







# Nutrition Surveillance Karamoja Region, Uganda Round 8, May 2012

DHO-ACF AND UNICEF NUTRITION SURVEILLANCE REPORT MAY 2012



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### Summary of key findings

• Severe Acute Malnutrition (SAM) prevalence rates in all districts of Karamoja exceed the 2.0 %. The overall rate of SAM for Karamoja Region is 3.1% (2.3-4.1, 95% CI). Using probability calculators, the probability of SAM exceeding the 2.0% threshold in Karamoja was 99.8%.

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- **Global Acute Malnutrition (GAM)** in Karamoja region was 11.7 % (10.2-13.4 95% C.I). There was no significant difference in the prevalence rates between May 2011, 2010 and May 2012(P>0.05).
- Moroto/Napak had the highest rate of SAM 4.0% (2.2-7.5 95% CI) twice the emergency threshold.
- Amudat, Kotido and Nakapiripirit SAM rates are 3.3% (1.2-8.4 95% Cl), 3.6% (2.2-5.5 95% Cl) and 3.5% (2.0-6.2 95% Cl) respectively.
- Global Acute Malnutrition (GAM) prevalence can be seen to follow the seasonal trends in Karamoja with a prevalence of 11.7% (10.2- 13.4 95% CI) based on weight for height Z-scores (WHO Growth Standards 2006) in May 2012.
- **Nakapiripirit** recorded the highest rate of Global acute malnutrition in May 2012 with GAM 13.1% (9.7-17.5, 95% CI) Much as there is a significant decline in GAM rates in Nakapiripirit (p<0.05) compared to May 2011, the district remains above critical level with children 6-23 months being the most affected with GAM of 22.6% (17.4 -28.8 95 % CI) and SAM 7.5% (4.0 13.8 95% CI).
- Kotido also reported high malnutrition rates above critical thresholds with children 6 to 23 months 20.2 % (15.3-26.0 95% CI) and SAM of 5.6 %( 3.1-10.0 95% CI).
- GAM within the different Livelihood Zones of Karamoja was in Agricultural 12.0 % (9.4-14.4 95% CI), Pastoral 13.0% (10.3 -15.8 95% CI) and Agro pastoral reporting 9.6% (7.3-11.9 95% CI).
- Pastoralists had high rates of SAM 3.9%(2.2-5.6 95% Cl)
- The majority of children 6 to 23 months in Karamoja had unacceptable diet ranging from 71% in Amudat to 94% in Moroto/Napak and regional value at 82%
- Child morbidity two weeks prior to the survey was very high with **70.3% (67.6 -73.0 95% CI)** in Karamoja region.
- Among children that reported to have suffered from illness, **diarrhea** was very high in **Kotido** and **Kaabong** with **62.3%** (54.2-70.3 95% CI) and 60.1 %( 53.8 -66.3 95% CI) respectively.
- Across the region, purchasing was the main source of food at **49.0%** while cultivation stood at **41.5%**.
- Majority of **households (74.5%) in Karamoja** have severe food insecurity access and had to reduce the number of meals eaten in a day.
- The private pit latrine use in Karamoja was 26.5% while the utilization of bush remains high at 60.8%
- Borehole was the main source of water for majority of households at 84.3%







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# **1** Introduction

# 1.1.1 Background

Located in North Eastern Uganda, Karamoja region is divided in to seven administrative units (districts) that overlap into three main livelihood zones (agricultural, agro-pastoral and pastoral).

District population estimate are: Nakapiripirit  $-176,142^{1}$ ; Amudat  $-104,859^{-1}$ ; Moroto (including Napak)  $-322,057^{2}$ ; Kotido  $-170,738^{3}$ ; Kaabong  $-266,707^{4}$ ; and Abim  $-111,989^{-4}$ .

The eighth round of nutrition surveillance in Karamoja region was conducted between April 18<sup>th</sup> and May 12<sup>th</sup> 2012 in collaboration with District Health Offices (DHOs). The timing of the nutritional surveillance was slightly adjusted as compared to May 2011, to prevent an overlap with other priority health interventions in Karamoja region. Data was collected in two phases, south Karamoja (Nakapiripirit, Amudat and Moroto/Napak) and North Karamoja (Abim, Kaabong and Kotido). Data collection in southern Karamoja was completed in April while North Karamoja was covered in May.

The Objectives of the May 2012 round were:

- to monitor the nutrition status of children aged between 6 and 59 months,
- to identify rates of acute malnutrition among children aged between 6 to 59 months,
- to monitor health and morbidity, food security & livelihoods(FSL), and water, sanitation and hygiene (WaSH) factors linked to acute malnutrition,
- to collect data according to the seasonal calendar developed for Karamoja, three times a year in May, August/September and December,
- to build the capacity of district nutrition focal persons (DNFP) and health workers on implementing and running a nutrition surveillance system, and
- to strengthen DHOs skills to identify acute malnutrition trends, through the monitoring of aggravating factors of acute malnutrition, and contributing to the design of appropriate interventions accordingly.

# 1.2 Methodology

Household<sup>5</sup> was the **sampling unit** and the **sample size** was **480** for each district.

A **multi-stage cluster sampling** method was used to select the 480 households per district with 30 clusters of 16 households design.

For each given district, **villages' populations** were entered in ENA<sup>6</sup> software for random selection of clusters.

<sup>&</sup>lt;sup>1</sup> WFP 2009 village population data

<sup>2</sup> Samaritan Purse 2009 village population data

<sup>3</sup> Kotido district 2008 village population data

<sup>&</sup>lt;sup>4</sup> World Vision 2009 village population data

<sup>&</sup>lt;sup>5</sup> Household is identified as all people eating from the same pot

<sup>&</sup>lt;sup>6</sup> Emergency Nutrition Asessment

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For selected villages with more than 4 manyattas7, a ballot system was used to randomly select 4 manyattas and households assessed in each selected manyatta were distributed in proportion to population size (PPS).

In villages with 3 manyattas, households were selected from each manyatta in proportion to population sample (PPS). The bigger the manyatta, the more the number of households and the smaller the manyattas, the fewer the households to be assessed). For 2 manyattas in the village, PPS is used to select the households while villages with only one manyatta had all the 16 households selected from it.

In places with no manyatta settings, systematic random sampling was employed to select the households in this case, the households were listed and sampling interval was calculated. The first household was selected using simple ballot system then the subsequent households selected following a systematic random sampling method.

Nutrition security questionnaire was administered to all selected households and anthropometric measurements carried in households with children 6 – 59 months.

Data was entered in ENA for SMART (November 8th, 2011 version) to determine nutritional indicators of WHZ, WAZ and HAZ using WHO 2006 Growth Standards. Design weights were added to each district (total population divided by number of respondents) to perform a regional weighted analysis (with ENA for SMART). CDC Calculators using MS Excel 2007 were employed to perform probability testing to compare inter and intra-round results. NCHS 1977 reference is presented in order to compare earlier survey results with the current ones.

Data on children identified with flagged reference values for WHZ were checked, confirmed to be malnourished children identified/referred during the survey, and therefore analysis was run without exclusion.

# 2 Results

Across the region, a total of 2,843 out of 2,880 households were interviewed and 2,919 children 6 to 59 months were measured. **Table 1** summarises information on households interviewed, children measured, replaced households, absent households and missing children.

	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
Households interviewed	479	472	473	469	470	480	2,843
Children measured	484	431	460	534	529	481	2,919
Replaced households	0	0	0	0	0	0	0
Absent households	1	8	6	11	10	0	37
Missing children	5	0	0	7	0	2	14

Table 1: Information related to sample size, replaced/absent households and missing children

Regional gender ratio was 1.1:1, female to male respectively, this result identifies that boys and girls are represented equally through random selection. A high age ratio indicates an over representation of children more than 30 months. For Karamoja Region age ratio (6-29 months/30-59 months) was 1.38:1. The age ratios for the individual districts are shown in **Table 2**. Lack of documented birthdates

<sup>&</sup>lt;sup>7</sup> **Manyatta** is a cluster of traditional Tukul/ huts, which can accommodate up to 300 people individually and communally surrounded by barrier enclosure

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and poor parental recall of birthdays make age estimation challenging and as a consequence, taller/larger children are presumed to be older than 59 months and are excluded from the survey.

### Table 2: Age ratio for children 6-29/30-59 months per district

	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
Age Ratio (6-29 months/30- 59 months)	1.42	1.17	1.29	1.51	1.34	1.51	1.38

# 2.1 Anthropometry Indicators.

The overall global acute malnutrition (GAM) in the Karamoja region was **11.7**% (10.2-13.4 95% CI) and severe acute malnutrition **SAM 3.1%** (2.3 - 4.1 95% CI) based on weight for height Z-scores (WHO 2006 Growth Standards).

Nakapiripirit showed a higher prevalence of GAM 13.1% (9.5-17.5, 95% CI) while Moroto/Napak showed a higher prevalence of SAM 4.0% (2.2-7.1 95% CI).

### Table 3: W/H–Z (wasting) among children 6 to 59 month per district, WHO 2006 Growth Standards

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
<b>GAM</b> W/H <-2 Z-score and/or oedema	<b>9.4%</b> (6.2-13.9)	<b>11.9%</b> (7.6-18.0)	<b>11.6%</b> (7.9-16.6)	<b>13.1%</b> (10.6-16.2)	<b>11.0%</b> (8.2-14.6)	<b>13.1%</b> (9.7-17.5)	<b>11.7%</b> (10.2-13.4)
<b>SAM</b> W/H < -3 z and/or oedema	<b>2.1%</b> (0.7- 6.0)	<b>3.3%</b> (1.2- 8.4)	<b>2.0%</b> (0.9- 4.2)	<b>3.6%</b> (2.3- 5.4)	<b>4.0%</b> (2.2- 7.1)	<b>3.5%</b> (2.0- 6.2)	<b>3.1%</b> (2.3- 4.1)

### Table 4: Mean Weight-for-height Z-score by district

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
May -12	-0.58	-0.82	-0.86	-0.83	-0.83	-0.83	-0.79

CDC probability calculator was then used to establish the chance of exceeding the 2% threshold for SAM in each district (Table 4 below)

### Table 5: Probability of SAM exceeding 2.0% threshold

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
SAM	54.5%	88.0%	50.0%	99.3%	99.6%	96.7%	99.8%

Age analysis was conducted to establish children which are most affected per district. Children 6 to 23 months were most affected in all districts except Kaabong as shown below.



### Table 6: W/H – Z (wasting) among 6 to 23 month old children per district, WHO 2006 Growth Standards

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
<b>GAM</b> W/H < -2 z and/or oedema	<b>12.3%</b> ( 8.1-18.4)	<b>14.0%</b> ( 8.8-21.7)	<b>10.2%</b> ( 6.5-15.7)	<b>20.5%</b> (158-26.2)	<b>13.8%</b> ( 9.3-20.0)	<b>22.6%</b> (17.4-28.8)	<b>15.1%</b> (13.2-17.2)
<b>SAM</b> W/H < -3 z and/or oedema	<b>2.6%</b> ( 0.6-10.3)	<b>2.2%</b> ( 0.7- 7.3)	<b>1.1%</b> ( 0.3- 4.4)	<b>5.6%</b> (3.1-9.8)	<b>5.2%</b> ( 2.5-10.3)	<b>7.5%</b> ( 4.0-13.8)	<b>4.4%</b> ( 3.1- 6.1)

### Table 7: W/H – Z (wasting) among 24 to 59 month old children per district, WHO 2006 Growth

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/ Napak	Nakapiripirit	Karamoja
<b>GAM</b> W/H < -2 z and/or oedema	<b>6.7%</b> (3.6-12.2)	<b>10.3%</b> (6.0-17.2)	<b>12.5%</b> (7.8-19.5)	<b>7.4%</b> (5.0-10.7)	<b>8.8%</b> (5.9-13.0)	<b>6.4%</b> (3.5-11.5)	<b>9.1%</b> (7.3-11.2 )
<b>SAM</b> W/H < -3 z and/or oedema	<b>1.6%</b> (0.6- 4.1)	<b>0.8%</b> (0.2- 3.3)	<b>2.6%</b> (1.0- 6.4)	<b>2.0%</b> (0.9- 4.2)	<b>3.1%</b> (1.2- 7.8)	<b>0.7%</b> (0.2- 2.9)	<b>2.1%</b> (1.4- 3.2)

# Table 8: H/A-Z (Stunting) and W/A-Z (Underweight) among children 6 to 59 month per district, WHO 2006 Growth Standards

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
<b>Stunting</b> H/A<-2 Z-score	<b>29.2%</b> (23.1-36.1)	<b>22.6%</b> (17.9-28.1)	<b>22.7%</b> (16.7-30.0)	<b>39.0%</b> (34.7-43.5)	<b>43.4%</b> (38.6-48.3)	<b>34.4%</b> (28.8-40.4)	<b>32.4%</b> (30.6-34.3)
<b>Underweight</b> W/A<-2 Z- score	<b>17.3%</b> (13.8-21.5)	<b>17.7%</b> (14.0-22.0)	<b>21.2%</b> (16.5-26.8)	<b>31.8%</b> (27.2-36.7)	<b>33.9%</b> (28.5-39.8)	<b>28.5%</b> (22.5-35.5)	<b>25.5%</b> (23.6-27.4)

### Table 9: MUAC Results of Children per district

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
GAM	7.3%	2.6%	5.0%	10.3%	12.7%	11.9%	8.5%
(<125 mm)	( 5.2-10.1)	(1.5- 4.3)	(3.0- 8.4)	(7.0-15.0)	(8.5-18.5)	(8.3-16.7)	(7.0-10.3)
SAM	0.6%	0.5%	0.7%	2.6%	1.7%	1.7%	1.3%
(<115 mm)	(0.2- 2.0)	(0.1- 1.9)	(0.1- 2.9)	(1.4- 4.9)	(0.7- 4.1)	(0.7- 4.0)	(0.9- 2.0)

Classification of malnutrition categorized by interpretation levels shown in Table 10 are based on the following<sup>8</sup>

- Wasting (GAM): Acceptable (0-5%) / Poor (5%-9%) / Serious (10%-14%) / Critical (≥15%);
- Stunting: Low (less than 20%) / Medium (20%-29%) / High (30%-39%) / Very High (≥ 40%);
- Underweight: Low (<10%) / Medium (10%-19%) / High (20%-29%) / Very High (≥ 30%).

### Table 10: GAM expressed according to the WHO classification of malnutrition prevalence

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
Wasting	Poor	Serious	Serious	Serious	Serious	Serious	Serious
Stunting	Medium	Medium	Medium	High	Very High	High	High
Underweight	Medium	Medium	High	Very High	Very High	High	High

<sup>8</sup>WHO. 1995 The management of nutrition in major emergencies

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# 2.1.1 Trend analysis of GAM and SAM rates in the region.

### Trend analysis of GAM

Compared to May 2011, there was no significant change (p>0.05) in the GAM rates for the region, however, a slight reduction was registered in the entire region from 12.8% (11.0-14.9) to 11.7% (10.2-13.4), the highest reduction was noted in Nakapiripirit from 20.4% to 13.1% (p<0.05) for the same time as 2011.

Compared to December 2011, there was a general increase in the GAM rates from 8.1% to 11.7% within all districts registering sharp increments except Moroto/Napak which increased from 10.9% to 11.0% (p>0.05).

All districts with the exception of Abim reported serious levels of GAM according to WHO thresholds (Table 11). The increase of GAM in Karamoja is a 'usual' trend for Karamoja for this time of the year. This usual trend, while repeating should not be misunderstood as being acceptable for Karamoja and calls for a reinforcement of already established programs to deal with the expected increase in malnutrition cases for this time of the year. Moroto district continues to show chronically serious prevalence rates of acute malnutrition regardless of the timing of surveillance, showing that emphasis on nutrition related programs should be reinforced throughout the year until prevalence rates of GAM come more closely aligned with other districts in the region.

GAM	Abim	Amudat	Kaabong	Kotido	Moroto Napak	Nakapiripirit	Karamoja
May 12	9.4%	11.9%	11.6%	13.1%	11.0%	13.1%	11.7%
IVIAY-12	(6.2-13.9)	(7.6-18.0)	(7.9-16.6)	(10.6-16.2)	(8.2-14.6)	(9.7-17.5)	(10.2-13.4)
Dec 11	6.3%	7.0%	8.4%	6.8%	10.9%	9.2%	8.1%
Dec-11	(4.0-9.6)	(4.4-11.0)	(6.2-11.4)	(4.8-9.6)	(8.2-14.4)	(6.2-13.3)	(6.9-9.5)
May 11	8.6%	11.9%	8.5%	14.1%	13.3%	20.4%	12.8%
IVIAY-11	(5.7-12.7)	(7.9-17.7)	(5.8-12.3)	(10.5-18.6)	(8.9-19.3)	(16.0-25.6)	(11.0-14.9)
Dec 10	7.4%	8.5%	7.5%	6.9%	16.3%	12.3%	9.8%
Dec-10	(4.3-12.2)	(5.7-12.4)	(4.9-11.2)	(4.3-10.8 <b>)</b>	(11.8-22.1)	(8.4-17.8)	(8.6-11.2 <b>)</b>
May 10	8.9%		13.0	10.4%	15.8%	9.4%	11.5%
Iviay-10	(4.9-154)		(9.8-18.2)	(7.1-15.6)	(9.3-25.4)	(6.6-13.1)	(9.9-13.5)
	6.5%		6.3%	9.8%	11.6%	12.3%	9.1%
Dec-09	(3.1-12.1)		(4.3-9.0)	(7.1-13.4)	(7.0-16.7)	(8.2-19.1)	(7.6-11.0)

### Table 11: Table showing trend analysis of GAM

### 2.1.2 **SAM** rates in the region.

The month of May 2012 registered an overall increase in the rates of SAM within the entire region to **3.1%** (2.3-4.1 95%CI), with prevalence rates of SAM exceeding 2%. Moroto/Napak registered the highest prevalence at 4.0% (2.2-7.1 95% C.I) while the lowest was recorded in Kaabong at 2.0% (0.9-4.2 95% C.I). Compared to May last year, there was a significant increase in SAM from 1.0%(0.2 - 4.4 95% C.I) to 4.0%(2.2-7.4 95% C.I) with (p< 0.05) in Moroto while Nakapiripirit registered a reduction from 5.6%(3.5-6.9 95% C.I) to 3.5%(2.0-6.2 95% C.I) although remaining at alarming levels (Table 11).

Since May 2010 there has been an increasing trend in the prevalence of SAM within Karamoja region, even while there have been fluctuations at the district level. The proportion of severely malnourished children in Karamoja has increased from 20% to 26% of all malnourished children. The increasing trend in the proportion of children with SAM shows that 'safety nets' established to prevent a deterioration of nutritional status in children are currently not adequately addressing the high numbers of children identified with nutritional needs.



GAM	Abim	Amudat	Kaabong	Kotido	Moroto Napak	Nakapiripirit	Karamoja
May-12	2.1%	3.3%	2.0%	3.6%	4.0%	3.5%	3.1%
Ividy-12	( 0.7- 6.0)	( 1.2- 8.4)	( 0.9- 4.2)	( 2.3- 5.5)	( 2.2- 7.1)	( 2.0- 6.2)	( 2.3- 4.1)
Dec 11	1.1%	0.9%	2.3%	1.8%	2.5%	1.4%	1.7%
Dec-11	(0.5-2.6)	(0.3-2.3)	(1.4-4.0)	(0.9-3.5)	(1.4-4.2)	(0.5-3.8)	(1.3-2.3)
May 11	2.3%	2.3%	3.0%	2.3%	1.0%	5.6%	2.8%
IVIDY-11	(1.0-5.0)	(1.3-4.3)	(1.5-5.7)	(0.8-5.9)	(0.2-4.4)	(3.5-6.9)	(2.1-3.9)
Dec 10	1.0%	1.7%	1.4%	1.6%	2.9%	1.7%	1.7%
Dec-10	(0.2-4.4)	(0.7-3.9)	(0.4-4.6)	(0.7-3.6)	(1.3-6.2)	(0.7-3. <b>9)</b>	(1.2-2.4)
May 10	2.3%		1.4%	1.8%	4.7%	1.4%	2.3%
Iviay-10	(1.0-5.0)		(0.4-4.5)	(0.8-3.7)	(3.0-7.4)	(0.5-3.6)	(1.7-3.1)
	1.4%		0.9%	2.9%	2.0%	1.9%	1.8%
Dec-09	(0.3-5.9)		(0.3-2.7)	(1.5-5.5)	(0.7-5.9)	(0.7-5.3)	(1.2-2.8)

### Table 12: Trends of SAM by district from May 2011 to May 2012

# 2.1.3 Nutrition indicators by livelihood zones

In order to give a more comprehensive understanding of malnutrition across Karamoja, nutritional indicators for each of the identified livelihood zones are presented.

Rates in agro-pastoral livelihood zone remain "poor" as per the WHO classification of acute malnutrition while serious in Agricultural and pastoral zones respectively.

GAM and SAM rates within the livelihood zones reflect those at the district and regional level, with all districts reporting >2% SAM.

May 2012 showed that for the first time Pastoralist communities have the highest prevalence of SAM between the livelihoods for this period of the yea as shown in **Table 13** below:.

### Table 13: Acute Malnutrition (wasting) by Livelihood Zones, WHO 2006 Standards

Indicator	AGRICULTURAL	AGRO-PASTORAL	PASTORAL
GAM	12.0%	9.6%	13.1%
W/H< -2 z and/or oedema	(9.3-14.6)	(7.3-11.9)	(10.3-15.9)
SAM	2.6%	2.3%	3.9%
W/H < -3 z and/or oedema	(1.1-4.0)	(1.3-3.3)	(2.2-5.6)

### Table 14: Stunting and underweight weighted analysis by livelihood zones, WHO 2006 standards

Indicator	AGRICULTURAL	AGRO-PASTORAL	PASTORAL
Stunting	31.0%	33.4%	30.7%
H/A< -2 z	(26.9-35.0)	(29.0-29.5)	(26.4-31.2)
Underweight	19.8%	25.7%	27.2%
W/A< -2 z	(16.5-23.1)	(117.4-26.3)	(23.3-31.2)



# 2.1.4 National Centre for Health Statistics

In order to be able to compare data from nutrition surveys conducted in previous years, each surveillance round of data collection provides rates of GAM and SAM in NCHS, 1977 reference as shown in the table below.

### Table 15: Acute Malnutrition (wasting), NCHS Reference per District

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napa	Nakapiripirit
Global Acute Malnutrition	11.6%	11.9%	10.0%	11.6%	11.2%	13.5%
W/H< -2 z and/or oedema	(7.1-15.5)	(7.8-17.6)	(6.8-14.6)	(8.7-15.4)	(7.7-15.9)	(10.1-17.8)
Severe Acute Malnutrition	1.0%	1.5%	1.3%	2.4%	1.4%	1.5%
W/H < -3 z and/or oedema	(0.3-3.9)	(0.7-2.8)	(0.5-3.7)	(1.3-4.4)	(0.5-3.8)	(0.7-2.8)
Global Acute Malnutrition	6.0%	7.2%	5.5%	7.9%	7.4%	8.8%
W/H < 80% and/or oedema	(3.2-11.2)	(4.3-11.8)	(3.3-8.8)	(6.1-10.1)	(5.2-10.4)	(6.1-12.5)
Severe Acute Malnutrition W/H < 70% and/or oedema	<b>0.6%</b> (0.2-1.9)	<b>0.2%</b> (0.0-1.8)	<b>1.3%</b> (0.5-3.7)	<b>1.5%</b> (0.6-3.8)	<b>0.8%</b> (0.3-2.0)	<b>1.3%</b> (0.6-2.6)

# 2.2 Health Indicators

Child morbidity 2 weeks prior to the surveillance round remained high across the region at 70.3 % (67.6 -73.0 95% CI) in April/May. All districts recorded child morbidity rates higher than 70.0% with exception of Amudat which had 56.6% (**Table 16**).

### Table 16: Rates of illness among 6 to 59 month children (2 weeks prior the survey)

	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Karamoja
Illness	72.9%	56.6%	72.6%	72.7%	72.8%	72.3%	70.3%
	(68.2-77.7)	(48.4-64.8)	(67.1-78.1)	(65.5-79.8)	(68.0-77.6)	(65.8-78.9)	(67.6-73.0)

### Table 17: Rates of diarrhoea among 6 to 59 month children (2 weeks prior to survey)

Illness	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Karamoja
Diamhaaa	44.8%	54.9%	62.3%	60.1%	47.8%	58.3%	54.6%
Diarrioea	(38.5-51.1)	(43.6-66.2)	(54.2-70.3)	(53.8-66.3)	(39.2-56.4)	(60.1-66.6)	51.2-58.0)

### Table 18: Rates of malaria among 6 to 59 month children (2 weeks prior to survey)

Illness	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Karamoja
Malaria	49.6%	52.9%	63.8%	60.1%	54.3%	58.9%	56.7%
Ivialalla	(44.3-54.9)	(43.9-62.0)	(55.8-71.7)	(52.7-67.4)	(47.5-61.1)	(52.5-65.3)	(53.7-59.8)



Table 19. Occurrence of ARI amon	7 6- to 59-month children	(in the nast 2 weeks prior to s	(Irvev)
Table 13. Occurrence of AM amon	5 0- to 55-month think en	1 (iii) the past 2 weeks prior to so	JIVCYJ

Illness	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Karamoja
	66.3%	44.7%	53.6%	69.3%	57.1%	60.1%	59.5%
ARI	(59.0-73.6)	(36.6-52.7)	(44.4-62.8)	(63.9-74.8)	(49.6-64.7)	(51.1-69.0)	(56.1-62.8)

Of those children that reported illness, acute respiratory infections (ARI) was the most frequently reported childhood infection **(Table 19)** followed closely by malaria (**Table 18**) above.

Child morbidity was very high in agricultural and pastoral zones as shown below (Table **19 below**)

Table 20: Occurrence of illness among 6 to 59-month childre	en per livelihood (2 weeks prior to survey)

	AGRICULTURAL	AGROSPASTORAL	PASTORAL
	72.7%	67.3%	70.7%
Illness	(68.8 - 76.7)	(62.5-72.2)	(65.8-75.7)

# 2.3 Childhood Nutrition

# 2.3.1 Child meal

The number of meals eaten by children 6-23 months in 24 hours preceding the nutrition surveillance was assessed to identify whether children are receiving adequate number of meals per day. Children 6-23 months should receive 4 or more meals to provide frequent and adequate food input during this time of rapid growth. Results showed that across the region children mainly consumed two meals/ day, with exception of Abim and Amudat where 53.2% and 67.9% of 6 to 23 months' children were fed three meals per day. Moroto/Napak continued to show low meal frequency for children, where 17.9% of children had only one meal per day. Nakapiripirit improved on the number of meals consumed by children per day, with the majority now having 2 meals per day, an increase from 38.0% to 56.3 % was registered in Nakapiripirit but still falls below the infant and young child feeding recommendations of 3 meals per day

### Table 21: Meal Frequency for children 6-23 months for previous 24 hours

Meals	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
0 meals	0.9%	0.0%	1.1%	0.9%	3.0%	0.0%	1.0%
1 meal/day	12.3%	0.6%	2.2%	7.7%	17.2%	6.5%	8.3%
2 meals/day	32.2%	7.3%	47.8%	35.0%	44.4%	56.3%	37.6%
3 meals/day	42.3%	68.0%	33.3%	38.9%	23.3%	33.7%	39.1%
4 or more meals/day	12.3%	24.2%	15.6%	14.2%	10.9%	3.5%	13.2%

Across the livelihood zone, more children in the Pastoral and agro pastoral zone consumed three meals and above, in pastoral and Agro pastoral communities, 42.5% and 40.1% of the children respectively were found to have consumed at least three meals in the past 24 hours. More children in the agricultural livelihood zone (42.0%) were reported to have consumed mainly 2 meals a day





Figure 1: Meal Frequency of children 6-23 months



# 2.3.2 Individual Dietary Diversity Score (IDDS) and Food group consumption by 6-23 months children

The calculation of IDDS for children 6-23 months is based on food groups (Grains/cereals, legume/pulses, Organ meat/meat, eggs, milk and dairy products, Vitamin A rich fruit and vegetables, and other fruit and vegetables). The children aged between 6 to 23 months in Karamoja were identified with having a low dietary diversity with the mean number of food groups consumed for the region being 2.8. Most children in Karamoja have low protein intake from animal sources with only 29.1% of children 6-23 months consuming milk, and fewer children consuming meat and eggs, 12.7% and 4.9%, respectively. The main source of protein (45.3%) came from beans. All districts had low IDDS for children 6-23 months, while Kaabong, Kotido and Moroto was identified with having the lowest IDDS score average of 2.7, 2.8 and 2.3 respectively. The table below summarizes the IDDS classification across the entire region. Throughout Karamoja, The majority of children have unacceptable food intake as seen in the table below.

### Table 22: IDDS for children aged 6-23 months for Karamoja.

IDDS	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit
Poor (≤4)	67.4%	68.7%	81.6%	78.6%	89.8%	63.8%
Acceptable (>4)	32.6%	31.3%	18.4%	21.4%	10.2%	36.2%

Children 6-23 months were mainly fed on foods from cereal origin; with 92.9 % of children consuming grain products in the past 24 hours. The graph (**Figure 2**) below shows the foods consumed throughout Karamoja in May 2012 amongst children 6-23months.





Figure 2: Dietary Diversity of children 6-23 months by district

To better understand whether children are being fed appropriately in Karamoja, calculations using a combination of dietary diversity and child meals is used. The resulting calculation shows per district the proportion of children age 6 to 23 months who are receiving an acceptable diet according to UNICEF guidelines. An acceptable diet for children 6-23 months consists of a child being fed at least 3 times a day and receiving 4 of the food groups as described above in the individual dietary diversity for children 6-23 months. In all districts it is identified that a large percentage of children are not receiving what is considered to be an acceptable diet for this age group. Unacceptable child feeding practices add to increased rates of malnutrition both acute and chronic malnutrition.

Since December the percentage of children receiving acceptable meals has decreased in Abim, Amudat, Moroto/Napak. Nakapiripirit has remained relatively stable and Kaabong and Kotido have improved with increases in children receiving acceptable meals

		Abim	Amudat	Kaabong	Kotido	Moroto Napak	Nakapiripiri t	Karamoja
May-	Acceptable diet Unacceptable	23%	29%	15%	16%	6%	21%	18%
12	diet	77%	71%	85%	84%	94%	79%	82%
Dec-11	Acceptable diet	28.5%	36.2%	7.5%	6.0%	11.6%	22.4%	17.0%
	Unacceptable diet	71.5%	63.8%	92.5%	94.0%	88.4%	77.6%	83.0%





# 2.4 Food Security Indicators

# 2.4.1 Main Food source

In May 2012, the regional findings show that purchasing was main source of food (49%) closely followed by cultivation at 41.5%. Food aid and hunting or gathering accounted for 2.6% each while borrowing contributed 2%, barter 0.6% and others 1.7%.

Purchasing was high in the districts of Nakapiripirit (67.3%), Moroto (66.0%) and Amudat (61.2%) with a decline in cultivation as main source of food. These findings follow similar pattern of May 2011. In comparison to other districts in the region, Abim had the majority of households depending entirely on cultivation (78.9%). In comparison to May 2011, there was an overall increase in cultivation in the districts of Amudat (24.7% to 37.7%), Kotido (2.7% to 35.6%) and Nakapiripirit (11.0% to 29.2%) while a slight decrease was noted in Moroto from 14.6% to 11.9%.

According to ACF Food security market price surveys, there has been an overall increase in the price of staples in Moroto and Kaabong

# 2.4.2 Main source of Household Income

Charcoal and firewood sale was the main source of income in the region at 29.2% in May 2012 and although this scored highest, there is a decrease as reported in the previous December 2011 survey where charcoal and firewood production and selling were at 32.4%.

Cash for work came second at 20.6% as a means in which households obtained income, selling brew at 18.2% and selling livestock at 10%.



### Figure 3: Household Income Source by District

### 2.4.3 Main Household Expenditure

In the region, a substantial amount of household income was spent on food (61.1%) with Moroto at 80.9%, Nakapiripirit 75.6%, Amudat 59%, Kotido 55.1% and Abim at 47.9%.

The rest of the Household income was spent on Health (14.8%), Education (14.4%) and others (9.6%) as illustrated by the graph below.

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Figure 4: Household expenditure by District



# 2.4.4 Household Food Consumption Score

At the regional level, there were no marked changes in the Household Food Composition Scores (FCS) in May 2012 with the proportion of households having poor food consumption score remaining at 8.2 % as that of December 2011. Similarly, the proportion of acceptable FCS households slightly increased from 58.4% to 59%. It was only Abim (54.9%), Kaabong (52.9%) and Kotido (57.3%) that recorded an improvement in the proportion of households with acceptable FCS in May 2012 in relation to December 2011.

A rise in mean FCS was noted in Kaabong and Kotido. This can be explained by the increase in the proportion of households that fell in the acceptable level from Dec 2011 to May 2012 (Kaabong: 39% - 52.9%, Kotido: 35.6% - 57.3%) and a decrease in the households that had poor FCS in December 2011 from 20.4% to 10.7% and 12% to 9.3% respectively.

Recent research by the International Food Policy Research Institute (IFPRI) attempted to validate the use of the FCS for classifying household food security status, based on survey data from three countries – Burundi, Haiti and Sri Lanka.

The study found the usefulness of the dietary diversity and food frequency indicators encouraging. There are positive and statistically significant associations with calorie consumption per capita, particularly when small quantities are excluded from food frequencies. However, the cut-off points currently used by WFP to define poor, borderline and adequate food consumption groups correspond with energy intake that is considerably below the usual average 2,100 kcal/capita/day benchmark used to define undernourishment. Hence, the poor food consumption group corresponds with extreme undernourishment, and some households in the acceptable food consumption group.<sup>9</sup>

<sup>9</sup> WFP 2009 Emergency Food Security Assessment Handbook DHO/ACF Nutritional Surveillance Report May 2012





Figure 5: Food Consumption Classification by District



# 2.4.5 Trends in Food Consumption Score

Since May 2011, there has been an increase in the overall Food Consumption score for Karamoja, The region shown improvement moving from borderline food consumption in May 2011 to the acceptable level of food consumption in May 2012. To be able to explain the increase in the Food Consumption Score, May 2011 has seen slight increases number of days in the consumption of cereals, meat, beans and milk throughout the region, increasing the overall food consumption score. Table 24: Food Consumption Score by District

### Table 25: Food Consumption Score by District by Round

					Moroto		
Surveillance Round	Abim	Amudat	Kaabong	Kotido	Napak	Nakapiripirit	Karamoja
May-12	38.8	50.5	38.6	42	31.7	45.5	41.2
Dec-11	41	56.7	33.2	33.5	34.5	50.8	41.6
Sep-11	39.6	31.2	44	30.7	44.2	36.7	37.7
May-11	35.8	42.8	38.9	24.7	23.5	39.8	34.3

All livelihood zones in Karamoja also showed an increase in the food consumption score. Pastoralists have increased their food consumption from a borderline level to an acceptable level since May 2011.

Table 26: Fo	od consumption se	core by Livelihood

Surveillance Round	Agricultural	Agro-pastoral	Pastoral
May-12	40.0	39.7	43.6
Dec-11	42.1	41.1	41.6
Sep-11	41.2	38.1	34.0
May-11	37.1	33.4	32.3



Figure 6: Food Consumption Classification by Livelihood Zones



# 2.4.6 Household Dietary Diversity Score (HDDS)

In May 2012, the highest proportion (38.8%) of households in Karamoja fell within medium classification of HDDS. However, in comparison with December 2011 the proportion of households with low HDDS increased from 20.2% to 37.0%, predominantly this increase was because of the decrease in the proportion of households with a medium HDDS decreasing.

The mean HDDS for Moroto has greatly declined from 5.2 in Dec-11 to 3.0 in May 2012 because the proportion of households falling into the low category increased to 72.8% from 34.5% in Dec-11.

HDDS (%)	Abim	Amudat	Kaabong	Kotido	Moroto Napak	Nakapiripirit	Karamoja
Low (≤3)	39.0	10.8	47.6	30.1	72.1	22.5	37.0
Medium (4-5)	44.9	42.8	30.2	42.2	23.2	49.0	38.8
High (≥6)	16.1	46.4	22.2	27.7	4.7	28.5	24.3
Mean HDDS	4.1	5.6	4.1	4.7	3.0	4.8	4.3

### Table 27: HDDS per Districts in Karamoja

### Food groups consumed by Households in the past 24 hours

Overall there were no significant changes in the consumption patterns of households in Karamoja since December 2011. More than 96% of households consumed cereals as their primary food type. Vegetables were consumed by 79.9% of households in the previous 24 hours. There was a slight increase in the consumption of meat from December to May with 21.89% of households consuming meat in May, with only 13.9% in December 2011.





Figure 7: Household food groups consumed in 24 hours prior to survey

# 2.4.7 Household Food Insecurity Access Scale

House hold food insecurity access scale (HFIAS) was used to assess to what extent households had difficulty accessing food over the previous 4 weeks<sup>10</sup>. Households were asked to recall the number of times that they had to implement coping mechanisms in the previous 4 weeks and their level of concern that this was felt within the house. Using the responses from households, standardized calculation were used to assess whether households were food secure, had mild food access insecurity, moderate food security access or severe food security access in the previous 4 weeks.

Households were asked if in the past four weeks prior to the survey they had faced any of the nine situations in the HFIAS. The responses were never experienced, rarely, sometimes or often. Moderately food insecure household eat a monotonous diet or undesirable food and has started to reduce the required size or number of meals. A house with severe food access insecurity is required to reduce the number of meals, food size and has run out of food, going to bed hungry or going whole day and night without eating.

Overall, in the past 4 weeks **76.5%** of households throughout Karamoja had severe food insecurity access, with only 2.7% of household being reported as being food secure.

The outcome indicates majority of households ranging from 66.4% in Abim to 80.9% in Moroto having severe food access insecurity. The graph below summarizes the state of districts in the region.

<sup>&</sup>lt;sup>10</sup> HFIAS indicator guide V3 Food and Nutrition Technical Assistance August 2007 DHO/ACF Nutritional Surveillance Report May 2012







# 2.5 Water, Sanitation and Hygiene (WASH) Indicators

# 2.5.1 **Primary water sources**

In May 2012, Borehole still remained the main source of drinking water in Karamoja ranging from 61.1% in Kaabong to 96.6% in Moroto. Other water sources in the region included; seasonal streams/ponds, unprotected well/spring, protected well/spring, swamp water, and pans. The percentage of households accessing water from unsafe sources like seasonal streams was highest in Kaabong at 12.9%; his is due to rains at the time of the survey. Nakapiripirit registered an increase of households accessing borehole water from 68.8% in May 2011 to 82.6% in May 2012. The districts of Kaabong and Kotido showed a decline in borehole usage between December 2011 and May 2012. Other water sources like windmill and rain water were also recorded at a small percentage in the region as seen in the figure below especially in Kotido.



Figure 9: Primary Water Source by District



# 2.5.2 Time to water source

Distance is one of the main factors to water accessibility and has links to child care practices. Where households need to spend an extended period of time collecting water, water is used primarily for consumption rather than hygiene. Additionally, transport and storage of water in multi-purpose containers allows for contaminants to reduce the possibility of water increasing the risk of water borne disease, such as diarrheal disease.

During the surveillance round, the time that households took to reach the main water sources was assessed. The districts of Nakapiripirit, Moroto/Napak, Kotido and Abim had a greater majority of respondents spending less than 15 minutes to reach their main water sources. However, a majority of respondents in Amudat and Kaabong spent between 15 to 60 minutes walking to the water points at 69.9% and 64.7% respectively. Kaabong was the most affected in terms of distances moved with over 48.8% of households spending more than 60 minutes to access their main water sources.





Figure 10: Time taken to fetch water per District (minutes)



# 2.5.3 Hand Washing Practices

In December 2011, it was noted that majority of people in Karamoja washed hands with water only (73.8%). in May 2012 households were asked about hand washing practices regardless whether soap was used or not. The findings show that hand washing was mainly practiced before eating food which accounted for up to 82.1% on average across the region. Abim District had the highest number of people washing hands after defecation (93.3%) while Kotido district had the lowest number of respondents washing hands after defecation (46.9%)



Figure 11: Hand washing practices by district

Most of the households continue to use the bush as their means of human waste disposal across Karamoja region at (60.8%). Abim (51.3%) and Kaabong (40.8%) continue to show the highest use of

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private pit latrines. Amudat and Nakapiripirit districts had the highest number of people using the Bush for human waste disposal, at 87.1% and 79.6% respectively. There was an increase in private pit latrine use in Moroto from 5.1% in May 2011 to 18.1% in May 2012.



Figure 12: Means of human waste disposal per district

# 3 Conclusions

# Nutrition and Health

Malnutrition remains a serious public health problem in Karamoja with GAM rates exceeding 10% in all districts, except Abim. The mean regional GAM for Karamoja was 11.7% (10.2-13.4 95% CI). This was slightly higher than that recorded in December 2011 (8.1%), however, trend analysis showed no significant difference in the GAM rates registered for the same period in 2011 and 2010 at 12.8% and 11.5% respectively(p>0.05).

The SAM rate for Karamoja is 3.1% (2.3-4.1 95% CI). While this accounts for a significant number of children, the major concern is the increasing proportion of SAM children as compared with all children with acute malnutrition. There is an increasing trend in the proportion of children with SAM from 20% of all malnourished children in May 2010 to 26% in May 2012. In really numbers, estimate figures show 470 children in Abim, 692 in Amudat, 1066 in Kaabong, 1067 in Kotido, 1229 in Moroto/Napak and in 1233 Nakapiripirit are severely malnourished, making a total of 7268 children in Karamoja. These children require immediate nutritional treatment to ensure that the damage already done and the risk of child mortality because of severe malnutrition are mitigated.

Child morbidity among children 6-59 months was at 70.3% in the region with the most prevalent illness being ARI at 59.5%, With a moderate relationship between diarrhea and children's weight-for-height in the districts of Moroto and Nakapiripirit at r = -0.437 and r = -0.430 respectively. The coefficient for May 2012 was stronger than May 2011 in these two districts. Concerted efforts by health services need to continue to educate the population on childhood diarrhea and early treatment







# 3.2 Child Feeding

Child feeding practices have remained poor with nearly half (47.4%) of the children between 6-23months having less than 3 meals a day, and despite 53.6% of the other children affording to take three or more meals a day, the quality of the food taken remains insufficient. In the current round of surveillance it was noted that the most consumed food group among children of 6-23 months was cereals ranging from 89.4% in Amudat to 99.8% in Kaabong. Consumption of rich protein foods among the children remains poor with the exception of milk in Amudat which was recorded at 80.6%. Abim recorded milk consumption at only 6.6%. Overall meat consumption in the region as low as 12.7% in the entire region. The IDDS showed 63.8% of the children consuming less than 3 food varieties in the previous 24 hours.

# 3.3 Food Security

The purchase of household food continues to be the major source of food in the region at 49.0% for the May period in the year and in comparison to May last year, there was slight difference from 54.8% to 49.0%. During this time of the year most of the households have depleted food reserves hence more reliance on purchasing of food. Compounding this problem is the steady increase in food prices during this period of the year, placing additional hardship on poor households

Despite an indication that most of the households in the region lay more in the acceptable category 59.2% for food consumption, access to food at the household level remain serious with only 2.57% of households being food secure and 76.5% of households having serious access problems to food.

Selling of charcoal/Firewood remained the main income source in the entire region with about 35.5% of the population relying on this as the main income source except in Amudat where over 50% of the population sold their livestock for income.

# 3.4 WASH

Defecating in the surrounding bush to Manyatta remains the main means for human waste disposal with 60.8% of the households disposing of human waste in the bush, although there was a slight improvement from May 2011 (68.1%). Households continue to show the need to be educated on the proper disposal of human waste to control the spread of infectious diseases like diarrhea which have be seen to have an association with malnutrition among children.

Most people continue to fetch water from boreholes (84.3%), unsafe water sources were also registered with 12.9% collecting their drinking water from these points ranging from 0.1% in swamp water to 5.9% seasonal streams/ponds in the region.

The average time to the water source is 25 minutes with ranges of 11 minutes in Abim to 58 minutes from Kaabong; this however is not reflective of the actual time it may take to collect water from the source or the water source from which the water is collected.





# 4 Summary of District Key Findings

**Abim:** Increase in rates of GAM from 6.3 %(4.0 - 9.695 % C.I) in December 2011 to 9.4 %(6.2 - 13.495% C.I) in May 2012. A decline in cultivation as the household main food source from 87.7% in December 2011 to 78.9% in May 2012 with increase in the household purchases from 11.3% to 18.0% as evidence of depleting household food stocks. Increase in the cases of diarrhea from 48.5 % December 2011 to 60.2% in May 2012 hence household expenditure on health rose to 13.5% from 5.0 % during the same period.

**Amudat:** Increase in the rates of both GAM from 7.0 %(4.4-11.0 95% C.I) to 11.9 %() with a significant increase in rates of SAM from 0.9% (0.3 – 2.3 95% C.I) to 3.3%(1.2-8.4 95% C.I) P<0.05 in December 2011 and May 2012 respectively

Household main food source was purchasing at 61% with sale of livestock being their income source 51.4% hence high level of stress. The household food insecurity access scale indicates that 77.5% of households were food insecure

Private pit latrine use in Amudat has decreased tremendously from 6.0% to 3.8% with increase in diarrheal diseases from 37.4% to 54.9 % in December 2011 and May 2012 respectively

**Kaabong:** GAM increased from 8.4%(6.2-11.4 95% C.I) to 11.6%(7.9 -16.7 95%C.I) in December 20111 to May 2012.A decline in the households with cultivation as main food source from 72.1% to 59.0% during the same periods hence majority (78.9%) of them were severely Food insecure.

**Kotido:** GAM rates increased from 6.8% (4.8-9.6 95% C.I) to 13.1% (10.6-16.2 95% C.I). The rates of SAM in the district were high 3.6%(2.3-5.6 95% C.I) with 5 cases of edema reported in the villages of Kotido mixed, Nyakwae and Nakongmutu South. The rates of acute malnutrition in children under two years was critical 20.5% (15.8-26.2 95% C.I) identifying that programs to prevent malnutrition for this age group are failing to reach those most in need.

Increase in the households with purchasing as main food source from 36.7% to 58.2% with subsequent decline in cultivation from 53.1% to 35.6% in December 2011 and May 2012 respectively hence 84.9% of households had severely food insecurity access.

**Moroto/Napak:** The rates of SAM in the district 4.0% (2.2-7.1 95% C.I) were twice the WHO emergency thresh hold. The Insecticide Treated Net (ITN) possession was very low 38.9%. Household main food source was purchasing at 66.0% while cultivation was as low as 11.0% with 80.9% of household income spent on food. The Majority of households 80.2% were severely food insecure. The district has very poor child care practices with 62.6% of children under two years fed on two meals or less per day

**Nakapiripirit:** The rates of GAM decreased significantly from 20.4% to 13.1% in May 2011 and May 2012 (p<0.05). In spite of such a decline, the district still remains at serious category and critical with rates of GAM under two years at 22.6% (17.8-28.4 95% C.I) are excessive. The majority of children (93.5%) were fed three of fewer meals which is below the infant and young child recommended four meals for non-breastfed children age 6-23 months. Purchasing of food was household main food source in May 2012 and this followed a similar trend in May 2011. An increase in households with buying was noted from 41.9% to 67.3% in December 2011 and May 2012 respectively.





# 4.1 Causes of malnutrition

- There was moderate relationship between weight-for-height Z-scores and diarrhea in the districts of Nakapiripirit, Kotido, Moroto and Abim
- Inadequate dietary intake due to lack of food variety as most children were fed on Monotonous diets of cereals with very low foods rich in proteins such as milk, eggs or meat being consumed.
- Poor infant and young child feeding practices as majority of children were fed on two meals or less in the districts of Nakapiripirit, Moroto/Napak and Kaabong.
- Poor food security was identified throughout the district with Poor food consumption scores indication households that are severely undernourished. Even those districts with FCS in the acceptable range, more research as to whether the quality and quantity of food being consumed is more than the recommended 2100kcal/day for individuals

# **5** Recommendations

### Health

- Activation of VHT to conduct active case finding in all districts of Karamoja and to refer severely malnourished children to outpatient centers for treatment of severe malnutrition to prevent morbidity and mortality associated with severe acute malnutrition.
- Referral of moderately malnourished children to targeted supplementary feeding program in order to prevent severe acute malnutrition and reduce childhood morbidity and mortality associated with moderate malnutrition.
- Referral of all children under 2 years to nutrition support programs to prevent malnutrition
- The establishments of mobile OTP in districts where health centre cover impacts on treatment
  of severe malnutrition and reinforce the importance of nutrition programs and their
  implementation to all levels of the health sector in Karamoja, in order to prevent childhood
  mortality and morbidity associated with malnutrition
- Increase treatment of childhood disease at village level to reduce morbidity of children.
- Continue to advocate for continued regular integrated nutrition surveillance activities in Karamoja to ensure that the nutritional status of vulnerable populations is watched.

### WaSH

• Hygiene messages surrounding private pit latrine construction and hand washing needs to be continued across the region to improve on pit latrine usage and hand washing practices especially with soap so as to prevent illnesses and cross infections.

### Food security

- The importance of household and children's' diets need to be strengthened to ensure that children receive both macro and micro nutrients regularly, this can be achieved through passing appropriate infant and young child feeding messages.
- Further research into the quantity and quality of food being consumed at the household and individual level to identify whether people are consuming more or less than the minimum 2100kcal/day





ACF

- Identification and maintenance of food granary reserves that can be used up to next harvest season in each household through community elders or leaders.
- Initiation of community poultry farms and small scale industries that can be used as the income source for most vulnerable communities.