

## General Overview

**Middle and Lower Shabelle Regions:** Preliminary results from three nutrition surveys conducted in the Shabelle regions from Oct 30<sup>th</sup> to November 9<sup>th</sup> by FSAU and partners, indicate that the nutrition situation remains at or close to emergency threshold levels (>15%), without any statistically significant change from levels reported in May 2007. The retrospective crude mortality rates (CMR) are similar to the May '07 studies, indicating **alert** levels in two of the three assessments. Results are as follows:

- **Shabelle Rural Riverine:** reported a global acute malnutrition (GAM) rate of **14.0% (11.2 – 16.7)** and a Severe Acute Malnutrition (SAM) rate of **2.9% (1.6 – 4.1)** and although these results appear lower than the rates reported in May of 17% GAM and 4.8% SAM, the change is not statistically significant. The estimated malarial prevalence based on the rapid diagnostic tests (RDT – see Photo 1) is **2.7%** (2.0-3.7).
- **Shabelle Rural Agropastoral/Pastoral:** reported a **GAM** rate of **17.6% (13.3-21.3)** and a **SAM** rate of **3.2% (1.7-4.6)**. These results indicate sustained critical levels from May where a GAM rate of 17.3% and a SAM of 4.8% were reported. The estimated malarial prevalence based on the RDT is **1.4%** (0.9-2.2).
- **Shabelle Newly Internally Displaced Populations<sup>1</sup> in Afgoye and Merka:** reported a **GAM** rate of **15.2% (11.7-18.6%)** and a **SAM** rate of **3.2% (1.9-4.5)**. This is the first detailed nutrition survey to be conducted in this population; therefore there is no previous data to compare to. The estimated malarial prevalence based on the RDT is **0.4%**.

These results indicate that the **nutrition situation remains at or close to, emergency threshold levels** (>15%) with continued high rates of severe acute malnutrition. Based on these figures therefore an estimated 45,000 children under the age of five years of age are acutely malnourished, of which nearly 8,500 are severely malnourished and in need of specialist care, without which they are at high risk of death. The critical nutrition situation is the result of the multiple shocks including, disruptions in trade and economic activities, massive population displacement, poor crop production,

<sup>1</sup> Displaced from Mogadishu from February 2007

hyper-inflation and continued civil insecurity in the Shabelle Regions since January 2007. Detailed analysis of the nutrition assessment findings is provided inside this update.

**Central and Northeast Regions:** FSAU and partners conducted two nutrition surveys in central and northeast regions at livelihood level from October 30<sup>th</sup> to November 9<sup>th</sup>. The Hawd and Addun pastoral livelihood zones span from Galgadud and Mudug regions in central region to southern Nugal region in the northeast (See Map 1). Preliminary results from two nutrition surveys indicate critical levels of acute malnutrition, which illustrate some deterioration over the last six months from the earlier estimates of serious levels based on sentinel site, health centre and MUAC Rapid Assessment findings of 10-15%. Results as follows:

- **Addun Livelihood Zone:** reported a **GAM** rate of **15.9% (12.8-18.9)** and a **SAM** rate of **1.7% (0.8-2.6)**.
- **Hawd Livelihood Zone:** reported a **GAM** rate of **17.2% (14.1-20.5)** and a **SAM** rate of **1.3% (0.55-2.1)**.
- The retrospective mortality rates indicate acceptable levels in the **Addun** with **CMR** of **0.82 (0.38-1.25)** and the **Hawd** with **CMR** of **0.36 (0.14-0.58)** respectively.

**Bakool Region:** Action Contre La Faim (ACF) conducted a nutrition survey in **Wajid town and surrounding areas** in November 2007 and preliminary findings indicate a **GAM** rate of **14.3%** (10.5-18.1) and a **SAM** rate of **0.8%** (0.2-1.5). These rates do not indicate any significant change from the most recent nutrition survey conducted in February by ACF, where a **GAM** rate of 15.6% (12.4-18.8) and a **SAM** rate of 1.1% (0.2-2.0) were reported. Mortality rates of **1.55** (0.44-2.66) for the under five years and **0.57** (0.24-0.9) for the total population, indicate levels below the emergency thresholds. More detailed analysis is currently on-going and for more information please contact ACF directly.



*Malaria testing – Using a rapid diagnostic test on a young mother. FSAU, Nov 07, Shabelle Regions.*

## SPECIAL FOCUS ON AREAS AFFECTED BY THE ONGOING IDP CRISIS – Shabelle, Central and Northeastern Regions

### Middle and Lower Shabelle Regions

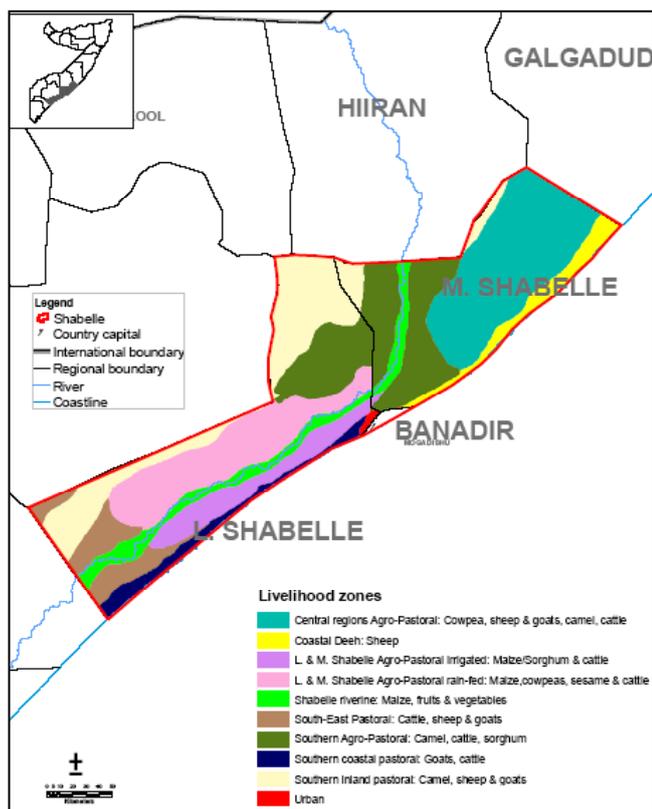
#### Context

The riverine, agro-pastoral, pastoral and urban are the main livelihood systems in Shabelle Regions (See Map 1). The riverine zone is located within 10 km of the Shabelle River where maize, sesame and a variety of vegetables are cultivated in addition to fruit. Livestock keeping is almost non-existent due to tsetse fly infestation. The agro pastoral zone extends within 20-40 km from

the Shabelle river with maize, sorghum, cowpeas, sesame and fruits cultivated and livestock kept. The agricultural potential, the diverse casual labor and income opportunities from agricultural activities in the agro pastoral livelihood zone make it an important host area for seasonal and vulnerable populations in normal and bad years. In both the riverine and agro pastoral livelihood zones, ownership of land is politically sensitive (Ref: FSAU Food Economy Baseline Profile 2000).

The Shabelle regions are considered the main maize basket for southern Somalia. For more than a decade, the food security situation in the riverine and agro-pastoral livelihood zones have been classified in the **Chronically Food Insecure** phase due to resilience to seasonal shocks and external pressures.

Map 1: Shabelle Riverine, Agropastoral and Pastoral Livelihood Zones



This resilience is attributed to the extensive range of coping strategies, including income source diversification options and strong urban and rural economy linkages. (Ref: FSAU Technical Series Report No. V.13 September 21, 2007). Nevertheless, the FSAU Post Deyr '06/07 conducted in Dec '06/Jan '07 2007, classified Shabelle Region as in an **Early Warning level of Watch** due to the potential decline in income from loss of crop and labor opportunities incurred during the Deyr 06/07 severe flooding and the risk associated with off-season cereal harvest. A further consequence was a potential increase in cereal prices and erosion of the population's resilience to shocks and seasonal pressures in addition to a potential deterioration in security.

**Historical Nutrition Situation**

Historically, the nutrition situation in the rural livelihoods in the Shabelle regions has not been of concern. Information has been collected predominantly from health centres and nutrition sentinel sites and up to December 2006, levels of acutely malnourished children had remained stable and low. However the nutrition situation of the urban poor and protracted IDP population in the urban settings of Mogadishu is different.

A series of nutrition surveys were conducted from 2000 to 2005 which highlighted the nutritional vulnerability of this group reporting levels from 13% to 16% GAM, in addition to high rates of severe acute malnutrition from 2% to 4% (See Figure 1). This is illustrated in the sustained high admissions of severely malnourished children into the selective feeding centers in Mogadishu (See Figure 2) over the last few years.

Figure 1: Trends in Levels of Acute Malnutrition in Mogadishu Protracted IDPs 2000 - 2005

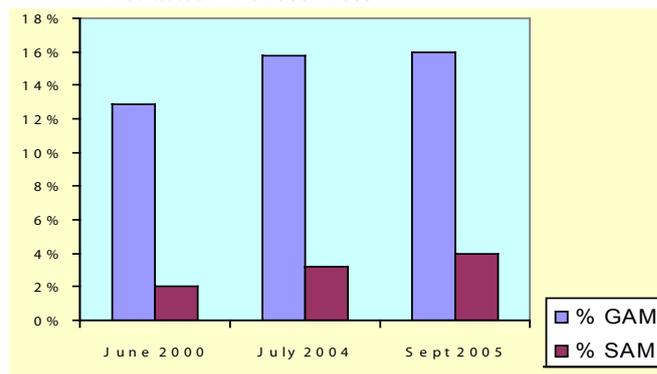
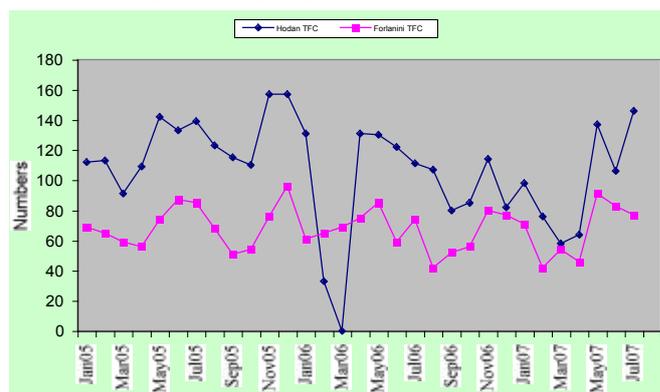


Figure 2: Monthly New Admissions in ACF Mogadishu TFCs among 6-59 months Children



In the Deyr '06/07 pockets of nutritional concern were reported in Adale Town, Galigudud, Moiko and Jowhar Town following a rapid MUAC assessment which highlighted levels of 5-9.9% of children as acutely malnourished. This was likely linked to the effects of the Deyr '06/07 floods, which exposed the populations to water borne diseases such as Acute Watery Diarrhoea.

**Current Crisis**

Since February 2007 a series of shocks have affected the Shabelle regions. In addition to the flooding in the Deyr season and the poor harvest in the recent Gu, there has been large displacement of thousands of people fleeing from Mogadishu as a result of the sudden upsurge in violence in the city. Many of the IDPs fled to secure places throughout the country with concentrations remaining in the areas surrounding Mogadishu, Merka, Afgoye in the first wave of displacement in February. Since February an estimated 600,000 have fled Mogadishu, nearly half of whom reside in the Shabelle region (UNHCR Nov, 2007).

The cumulative effects of the significant reduction of agricultural production, sharp rates of inflation in food and non-food items, disruptions in trade and economic activities, a high and increasing concentration of displaced population fleeing Mogadishu, deteriorating health conditions with the Acute Watery Diarrhoea Outbreak, and continued escalating civil insecurity resulted in a sudden onset Humanitarian Emergency affecting more than 30% of the population. The following table and nutrition surveys results presented, highlight the impacts of the shocks in the regions and the effects on nutritional status.

**Table 1: FSAU Post Gu '07 Integrated Food Security and Nutrition Analysis and Rapid Integrated Assessments, Shabelle Regions in September 2007**

Month	Events And Potential Risk Factors for Acute Malnutrition	Nutritional Status Outcome
<p><b>July - Dec. 2007 Projection</b></p>	<p><b>Post Gu 2007 Food Security Analysis:</b></p> <ul style="list-style-type: none"> <li>Deterioration in the food security situation attributed to the impact of multiple shocks, including several seasons of below normal rains and poor cereal production, high and rapid inflation of food and non-food commodity prices, disrupted economic trade and activities, large influx of IDPs from Mogadishu, limited access to humanitarian assistance, an Acute Watery Diarrhoea (AWD) outbreak and recurrent civil insecurity and conflict.</li> <li>An estimated <b>400,000</b> people in the riverine and agro-pastoral livelihood zone in Middle and Lower Shabelle are faced with a <b>humanitarian emergency (250,000) or an Acute Livelihood Crisis (150,000)</b>. About two thirds of these are in the Lower Shabelle. <i>(Source: FSAU Technical Series V. 13 September 21, 2007)</i></li> </ul>	<p><b>Nutrition Situation Survey July 2007</b></p> <p>The nutrition situation in the riverine, agropastoral and pastoral livelihoods of Lower and Middle Shabelle is <b>Critical</b> with pockets hosting high numbers of recent IDP's such as Afgoye town, indicating a <b>Very Critical</b> situation. In addition, due to the ongoing insecurity, disrupted livelihoods, limited humanitarian access and high numbers of vulnerable groups (IDP/ urban poor) in Mogadishu, reflected in the high and increasing admissions of severely malnourished children into the selective feeding centres, the nutrition situation there is classified as <b>Very Critical</b>. <i>The key nutrition findings in these areas are as follows:</i></p> <ul style="list-style-type: none"> <li>Two <b>Nutrition assessments</b> conducted in May 2007 in the riverine and agropastoral/pastoral population groups reported the following results; <ul style="list-style-type: none"> <li>Shabelle Riverine GAM rate of <b>17.0%</b> (13.4 – 20.0) and a SAM rate of <b>4.8%</b> (3.0 – 6.7)</li> <li>Shabelle Agropastoral/Pastoral with a GAM rate of <b>17.3%</b> (13.3 – 21.3) and a SAM rate of <b>4.5%</b> (2.5-6.6).</li> </ul> </li> <li><b>Rapid MUAC assessment</b> conducted in Afgoye town among the recently displaced populations in July 2007 by MSF Suisse identified <b>21.5%</b> of 741 assessed children as acutely malnourished (&lt;12.5cm).</li> <li><b>Selective Feeding centre Data:</b> The ACF managed TFC's in Mogadishu city, Hodan and Forlanini, continue to report high and increasing numbers of severely malnourished children amidst a fluid security situation. A large proportion of these children originate from the IDP / urban poor populations where living conditions, sanitation and access to health care are poor.</li> <li><b>Sentinel Site Data:</b> Trends in levels of acutely malnourished children from sentinel sites in the agropastoral areas indicated an increasing trend in March '07 in three (Kunyobarow, Mungiya and Sablale) of the five old sites while four newly selected sites (Garasgyrad, Warabaley Ambarey and Hakaw) reported generally low (3 to 8%) levels. In the riverine sentinel sites, an increasing trend was reported in one (Ganshale) of the old sites while high levels (11% -26%) were reported in four newly selected sites Moiko, Walamoy, Mukadhere and Marere in April 2007.</li> <li><b>Health Information System:</b> The levels of acutely malnourished children screened at health centre level remain low but increasing, though with increasing reports of seasonal diseases such as suspected malaria, diarrhoea and associated among others with consumption of unsafe water from unprotected sources as the norm for over 70% of the population</li> </ul>
<p><b>Sept-Nov 2007</b></p>	<p>On-going conflict in Mogadishu results in continuing displacement, loss of assets and livelihoods, and reduced access to basic services such as food, health care and water; in addition to successive seasons of crop failure <i>(Source: FSAU Nutrition Update August September 2007)</i></p>	<p><b>Rapid MUAC Assessments</b> conducted by FSAU in August and September '07 in randomly selected villages from the riverine, agropastoral and newly displaced populations in Lower and Middle Shabelle Regions as well as IDP populations in Afgoye indicated a <b>continuing deterioration in Middle Shabelle Region with an average of 25% of the children identified as acutely malnourished</b> (MUAC &lt;12.5cm); this was consistent across the different livelihoods and IDP and host populations. A total of <b>1887</b> children were assessed in Middle Shabelle, <b>875</b> children in Lower Shabelle and <b>1081</b> children in the IDP settlement along Mogadishu – Afgoye road.</p> <ul style="list-style-type: none"> <li>In IDP settlements along the Mogadishu Afgoye road, findings from Elasha, Lafole Arbis and Hawa Abdi reported &lt;10% of children identified as acutely malnourished with <b>higher levels of 16.4% reported from the settlements at the Ministry of Agriculture faculty</b>.</li> <li><b>Afgoye IDP population:</b> Households with acutely malnourished children had a higher reliance on relief assistance for food than those without acutely malnourished children. Although many households reported reducing meal frequency and switching to less expensive foods to meet their needs, this most notably seen in the households with severely malnourished children with 90% of households reporting this practice.</li> <li><b>Lower Shabelle:</b> Similar to Middle Shabelle, households with severely malnourished children were more likely to be female headed and split compared to families with no acutely malnourished children. These households were also more dependent on purchase of food rather than production and were also more likely to be limiting portion sizes.</li> </ul>

## LATEST NUTRITION FINDINGS

### Shabelle Regions Nutrition Assessment Findings

#### Riverine Population Assessment Findings

A total of 901 children aged 6 – 59 months and measuring 65 – 109.9 cm in height/length from 435 households were assessed; and mortality data was collected from 905 households.

Preliminary results report a **GAM** rate of **14.0%** (11.2 – 16.7) and a **SAM** rate of **2.9%** (1.6 – 4.1). The results indicate a serious nutrition situation according to WHO classification and although the figures represent a slight improvement from the previous critical nutrition situation (GAM of 17.0%, 13.4 – 20.5) in May 2007, the difference is not statistically significant.

The retrospective crude and under five mortality rates were estimated at **1.27** (1.13 – 2.41) and **2.02** (1.07 – 2.97) deaths/10,000/day respectively, were both above the 'alert' threshold<sup>2</sup> indicating a serious situation (WHO) these are indicating sustained levels from the last assessment conducted in May 2007 among the riverine population. Most (>60%) of the reported deaths of children aged below five years were reportedly caused by diarrhoea. Other reported causes of deaths included suspected malaria/febrile illnesses, complications arising during birth, and ARI (*See Table 2*).

Indicator	No	%	95% CI
Total number of Households surveyed	435	100	
Total number of children assessed	901	100	
Global Acute Malnutrition (WHZ<-2 or oedema)	126	<b>14.0</b>	11.2 – 16.7
Severe Acute Malnutrition (WHZ<-3 or oedema)	26	<b>2.9</b>	1.6 – 4.1
Oedema	7	<b>0.8</b>	0.1 – 1.4
Global Acute Malnutrition (WHM<80 or oedema)	79	<b>8.8</b>	6.7 – 10.9
Severe Acute Malnutrition (WHM<70 or oedema)	13	<b>1.4</b>	0.5 – 2.4
Children reported to have diarrhoea in 2 weeks prior to study	195	<b>21.6</b>	17.0 – 26.3
Children reported to have ARI within 2 weeks prior to study	248	<b>27.5</b>	19.7 – 35.3
Children reported with suspected malaria/febrile illness in 2 weeks prior to study	170	<b>18.9</b>	15.1 – 22.6
Confirmed RDT (malaria) positive cases (N=1505)	41	<b>2.7</b>	2.0 – 3.7
Children reported with suspected measles within one month prior to study (N=842)	12	<b>1.4</b>	0.6 – 2.3
Children (9-59 months) immunized against measles (N=877)	399	<b>47.4</b>	33.9 – 60.8
Children who have ever received polio vaccine (N=936)	820	<b>91.0</b>	86.7 – 95.3
Children supplemented with vitamin A in last 6 months	493	<b>54.7</b>	42.9 – 66.5
Households who reported to have consumed <4 food groups (N=435)	17	<b>3.9</b>	2.4 – 6.3
Households who reported to have consumed ≥4 food groups (N=435)	418	<b>96.1</b>	93.7 – 97.6
Children 6-24 months reported to be breastfeeding(N=347)	181	<b>52.2</b>	46.8 – 57.5
Children introduced to other foods before 6 months (N=347)	343	<b>98.8</b>	96.9 – 99.6
Under five Mortality Rate (U5MR) as deaths/10,000/day		<b>2.02</b>	1.07 – 2.97
Crude Mortality Rate (CMR) as deaths/10,000/day		<b>1.27</b>	1.13 – 2.41

<sup>2</sup> Alert thresholds at CMR=1 death/10,000/day, U5MR=2 deaths/10,000/day. Emergency thresholds X2 alert levels.

A high proportion (52.6%) of children had reportedly suffered from one or more communicable childhood diseases in the two weeks prior to the assessment. Approximately 22% of the assessed children reportedly had diarrhoea with similar high proportion of ARI reported at 27.5%, Approximately 19% were reported to have had febrile illness (suspected malaria), however RDT tests confirmed only 2.7% of positive malaria cases among the assessed riverine population. Approximately 1.4% of suspected measles cases were reported in the area possibly associated with the low measles vaccination coverage of 47.4%. Similarly, Vitamin A supplementation was low (54.7%), unlike polio vaccination coverage at 91%. All the immunization coverage was below the Sphere 2004 recommended coverage of 95%. High morbidity and low immunization coverage raise great concern as the disease further predisposes the children to poor nutrition. Those who were ill were almost **1.5 times** ( $1.03 \leq RR = 1.45 \leq 2.09$ ) more likely to be acutely malnourished especially those with illness such as diarrhoea ( $1.29 \leq RR = 1.75 \leq 2.36$ ). Poor sanitation and hygiene was reported in the study area with more than one third (36.6%) lacking access to a formal sanitation facilities. Approximately 62% did not have access to clean drinking water while 69% did not have access to a health facility, mostly because the existing facility was too far (61%) or not available at all (29%). These unprotected water sources coupled with high vulnerability to flooding and the poor sanitation situation are likely factors contributing to the high diarrhoeal diseases reported.

There was a statistically significant difference in the nutritional status of children in the breastfeeding age of 6-24 months and those 25-59 months. The younger children were **1.55 times** ( $RR = 1.55$ ;  $CI: 1.05 - 2.29$ ) more likely to be acutely malnourished than their older counterparts, highlighting the importance of poor child feeding practices to risk of acute malnutrition. About one half (47.8%) of the children aged 6-24 months had stopped breastfeeding at the time of the assessment while the majority 98.8% had been introduced to complimentary foods before the age of 6 months. This is contrary to the international recommendation for exclusive breastfeeding up to the first six months of life; introduction of appropriate complementary food at the age of six months and continued breastfeeding up to the age of 24 months and beyond (WHO).

On a positive note, the majority of the assessed households (96.1%) consumed a diet comprised of four or more food groups (mean=6.2± 1.8), which is a reflection of a diversified diet. Increased consumption of milk and access to cereals and pulses through food aid, as well as consumption of vegetables (71.7%) could have contributed to the favourable dietary diversity. The riverine population had received food assistance distributed by WFP and partner agencies in September/October, just one month prior to the assessment, in addition to the increased availability of fruit, vegetables and fish from the riverine areas. Consumption of a diversified diet has a potential of enhancing nutrition status and this may have minimized risks of acute malnutrition and contributed to the stabilising of the nutrition situation among the riverine population in Lower and Middle Shabelle. However the public health factors, such as lack of clean water, sanitation and health services are the main driving factors in maintaining the concerning levels of acute malnutrition.

## Agro Pastoral Population Assessment Findings

A total 951 children aged 6- 59 months and measuring 65 cm and/or less than 110cm were assessed from 464 households with mortality data collected from 950 households. Results recorded a **GAM** rate of **17.6%** (13.3 – 21.8) and a **SAM** rate of **3.2%** (1.7 – 4.6). Four oedema cases (0.2%) were reported during the assessment. These results indicate a persistent critical situation in the nutrition status with no improvement from the results conducted in the May 2007 nutrition assessment, when a Global Acute Malnutrition (WHZ<-2 or oedema) of 17.3 % (13.3 – 21.3) and Severe Acute Malnutrition of 4.5% (2.5 – 6.6) were reported. The crude and under five mortality rates of **0.42** (0.22 – 0.62) and **0.95** (0.42 – 1.47) respectively, among the agro pastoral population in Shabelle region were however, below alert levels according WHO standards.

**Table 3. Summary of the Shabelle Agropastoral assessment findings**

Indicator	n	%	95% CI
Total number of households surveyed	464	100	
Total number of children assessed	951	100	
Global Acute Malnutrition (WHZ<-2 or oedema)	167	<b>17.6</b>	13.3 – 21.8
Severe Acute Malnutrition (WHZ<-3 or oedema)	30	<b>3.2</b>	1.7 – 4.6
Oedema	4	<b>0.4</b>	0.0 – 0.8
Global Acute Malnutrition (WHM<80% or oedema)	101	<b>10.6</b>	7.5 – 13.8
Severe Acute Malnutrition (WHM<70% or oedema)	12	<b>1.3</b>	0.5 – 2.0
Children reported with diarrhoea in 2 weeks prior to assessment	128	<b>13.5</b>	8.8 – 18.1
Children reported with ARI within two weeks prior to assessment	133	<b>14.0</b>	9.0 – 19.0
Children reported with febrile illness in 2 weeks prior to assessment	92	<b>9.7</b>	6.6 – 12.7
Confirmed RDT (malaria) positive cases (N=1536)	22	<b>1.4</b>	0.9 – 2.2
Children reported with suspected measles within one month prior to assessment (N=898)	30	<b>3.3</b>	0.9 – 5.7
Children (9-59 months) immunised against measles (N=898)	205	<b>22.8</b>	12.5 – 33.2
Children who have ever received polio vaccine	737	<b>77.5</b>	69.4 – 85.6
Children reported to have received vitamin A supplementation in last 6 months	349	<b>36.7</b>	26.3 – 47.1
Proportion of children 6-24 months reported to be breastfeeding (N=343)	167	<b>48.7</b>	43.3 – 54.1
Children (6-24 months) reported to have been introduced to other foods before 6 months	337	<b>98.3</b>	96.0 – 99.3
Proportion of households who reported to have consumed ≤3 food groups (N=464)	62	<b>13.4</b>	10.5 – 16.9
Proportion of households who reported to have consumed ≥4 food groups (N=464)	402	<b>86.6</b>	83.1 – 89.5
Under five Mortality Rate (U5MR) as deaths/10,000/ day		<b>0.95</b>	0.42 – 1.47
Crude Mortality Rate (CMR) as deaths/10,000/ day		<b>0.42</b>	0.22 – 0.62

The proportion of children who had reportedly suffered from one or more communicable childhood diseases during the two weeks prior to the assessment was **30.4%**. As illustrated in *Table 3*, the proportion of children that had reportedly suffered from diarrhoea, ARI and suspected malaria two weeks prior to the study was 13.5%, 14.0% and 9.7% respectively while 1.4% of the assessed population tested positive for malaria (*P. falciparum*). Sick children were one and a half times more likely (RR=1.50; CI: 1.01 – 2.26) to be acutely malnourished than their healthy counterparts while those who had suffered from either diarrhoea were **1.64** times (RR=1.64; CI: 1.17 – 2.30) more likely to be acutely malnourished.

While diseases continue to predispose children to acute malnutrition, the driving factors to these diseases are poor quality water, lack of sanitation facilities, poor child care and feeding practices (*See Table 3*). Less than 40% of the households assessed had access to clean drinking water (39%), formal sanitation facilities (26.1%) or health facilities (19.6%); and only 40% of the children who fell sick sought medical assistance in the private or public facility available. Further, a large majority (98.3%) of the children were introduced to complementary foods before the age of 6 months, which predisposes them to disease and acute malnutrition and only 48.7% of the children aged 6-24 months were breastfeeding at the time of the assessment. Past studies have shown that vitamin A greatly improves the immunity of individuals, hence reducing the disease burden of a population. However, as shown on *Table 3*, measles immunisation and vitamin A supplementation coverage were far below the WHO recommended coverage of 95%.

Dietary diversity was high with 86.6% of the households consuming four or more food groups in the previous 24 hours. Improved milk consumption (90.3%) and recent supplies (ongoing at the time of the assessment) of cereals, pulses and oil from humanitarian food assistance in some villages have contributed to improved dietary diversity. However, poor access to health services and low coverage of health programmes among the agropastoralists are worrying and require urgent attention. This coupled with consistently high morbidity rates, especially diarrhoea and ARI are possible aggravating factors to the critical nutrition situation. It is important to note that a significant proportion (6.7%) of the assessed agropastoral households have hosted IDPs from Mogadishu constraining their food resources and limiting their resilience to further shocks.

## Shabelle IDPs Nutrition Assessment Findings

The renewed armed conflict and civil insecurity in Mogadishu during the assessment has resulted in the latest wave of population displacement and influx of displaced populations (IDP) estimated at 100,000 in November 2007 (UNHCR figures) into temporary settlements outside Mogadishu especially in Afgoye and Merka. The numbers are an addition to the existing settlement which have been established since the first wave of displacement in February 2007. Current estimates are of approximately 200,000 IDPs in Afgoye district with a further 25,000 in Merka. Due to the large and concentrated numbers the nutrition situation of these population has been of great concern with early indications from response agencies on the ground in June of high levels of acute malnutrition. From June response agencies have established emergency interventions and though the recent influx is now placing additional stress on the already vulnerable population, the nutrition situation has reportedly begun to stabilise in recent months. In order to establish the current nutrition status FSAU and partners conducted an assessment in the IDP population in Afgoye and Merka (7 clusters Merka, 23 clusters Afgoye) to guide response agencies as to the severity of the situation.

**Table 4: Summary of Findings – Shabelle IDPs**

Indicator	No	%	95% CI
Total number of households surveyed	444	100	
Total number of children assessed	903	100	
Global Acute Malnutrition (WHZ<-2 or oedema)	137	15.2	11.7 – 18.6
Severe Acute Malnutrition (WHZ<-3 or oedema)	29	3.2	1.9 – 4.5
Oedema	8	0.9	0
Global Acute Malnutrition (WHM<80 or oedema)	94	10.4	7.4 – 13.4
Severe Acute Malnutrition (WHM<70 or oedema)	13	1.4	0.7 – 2.2
Children reported to have diarrhoea in 2 weeks prior to study	282	31.2	24.8 – 37.7
Children reported to have ARI within 2 weeks prior to study	254	28.1	21.2 – 35.1
Children with suspected malaria/febrile illness in 2 weeks prior to study	168	18.6	14.4 – 22.8
Confirmed RDT (Malaria) positive cases N=1575	7	0.4	
Suspected measles within one month prior to study (N=839)	33	3.9	1.6 – 6.2
Children (9-59 months) immunised against measles (N=839)	567	67.6	57.2 – 78.0
Children who have ever received polio vaccine	761	84.3	79.7 – 88.8
Children supplemented with vitamin A in last 6 months	598	66.2	56.5 – 75.9
Households who consumed ≤3 food groups (N=444)	35	7.9	5.6 – 10.9
Households who consumed ≥4 food groups(N=444)	409	92.1	89.1 – 94.4
Children 6-24 months who are breastfeeding (N=315)	157	49.8	44.2 – 55.5
Children introduced to other foods before 6 months	155	99.4	0.1 – 2.5
Under Five Mortality Rate (U5MR) as deaths/10,000/day		2.95	1.55 – 4.34
Crude Mortality Rate (CMR) as deaths/10,000/day		1.45	0.97 – 1.93

In November 2007, FSAU in collaboration with UNICEF, WFP, COSV, CARE, INTERSOS, SRCS TRG and SAACID conducted a nutrition assessment in the displaced populations in Afgoye and Merka. A two stage cluster sampling methodology was used to select the study households. A total of 903 children aged 6 – 59 months were assessed from 444 households. Mortality data was collected from 909 households.

Preliminary results indicate a global acute malnutrition (weight for height <-2 Z score or oedema) of **15.2%** (11.7 – 18.6) with a severe acute malnutrition (weight for height <-3 Z score or oedema) rate of **3.2%** (0.4 – 2.2). The results indicate a critical nutrition situation and close to the emergency threshold levels of >15% according to WHO classification. Even though this is the first detailed assessment conducted for this population and thus there is no previous data to directly compare to, integrated analysis and two nutrition surveys conducted among riverine and agropastoral populations in the Shabelle regions earlier in May 2007 indicated a global acute malnutrition rate of (>15%), hence sustained critical rates.

Mortality findings indicate a crude mortality rate (CMR) of **1.45** (0.97–1.93) and under five mortality rate (U5MR) of **2.95** (1.55–4.34). Both rates indicate an alert situation according to WHO classification. Diarrhoeal disease was reported as the main cause of death among the under fives; while birth complications and physical injuries were the main reported causes of death among the adults.

Morbidity rates were reportedly high with more than half (52.6%) of children reported to have suffered from one or more communicable childhood diseases during the two weeks prior to the assessment. As shown in Table 4, a high proportion of children had reportedly suffered from diarrhoea (31.2%), ARI

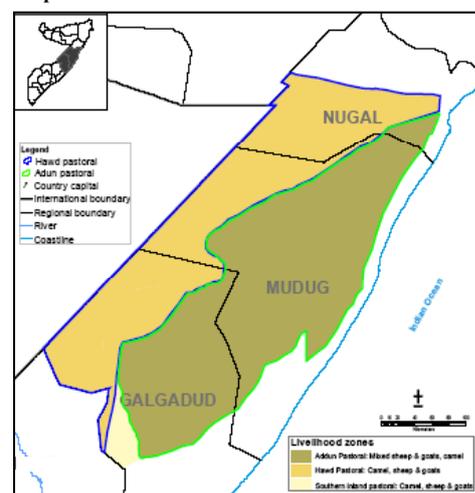
(28.1%) and febrile illnesses (18.6%) two weeks prior to the study. Disease and poor food intake remain the immediate causes of acute malnutrition among children. In the assessed IDP populations, illness (RR=1.47; CI: 1.09 – 1.98) and especially diarrhoea (RR=1.62; CI: 1.16 – 2.25) and febrile illness (RR=1.62; CI: 1.09 – 2.40) were significantly associated with acute malnutrition. Feeding practices remain suboptimal with almost all (99.4%) of the children reportedly introduced to complementary foods before the age of 6 months, which predisposes them to disease and malnutrition and only 49.8% of the children aged 6-24 months were breastfeeding at the time of the assessment. The greatest concern among the IDPs population remain access to protected water, formal sanitation facilities and functional health care services. This is illustrated by the majority of the assessed IDP households not having access to clean drinking water (35.1%), formal sanitation facilities (57.7%) or health facilities (76.6%); the main reason being unavailability of these services in the settlements or the inability of the households to pay for services. Further, immunisation for polio (84.3%), measles (67.6%) and vitamin A supplementation (66.2%) coverage were far below the WHO recommended coverage of 95%.

Even though dietary diversity was high with 92.1% of the households consuming four or more food groups, most of the food supplies were from food aid (39.1%) or purchases (47.3%). Humanitarian food distribution was going on during the same period of the assessment. Furthermore, poor infrastructure (flooded roads) and sea piracy had caused an increase in prices of local and imported food commodities making them inaccessible to a large proportion of IDPs population. Sustained and integrated humanitarian assistance for the displaced population as well as the affected host populations in Shabelle regions therefore needed urgently to rehabilitate the severely malnourished children who are at risk of mortality and to address moderate malnutrition, food insecurity, water and sanitation in these settlements.

## The Hawd and Addun Pastoral livelihoods in Central and North East Regions

### Context

**Map 2: The Addun and Hawd Livelihood Zones**



The Hawd and Addun, both pastoral populations, are the main livelihood zones in Central and parts of the North East regions (See Map 2). In the Hawd, camel rearing is predominant while sheep rearing is

predominant in the Addun zone. The main source of food for the pastoralists is market purchased cereals, mainly rice and sorghum which they purchase by selling livestock (mainly sheep and goats) and livestock products (milk and ghee). Under normal circumstances pastoralists in this region, irrespective of their wealth groups, rely on livestock and livestock product sales for income generation.

Table 5 highlights the findings from the FSAU Post *Gu* '07 projections to December '07.

The current *Deyr* '07 rainy season performance has been mixed with some regions receiving good rains while in others, little or no rains. Of particular concern are parts of Galgadud and Mudug regions in central Somalia hosting large numbers of IDPs, where there are early indications of below normal rains, in both amount and distribution. Market prices of cereals in the regions remain high.

Figure 3: Trends in levels of Acute malnutrition (WHZ<-2 or oedema) in locations in the Hawd and Addun Livelihood Zones Nutrition Surveys 2002-2007

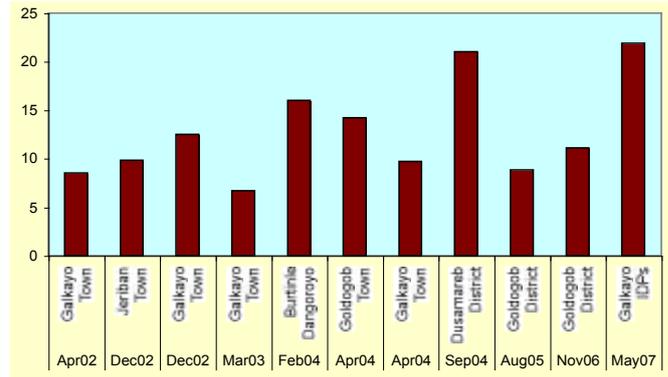


Table 5: FSAU Post *Gu* '07 Integrated Food Security and Nutrition Analysis, Central and Galgadud Regions

Year	Events And Potential Risk Factors for Acute Malnutrition	Nutritional Status Outcome
July - Dec 2007 Projection	<p><b>Post Gu 2007 Food Security Analysis:</b> Pastoral and agro-pastoral livelihoods in Galgadud and south Mudug remain in the same phase of <b>Chronically Food Insecure</b> as identified in the Post <i>Deyr</i> '06/07 analysis. This is due to the positive gains in recovery achieved during the last <i>Gu</i> '07 and <i>Deyr</i> '06/07. However as a result of below normal <i>Gu</i> '07 rains (20-40% of long Term Mean), rangeland conditions are deteriorating and are of special concern in Ceeldheer, Xaradheere, Dhusamareeb, Cadaado and Cabudwaaq districts. Water trucking has started two months ahead of normal (from June instead of August '07) with increased prices.</p> <p>The early level of watch in the last <i>Deyr</i> '06/07 has changed to a level of moderate risk between July and December due to increased food prices, early water trucking at increased costs and overall prices increases as a result of devaluation of the Somali shilling. (Source: FSAU Technical Series V. 13 September 21, 2007)</p>	<p><b>Post Gu 2007 Nutrition Analysis:</b> The nutrition situation in Galgadud and South Mudug is <b>Serious</b> with some pockets of a <b>Critical</b> situation. The <b>Critical</b> pockets also host a high number of recent IDPs following the insecurity in Mogadishu. While the nutrition situation has remained similar to that observed in the post <i>Deyr</i> '06/07 analysis in most areas, a deterioration was noted in the Coastal Deeh and Cowpea belt mainly attributed to the acute watery diarrhoea outbreak, presence of recently displaced populations and the unstable security situation especially in Hobyo area. Similarly, deterioration in the nutrition situation was noted in neighbouring regions of these two livelihoods. <i>The key nutrition findings in these areas are as follows:</i></p> <ul style="list-style-type: none"> <li>• <b>Nutrition Assessments:</b> Although not fully completed due to insecurity therefore is not fully representative, a study by ACF in April 2007 among 418 under five children in Dhusamareb and Guriel Districts reported <b>15.3%</b> of the children as acutely malnourished using weight for height Z-Score or oedema and 1.9% as acutely malnourished using MUAC</li> <li>• <b>Sentinel Site Data:</b> Trends in levels of acutely malnourished children from the sentinel site data indicates a decline in levels of acutely malnourished children in most sites in Addun and Hawd pastoral with the exception of selected sites (Waberi and Eldhere) that indicate an increase. In the Coastal Deeh a steady increase in the levels of acutely malnourished children is observed in Howaldur site.</li> <li>• <b>Selective Feeding Centre Data:</b> Trends in admissions of severely malnourished children from Galgadud indicate low and stable levels.</li> <li>• <b>Rapid MUAC Assessment:</b> Rapid assessments by FSAU in June 2007 in the Hawd pastoral among 169 children aged 1-5 years, identified <b>1.7%</b> as acutely malnourished (MUAC of &lt;12.5cm or oedema), in the Addun pastoral <b>1.4%</b> were identified as malnourished from a sample of 206 children screened and finally <b>2.5%</b> of 474 IDPs screened were also identified as acutely malnourished. These levels indicate low and stable levels of acute malnutrition.</li> <li>• <b>Health Information System:</b> The levels of acutely malnourished children screened at health centre level remains low and stable.</li> </ul> <p>(Source: FSAU Technical Series V. 13 September 21, 2007)</p>

## LATEST NUTRITION FINDINGS

### Hawd Nutrition Assessment Findings

A total of 916 children aged 6 – 59 months and measuring 65 – 109.9 cm in height/length from 426 households were assessed; mortality data was collected from 1109 households. Preliminary results report a **GAM** rate of **17.2%** (14.06-20.51) and a **SAM** rate of **1.3%** (0.55-2.07), there was 1 case of oedema reported. The results indicate a **critical** nutrition situation according to WHO classification. This indicates some deterioration compared to the previous integrated nutrition analysis carried out in July 2007 that classified the area as serious.

The retrospective crude and under five mortality rates estimated at **0.36** (0.14-0.58) and **0.92** (0.13-1.97) deaths/10,000/day respectively, are within the acceptable levels according to WHO standards. Approximately 19.6% of the assessed children reportedly had diarrhoea within the two weeks prior to the assessment. The proportion of children that had suffered

from acute respiratory infections two weeks prior to the study was 24.6%. Twenty five percent of the assessed children were reported to have had febrile illness (suspected malaria). The suspected measles cases reported were 2.8%. RDT results indicate 5.2% of the assessed under fives (N=306) as having tested positive to malaria. It is important to note the low measles vaccination coverage of 31.2%. Likewise, vitamin A supplementation and polio vaccination was low at 56.9% and 65.5%, respectively. All the immunization coverage was below the Sphere 2004 recommended coverage of 95%.

High morbidity and low immunization coverage increase the risk of acute malnutrition amongst young children. The total proportion of children that reportedly suffered from a disease in the two weeks prior to the survey was high (**47.4%**). Lack of proper sanitation and access to safe water are factors that increase the risk of infection among the population. There was a positive statistical association between illness and morbidity (P=0.01). This further illustrates the association of malnutrition and morbidity. About 64.5% of the households had access to health facilities, the main reasons the remaining proportion of the households were not able to access the health facilities was distance. Sixty two percent of the households had access to safe water for domestic use, further to this 71.4% had access to latrines.

Only just over a quarter (29.1%) of the children aged 6-24 months (N=374) were still breastfeeding at the time of the assessment, and the majority 98.7% had been introduced to complimentary foods before the age of 6 months, contrary to the international recommendation of exclusively breastfeeding for 6 months of age, and continued breastfeeding up to the age of 24 months (WHO). Older children of 30-59 months were more



An enumerator measures the height of a child, Galgadud '07

likely to be acutely malnourished (18.6%) compared to their younger counterparts 6-30 months of age (16.6%), this could reflect reduced access to food, as older children usually eat from the same plate as the adults. Just about half of the households (51.6%) consumed a diet of more than four food groups daily (mean = 5.6± 1.5), reflecting a good dietary diversity, however good dietary diversity does not necessarily reflect quality of diet rather frequency of food groups. Approximately 4.2% of the assessed households in the Hawd were recently displaced from the February violence in Mogadishu. In addition 5 % of the resident households were hosting IDPs. Those hosting IDPs highlighted the additional stress of sharing of food, which could further contribute to the nutritional vulnerability.

Interviewed community members attributed the poor nutrition situation in the area to reduced access to milk and livestock products following below normal rains for the last two seasons, and the resultant scarcity of water and pasture, and high food prices. FSAU Market Monitoring reports that prices for imported rice remain at an all time high. A further factor of concern are lack of health facilities in the area leading to very high reported morbidity rates.

Table 6: Summary of Findings	Hawd Livelihood			Addun Livelihood		
	N	%	CI	N	%	CI
Total number of Households surveyed	416		100	453		100
Total number of children assessed	916		100	951		100
<b>Global Acute Malnutrition (WHZ&lt;-2 or oedema)</b>	<b>158</b>	<b>17.2</b>	<b>14.1 - 20.5</b>	<b>151</b>	<b>15.9</b>	<b>12.8 - 18.9</b>
<b>Severe Acute Malnutrition (WHZ&lt;-3 or oedema)</b>	<b>12</b>	<b>1.3</b>	<b>0.6 - 2.1</b>	<b>16</b>	<b>1.6</b>	<b>0.8 - 2.6</b>
Oedema	1	0.1	0-0.8	2	0.2	0-1.07
Global Acute Malnutrition (WHM<80 or oedema)	91	9.9	8.1-12.1	87	9.1	7.4-11.2
Severe Acute Malnutrition (WHM<70 or oedema)	3	0.3	0.1-1.0	2	0.2	0.0-0.8
Children reported to have diarrhoea in 2 weeks prior to study	179	19.6	15.28-23.9	220	23.2	19.6-26.9
Children reported to have ARI within 2 weeks prior to study	225	24.6	15.94-33.4	245	25.8	17.5-34.2
Children reported with suspected malarial/febrile illness in 2 weeks prior to study	229	25.1	14.9-35.3	144	15.2	9.2-21.21
Confirmed RDT (Malaria) Positive cases	55 N=1529	3.6	2.7-4.7	67 N=1537	4.4	3.4-5.5
Children reported with suspected measles within one month prior to study	26	2.8	0.9-4.9	13	1.3	0.3-2.4
Children (9-59 months) immunized against measles (N=)	278	31.2	21.6-40.7	107	11.5	6.4-16.6
Children who have ever received polio vaccine (N=)	597	65.5	56.2-74.7	626	66.1	58.0-74.1
Children supplemented with vitamin A in last 6 months	519	56.9	45.3-68.5	398	42.02	32.8-51.1
Households who reported to have consumed <4 food groups (N=416)	29	7	1.2-12.7	97	21.4	13.9-28.9
Households who reported to have consumed ≥4 food groups (N=416)	387	93.0	87.3-98.8	356	78.6	71.0-86.1
Children 6-24 months reported to be breastfeeding	64	26.5	21.8-31.3	109	29.1	23.4 - 34.8
Children introduced to other foods before 6 months	18.7	6.3	2.14-10.8	4	1.3	0 - 3.62
Under five Mortality Rate (USMR) as deaths/10,000/ day	<b>0.92 (0.13 – 1.97)</b>			<b>1.76 (0.62 – 2.90)</b>		
Crude Mortality Rate (CMR) as deaths/10,000/ day	<b>0.36 (0.14 – 0.58)</b>			<b>0.82 (0.38 – 1.25)</b>		

Improved access to water, health facilities and a diversified diet are crucial in reducing the risk of acute malnutrition in the population in the Hawd population.

### Addun Livelihood Nutrition Assessment Findings

A total of 951 children aged 6 – 59 months and measuring 65 – 109.9 cm in height/length from 457 households were assessed; mortality data was collected from 913 households. Preliminary results reported a **GAM** rate of **15.9%** (12.8-18.9) and a **SAM** rate of **1.6%** (0.76 - 2.6). This indicates a **critical** situation according to the WHO classification, and is a possible deterioration from the July 2007 integrated nutritional assessment which classified the nutritional situation in the area as serious. The intergrated analysis was based on health centre data, sentinel site data and rapid MUAC assessment data therefore can not be directly compared to this nutrition assessment data. The retrospective crude and under five mortality rates estimated at **0.82** (0.38 – 1.25) and **1.76** (0.62 – 2.90) deaths/10,000/day respectively are also within the acceptable levels according to WHO standards. (see Table 6 for summary of the findings)

The morbidity rate for children who had reportedly fallen ill in the two weeks prior to the assessment was high (44.2%). Approximately 23.2% of the assessed children reportedly had diarrhoea. The proportion of children that had reportedly suffered from acute respiratory infections in the two weeks prior to the study was 25.8%. Approximately 15.2% were reported to have had febrile illness (suspected malaria). RDT results indicate 3.2% of the assessed under fives (N=558) as having tested positive for malaria. Approximately 1.3% of suspected measles cases was reported in the area and was closely associated to the low measles vaccination coverage of 11.5%. There was also a positive statistical association between acute malnutrition and morbidity among the assessed children (P=0.004), children who suffered from any disease were more likely to be acutely malnourished than their healthier counter parts. Similarly, vitamin A supplementation and polio vaccination coverage was low (42.02% and 66.10% respectively). All the immunization coverage was below the Sphere 2004 recommended coverage of 95%; once again high morbidity and low immunization coverage are of great concern as they predispose the children to a poor nutritional status. Poor sanitation and hygiene was reported in the study area with only 47.8% of the households with access to a formal sanitation facility and 45.7% with access to safe water. A low number of the households, 33.8%, had access to health facilities, the main reason being the facilities were not available (75.9%), or they were too far (22.7%).

Approximately 29.1% of the children aged 6-24 months had stopped breastfeeding at the time of the assessment and the majority 98.7% had been introduced to complimentary foods before the age of 6 months, contrary to the international recommendation for exclusive breastfeeding up to the first six months of life (Ref: *Facts for Life Booklet*). A possible impact of the reduced availability of livestock products and increased market prices was further demonstrated with analysis indicating that older children were relatively more acutely malnourished with 17.3% of the children aged over 30 months being acutely malnourished as compared to 14% for the children aged below 30 months. Approximately three quarters, (78.6%) of the households consumed a diversified diet, consisting of

over four food groups, while the remaining proportion of the households consumed less than four food groups in a day. Consumption of a diversified diet has the potential of improving the nutritional status of an individual, however has not shown to be associated with reduced rates of wasting in Somalia. Some of the main factors likely to be affecting the nutritional status of the population are poor access to health facilities, lack of adequate safe water for domestic use and for animals, water scarcity, inadequate health and sanitation facilities in the area, high prices of food commodities and lack of essential micronutrients from foods such as fruits and vegetables. There was also livestock migration out of the area due to lack of adequate water and pasture in the area. This reduced the availability of animal and animal products, which is normally the main provider of essential nutrients for young children.

Approximately 21% of the assessed households of Addun were displaced from Mogadishu since February '07 following the upsurge in violence. This indicates a significant proportion of the newly displaced population are currently residing in the area. In addition, 19.2% of Addun resident households were hosting an average of 3 IDPs. The presence of IDPs in the area who are known to be vulnerable to acute malnutrition and food insecurity and their negative impact on the displaced people to the host community, such as increased food sharing and expenditure on food also explains the critical nutrition situation the area. Therefore the negative impact of the newly displaced population on the nutritional status of both themselves and the host community cannot be underestimated.

The assessment team recommends continued short and long-term efforts in the Hawd and Addun pastoral livelihood zones to address the current deteriorating nutrition situation. The immediate efforts should include rehabilitation of acutely malnourished children through selective feeding programmes using appropriate community based approaches, measures to increase access to safe water and sanitation facilities to curb diarrhoea diseases, and nutrition education to women and other child care givers on appropriate infant and child feeding practices. It is also imperative to ensure that the community has access to health services.

**Quality Checks for the Nutrition Survey Data:** As part of the global effort to enhance the quality of nutrition data, a nutrition software package *Nutrisurvey ENA*, has been developed to analyse the raw data generated through the fieldwork of the nutrition survey and compares it to a set of quality checks. FSAU has decided to run these checks on all nutrition surveys conducted by FSAU and report them in the monthly updates. The quality of the survey results presented were checked in order to determine 1) If significant bias had been introduced during the sampling procedures and measurements and 2) whether the survey results were representative and reliable. Quality control results are compiled in Table 7. The quality checks below were run on the nutrition assessment data using the *Nutrisurvey* software, the results (See Table 7) indicate that the five nutrition surveys conducted are of an appropriate standard.

**Digit Preference (DP) for weight and height:** Indicates how accurately children were weighed and when done correctly there should not be any digit preference. This normally occurs when enumerators round off to the nearest cm/kg or half cm/kg.

The signs; +, ++, +++ indicate if there was any DP for a number and if it was, mild, moderate or severe, respectively.

**Standard Deviation (SD) of WHZ:** Indicates whether there was a substantial random error in measurements. In a normal distribution the SD is equal to +1, but should lie between 0.8 and 1.2 Z score. SD increases as the proportion of erroneous results in the dataset increases.

**Skewness of WHZ:** This is a measure of degree of asymmetry of the data around the mean. A normal distribution is symmetrical and has zero skewness and should lie between +1 or -1. Positive skewness indicates a long right tail and negative skewness indicates a long left tail.

**Kurtosis of WHZ:** This demonstrates the relative peakedness or flatness compared to a normal distribution. The normal distribution has zero kurtosis and surveys should lie between +1 and -1. Positive kurtosis indicates a peaked distribution while negative indicates a flat distribution.

**Percent of flag (WHZ):** Flags are measurement that are highly unlikely to occur in nature and are therefore highlighted by measurements' software. These incoherent measurements should be corrected or discarded prior to analysis 0% flags is ideal but should be less than 2-3% of children measured.

**Age distribution:** This allows for a view of the representativeness of the sample and should be similar to the distribution within the population. Age bias is of particular concern for anthropometry as younger age(6-29) are more likely to be acutely malnourished than older age group (30-59). This means under representation of the younger age group may give lower prevalence than the actual one and vice versa. The age ratio allows a view of this relationship and should be between 0.78 and 1.18 with an ideal ration of 0.98.

**Sex ratio:** Allows a view of the representativeness of the sample and should be similar to the distribution within the population. This should not vary too much from the expected sex ratio and should lie between 0.8 and 1.2.

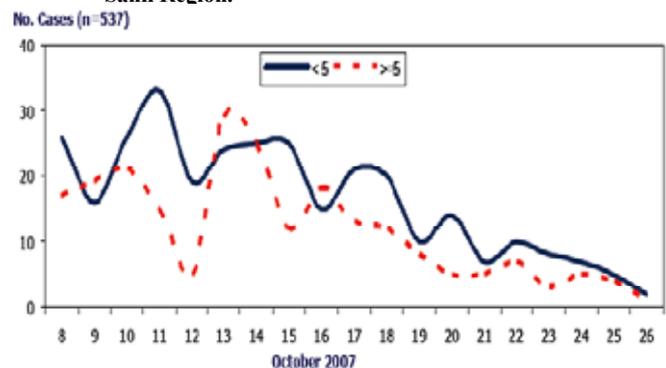
**Table 7. Summary findings on the quality checks for the Nutrition Assessments conducted by FSAU**

Quality Check	Nutrition Assessment				
	Shabelle Agro pastoral	Shabelle Riverine	Shabelle IDP	Addun	Hawd
Digit Preference-Weight	None	None	None	None	None
Digit Preference-Height	None	None	Digit 0+, Digit 5+	None	None
Age preference	13,24,36,58	58	13, 25, 30, 47.	12,24,36, 42,48, 59	25
SD of WHZ	1.05	1.10	1.39	1.39	1.08
Skewness of WHZ	0.41	0.40	0.32	0.46	0.70
Kurtosis of WHZ	0.70	1.00	0.38	0.37	0.88
Percent of flags	1 case (0.1%)	4 cases (0.4%)	0	0	1 case (0.1%)
Age groups (6-29)	No bias	No bias	No bias	No bias	No bias
Age Groups(30-59)	No bias	No bias	No bias	No bias	No bias
Sex Ratio (M/F)	1.1 – no bias	1.0– no bias	1.0– no bias	1.1– no bias	1.1– no bias

### Acute Watery Diarrhea (AWD) Update (WHO Somaliland)

Following reports of an increased number of cases of Acute Watery Diarrhea (AWD) in Berbera Town, Somaliland, the Ministry of Health and Labor (MOHL) established a Cholera taskforce on October 8<sup>th</sup>, 2007 to rapidly contain the outbreak. Specific tasks were divided between the MOHL, WHO and local NGOs for case management, supplies and establishing of surveillance systems for all health problems related to the AWD outbreak. On October 27<sup>th</sup> 2007, the WHO undertook an additional mission aimed at equipping medical staff, community leaders and health workers in Berbera with the necessary knowledge and skills in cholera preparedness and response. The mission entailed meeting the Berbera health sector committee, the AWD taskforce, visits to Berbera General Hospital, main water supplies and two affected villages and collection of samples which were then sent to Hargeisa Laboratory for confirmation. A review of the Berbera hospital records revealed that from October 8<sup>th</sup> – 27<sup>th</sup> 2007, 537 AWD cases were admitted including 1 related death (Case Fatality Rate, CFR of 0.19%). Of the six stool samples collected on October 8<sup>th</sup>, *Vibrio cholerae*, the parasite that causes cholera, could not be confirmed. The daily distribution of AWD cases by age groups in Berbera is illustrated in Figure 4. The mission's recommendations included refresher training for hospital staff on case definition and management and continued chlorination of water sources. As of October 29<sup>th</sup> 2007, elsewhere, 32 cases of AWD were admitted in Gabiley District Hospital; 21 of them being children under 5 years of age. Most of these arrived at the hospital with severe dehydration. No related deaths have been reported.

**Figure 4: Distribution of AWD cases by Age Group, Berbera Town, Sahil Region.**



#### Trainings and Courses

- Public Health in Complex Emergency (PHCE) Course, Makerere University Institute of Public Health (IPH) in Kampala on December 3-15. Information and application forms are also available at: [www.phcetraining.org](http://www.phcetraining.org)

#### Other related publications and Releases

- FSAU, Press Release, November 19<sup>th</sup>, 2007
- FSAU/FEWSNET Market Data Update, November 2007.
- FSAU/FEWSNET Climate Data Update, November 2007

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