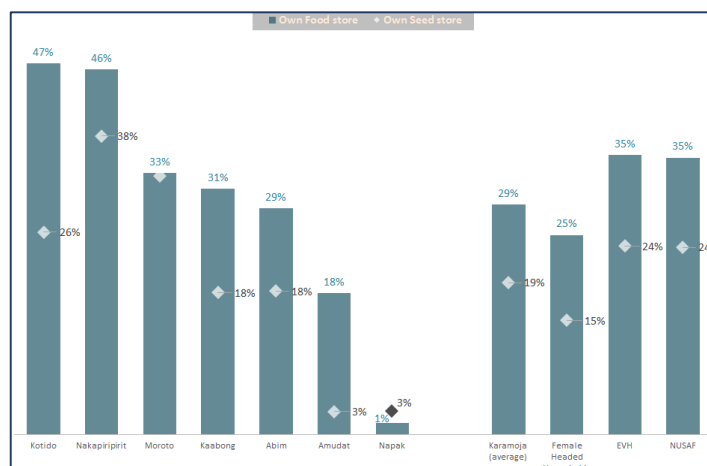


Figure 1-7: Ownership of Food and Seed stores

⁴ Enumerated assets were: Bed, Table, Chair, Mattress, Radio, Cellphone, Sewing machine, Bicycle, Car, Motorcycle, Television, Axe, Panga, Hoe, Oxplough, Water tank, Seed store, Food Store, Beehive, Watering can, and irrigation equipment.

⁵ Relationship was however weak due to generally low food availability in the region at the time of the survey

2. Food availability

Access to agricultural land and cropping practices

Access to agricultural land is not an issue in the region with the majority (90%) indicating access to enough land for production (**Figure 2-1**). Perhaps one of the main limiting factors for crop production is the practice of mono-cropping that is widespread among farmers. Only 30% of households reported having mixed/intercropping of staples such as sorghum/maize with beans or other leguminous crops. Thus Sorghum and Maize are the most commonly cultivated crops at 71% and 50% respectively, followed by beans at 30%. This practice predisposes households to the risk of crop failure and constrains the ability to diversity diets for better nutrition. There is need for interventions to promote Good Agricultural Practices among households through extension and training, particularly in Kaabong and Kotido districts.

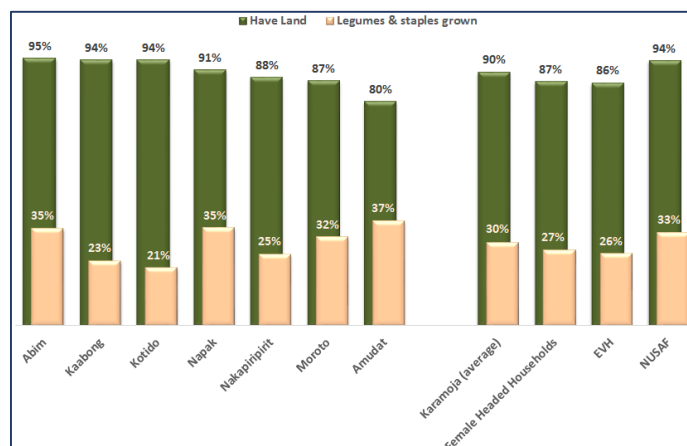


Figure 2-1: Access to agricultural land and cropping practices

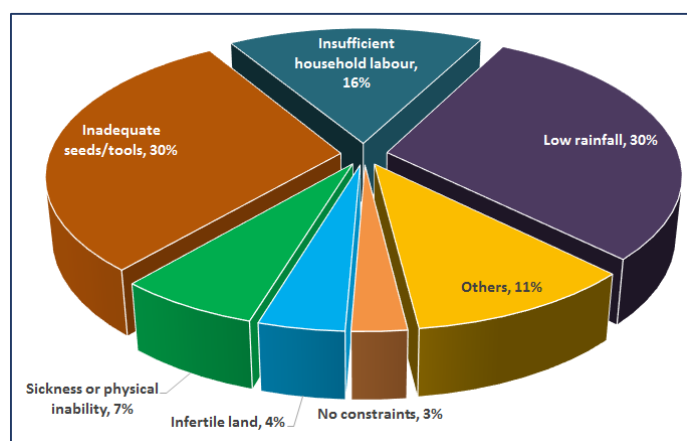


Figure 2-2: Constraints to crop production

Constraints to agricultural production

As shown in **Figure 2-2**, the three main constraints to agriculture reported across the region were:

- i) Low rainfall (30%);
- ii) Inadequate seeds/tools (30%) and;
- iii) Insufficient household labor (16%).

Poor rainfall performance has historically been a major factor affecting agricultural production in the region. There is need for multi-stakeholder investment in expanded irrigation schemes, valley dams, and other water harvesting/conservation solutions if food availability is to be stabilized in the region in the medium to long term.

In addition, development of a self-sustaining mechanism for households to access seeds for diverse and improved crop varieties remains paramount to promoting crop production.

The reported shortage of household labor is probably because, as findings showed, only 13% of men were involved in on-farm income activities, leaving most of the burden to women.

Household Food stocks

Availability of food stocks was generally low in the region with only 24% of households reporting any food stocks, of which these were generally expected to last about 20 days at the time of the assessment, thus until the last week of June (**Table 2-1**). The highest percentage of households with food stocks was found in Nakapiripirit (48%) and the lowest in Moroto and Amudat (9%). These findings are expected especially given the generally poor harvest in the 2015 season due to poor rainfall performance, and the fact that the survey was conducted in the typical lean season.

Table 2-1: Household food stocks and expected duration

District	Have food stocks	Days stocks will last
Nakapiripirit	48%	18
Napak	35%	10
Abim	28%	44
Kotido	25%	7
Kaabong	15%	21
Moroto	9%	11
Amudat	9%	44
Karamoja (average)	24%	21
Female Headed Households	17%	21
EVH	20%	23
NUSAF	27%	19

Livestock ownership

Similar to findings in previous assessments, majority (53%) of households did not own any livestock. The highest levels of livestock were found in Amudat, followed by Kotido and Nakapiripirit as shown in **Figure 2-3**. Many of the households that own livestock have low holding, except in Amudat where up to 31% had high holding. The positive association between livestock holding and food security/nutrition status (see **Section 10**) in part explains relatively lower malnutrition prevalence in Amudat as described in subsequent sections.

Constraints to livestock production

For households that own livestock, the two most commonly cited constraints were very closely linked with nearly three-quarters (72%) citing parasites and diseases as the main constraint, and another 11% citing lack of veterinary services as the key issues. Factors such as poor breeds and theft were only to a negligible extent. Given the importance of livestock to these communities, there is an urgent need to strengthen district veterinary services as a way to improve animal health.

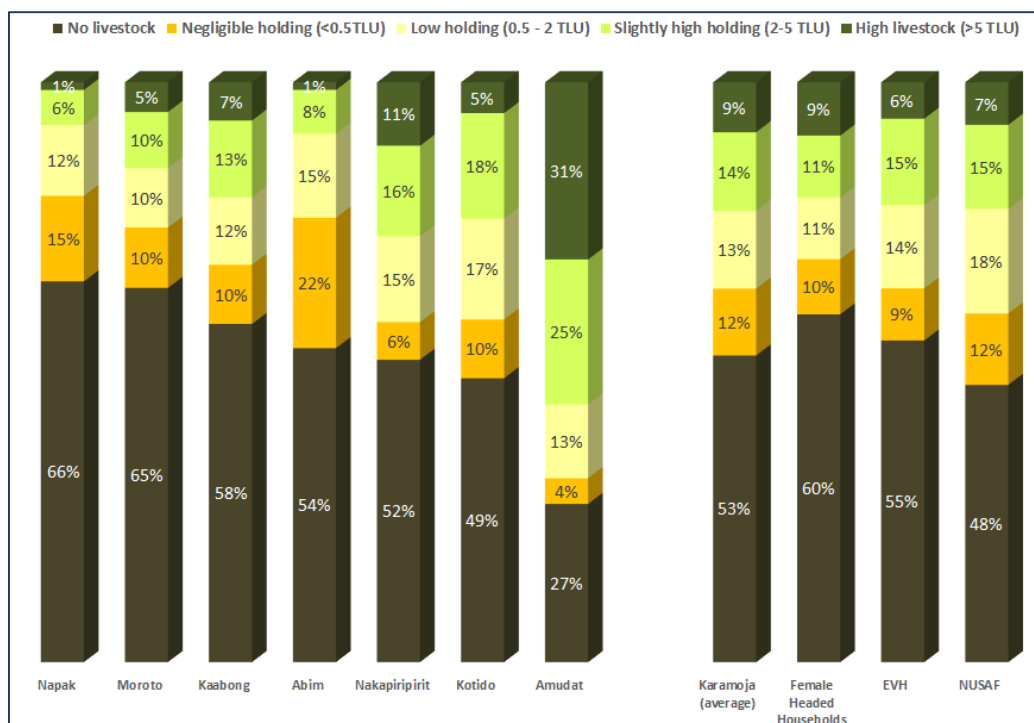


Figure 2-3: Livestock ownership

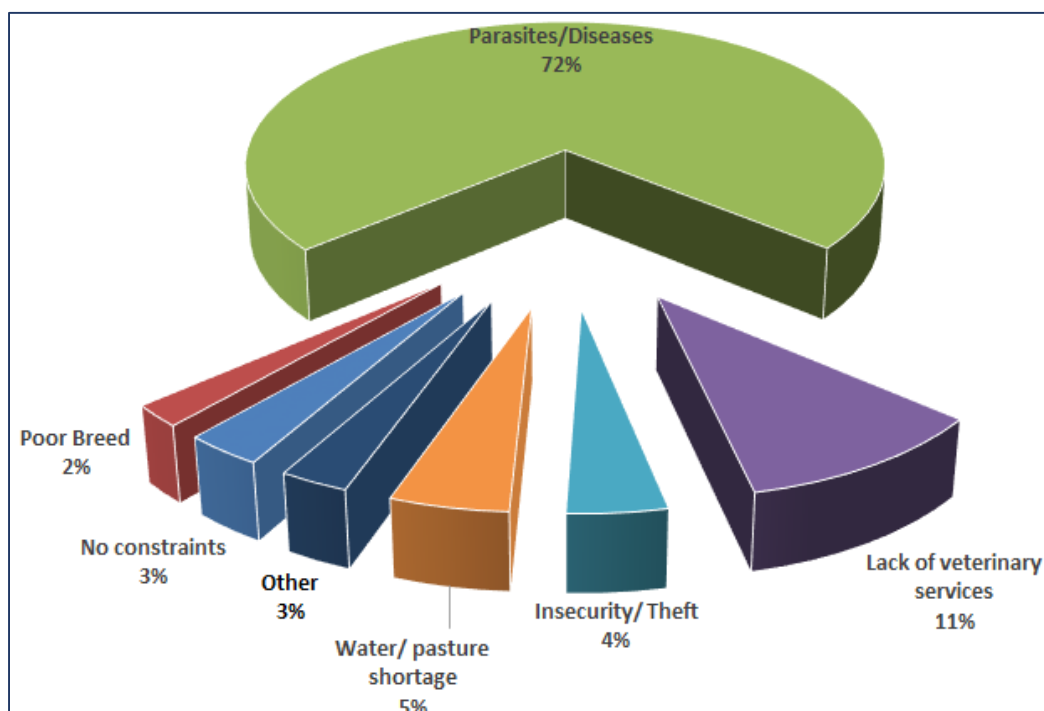


Figure 2-4: Constraints to livestock production

3. Household access to food

Household income earners

About one in every three households (32%) did not have an income earner. The highest percentage of households without an income earner was in Amudat, Kaabong and Moroto districts (**Figure 3-1**). Findings suggest relatively higher economic access to food in Nakapiripirit, Kotido and Abim districts.

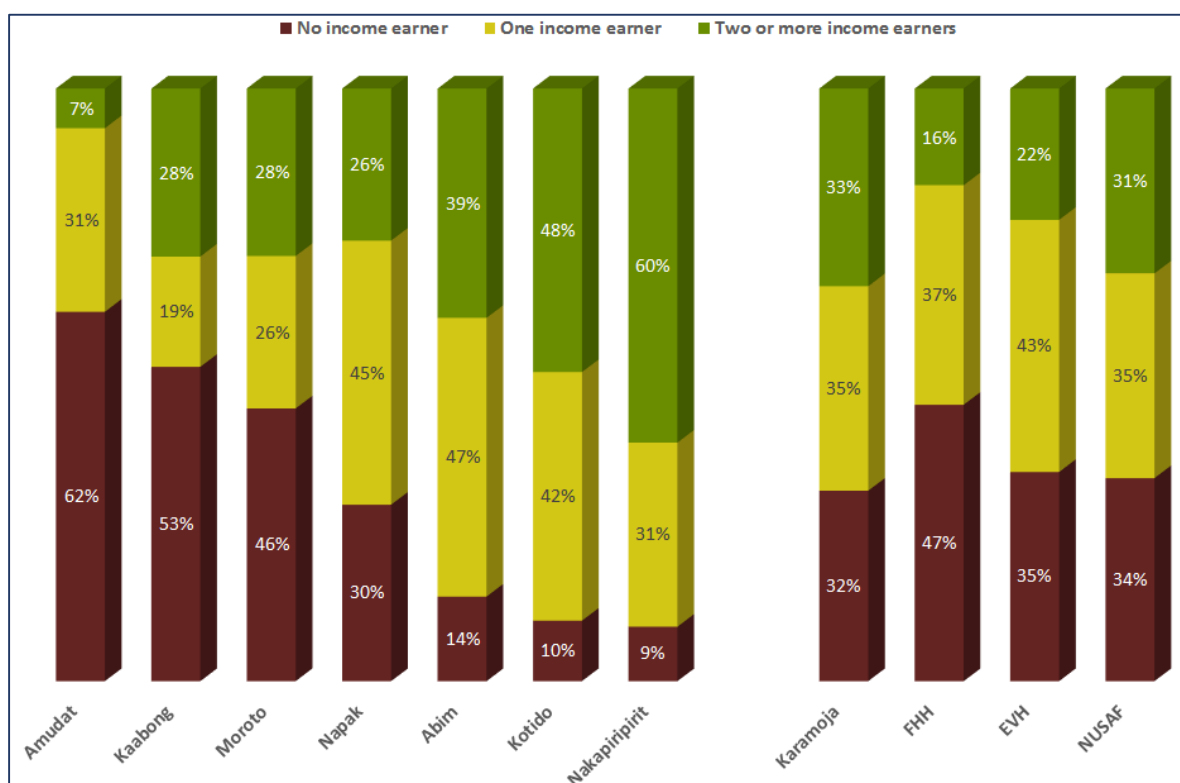


Figure 3-1: Household income earners

Main income sources

In terms of income sources, districts could be classified according to the predominant income sources as shown in **Table 3-1**.

Table 3-1: Classification of household income sources

District	Predominant income sources
Abim, Nakapiripirit & Napak	Agricultural (crop) production dependent income sources e.g. food crop production/sales and agricultural wage labour
Kaabong & Moroto	Natural resource dependent e.g. sale of firewood/charcoal
Kotido	Non-agricultural/off-farm income sources e.g. non-agricultural wage labour, brewing and petty trade
Amudat	Livestock dependent

Whereas the majority of households had at least one income earner, it is expected that income levels are generally low as most of the income earning activities are ad-hoc, sporadic and low paying (**Figure 3-2**). In particular, households dependent on agriculture are worse off given the generally poor performance of cropping season, potentially constraining access to food.

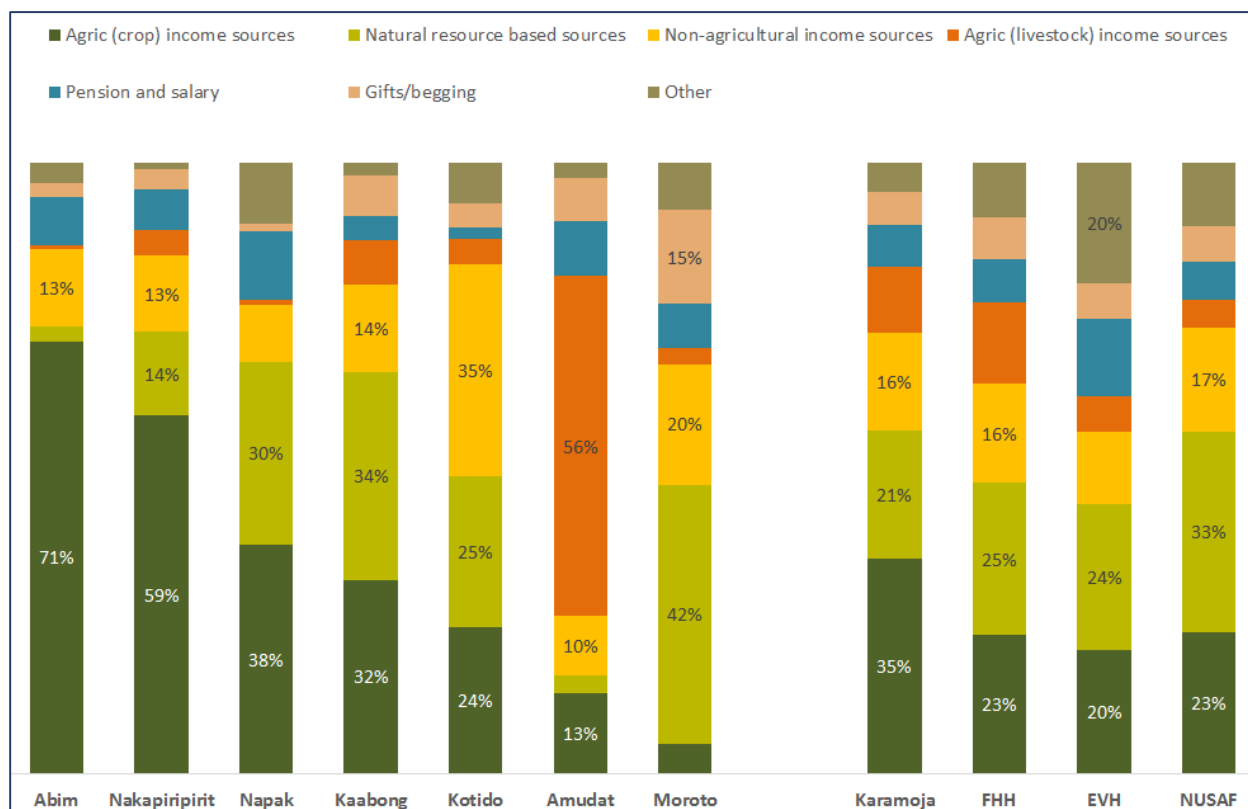


Figure 3-2: Main income sources

Debt prevalence

About 35% of households reported having debt in the region. The highest prevalence of debt was observed in Abim, Kotido, and Moroto districts (**Figure 3-3**). While debt is not necessarily bad for households (as it can potentially be used to augment agricultural production and other income generating activities), it is indicative of stress when used to meet essential household needs, including for purchase of food.

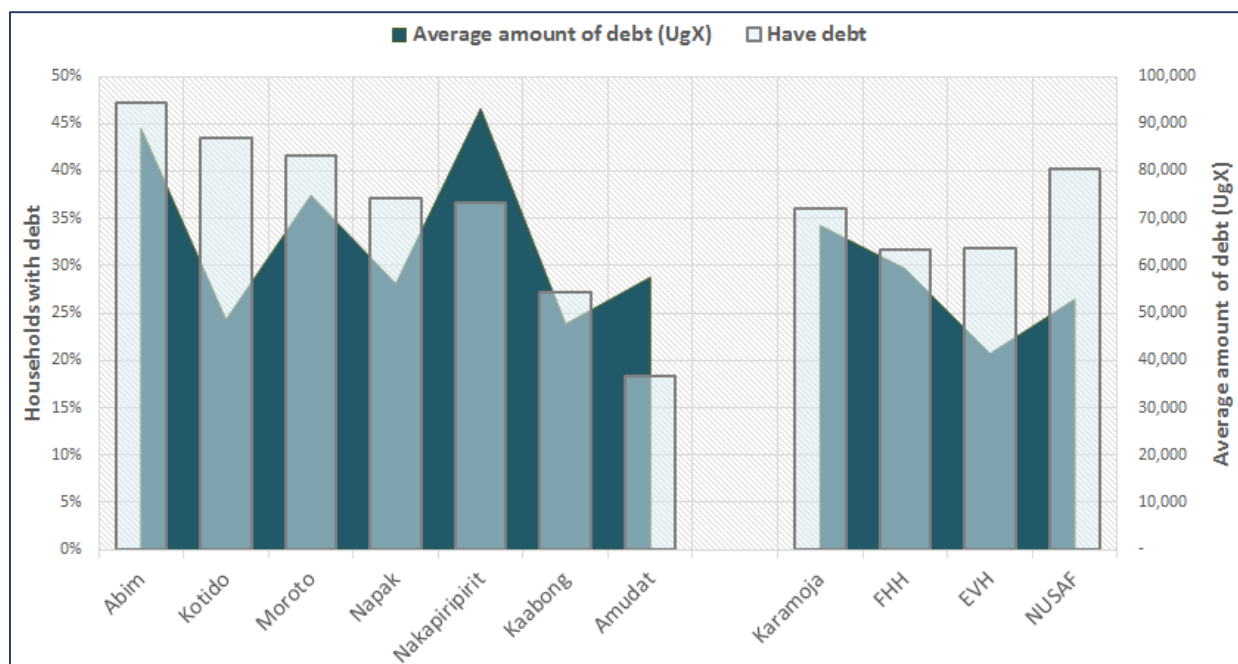


Figure 3-3: Prevalence of debt

Main reasons for debt

For the majority of households that had debt, up to 52% borrowed to buy food, while 18% did so to cover health expenses (**Figure 3-4**). The highest percentage of households that borrowed to buy food was reported in Kaabong (75%), Moroto (55%), and Amudat (52%). This further shows stress in acquisition of food for household consumption.

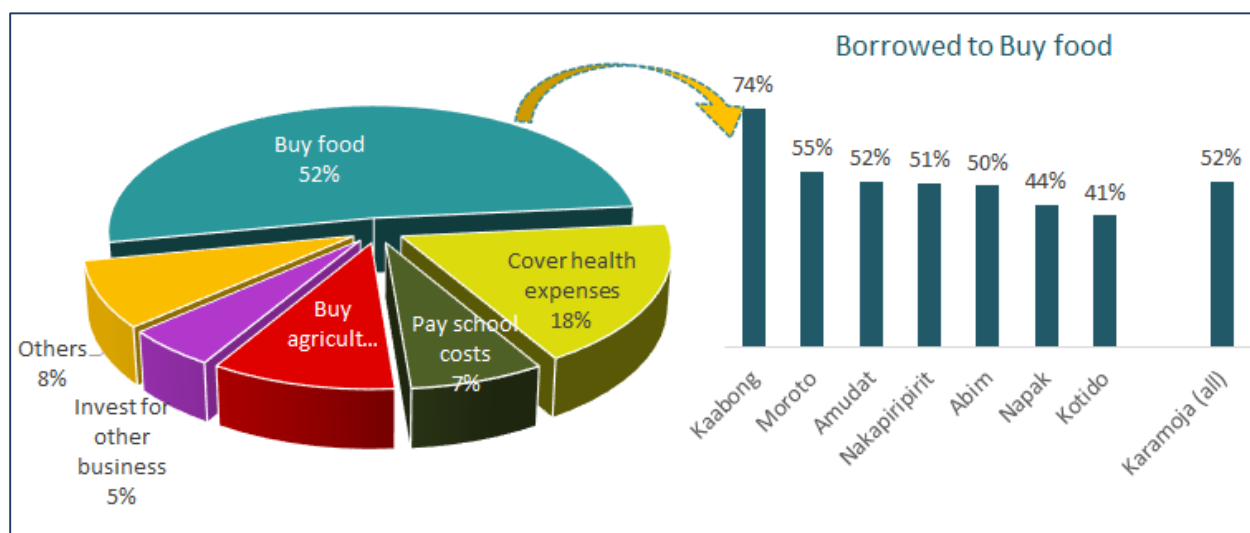


Figure 3-4: Main reasons for debt

Food expenditure profiles

In general, Nakapiripirit and Amudat districts had relatively higher absolute expenditure on food, while Kaabong and Napak had lower monthly food expenditure (**Table 3-2**). Analysis showed that households in Nakapiripirit had significantly higher expenditure on meat and meat products, fruits and vegetables, as well as dairy products. This might be a contributing factor to the observed higher food consumption and dietary diversity scores, and higher consumption of protein rich foods among households. Access to food seems to be an issue in Kotido and Napak districts that had low expenditures on food across the food groups. Introduction and/or scaling up of food for work programmes in these districts is an option.

Table 3-2: Food Expenditure profiles

Food category	Karamoja	Average Monthly Expenditure (UgX)							Significant differences (p<0.05)
		Highest						Lowest	
Cereals	38,800	Amudat (50,700)	Moroto	Nakapiripirit	Abim	Kaabong	Kotido	Napak (26,700)	Napak vs. all districts
Pulses	22,000	Abim (35,000)	Nakapiripirit	Moroto	Amudat	Kaabong	Napak	Kotido (12,900)	Abim vs. all districts
Fruits & Vegetables	9,100	Nakapiripirit (18,100)	Kotido	Abim	Kaabong	Amudat	Moroto	Napak (4,900)	Nakapiripirit & Kotido vs. all districts
Dairy	10,200	Nakapiripirit (13,400)	Kotido	Amudat	Abim	Moroto	Kaabong	Napak (4,200)	Kaabong & Napak vs. Nakapiripirit, Kotido & Amudat
Meat	11,500	Nakapiripirit (18,000)	Abim	Amudat	Moroto	Kaabong	Kotido	Napak (6,300)	Nakapiripirit vs. all districts
All food	81,600	Nakapiripirit (119,000)	Amudat	Abim	Moroto	Kotido	Kaabong	Napak (48,000)	Nakapiripirit vs. all districts

Dependence on markets for food

At least two in every five households (40%) depends heavily on markets, deriving over 75% of food consumed in the households from markets (**Figure 3-5**). Given limited incomes and limited earning potential among households, findings suggest high vulnerability to food insecurity due to exposure to food price fluctuations that are typically high during the lean season.

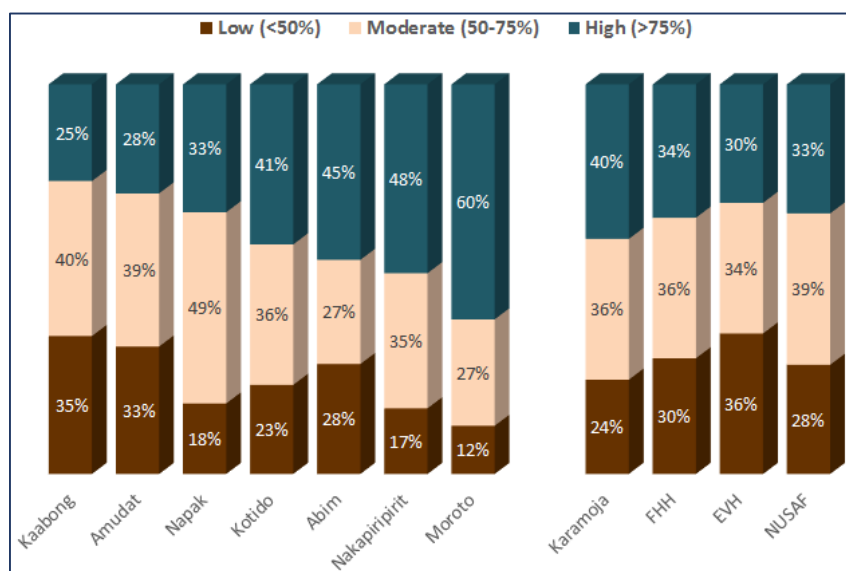


Figure 3-5: Dependence on markets for food among households

Indeed, according to WFP Uganda's monthly market monitor (*May 2016 Issue*), staple food prices this year are at a much higher level compared to 2015 prices and the two-year's average (**Figure 3-6**).

Food Expenditure Share

Up to 47% of households in the region spend proportionately more on food than other essential non-food items, indicating food access issues for nearly half of the population (**Figure 3-7**). The highest percentage of households with Food Expenditure Share⁶ >65% were in Kotido (53%), Napak (50%) and Moroto (46%). As per previous findings, this is mainly due to;

- i) Low incomes among households;
- ii) Very high dependence on markets for food against a poor harvest season and;
- iii) Higher than average staple food prices.

Given that food availability is generally low, and that food prices are exhibiting an upward trend, it is expected that many households will become increasingly Food Insecure as the lean season progresses and food stocks/savings dwindle. This further points to the importance of upscaling Food for Assets programmes especially in Kotido, in light of reducing food access.

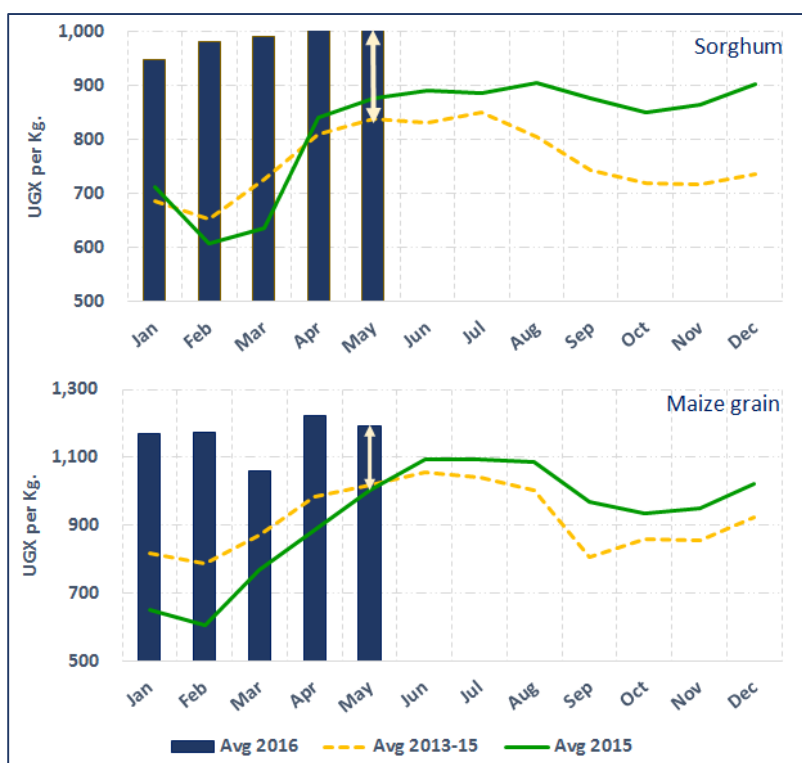


Figure 3-6: Evolution of staple food prices in Karamoja

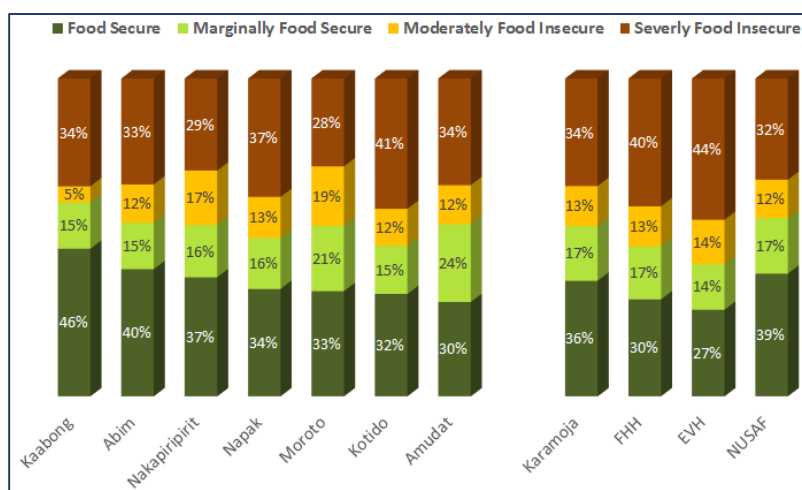


Figure 3-7: Food Expenditure Share categories

⁶ The Food Expenditure Share, FES, is the percentage of total household expenditure that is allocated to food. The higher the percentage of total expenditure that is allocated to food by a household, the more food insecure the household. Thus, households that spend *less than 50%* of total household expenditure on food are regarded as food secure; 50-65% as marginally food secure; 65-75% as moderately food insecure; and >75% as severely food insecure.

4. Food utilization

Food Consumption

Up to 47% of households in the region had acceptable FCS⁷, while 35% had borderline FCS and 17% poor FCS (**Figure 4-1**). The percentage of households with acceptable FCS was generally similar to 2015 patterns but declined significantly in Kaabong⁸. This stability of food consumption patterns amidst shortfalls in food availability and curtailed access to food may be due to:

- i) Interventions from development partners as 48% of households had received food assistance in the last 6 months;
- ii) Application of coping strategies: Analysis showed that 11% of households that had acceptable FCS had also borrowed money to buy food (**Figure 4-2**).

This suggests that otherwise higher levels of food consumption observed in Amudat, Nakapiripirit and Moroto are temporary and fragile and could potentially worsen. Food security situation in these districts should therefore be closely monitored to facilitate early response.

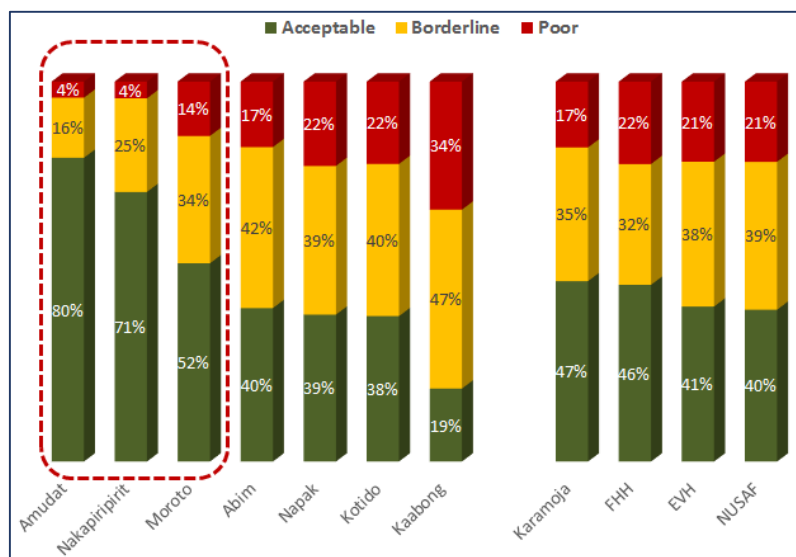


Figure 4-1: Food Consumption Scores

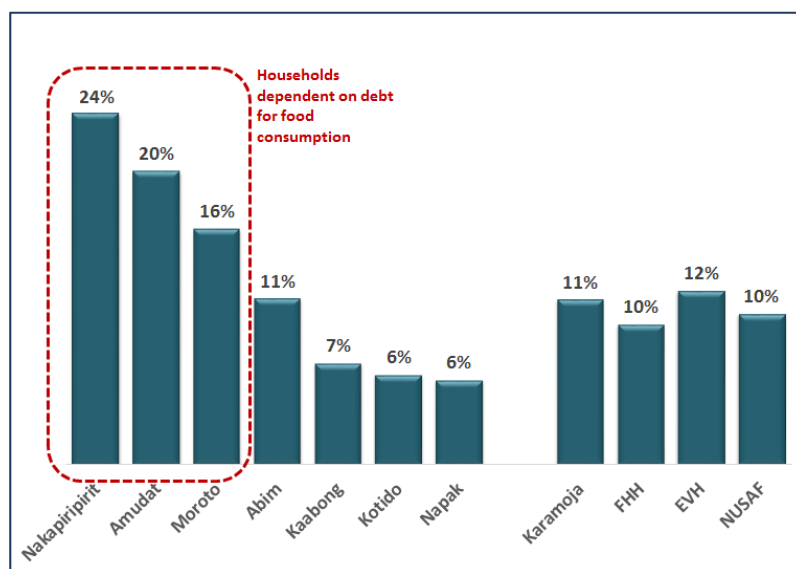


Figure 4-2: Households with Acceptable FCS that borrowed to buy food

⁷ The Food Consumption Score (FCS) is a composite score based on dietary diversity, food frequency and relative nutrition importance of different food groups.

⁸ See FSNA June 2016 District supplement for detailed district level analysis

Diet diversity

The percentage of households found to have low diet diversity score⁹ (DDS) increased from 40% in 2015 to 46% in 2016. The highest percentage of households with low diet diversity was observed in Kaabong, Napak and Moroto districts (**Figure 4-3**).

Consequently, these districts also had the highest percentages of households that had not consumed any protein rich foods in the 7 days prior to the survey (**Figure 4-4**). Highest level of consumption of protein rich foods was in Amudat and Nakapiripirit due to the higher level of access to livestock products.

Analysis also showed that half of households had not consumed any foods rich in hem-iron in the 7 days preceding the survey with negligible variation across districts (**Figure 4-5**). This is a critical issue as consumption of hem-iron is a key factor in reducing child stunting.

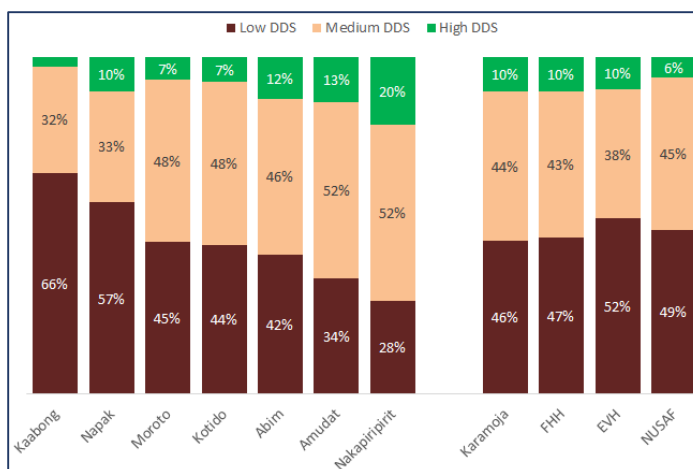


Figure 4-3: Household Dietary Diversity

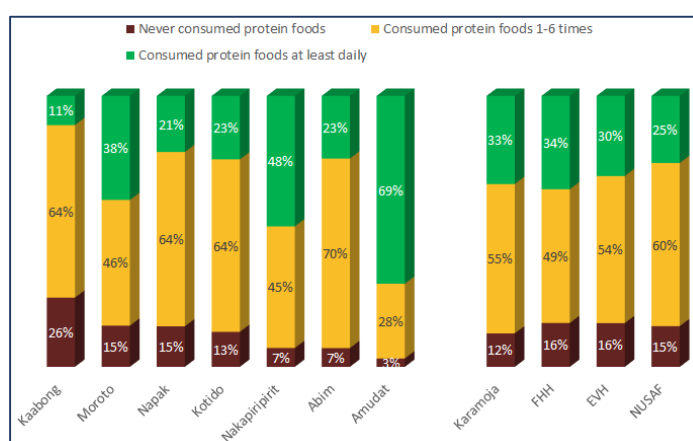


Figure 4-4: Consumption of protein foods

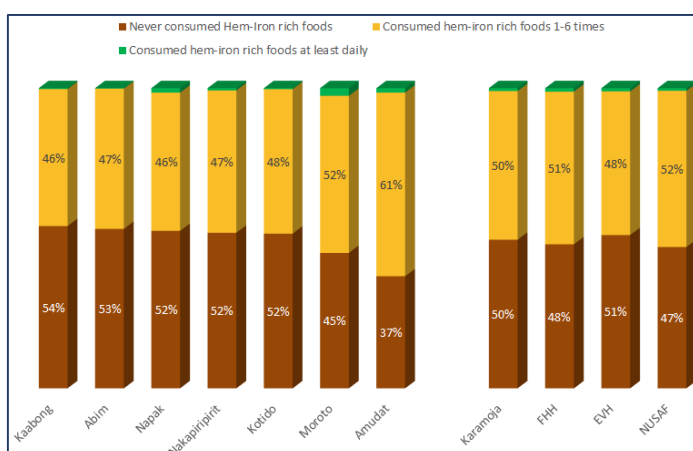


Figure 4-5: Consumption of hem-iron rich foods

⁹ 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. Based on IFPRI classification, HDDS is then classified as Low (HDDS <4.5), Medium (4.5 < HDDS < 6) or High (HDDS > 6).

5. Stability

Main shocks to household food security

The main shocks to household food security across the region were cited as high food prices and sickness/disease especially of the household head (**Figure 5-1**). Indeed, as shown in **Figure 3-7**, maize and sorghum prices are markedly higher this year compared to 2015 and previous years. Thus households depending on markets are highly vulnerable to food insecurity, particularly so in Moroto. Interventions to improve access to food through income generating activities and food for work programmes are recommended.

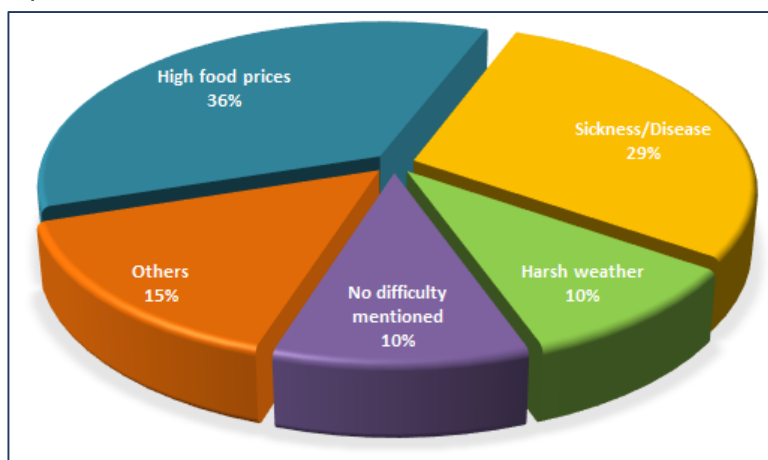


Figure 5-1: Main shocks to household food security

Food Consumption Coping Strategies

On average 23% of the households had high food consumption coping¹⁰, particularly higher in Kotido, Nakapiripirit and Napak (**Figure 5-2**). The lowest levels of food consumption coping were observed in Amudat and Abim districts. Findings suggest stress in food acquisition, especially in Kotido, potentially leading to a worsening of food security and nutrition outcomes.

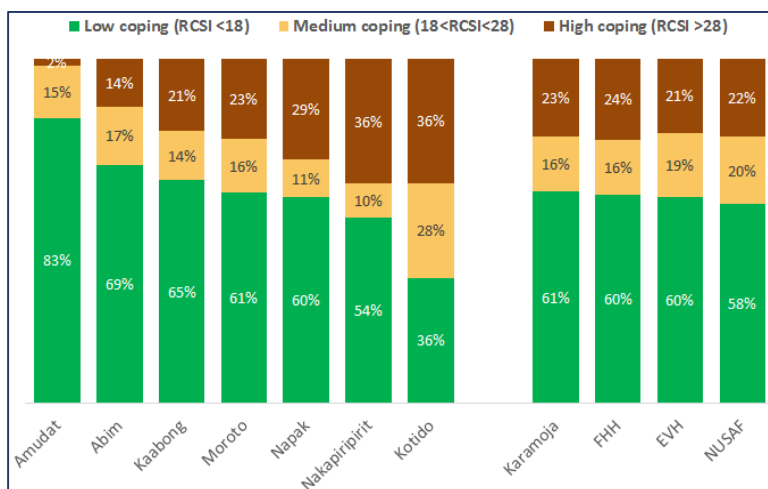


Figure 5-2: Food Consumption Coping Strategies

¹⁰ The Food Consumption or 'Reduced' Coping Strategy Index (RCSI) measures the behaviors adopted by households when they have difficulties covering their food needs. It is calculated using standard food consumption-based strategies (reliance on less preferred, less expensive food; borrowing food or relying on help from friends/relatives; reduction in the number of meals eaten per day; reduction in portion size of meals; and reduction in the quantities of food consumed by adults/mothers for young children) and severity weighting.

The most commonly applied food consumption coping strategies were the consumption of less preferred food and reduction in the number of meals consumed per day (**Figure 5-3**). In Moroto however, reduction in the number of meals and reduced portion sizes were the most common.

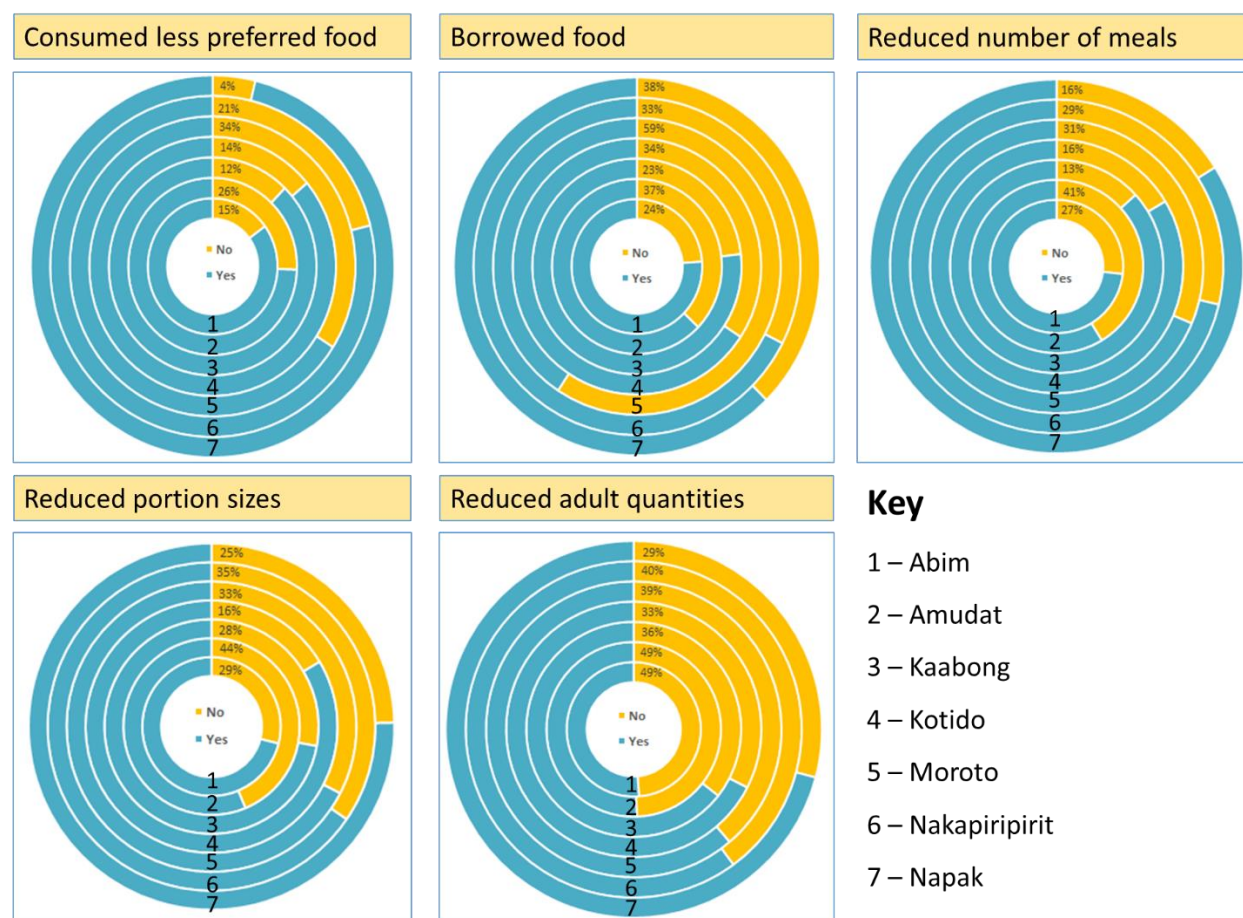


Figure 5-3: Most common food consumption coping strategies

Livelihood coping strategies

About 34% of households did not adopt any of the enumerated livelihood coping strategies¹¹, while 39% applied emergency coping strategies (**Figure 5-4**). These findings are similar to findings in the June 2015 FSNA. However, further analysis revealed significant changes at district level:

¹¹ Livelihoods-based coping strategies reflect longer term coping capacity of households. The various strategies applied by households can be categorized as stress, crisis or emergency coping strategies 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. They include borrowing money, spending savings, selling household goods or animals. Crisis coping strategies, such as selling productive assets, reduction of essential non-food expenditure, and consumption of seed stock directly reduce future productivity, including human capital formation. Emergency coping strategies, such as selling one's house or land, engaging in illegal income activities, and begging also affect future productivity, but are more difficult to reverse or more dramatic in nature.

- i) Moroto, Amudat and Kaabong districts showed a marked decrease in the percentage of households that applied emergency coping strategies;
- ii) Kotido, Abim and Napak districts showed marked increases in the percentage of households applying emergency coping strategies.

Findings suggest a deterioration in the food security level in the latter three districts. Close monitoring of the food security situation especially in Kotido and Napak districts is highly recommended with scale up of food for assets programmes to prevent depletion of productive assets by households.

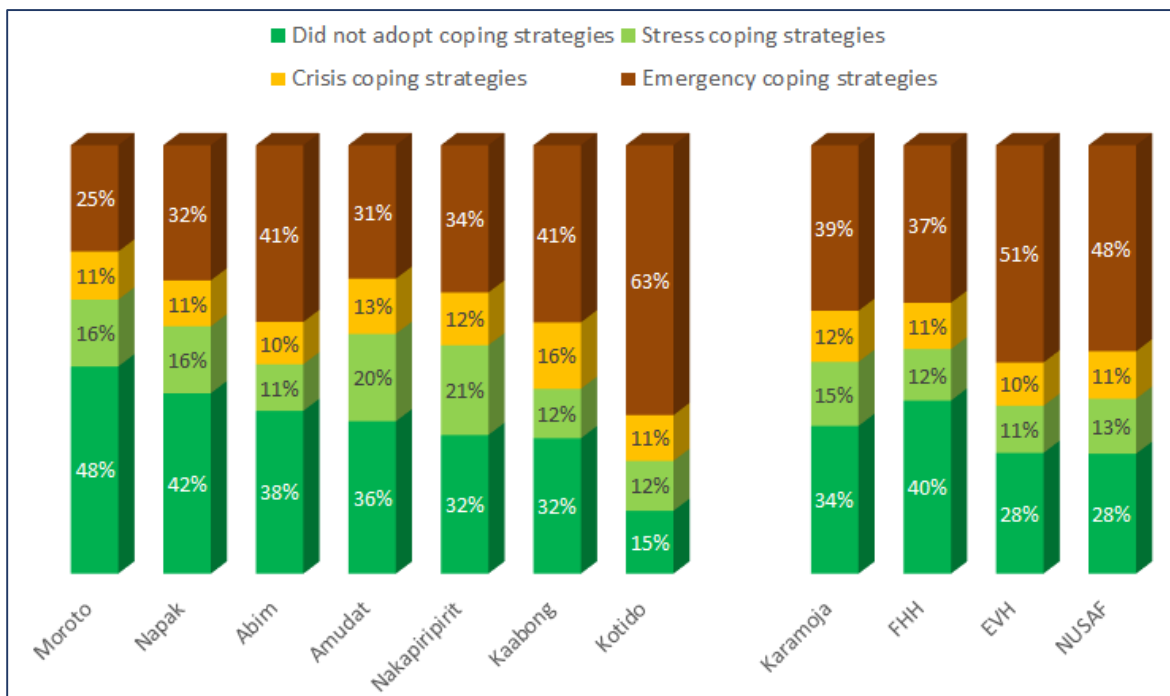


Figure 5-4: Livelihood coping strategies

6. Final food security classification

Summative findings as per the Food Security Index¹² that combines the Food Expenditure Share, Food Consumption Score, and Livelihood coping strategies showed that only half (50%) of households are food secure (Food secure + marginally food secure) and another half food insecure (**Figure 6-1**). Lowest levels of food insecurity were observed in Amudat and Nakapiripirit districts, while the highest levels of food insecurity were observed in Kotido and Kaabong districts.

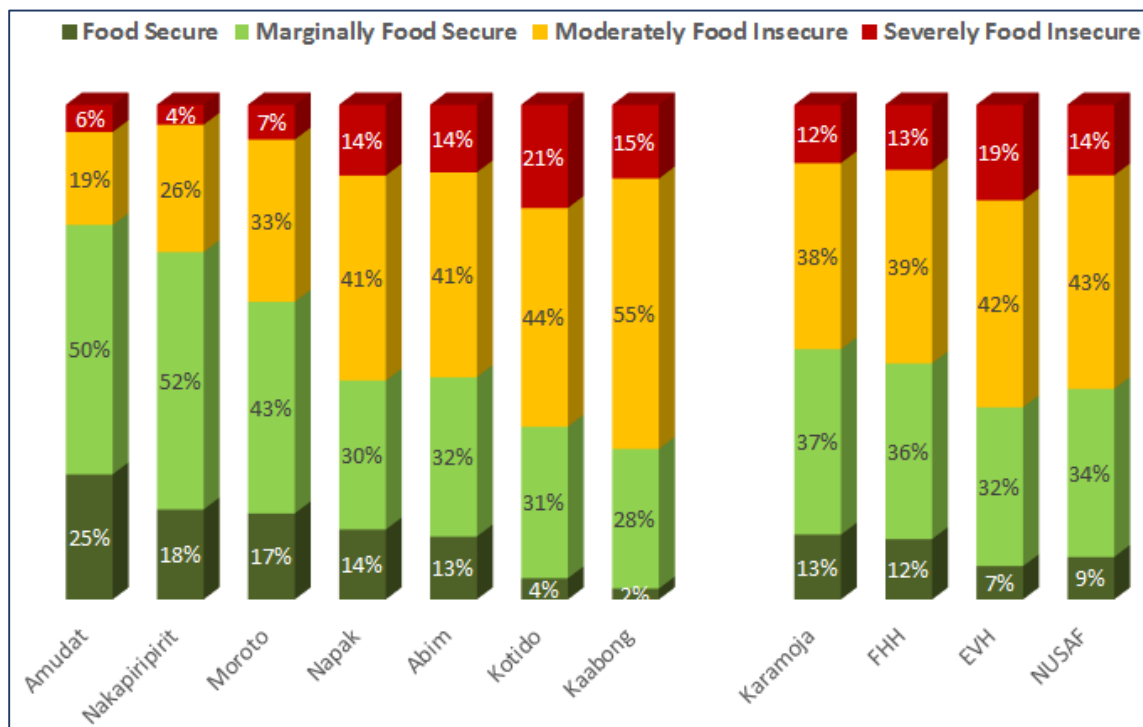


Figure 6-1: Final food security classification

Compared to the situation in June 2015, findings show varied trends in the food security situation as shown in **Table 6-1**. Significant deterioration of the food security situation has specifically been observed in Kaabong, Kotido, Napak and Abim districts. On the other hand, improvements have been observed in Moroto and Nakapiripirit districts. While food assistance contributed to improvements in some areas, the extent of need seemingly superseded assistance provided in other areas.

Table 6-1: Food security situation in 2015 and 2016

	% Food Insecure Households (Moderately Food Insecure + Severely Food Insecure)	
	Jun-15	Jun-16
Abim	44%	▲ 55%
Amudat	26%	◀ 25%
Kaabong	42%	▲ 70%
Kotido	53%	▲ 66%
Moroto	62%	▼ 40%
Nakapiripirit	40%	▼ 30%
Napak	48%	▲ 55%

¹² See Annex 1 for a description of the Food Security Index

7. Nutrition

Mothers' education level

Nearly 75% of mothers did not have any formal education (**Figure 7-1**). This was highest in Kotido and Amudat, and lowest in Abim districts. Empirical studies have shown a strong relationship between the education level of a mother and children's nutrition outcomes. Indeed, further analysis¹³ showed a significant relationship ($P < 0.05$) between mothers' education level and children's nutrition status(**Table 7-1**).

Above findings therefore suggest great predisposition to malnutrition among children under five, especially in Kotido. Interventions are needed to address this issue through emphasis on girl child education particularly to ensure long term sustainability and improvements in household and child nutrition. Nutrition education is also necessary to improve current experiences of child nutrition – this education should be targeted at women as primary caregivers but also to men and broader community to ensure that other community contributors to feeding and food practices are improved and that women's nutrition education is supported upon the mothers return to the household.

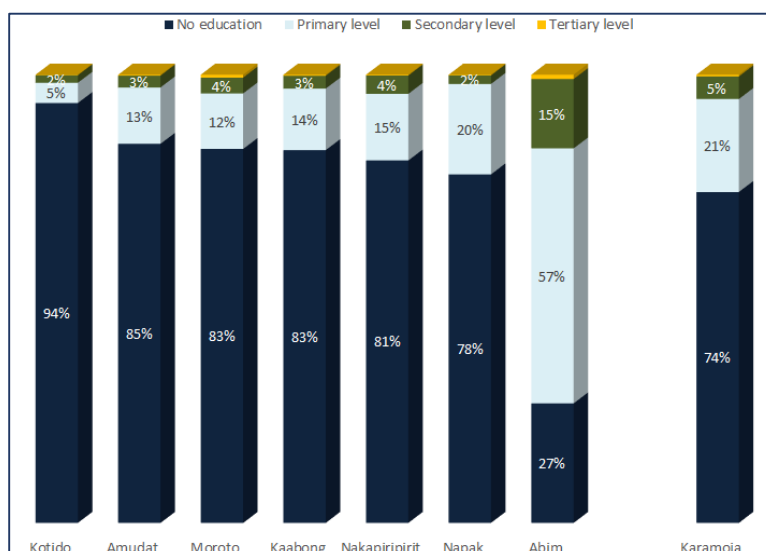


Figure 7-1: Education level of mothers

Table 7-1: Mothers' education level and child nutrition outcomes

		Child nutrition outcomes		
		Wasted*	Underweight*	Stunted*
Mothers' education level	No education	16%	25%	27%
	Primary level	11%	16%	20%
	Secondary level	9%	18%	19%
	Tertiary level	0%	0%	0%

* Significant relationship ($p < 0.05$)

¹³ Chi-square test

Mothers' nutritional status

Findings showed that nearly two-thirds (66%) of mothers in Karamoja had normal body mass index. However, relatively high percentages of underweight mothers were found in Napak and Moroto where approximately two in every five mothers were underweight (**Figure 7-2**).

Empirical studies have shown that underweight mothers are more likely to give birth to babies with low birth weight, which is a strong predictor of stunted growth among children. Above average prevalence of underweight mothers have previously been recorded in Moroto and Napak. It is therefore not surprising that these districts had the highest levels of stunting, perpetuated by the intergenerational cycle of malnutrition.

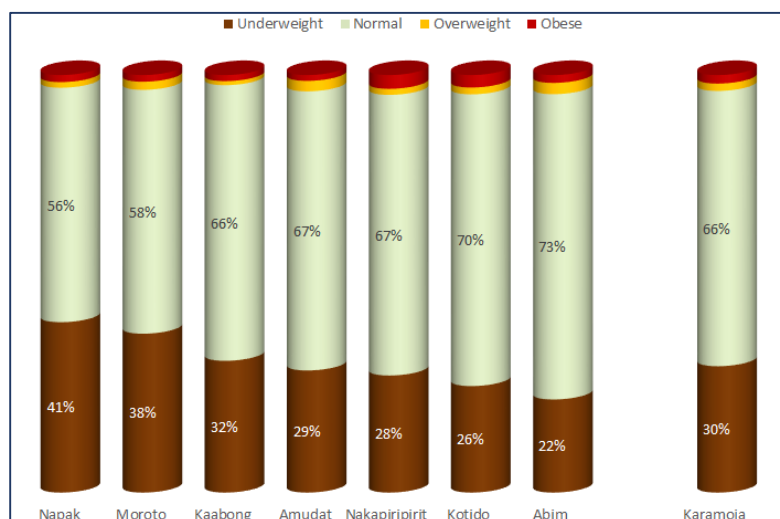


Figure 7-2: Mothers' nutritional status

Child nutritional status

GAM rates remain serious across the region with exception of Abim and Nakapiripirit that are classified as poor. As shown in **Table 7-2**, the highest GAM rates were found in Moroto (13.7%) and Napak (13.6%) districts.

Table 7-2: Prevalence of acute malnutrition based on WHZ scores

	N	GAM % (95% CI)	MAM % (95% CI)	SAM % (95% CI)	Underweight % (95% CI)	Stunting % (95% CI)
Abim	856	6.7 % (4.9 - 9.0)	5.7 % (4.1 - 7.9)	0.9 % (0.4 - 2.1)	17.1 % (13.4 - 21.5)	23.0 % (18.8 - 27.9)
Amudat	487	10.9 % (7.4 - 15.8)	8.6 % (5.6 - 13.0)	2.3 % (1.2 - 4.2)	16.0 % (12.7 - 20.0)	17.5 % (13.7 - 22.0)
Kaabong	821	12.8 % (10.4 - 15.6)	11.1 % (8.8 - 13.9)	1.7 % (1.0 - 2.9)	21.6 % (18.9 - 24.5)	26.1 % (23.1 - 29.3)
Kotido	826	12.1 % (9.7 - 15.0)	8.6 % (6.8 - 10.8)	3.5 % (2.4 - 5.1)	25.3 % (21.3 - 29.8)	30.0 % (26.4 - 33.9)
Moroto	533	13.7 % (10.3 - 18.0)	10.3 % (7.3 - 14.5)	3.4 % (1.9 - 6.0)	26.6 % (21.8 - 32.0)	34.1 % (29.8 - 38.8)
Nakapiripirit	520	8.3 % (5.8 - 11.7)	6.2 % (4.5 - 8.3)	2.1 % (0.9 - 4.7)	19.2 % (15.5 - 23.5)	25.6 % (20.9 - 31.1)
Napak	609	13.6 % (10.5 - 17.5)	11.2 % (8.5 - 14.5)	2.5 % (1.5 - 4.0)	31.4 % (26.5 - 36.8)	39.9 % (35.5 - 44.4)
Karamoja	4652	11.0% (10.0-12.2)	8.8% (7.9- 9.8)	2.3% (1.8- 2.8)	22.4% (21.2-23.7)	28.0% (26.7-29.3)

However, despite the poor harvest in the 2015 season (Nov/Dec 2015), and the current lean season, there has been a reduction (albeit slight) in GAM rates in the region from 14.1% in June 2015 to 11% this year. The scale up of food assistance in the region is thought to be a major contributing factor to this improvement.

The prevalence of underweight remains high at serious levels in the region, with the highest prevalence at critical level in Napak. The prevalence of stunting in the region is poor at 28%, and at serious levels in Kotido, Moroto and Napak districts. Concerted efforts are required to address the causal factors of malnutrition.

Table 7-3: Prevalence of acute malnutrition based on MUAC

	GAM (95% C.I.)	MAM (95% C.I.)	SAM (95% C.I.)
Abim	4.4 % (2.6 - 7.5)	4.2 % (2.5 - 7.1)	0.2 % (0.1 - 0.9)
Amudat	4.1 % (2.2 - 7.4)	2.9 % (1.4 - 5.9)	1.2 % (0.5 - 3.1)
Kaabong	12.7 % (10.2 - 15.8)	10.8 % (8.4 - 13.8)	1.9 % (1.0 - 3.6)
Kotido	13.8 % (10.2 - 18.2)	9.8 % (7.0 - 13.5)	4.0 % (2.6 - 6.1)
Moroto	11.7 % (8.5 - 15.9)	10.2 % (7.5 - 13.8)	1.5 % (0.7 - 3.0)
Nakapiripirit	11.3 % (8.4 - 15.2)	8.8 % (6.5 - 12.0)	2.5 % (1.3 - 4.6)
Napak	10.4 % (7.9 - 13.5)	8.4 % (6.3 - 11.1)	1.9 % (1.1 - 3.3)

An analysis of z-scores for all three anthropometric indicators shows a distribution shifted to the left of the reference population (**Figure 7-3**) indicating generally poor child nutrition status in the region.

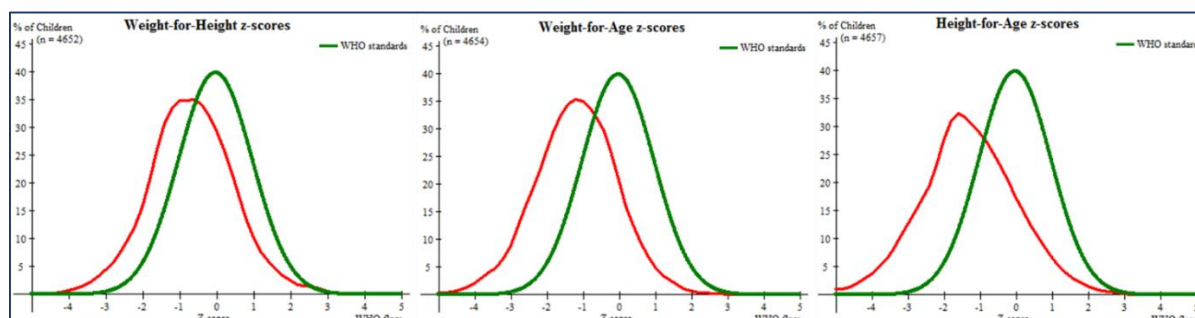


Figure 7-3: Anthropometric Z-scores

Exclusive breast feeding

Among the households in the survey, exclusive breastfeeding rates have remained high and generally stable with marginal changes at district level since June 2015 (**Figure 7-4**). However, a marked reduction was observed in Amudat of 16%, from 69% in June 2015 to the current 53%. Amudat has consistently had relatively low exclusive breast feeding rates compared to other districts in the region, and a reduction is a cause of concern and should be further investigated.

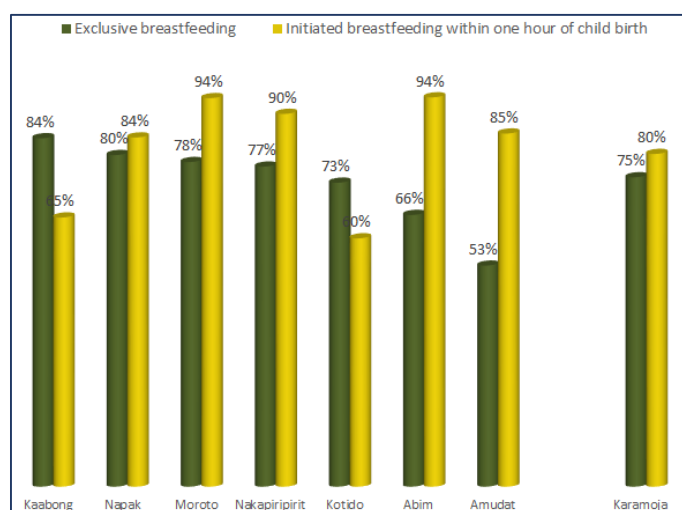


Figure 7-4: Breast feeding practices

In contrast to 2015 where only 15% of mothers reported having initiated breast feeding within the first hour of birth, a dramatic change was observed this year with 80% of mothers having done so. Continued monitoring of this practice at health centers is recommended to ensure its sustenance.

Introduction of complementary foods

With exception of Kotido district, a higher percentage of mothers reported timely introduction of complementary foods i.e. at six months (**Figure 7-5**). This is an important practice ensuring that children receive adequate nourishment for their growing bodies. It is recommended to introduce/sustain activities geared towards improving complementary feeding in the region in order to sustain these gains.

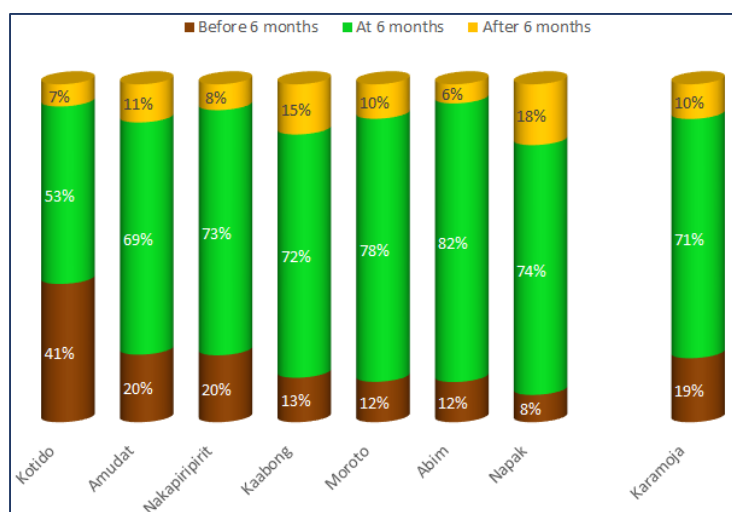


Figure 7-5: Introduction of complementary foods

Diet adequacy for children 6-23 months¹⁴

Analysis showed that majority of non-breastfeeding children were unable to access milk with only 5% of non-breast fed children consuming at least two milk feeds a day (**Figure 7-6**). This suggests chronic deprivation among children of essential macro- and micro- nutrients, increasing the risk of malnutrition, including stunting. Development programmes in the region should necessarily mainstream nutrition with activities such as nutrition education with the view to pass on key messages on infant and young child feeding practices.

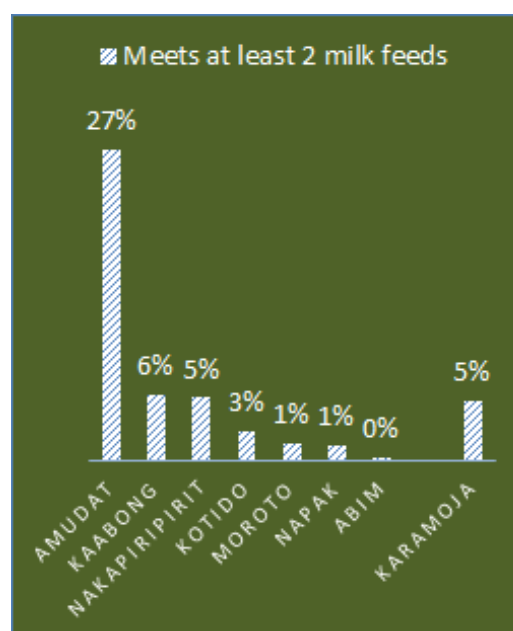


Figure 7-6: Consumption of milk among non-breastfed children

¹⁴ There is an on-going technical review on data related to other Infant and Young Child Feeding Practices, especially the Minimum Meal Frequency, Minimum Diet Diversity, and Minimum Acceptable Diet. Information on these indicators will be disseminated once the reviews are completed.

Enrollment in MCHN programme

The MCHN programme offers blanket nutrition support to expectant women, lactating mothers, and children under 2 years of age with the view to prevent chronic malnutrition. Findings show that 47% of eligible children are enrolled in the MCHN programme, particularly so in Kaabong, Napak and Kotido (**Figure 7-8**). This low coverage/enrolment level is probably because:

- ☐ The programme is mostly implemented in Health centre III and a few HC II that have MCH services. As such there are limited health centers that qualify to implement the programme;
- ☐ Food transfers are conditional and provided upon delivery of a service e.g. after children are vaccinated. The fact that these services do not take place often either due to absence of vaccines or even lack of outreach services by health workers affects coverage.

Given the high prevalence of malnutrition in the region, there is need to undertake a study to fully understand the causes of the low coverage/enrolment, address the causation (as well as the probabilities noted above), and simultaneously scale up this programme to reach more beneficiaries.

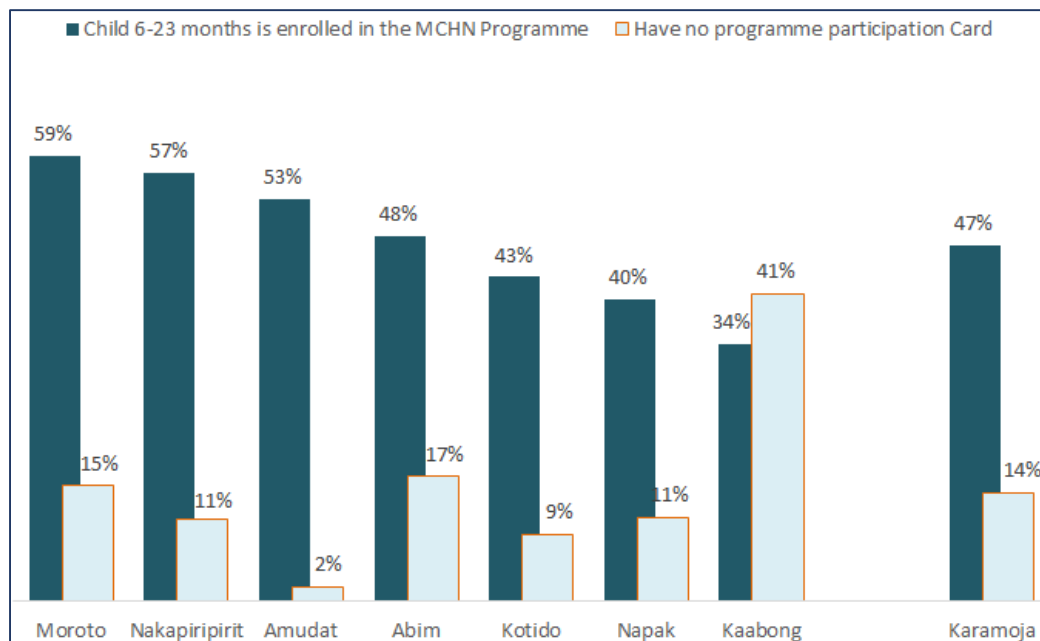


Figure 7-7: Enrollment in the MCHN programme

8. Household health

Immunization and supplementation status

Across the region, immunization rates were high particularly for DPT-3 and Vitamin A supplementation as shown in **Table 8-1**. However, findings show that Nakapiripirit had the highest percentage of children not having received Vitamin A supplementation (17%). Immunization is critical aspect for child survival, protecting children against killer diseases, reducing morbidity and effectively, nutrition outcomes.

Sustained efforts to immunize children therefore remain important. Emphasis should especially be on boosting coverage of measles vaccination and deworming that were relatively low especially in Amudat, Nakapiripirit and Kotido.

Table 8-1: Access to immunization, Vitamin A supplementation and deworming

		Karamoja	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Napak
Measles Vaccination	Yes, with card	65%	72%	60%	55%	72%	66%	54%	68%
	Yes, without card	17%	17%	12%	31%	6%	19%	21%	11%
	No, with card	15%	11%	24%	8%	20%	13%	16%	18%
	No, without card	3%	1%	4%	6%	2%	2%	8%	2%
DPT3 Vaccination	Yes, with card	78%	79%	80%	59%	89%	78%	72%	86%
	Yes, without card	19%	19%	12%	37%	7%	20%	23%	13%
	No, with card	2%	1%	4%	3%	3%	0%	2%	1%
	No, without card	1%	0%	3%	1%	1%	1%	3%	0%
Deworming	Yes, with card	63%	71%	58%	53%	69%	64%	42%	79%
	Yes, without card	17%	16%	11%	30%	8%	18%	25%	11%
	No, with card	15%	12%	26%	8%	20%	14%	20%	8%
	No, without card	5%	1%	5%	8%	4%	3%	13%	2%
Vitamin A	Yes, with card	74%	79%	80%	60%	82%	74%	59%	83%
	Yes, without card	19%	18%	12%	36%	8%	21%	25%	12%
	No, with card	5%	2%	4%	3%	7%	4%	11%	4%
	No, without card	2%	1%	3%	2%	3%	1%	6%	1%

Prevalence of common childhood illnesses

In general, 76% of children had suffered at least one illness in the two weeks preceding the survey, indicating high morbidity. The most common illnesses affecting children across the region were fever/malaria¹⁵, diarrhea, and Acute Respiratory Infections (ARI)/cough (**Figure 8-1**). Diarrheal diseases were most common in Moroto and Kotido.

¹⁵ For practical reasons, it is difficult to distinguish fevers according to their causes (e.g. malaria, typhoid, etc.) in typical data collection exercises

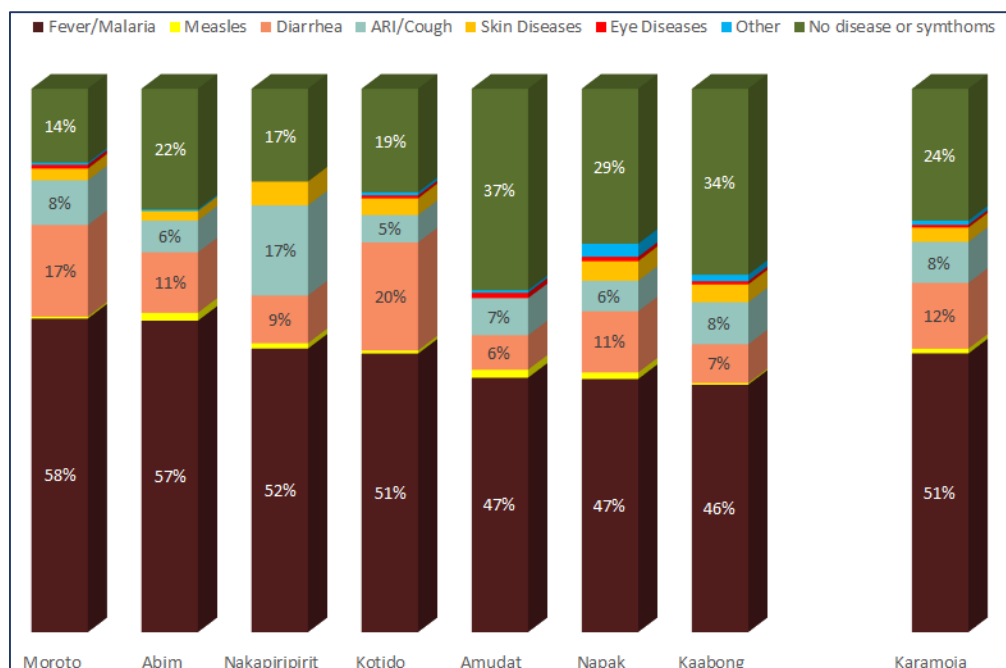


Figure 8-1: Prevalence of common childhood illnesses

Mosquito net coverage

While over two-thirds (68%) of children were reported to have slept under a mosquito net the night preceding the survey, bed net use was rather low in Moroto, Nakapiripirit and Amudat districts (**Figure 8-2**).

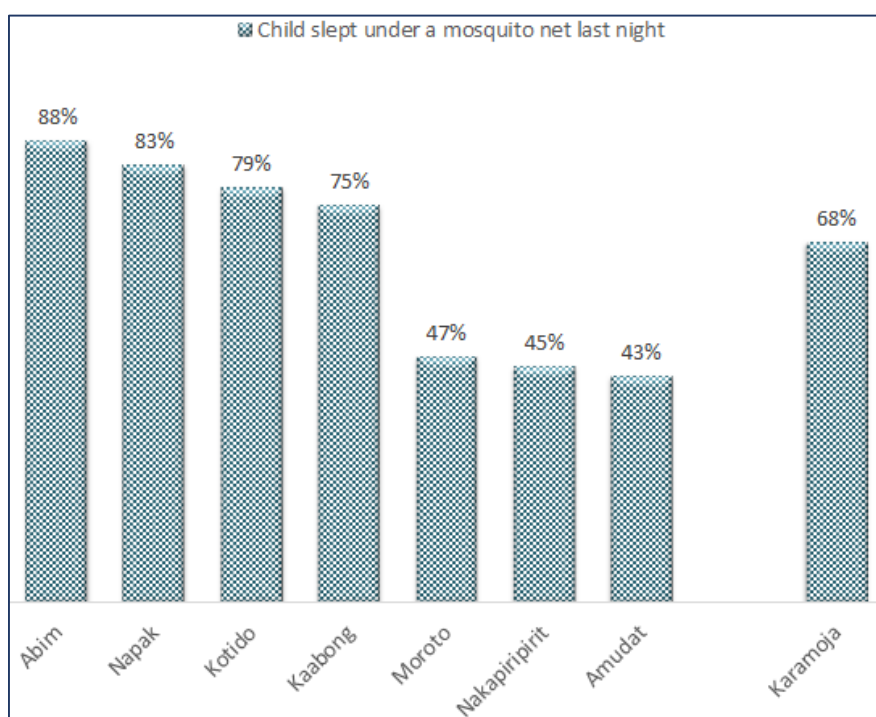


Figure 8-2: Mosquito bed net use

9. Water, Sanitation and Hygiene (WASH)

Access to safe water

Up to 83% of households in the region reported use of water from safe water sources such as water from boreholes, protected wells and piped water (**Figure 9-1**). However, a high percentage of households in Amudat and Kaabong reported access to unsafe water, especially utilizing surface water for household use. This negates efforts to improve household health and nutrition with increased exposure to disease, especially diarrheal diseases. Moreover, nearly all households (95%) that reported access to unsafe water sources (such as from open wells/springs and surface water) also do not carry out any form of water treatment before its use. Interventions to increase access to safe water in the region, especially in Amudat and Kaabong districts, as well as sensitization on simple water treatment techniques will be necessary to ensure adequate health.

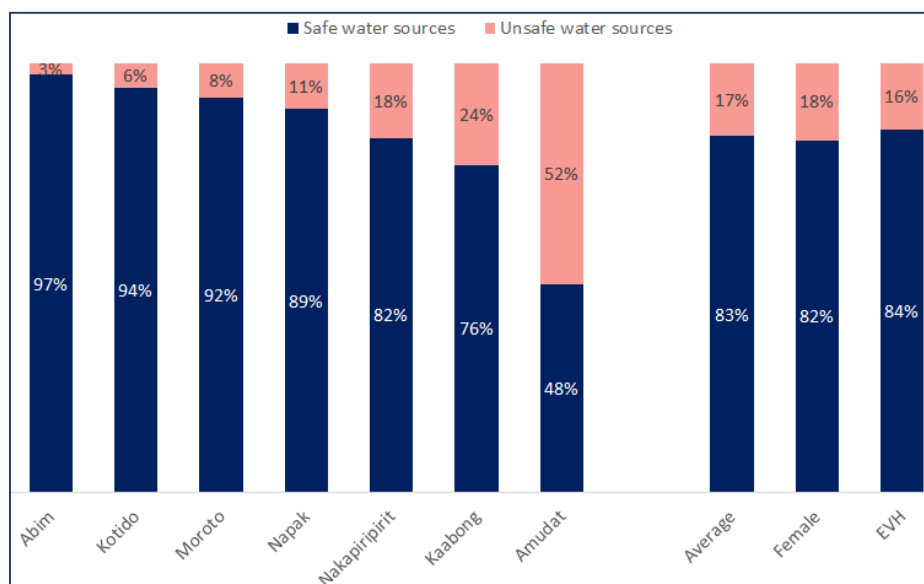


Figure 9-1: Access to safe water

Household level utilization of water

As shown in **Figure 9-2**, despite the fact that access to safe water was high in the region, only 17% of households use water at the recommended rate of 15 litres per person per day. This is especially low in Kotido, Kaabong and Moroto districts at less than 10%.

Findings indicate a general reduction in the percentage of households adequately utilizing water, particularly so in Kotido district. This is probably a result of the prolonged dry spell in the region that generally caused reduced water availability.

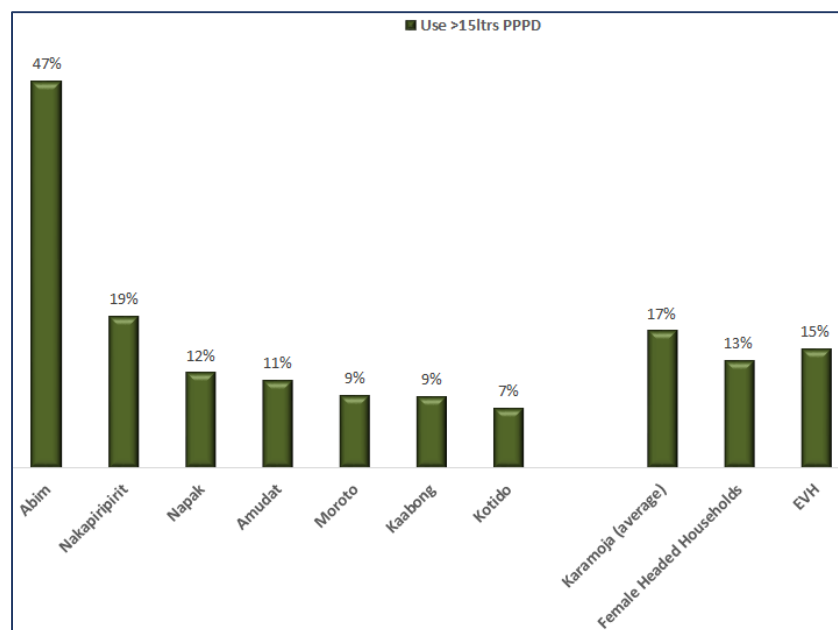


Figure 9-2: Households using more than 15 litres of water per person per day

Sanitation facilities and practices

One in every three households has access to toilet facilities in the region. The highest rate of access was observed in Abim where 2 in every 3 households had access to toilet facilities. Nonetheless, the rate of open defecation remains high, at 65% for the entire region, going up to 90% in Amudat and 85% in Moroto.

Marginal reductions in rate of open defecation were observed in Amudat, Kotido, Napak and Kaabong since 2015. More efforts are needed to:

- i) Improve latrine coverage;
- ii) Improve use of latrines where they are available.

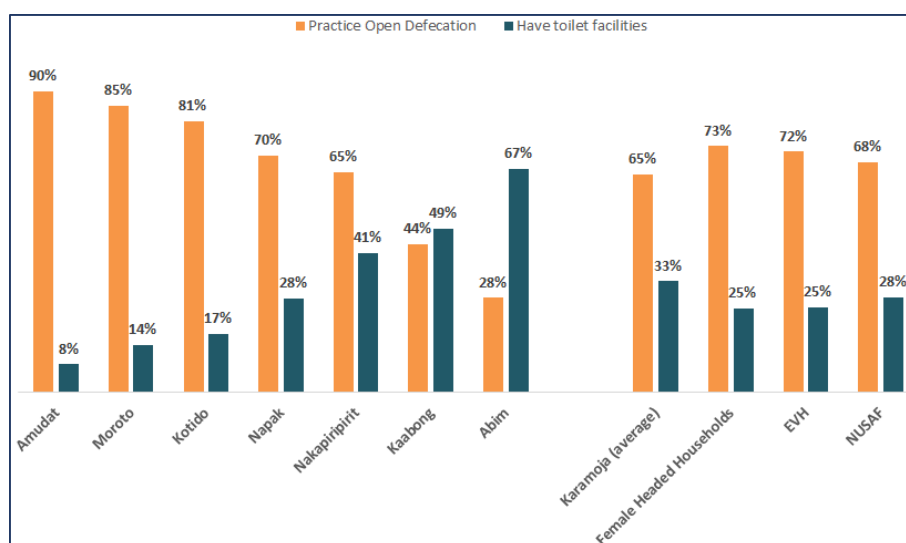


Figure 9-3: Access to and utilization of sanitary facilities

10. Factors associated with Food Security & Nutrition

Gender of the household head

Findings showed that children in female headed households were significantly more likely to be malnourished (GAM, Underweight, Stunting) compared to those in male headed households (**Figure 10-1**). This is not surprising as female headed households were found to be more food insecure and had less diversity of diet among other factors (see Sections 4 and 6).

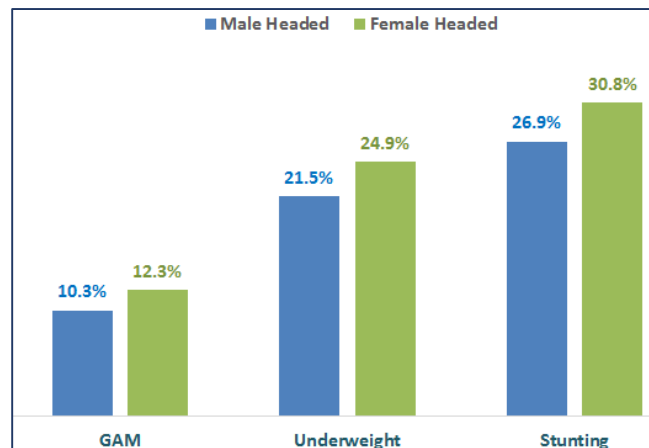


Figure 10-1: Prevalence of malnutrition in male and female headed households

Education level of the household head

Analysis showed that malnutrition decreases with the level of education; children in households whose heads had no formal education were significantly more likely to be wasted, underweight and stunted (**Figure 10-2**). Moreover, the higher the level of education of the household head, the more likely it was for the household to be classified as food secure.

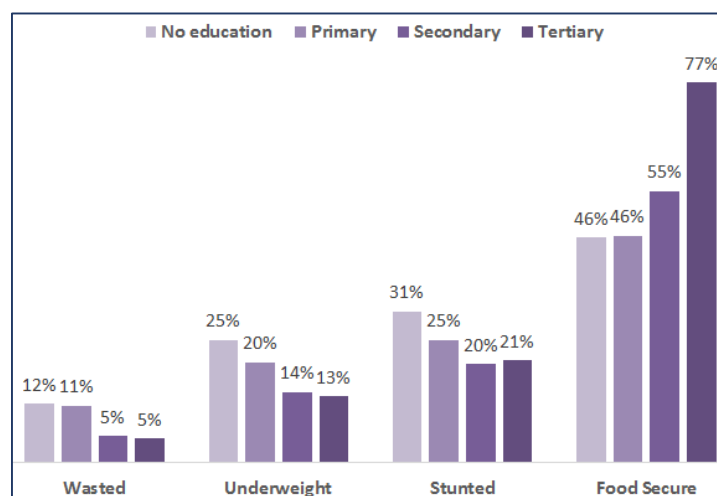


Figure 10-2: Influence of education level on food security/nutrition outcomes

Livestock ownership

Analysis showed no significant difference in GAM levels among children in households with or without livestock. However, child stunting and underweight were significantly less likely among households with livestock, with those in households that had higher livestock holding better off (**Figure 10-3**). This is probably because livestock products are relatively less effective as energy sources, an important element in prevention of acute malnutrition. Similarly, households with higher level of livestock holding were more likely to be classified as food secure.

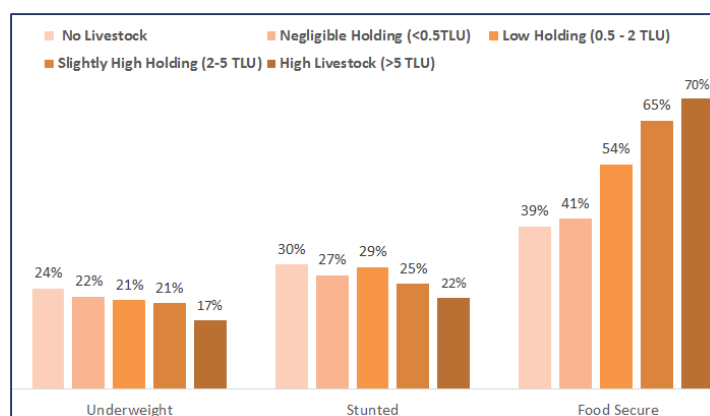


Figure 10-3: Influence of livestock ownership on Food Security/Nutrition outcomes

Household income earners

Findings showed that children in households with no income earner were more likely to be wasted, and the higher the number of income earners, the less likely for children to be wasted (**Figure 10-4**). Expectedly, the higher the number of income earners in a household, the more likely for the household to be food secure.

However, similar to findings in June 2015, households' income earning ability had no influence on the prevalence of stunting or underweight. This suggests that having more income earners in a household may improve overall access to food but simultaneously affects the much need quality of care that is fundamental for child growth.

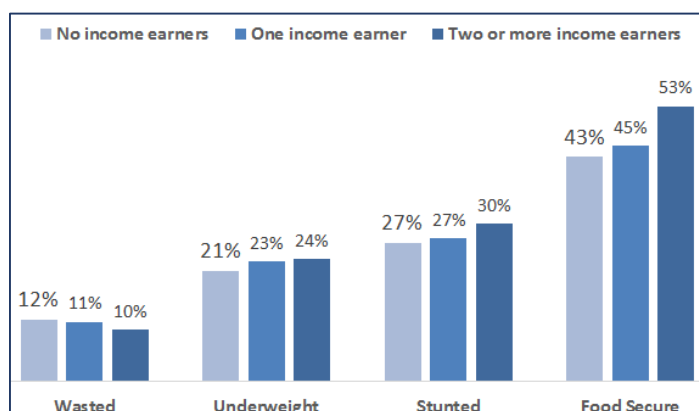


Figure 10-4: Influence of household income earners on food security/nutrition outcomes

Physical status of the household head

Having a disabled or chronically ill household head significantly predisposed households to food insecurity and the children therein to malnutrition (wasting, underweight and stunting). This is probably in light of their reduced ability to fend for their families and to provide much needed care for children.

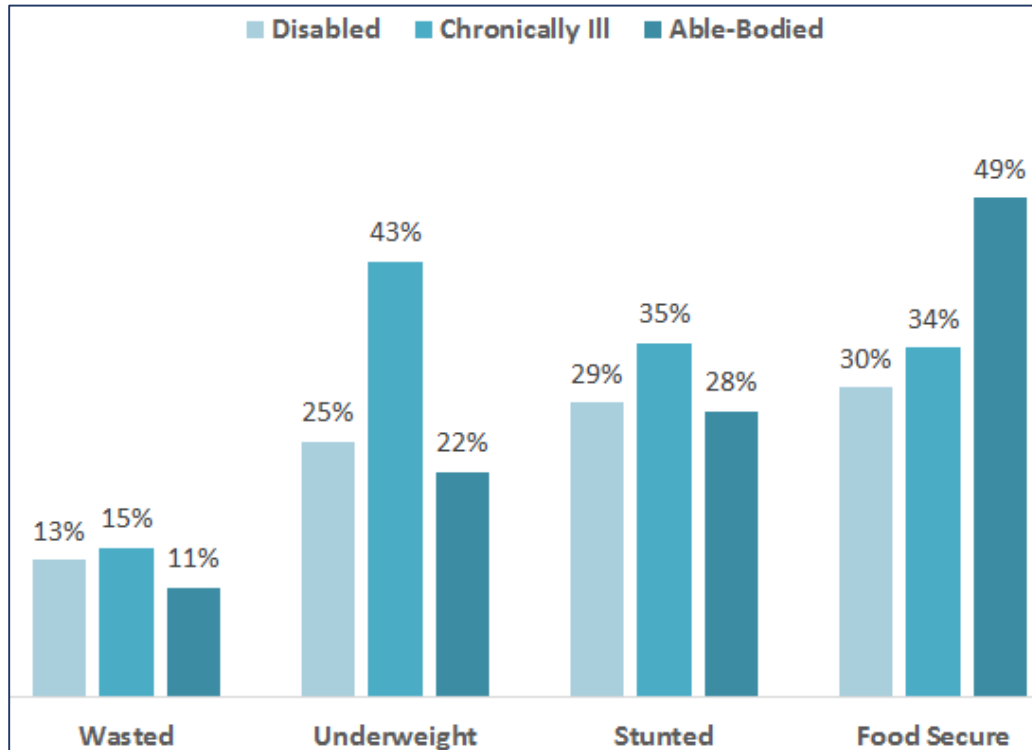


Figure 10-5: Influence of household head physical status on food security/nutrition outcomes

11. Food Security and Nutrition trends

Food Consumption Score trends (2012 – 2016)

Despite the fact the 2015 harvest in the region was below expected due to unfavorable weather conditions, and the fact that the 2015 season failure was the third consecutive one, a trends analysis shows that food consumption only slightly declined between June 2015 and 2016 with up to 17% having poor food consumption score this year (**Figure 11-1**). This is believed to be due to an increase in the level of humanitarian assistance over the 6-12 month period since 2015 in response to rising food insecurity.

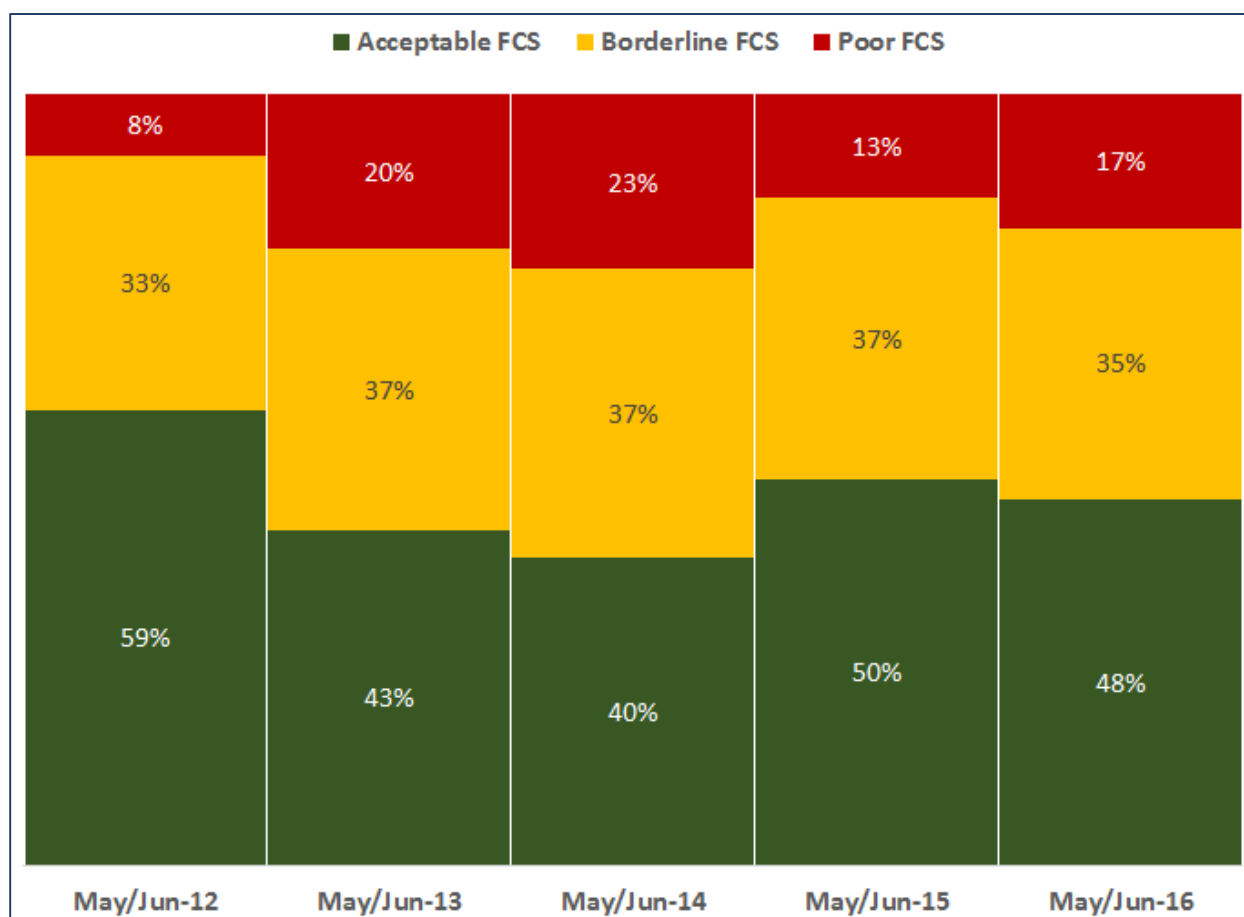


Figure 11-1: Food consumption trends in Karamoja (2012 – 2016)

Global Acute Malnutrition prevalence (2010 – 2016)

Overall lean season GAM prevalence declined for the first time since 2012 from 14% to 11% (**Figure 11-1**). This decline could be due to the finding that nearly half the population in Karamoja is on food assistance and the fact that in-kind assistance to households was increased following the failed harvest in 2015. Sustained multi-sectoral efforts will be necessary to continue this trend in the region.

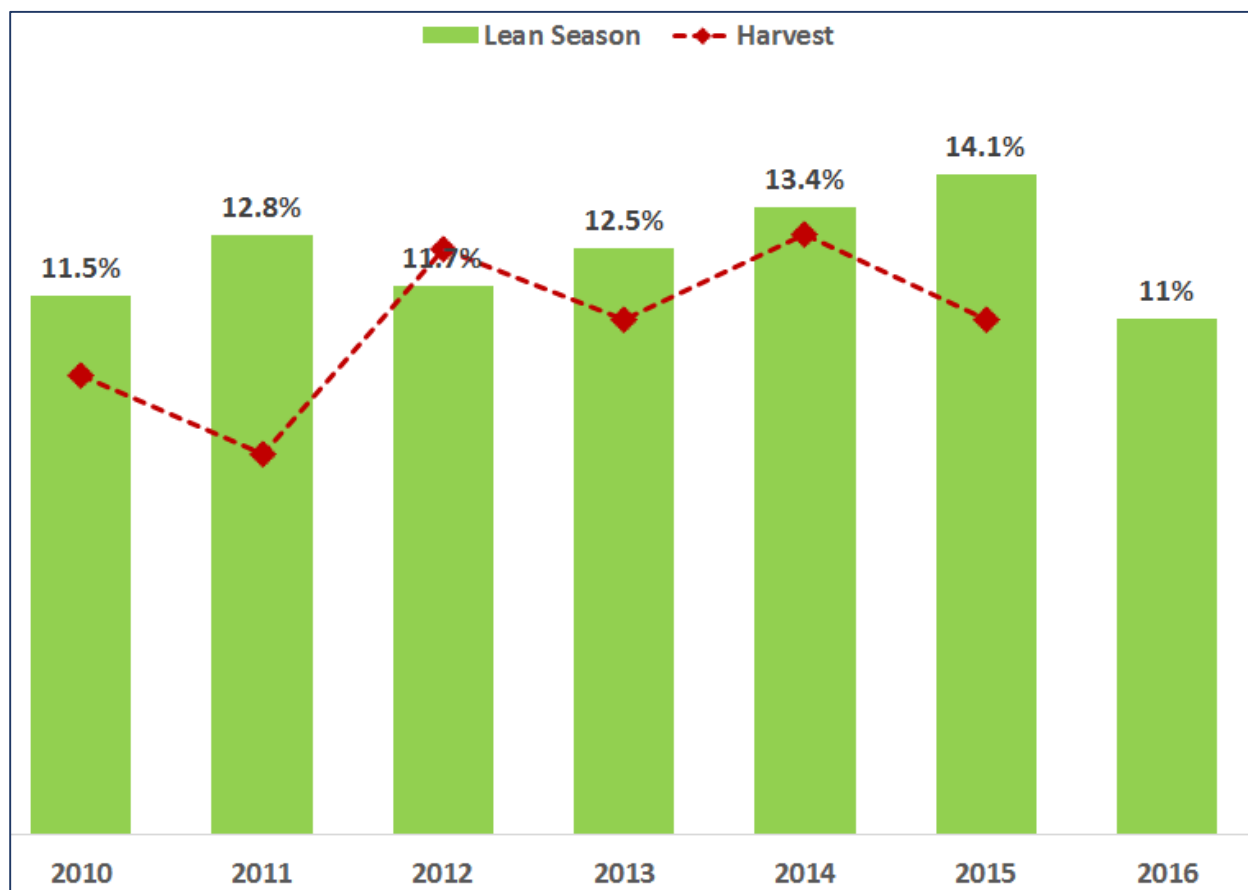


Figure 11-2: Lean season GAM prevalence in Karamoja (2010 – 2016)

ANNEX

Annex 1: 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 14-1**:

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 14-2**.

Table 04-0-1: 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 04-0-2: 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.

Annex 2: Plausibility checks

Abim

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 (0.6 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=1.000)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	4 (p=0.008)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (4)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (7)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (4)
Standard Dev WHZ .	Excl	SD	<1.1 and 0	<1.15 and 5	<1.20 and 10	>=1.20 or 20	0 (1.04)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.02)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.09)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=0.166)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	4 %

The overall score of this survey is 4 %, this is excellent.

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 (0.8 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.189)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.195)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (4)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (6)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (7)
Standard Dev WHZ .	Excl	SD	<1.1 and 0	<1.15 and 5	<1.20 and 10	>=1.20 or 20	5 (1.14)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.07)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.13)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	5 (p=0.000)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	10 %

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

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 (1.7 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.728)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	2 (p=0.088)
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	2 (11)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	2 (9)
Standard Dev WHZ .	Excl	SD	<1.1 and 0	<1.15 and 5	<1.20 and 10	>=1.20 or 20	0 (1.07)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.06)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.19)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=0.155)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	6 %

The overall score of this survey is 6 %, this is excellent.

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 (1.9 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.555)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	4 (p=0.001)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (4)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (6)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (7)
Standard Dev WHZ .	Excl	SD	<1.1 and 0	<1.15 and 5	<1.20 and 10	>=1.20 or 20	0 (1.09)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.05)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.03)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	3 (p=0.006)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	7 %

The overall score of this survey is 7 %, this is excellent.

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 (2.1 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.244)
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 (7)
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 0	<1.15 and 5	<1.20 and 10	>=1.20 or <=0.80 20	0 (1.08)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.04)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.03)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	3 (p=0.001)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	13 %

The overall score of this survey is 13 %, this is good.

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 (2.1 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.335)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	2 (p=0.077)
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	2 (10)
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 0	<1.15 and 5	<1.20 and 10	>=1.20 or 20	0 (1.02)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.03)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.14)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=0.342)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	4 %

The overall score of this survey is 4 %, this is excellent.

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 (2.1 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.904)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	2 (p=0.069)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (7)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (4)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (7)
Standard Dev WHZ .	Excl	SD	<1.1 and 0	<1.15 and 5	<1.20 and 10	>=1.20 or 20	0 (1.07)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.03)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	1 (-0.31)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	3 (p=0.001)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	6 %

The overall score of this survey is 6 %, this is excellent.