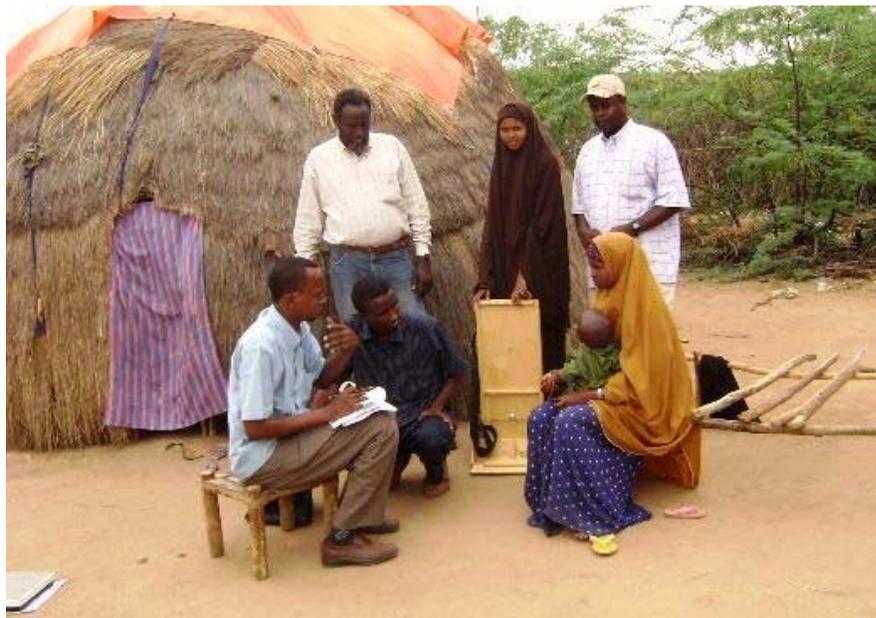


NUTRITION ASSESSMENT REPORT

GEDO PASTORAL, AGRO-PASTORAL AND RIVERINE LIVELIHOOD SYSTEMS GEDO REGION, SOMALIA

**Food Security Analysis Unit (FSAU/FAO)
United Nation Children Funds (UNICEF)
World Food Programme (WFP)
Gedo Health Consortium (GHC)
CARE
Norwegian Church Aid
Co- Somalia Red Crescent Society (SRCS)**



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FSAU provided overall coordination of the assessment in planning, training of assessment teams, supervision of data collection, data entry, cleaning and analysis and produced the assessment report. All participating organisations were invited to review and comment on the draft assessment report. Assessment staffs including supervisors, team leaders, nurses and enumerators were provided jointly by GHC, WFP, CARE, AMA, HIRDA, NCA and SRC. The Gedo local authorities played an essential role in identification of most of the enumerators and vehicles for the assessment from the local community. WFP also contributed one vehicle for the assessment. RDT kits and malaria treatment drugs were provided by UNICEF/Merlin.

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EXECUTIVE SUMMARY

The nutrition situation in Gedo region has remained precarious over years with the most recent livelihood-based assessments conducted in Gedo in May 2008 reporting *critical* to *very critical* nutrition situation with global acute malnutrition rates that were above the emergency threshold of 15%. The poor nutrition situation in the region has largely been attributed to the chronic food insecurity arising from man-made disasters (conflicts, displacement) and natural causes such as drought which affected the livelihood and social support systems in the region. Chronically high levels of morbidity particularly diarrhoea and poor child feeding and care practices have also been identified as major contributory factors to malnutrition. These factors have not been addressed sufficiently creating the need for continued nutritional surveillance in order to provide reliable information that can be used in designing appropriate responses.

FSAU and partners¹ conducted nutrition assessments in Pastoral and Gedo Agro pastoral livelihoods and a LQAS assessment in Riverine livelihood in Gedo Region in December 2008 (See map 1 for livelihoods). A two stage Probability proportionate to size (PPS) methodology was used in sampling. Using the ENA for SMART software, a total 812 and 728 households were calculated as the minimum number of households required in pastoral and agropastoral livelihood zones respectively for both anthropometric and mortality assessments. These households were sampled from 29 and 28 clusters respectively which were selected randomly using ENA for SMART software. Overall, a total of 831 and 705 children aged 6- 59 months were assessed from Pastoral and Agropastoral livelihoods respectively, In the riverine livelihood, a 33x6 LQAS design was used where a total of 198 children aged 6-59 months were assessed. The main objectives of the survey were to determine the level of wasting among children aged 6-59 months, analyze the possible factors contributing to malnutrition, and assess dietary diversity, morbidity and mortality rates in the specific livelihood systems in the region.

Results indicate a **Very Critical** nutrition situation with a Global Acute Malnutrition (GAM) rate of **25.4%** (22.0 - 29.0) and a Severe Acute Malnutrition (SAM) rate of **6.6%** (4.8 – 8.7) which included three (0.4%) oedema cases in the pastoral livelihood. In the riverine community, LQAS assessment identified 46 children out of the assessed 198 as acutely malnourished and basing on 33x6 LQAS decision rule, the acute malnutrition rate is classified **>20%** indicating a **very critical** situation. The results from the two livelihoods indicate a sustained **Very Critical** nutrition situation when compared with the past assessments conducted in May 2008 where GAM rates of 23.3% (18.9 – 27.7) and 21.5% (17.6 – 25.4) were recorded in pastoral and riverine livelihood zones respectively. The anthropometric result from agropastoral populations show a GAM rate of **>20%**, however the data was found to be of insufficient quality after carrying out plausibility checks using Epi-ENA software, likely due to reduced field supervision occasioned by insecurity (see appendix 7). For this reason the point prevalence of the survey is not reported but an integrated analysis of the survey data together with current health and targeted feeding facilities' data shows that the nutrition of agropastoral community is likely to have deteriorated from *critical* levels, with GAM rate of 18.8% (15.1 – 22.3) recorded in May 2008 to a *Likely to be Very Critical* situation. These results from the three livelihood are consistent with malnutrition rates recorded across the border areas of Mandera district in Kenya where LQAS assessments conducted by ACF² indicated that acute malnutrition rate is >20% indicating *very critical* nutrition situation

It is worth noting that LQAS methodology used in the riverine assessment is not designed to determine the point acute malnutrition prevalence rather provide a range estimate and hence for Gedo riverine, only the estimated GAM range is reported and discussed in this report.

¹ UNICEF, GHC, SRCS, NCA, WFP, AMA, HIRDA, and SRCS

² ACF, 2008: Sentinel Surveillance Report, Garissa and Mandera December 2008.

The mortality results indicate that crude and under five mortality rates for the pastoral and agropastoral livelihoods are within the acceptable³ levels according to the WHO classification with respective CMR and U5MR rates of **0.69** (0.34 -1.37) and **1.15** (0.33 – 3.88) in the pastoral and **0.69** (0.39 – 2.20) and **0.99** (0.44–3.60) in the agropastoral livelihood zones. In the two livelihoods, diarrhoea, suspected malaria/febrile illness and ARI were the main reported causes of deaths.

As in the past assessments, high morbidity levels have been recorded in pastoral and agropastoral livelihoods with a respective 61.2% and 12.3% of the children reported to have suffered from one or more common childhood illnesses in the two weeks prior to the assessments. Specifically, respective pastoral and agropastoral common illnesses prevalence were diarrhoea 18.6% and 6.2%, ARI 28.2% and 8.1%, suspected malaria 28.5% and 6.5% and measles 4.2% and 2.4%. However, a rapid diagnostic test for malaria conducted concurrently in the two livelihoods reported low malaria (positive for *Plasmodium falciparum*) prevalence rate of 4.8% and 0.7% among pastoral and agropastoral populations respectively. The reported vitamin A supplementation, measles vaccination and polio immunization status fall below the recommended coverage of 95%. Nevertheless the reported status does not confirm whether the child is fully immunized or not due to lack of health records to confirm adherence to recommended doses. Access to health services is unacceptably low at 57.6% and 14.7% among the pastoral and agropastoral livelihoods respectively as was the access to safe water at <10% recorded in both livelihoods. Past assessments⁴ have shown strong association between acute malnutrition and morbidity rates, particularly with diarrhoea. Diarrhoea is often linked with lack of safe drinking water and poor disposal of human excreta waste and poor hygiene practices.

Results further indicate poor dietary diversity in the two livelihoods with 24% and 38.1% of pastoral and agropastoral households respectively reportedly consuming poorly diversified diet comprising three or fewer food groups. The most commonly consumed food types in the two livelihoods were cereals, sugar, milk and oil while fish, eggs, fruits and vegetables were least consumed food types. Milk consumption was noted to have increased since May 2008 assessment but of concern is the fact that as many as 55.1% of the pastoral were accessing milk through purchase and thus restricting access. Majority of the pastoral 80% and agropastoral 55.7% households were reported to have consumed two meals 24 hour prior to the assessment. A possible explanation to the deterioration of dietary diversity could be the negative impact of poor cereal availability and low milk production due to poor rain performance in the region which has affected crop production as well as pasture and water availability, ultimately affecting livestock body conditions and milk production. The effect of the global rise in food prices and inflation continues to aggravate the food security situation of the population. This is particularly worrying given the significant proportion of the population relying on food purchase.

Overall, the nutrition situation in Gedo region is **Very Critical** in the three livelihoods indicating a sustained poor situation in pastoral and riverine livelihoods and deterioration from *Critical* to *Very Critical* situation in agropastoral livelihood. These results are consistent with malnutrition rates of >20% recorded across the border areas of Mandera district in Kenya. On the other hand, the rural food security and livelihood situation in Northern Gedo is classified in **Humanitarian Emergency** phase while Southern Gedo is in **Acute Food and Livelihood Crisis**. This is linked to the cumulative effect of the current and past rainfall performances and

³ Crude Mortality Rate <1/10,000/day and Under five Mortality Rate <2/10,000 persons/day

⁴ FSAU & Partners Nutrition Assessment reports, May 2008 & April 2007

the impact on different livelihoods, including cereal and livestock production as well as the impact of market forces and civil insecurity. The worsening nutrition situation is partly attributed to the cumulative effects of seasons with poor crop harvests and low milk production and the resultant decline in food availability and access at the household⁵. Other factors that have affected food access are hyperinflation, increased food prices and civil insecurity. The ongoing civil insecurity has disrupted delivery of health and nutrition-related assistance to the affected population by humanitarian agencies. Notably, the suspension of such activities like food distribution in Northern Gedo, scaling down or discontinued mobile outreach activities by INGO/NGO which identify acutely malnourished and ill children for appropriate referral, have had a negative impact on the nutrition situation. Other potential factors influencing the nutrition situation include the chronic issues of poor child care and feeding practices and limited access to basic human services such as health, sanitation and safe water. Intervention efforts, therefore, need to be reviewed with an aim of strengthening and expanding them to address both immediate life saving needs such as rehabilitation of acutely malnourished children and measures to cushion against the impact of food prices and poor rain performance. Cross border planning and strategising of humanitarian intervention is important given the fact that the equally affected population in the three countries of Somalia, Kenya and Ethiopia will cross borders to either side wherever humanitarian assistance is available. Integrated intervention is also important due to the fact that the multiple causes of malnutrition are inter-related.

Specific recommendations include:

Immediate Interventions

- Rehabilitation of acutely malnourished children through existing selective feeding programs coupled with active case finding of malnourished children in the rural areas until household food security is restored and critical public health issues are addressed. Capacity building of the existing MCH and the community to manage acute malnutrition could be explored.
- Improving household food security to prevent further deterioration of the nutrition situation. This may be achieved by intensifying provision of food and non-food items to affected households in the short term and support to the recovery of livelihoods.
- There is need to focus on programmes that improve dietary diversity and consumption of micronutrient rich foods. Production and consumption of vegetables and fruits which are good sources of micronutrient need to be promoted.
- There is need to have interventions to cater for livestock in the region given that food aid meant for human consumption is often shared with livestock. Provision of water and fodder for the livestock in strategic places could be explored as it could reduce out migration of livestock leaving family members without milk.
- Intervention programmes on water and health to address the problem of high morbidity.

Long term Interventions

- To address the issues of limited access to safe water, there is a need for rehabilitation/protection of water systems including the well and water catchments. The community should be trained on maintenance of the water systems and treatment of drinking water at household levels.
- To initiate income generating activities to improve the socio-economic situation in Gedo region and boost purchasing power for food and non-food items. Introduction of small-scale credit system for small business so as to raise income given that most households rely on food purchase as main food source.

⁵ FSAU Post Deyr'08/09 Technical series report

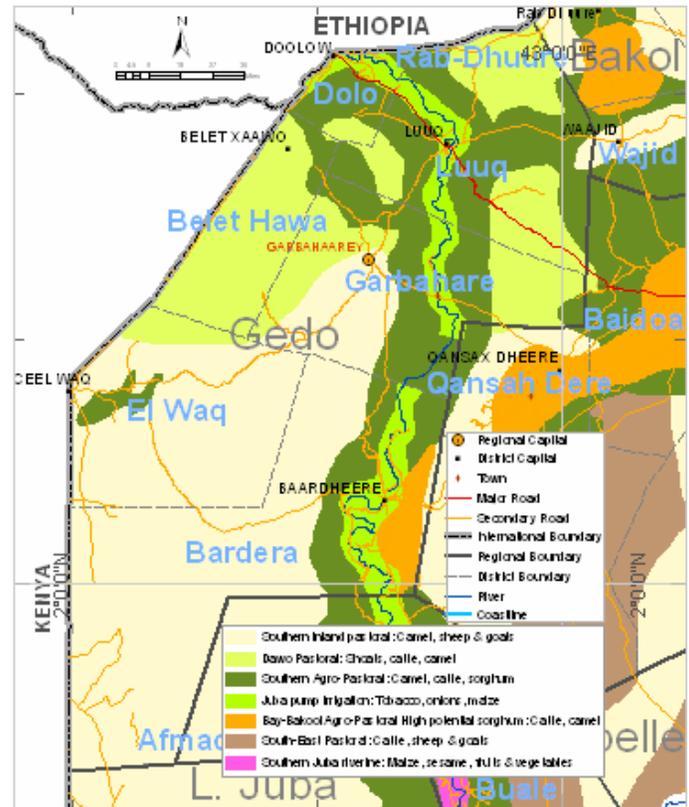
- There is need for establishment or strengthening of health facilities and satellite services especially in rural villages where there are no health facilities.
- Intensifying health and nutrition education activities at the household level to address care concerns, targeting mothers, and other caregivers. The main areas of focus should include promoting exclusive breastfeeding, appropriate young child feeding, diet diversification, and improvements in household hygiene including health seeking behaviours.
- In order to mitigate the impact of the current rain failure and past drought, there is need for interventions to cushion livelihoods from diminishing further as well as assisting those who have lost livelihoods start afresh. This could include provision of farm inputs, irrigation equipment, and rehabilitation of canal and restocking of livestock.
- Participatory approaches to boost access and utilization of sanitation facilities such as latrines. To enlighten the proportion of the households that see no need of using sanitation facilities, education on the importance of proper disposal of waste including excreta should form part of such initiative.

SUMMARY OF THE FINDINGS				
Indicator	Pastoral		Agro-pastoral	
	N	%	N	%
Total number of households surveyed	445	100	441	100
Mean household size	6.5	SD=2.7	5.5	SD=2.2
Total number of children assessed	831	100	705	100
Child sex:				
Males (boys)	418	50.3	380	53.9
Females (girls)	413	49.7	325	46.1
Global Acute Malnutrition (NCHS WHZ<-2 or oedema)	214	25.4 (22.0 – 29.0)		>20
Severe Acute Malnutrition (NCHS WHZ<-3 or oedema)	55	6.6 (4.8 – 8.7)	NA	
Oedema	3	0.4 (0 – 0.7)	NA	
Global Acute Malnutrition (WHM<80% or oedema)	168	20.2 (16.8 – 24.1)	NA	
Severe Acute Malnutrition (WHM<70% or oedema)	28	3.4 (2.1 – 5.4)	NA	
Proportion of malnourished pregnant women (MUAC≤23.0).	34	30.1 (N=113)	25 (N=78)	32.0
Proportion of severely malnourished pregnant women (MUAC≤20.7)	14	12.4	10	12.8
Proportion of malnourished non pregnant women (MUAC≤ 18.5 cm)	5	1.6 (N=318)	1 (N=358)	0.3
Proportion of severely malnourished non pregnant women (MUAC≤ 16 cm)	1	0.3	1	0.3
Proportion of children reportedly with diarrhoea in 2 weeks prior to assessment	158	18.6 (14.0 – 23.2)	44	6.2 (3.7–8.8)
Proportion of children reportedly with ARI within two weeks prior to assessment	242	28.2 (20.6 – 36.5)	57	8.1 (4.1 – 12.1)
Children with suspected malaria in 2 weeks prior to assessment	385	28.5 (29.0 – 48.0)	46	6.5 (10.7 – 21.1)
RDT Confirmed malaria (<i>Plasmodium falciparum</i>)	69 (N=1447)	4.8 (2.6 – 7.0)	10 (N=1402)	0.7 (0.2 – 1.2)
Suspected measles within one month prior to assessment	36	4.2 (2.1- 6.4)	17	2.4 (0.4 – 4.4)
Children (9-59 months) immunised against measles	538	63.4 (50.1 – 76.7)	144	20.4 (9.2 – 31.7)
Children who have ever received polio vaccine	676	79.7 (68.7-90.7)	305	43.3 (29.9 – 56.6)
Children who received vitamin A supplementation in last 6 months	401	47.3 (32.5 – 62.1)	179	25.4 (14.0 – 36.7)
Proportion of households who consumed ≤3 food groups	109	24.0 (12.1 – 35.8)	168	38.1 (25.0– 51.2)
Proportion of households who consumed ≥4 food groups	346	76.0 (64.2 – 87.8)	273	61.9 (48.8 – 75.0)
Under five Mortality Rate (U5mR) as deaths/10,000/ day	1.15 (0.33 – 3.88)		0.99 (0.44 – 3.60)	
Crude Mortality Rate (CMR) as deaths/10,000/ day	0.69 (0.34 – 1.37)		0.69 (0.39 – 2.20)	

1.0 Introduction

Gedo Region is located in the South West of Somalia (See Map 1) and borders Ethiopia to the North, Kenya to the West and has an estimated population⁶ of 328,378. Gedo region comprises six districts that are Luuq, Dolo, Belet Hawa, Garbaharey, El Wak, and Bardera with Garbahare being the regional capital. The main rural livelihoods zones in Gedo region are Bay Bakool Agro Pastoralist, Dawa Pastoralist, Juba Pump Irrigation Riverine, Southern Agro Pastoral and Southern Inland Pastoral (See Map 1.)

Gedo is one of the regions in Somalia that has been greatly affected by a series of shocks from both natural and man-made causes. The devastating impact of these frequent shocks gives limited opportunity to the population to recover between shocks leading to a chronic emergency situation for parts of the population particularly those in the northern part of the region. According to the FSAU Integrated Food Security and Livelihood Phase Classification, parts of the region have persistently faced a **Humanitarian Emergency (HE)** situation since 2004.



The FSAU Post *Gu* '08 assessment indicated a further deterioration in the food security and nutrition situation with the number of people in

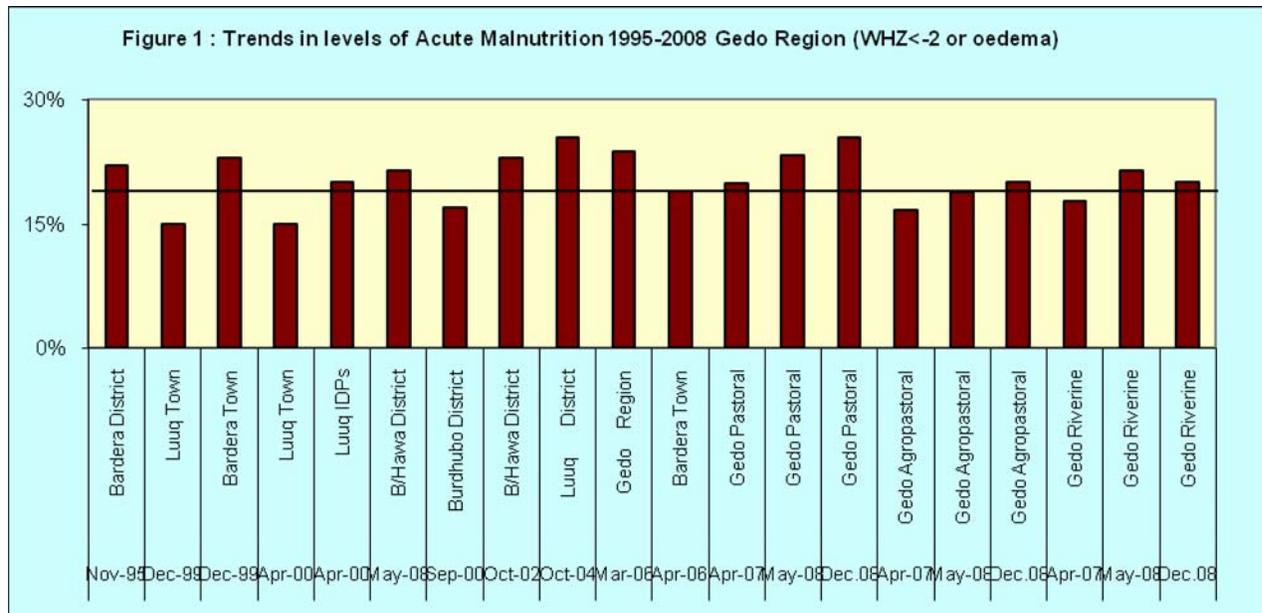
Humanitarian Emergency or **Acute Food and Livelihood Crisis** increasing from an estimated 45,000 people in Jan. '08 to 130,000 in Aug. '08. The deterioration was more severe in the Northern Gedo, particularly affecting the Dawo Pastoral, Southern Agropastoral and Juba pump irrigation Riverine livelihoods. The worsening food security situation was largely due to several seasons of below average rains leading to poor or failed crop, depletion of rangeland resources, low livestock productivity, reduction in herd sizes and livestock out-migration. Hyperinflation and high food prices also impacted negatively on the food security in the region.

Nutrition Situation trends

The nutrition situation in the region has likewise remained unstable, with all assessments conducted in the region since 1995 recording global acute malnutrition rates (GAM) above the emergency threshold of 15%. The most recent livelihood-based assessments conducted in May '08 continued to show the precarious situation recording *Very Critical* nutrition situation with GAM rates of >20% in the pastoral and riverine livelihoods and a *Critical* situation in the agropastoral livelihood with a GAM rate of 18.8%. *Figure 1* indicates the trends of acute malnutrition since 1995. The poor nutrition situation in the region has largely been attributed to the chronic food insecurity arising from manmade disasters (conflicts) and natural causes such as drought which affected the livelihood and social support systems in the region. The chronically high levels of morbidity particularly diarrhoea and poor child feeding and care practices have also been identified as major contributory factors to malnutrition. The trend reflected in figure 1 clearly

⁶ Rural Population Estimates by Region/ District, UNDO Somalia, August 2005.

shows a precarious nutrition situation that requires constant monitoring to form the basis for feasible and appropriate interventions. This, therefore, necessitated the need for repeat assessments at the livelihood level.



2.0 ASSESSMENT OBJECTIVES

The overall objective of the three livelihood-based assessments was to establish the extent and severity of acute malnutrition, the underlying factors and provide recommendations to guide response in Gedo region.

Specific Objectives:

1. To determine the prevalence of acute malnutrition among children aged 6-59 months in the Pastoral and Agro-pastoral livelihood zones and estimate the range of acute malnutrition in the Riverine zone in Gedo region.
2. To determine the level of acute malnutrition among women aged 15-49 years in the two livelihood groups of Pastoral and Agropastoral in Gedo region.
3. To identify factors influencing nutrition status of the children in the two livelihood groups of Pastoral and Agropastoral in Gedo region.
4. To determine the prevalence of some common diseases (measles, diarrhoea, febrile illnesses and ARI) and malaria (through RDT) in the two livelihood groups of Pastoral and Agropastoral in Gedo region.
5. To determine the measles polio vaccination and Vitamin A supplementation coverage among children in the two livelihood groups of Pastoral and Agro-pastoral in Gedo region.
6. To assess child feeding and care practices in the two livelihood groups of Pastoral and Agro-pastoral in Gedo region.
7. To determine the crude and under-five mortality rates in the two livelihood groups of Pastoral and Agro-pastoral in Gedo region.

3.0 METHODOLOGY

Three cross-sectional assessments were conducted among the pastoral; agro-pastoral and riverine livelihood zones of Gedo region covering all the six districts – Belet Hawa, Elwak, Dolo, Garbahare, Luuq and Bardera. The assessments were carried out from 10th to 25th December 2008.

A two stage Probability proportionate to size (PPS) methodology was used in sampling. Using the ENA for SMART software, a total of 812 and 728 households were calculated as the minimum number of households required in pastoral and agropastoral livelihood respectively for both anthropometric and mortality assessments. This was based from the malnutrition and mortality rates and design effects recorded in the May 2008 assessments. A list of all settlements/villages/towns within each of the three livelihoods in Gedo with their respective populations⁷⁷ formed a sampling frame from which 29 clusters for pastoral, 28 and 33 clusters for agropastoral and riverine livelihoods respectively were randomly selected using Epiinfo/ENA software (*Appendix 4*). For pastoral and agropastoral livelihoods, a 90 day retrospective mortality data was collected from the sampled households including those that did not have children aged 6-59 months. For the riverine livelihood 33x6 LQAS design was used where six children aged 6-59 months were assessed in each of the 33 clusters sampled. Mortality data was not collected in the riverine community.

Both qualitative and quantitative data collection techniques were used. Quantitative data was collected using a standard household questionnaire for nutrition assessment (appendix 1) and a standard mortality questionnaire (appendix 2). Quantitative data collected included household characteristics; child anthropometry, morbidity; vitamin A supplementation, measles and polio immunization coverage; dietary diversity; and water and sanitation. Qualitative data was collected by an interagency team comprising of assessment supervisors and coordinators through focus group discussions and key informant interviews to provide further understanding of possible factors influencing nutritional status. Additional food security information was collected during the FSAU post *Deyr*'08/09 assessment which took place in the same month of December 2008 overlapping with the nutrition assessment.

A five-day training of enumerators and supervisors was conducted in Garbahare town covering ethical procedures during the assessment, interview techniques, sampling procedure, inclusion and exclusion criteria, sources and reduction of errors, taking and standardization of measurements (height, weight and MUAC), review of questions in the questionnaire, diagnosis of oedema and measles, verification of deaths within households and handling of equipment.

Standardisation of measurements and pre-testing of the questionnaire and equipment were carried out in a section of Garbahare town that had not been selected as a cluster for the actual assessment. Quality of data was also ensured through (i) monitoring of the fieldwork by the coordination team, (ii) crosschecking of filled questionnaires on daily basis and recording of observations and confirmation of measles, severe malnutrition and death cases by supervisors. All households sampled were visited and recorded including empty ones (iii) daily review was undertaken with the teams to address any difficulties encountered, (iv) progress evaluation was carried out according to the time schedule and progress reports shared with partners on regular basis, (v) continuous data cleaning and plausibility checks (vi) monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights and (vii)

⁷⁷ Due to lack of UNDP population figures at settlement level, NID polio figures (March 2007) further verified by the assessment team were used for sampling.

continuous reinforcement of good practices. All measurements were loudly shouted by both the enumerators reading and recording them to reduce errors during recording. The plausibility check was carried out using Epiinfo/ENA software determine the quality of data collected (appendix 7)

Household and child data was entered, processed (including cleaning) and analysed using EPI6 software. Mortality data was entered and the retrospective crude and under five mortality rates generated in Nutrisurvey software.

4.0 ASSESSMENT RESULTS

Given that LQAS methodology used in riverine assessment is designed to estimate the range of acute malnutrition rate, only the estimated GAM range for riverine population is discussed in the context of this report.

4.1 Household Characteristics of Study Populations

The two livelihood-based nutrition assessments covered a total of 886 households with mean household size of 6.5±2.7 and 5.5±2.2 persons in the pastoral and agropastoral livelihoods respectively. A total of 1536 children aged 6-59 months were assessed. The mean number of the children with age of below five years was 2.0±0.88 and 1.7±0.72 children per household in pastoral and agropastoral livelihood zones respectively. The household characteristics by livelihood are presented in Table 4.1.

Table 4.1: Household Characteristics

Characteristics	Pastoral		Agropastoral	
	N	%	N	%
Total Households	445	100	441	100
Household size (Mean):	6.5	SD=2.7	5.5	SD=2.2
Mean No of Under fives	2.0	SD=0.9	1.7	SD=0.8
<i>Residential Status</i>				
Resident	431	96.9	429	97.3
Internally displaced<3 months	4	0.9	11	2.4
IDP from march'07	5	1.1	1	0.2
IDP before 2007	5	1.1		
Households hosting IDP	47	10.6	39	8.8
<i>Household Head</i>				
Male	257	57.8	351	79.6
Female	188	42.2	90	20.4
<i>Main source of Income</i>				
Animal and its products sales	133	29.9	53	12.0
Crop sales	22	4.9	307	69.6
Trade	22	4.9	4	0.9
Casual labour	236	53.0	73	16.6
Salaries/wages	9	2.0	1	0.2
Remittances/Zakat/Gifts	17	3.8	3	0.7
Others	6	1.3	-	-
<i>Mosquito Net Ownership</i>				
Yes	267	60.0	118	26.7
No	178	40.0	323	73.2

The results show over 96% of the assessed households were local residents while others were internally displaced persons (IDPs) who were displaced at different times (see Table 4.1). In addition to the internally displaced households about 10% of the resident households were hosting displaced persons.

Most of the assessed households in the two livelihoods are reportedly male headed with 57.8% and 79.6% of the pastoral and agropastoral respectively being male headed.

The major sources of income for the assessed households in the pastoral livelihoods are casual labour 53% and sale of livestock and livestock products (29.9%), while for the agropastoral households sale of crop (69.6%) and casual labour (16.6%) are the main sources of income. Other main sources of income are

listed in Table 4.1.

Regarding ownership of mosquito nets, majority (60%) of pastoral households reportedly own mosquito nets while only 26.7% of the agropastoral households reported to own similar nets. Most of the nets owned in the two livelihoods were from Global Fund for malaria, Somalia.

4.2 Health, Water and Environmental Sanitation

4.2.1 Water Access and Quality

In the two livelihoods assessed, most households (>80%) accessed water for drinking and other domestic use from surface-based sources such as river, streams, open wells and water catchments. Other water sources are listed in Table 4.2. Water from these sources was reportedly unsafe with only 2.9% of pastoral and 0.5% of the agropastoral reportedly accessing safe water. Treatment of drinking water was reportedly low with less than five percent of the households

	Pastoral (N=445)		Agro-pastoral (N=441)	
	N	%	N	%
<i>Source of Drinking Water</i>				
Tanker truck	6	1.3	6	1.4
Tube well/Borehole	81	18.2	14	3.2
Surface water (river, water catchment.)	358	80.4	421	95.5
<i>Whether water source is safe</i>				
Yes	13	2.9	2	0.5
No	432	97.1	439	99.5
<i>Whether water is treated</i>				
Yes at Source	16	3.8	3	0.7
Yes at Storage level	7	1.8	15	3.7

reporting water treatment practice either at the source or at the storage level. High incidences of diarrhoea have been associated with consumption of water from unprotected sources⁸.

4.2.2 Morbidity, immunization and Health Seeking Behaviour

Morbidity remains a concern in Gedo with 61.2% and 12.3% of the assessed children from pastoral and agropastoral communities respectively, reported to have suffered from one or more of the common childhood illnesses in the two weeks prior to the assessment. The specific prevalence of common illnesses varied between pastoral and agro-pastoral livelihoods with respective reported prevalence of 18.6% and 6.2% for diarrhoea; 28.5% and 6.5% for suspected malaria/febrile illness; 28.2% and 8.1% for ARI and 4.2% and 0.4% for suspected measles. For the majority (49.1%) of the children from pastoral population who fell sick within two weeks prior to the assessment, medical assistance was sought from public health facilities while an equal proportion (49.4%) of the children from agro-pastoral population sought medical services from private pharmacy and clinics. Of concern though was the significant proportion, particularly among the agro-pastoral (34.5%) that did not get any medical assistance. The reported status for the three health programmes assessed was below the recommended coverage of 95% level (Sphere, 2004) in the two livelihoods. Polio immunization status however is relatively higher particularly among the pastoral at 79.7% while the agro-pastoral population recorded a low immunization status of 43.3%. The proportions of the children reported to have received measles vaccination and vitamin A supplements are shown on Table 4.3. The results further show low access to health services with only 57.6% and 14.7% of the assessed pastoral and agropastoral households respectively accessing health services.

⁸ FSAU Gedo Nutrition Assessment, March 2006

Table 4.3: Morbidity, measles immunisation, polio vaccination and vitamin A supplementation status

	Pastoral		Agro-pastoral	
	n	%	n	%
Children reportedly sick	519	61.2	87	12.3
<i>Where health service was sought</i>				
Own medication	6	1.2	5	5.7
Traditional healers	19	3.7	-	-
Sheikh/Prayers	100	19.6	7	8.0
Private pharmacy/clinic	112	22.0	43	49.4
Public health facilities	250	49.1	2	2.3
No assistance sought	22	4.3	30	34.5
Proportion of children reported with diarrhoea in 2 weeks prior to assessment	158	18.6	44	6.2
Proportion of children reported with ARI within 2 weeks prior to assessment	234	28.2	57	8.1
Children with suspected malaria in 2 weeks prior to assessment	242	28.5	46	6.5
Suspected measles within one month prior to assessment	36	4.2	17	2.4
<i>Immunization Coverage</i>				
Children (9-59 months) immunised against measles	538	63.4	144	20.4
Children who have ever received polio vaccine	676	79.7	305	43.3
Children who received vitamin A supplementation in last 6 months	401	47.3	179	25.4
Proportion of reported household with access to health services	257	57.6	65	14.7

Table 4.4 Results of the Malaria RDT assessment

	Livelihood			
	Pastoral (N=1447)		Agro-pastoral (N=1402)	
	n	% (CI)	n	% (CI)
RDT Positive	69	4.8 (2.6 – 7.0)	10	0.7 (0.2 – 7.8)
Reported fever	463	32.0 (23.5 – 40.5)	54	3.9 (2.1 – 5.6)
Owned net	734	50.7 (38.1 – 63.4)	401	28.6 (16.6 – 40.6)
Slept under net	692	47.8 (34.7 – 60.9)	372	26.0 (14.3 – 37.8)
Treated for malaria	20	1.4 (0.5 – 2.2)	9	0.6 (0 – 1.2)

A rapid diagnostic test (RDT) for malaria⁹ conducted concurrently in the region confirmed malaria prevalence (*plasmodium falciparum*) of 4.8% among pastoral and 0.7% among the agropastoral populations. These levels are significantly lower than the self reported levels at 32% and 3.9% among the pastoral and agropastoral population highlighted on Table 4.3 and may be attributed to misdiagnosis of fever for

malaria. Half of the pastoralists who tested positive for malaria reportedly owned mosquito nets while only 28.6% of the assessed agro-pastoral population owned these nets. An important

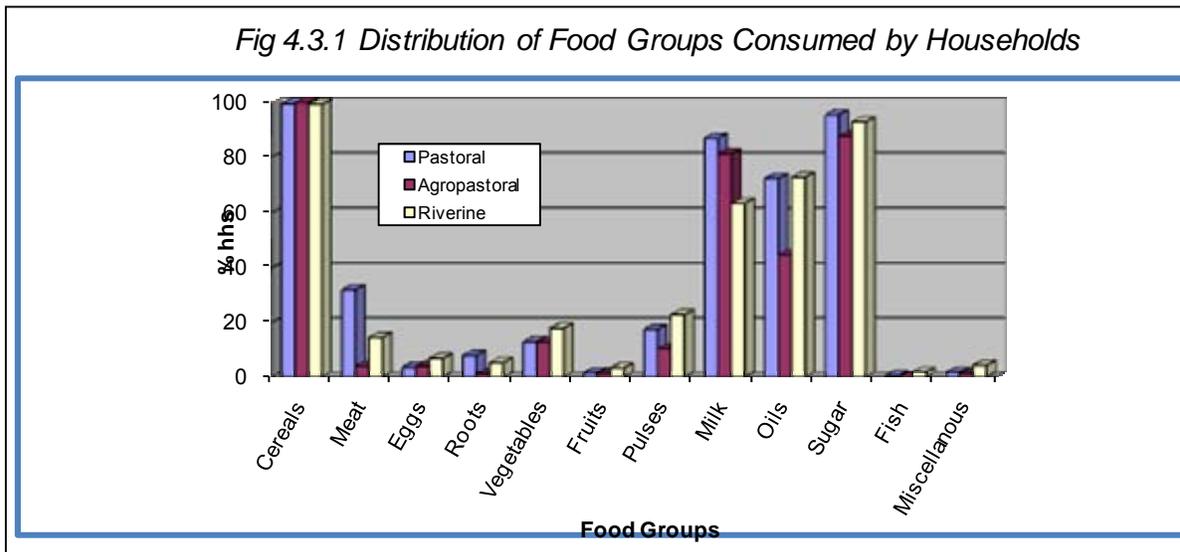
⁹ Tests using Para checks conducted in collaboration with UNICEF

observation was that not all those who reported to own mosquito nets had used them in the previous night as indicated on Table 4.4 hence exposing themselves to risks of malaria from mosquito bites.

4.3 Household Food Security

4.3.1 Food Consumption

As shown on figure 4.3.1, cereals provided the bulk of the food in the household diet. Cereal-based diets had been consumed by almost all the assessed households in the previous 24 hours prior to the assessment. Other food items frequently consumed by over 75% of the assessed households were milk, sugar and oil while the least consumed food items were roots, vegetables, fruits and fish.



The majority (93.7%) of the assessed pastoral households reportedly obtained food through

Table 4.5. Households main source of food

Main source of food	Pastoral		Agro-pastoral	
	n	%	n	%
Own production	5	1.1	233	53.0
Purchasing	417	93.7	181	41.1
Gifts from friends	2	0.4	6	1.4
Food aid	19	4.3	20	4.5
Bartered	1	0.2	-	-
Borrowed	1	0.2	-	-
<i>Main source of cereals</i>				
Own production	10	2.2	300	68.5
Purchasing	405	91.0	111	25.3
Gifts from friends	-	-	4	0.9
Food aid	27	6.1	23	5.2
Borrowed	2	0.4	-	-
<i>Main source of Milk</i>				
Own production	100	22.5	292	74.7
Purchasing	245	55.1	99	25.3

purchase, a significant shift from baseline¹⁰ figures of 47-60% for normal year (1998-1999). On the other hand, more than half (53%) of the agro-pastoral households acquired food through own production, which is consistent with 50-70%¹¹ⁱ for normal year. Food aid was reported as the main source of food to 4.3% and 4.5% of the assessed pastoral and agropastoral household respectively. On cereal access, the majority (68.5%) of the agro-pastoral population accessed cereals from their own production

while a large majority (91%) of the pastoral households obtained cereals through purchase. Of great concern is the fact that more than half (55.1%) of the pastoral and about a quarter (25.3%) of the agropastoral population were reportedly obtaining milk through purchase thereby limiting quantity at the household level which will negatively affect nutrition status. The low milk access may be due to the reported early outmigration of the livestock from pastoral and agropastoral areas to the riverine areas in Gedo region due to poor pasture and low water availability.

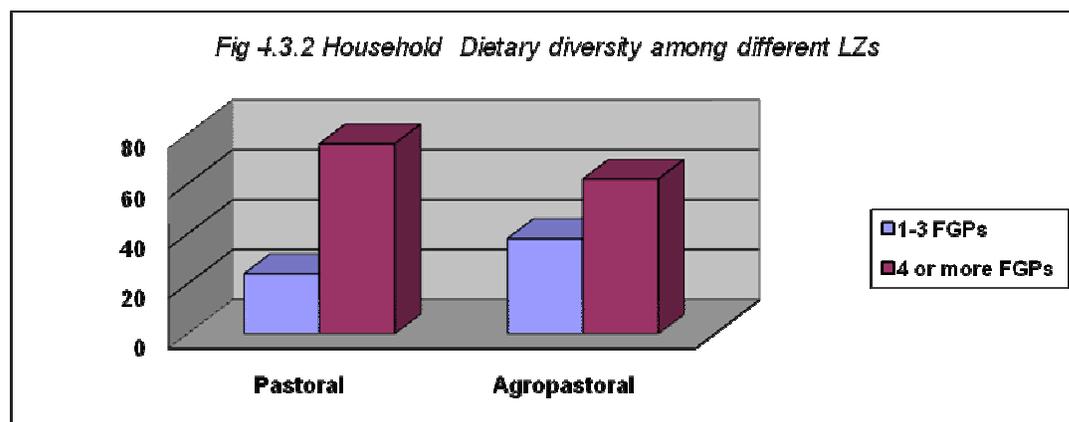
¹⁰ FSAU, 2002 Baseline Profile indicate 47-60% for Dawo Pastoral LZ and 34-58% for southern Iand Pastoral LZ

¹¹ FSAU 2002 Baseline Profiles indicate 60-70% for Juba Pump Irrigation LZ and 50-65% for southern Agropastoral

4.3.2 Dietary Diversity

The most frequently consumed number of food groups reported in the two livelihoods were four and on average the pastoral and agropastoral households were reportedly consuming 4.3 ± 1.3 and 3.9 ± 1.1 food groups respectively. As shown in Fig 4.3.2, a significant proportion of the pastoral, 24% as well as agro-pastoral, 38.1% households consumed poorly diversified diets¹² in the 24 hours prior to the assessment. These indicate a critical dietary diversity based on FSAU categorization. However results show that the majority of the pastoral, 80% and agropastoral, 55.7% households consumed two meals per day implying that some households skipped some meals.

	Pastoral		Agro-pastoral	
	n	%	n	%
<i>No of food groups consumed</i>				
2 food groups	27	6.1	25	5.7
3 food groups	80	18.0	143	32.5
4 food groups	163	36.6	158	35.9
3. food groups	96	21.6	88	20.0
3. food groups	58	13.0	15	3.4
7 food groups	15	3.4	5	1.1
8 food groups	3	0.7	2	0.5
9 food groups	2	0.4	3	0.7
10 food groups	1	0.2	1	0.2
<i>No. Having Diversified Diet</i>				
1-3 food groups	109	24.0	168	38.1
≥ 4 food groups	346	76.0	273	61.9
Mean HDDS	4.3 (SD=1.3)		3.8 (SD=1.1)	
<i>No. of meals consumed</i>				
One meal	46	10.3	26	5.9
Two meals	356	80.0	245	55.7
Three meals	43	9.7	169	38.4



¹² Composed of at three or fewer food groups based on a total of 12 FAO food groups.

4.3.3 Feeding Frequency and Admission to feeding centres for children under five years

Table 4.7: Feeding Frequency of U5 children

Feeding frequency	Pastoral (N=445)		Agro-pastoral (N=441)	
	N	%	N	%
1 time	46	5.5	4	0.6
2 times	397	47.9	261	37.0
3 times	224	27.1	402	57.0
4 times	103	12.4	32	4.5
5 times	59	7.1	6	0.9
<i>Type of feeding Programme the child admitted to</i>				
SFP	32	3.9	19	2.7
OTP/CTC	1	0.1	-	-
None	798	96	686	97.3

The majority (47.9%) of the pastoral children aged 6-59 months were fed two times in a day while among the agro-pastoral more than half (57%) were fed three times a day. It is recommended that children aged 6-8 months should be fed for 2-3 times, those aged >8-12, months 3-4 times while those aged

more than a year be fed for 4-5 times a day (FANTA, 2003; WHO, 2003; UNICEF, 2002). These results indicate that majority of the young children aged 6-12 months met the recommended feeding frequency while most of the older children aged more than one year were fed infrequently. Despite the high acute malnutrition rates recorded in the region, registration of acutely malnourished children to the targeted feeding programmes was very low with only 4% of the pastoral and 2.7% reportedly registered in either SFP or OTP/CTC.

4.4 Nutrition Status

4.4.1 Malnutrition by Livelihoods

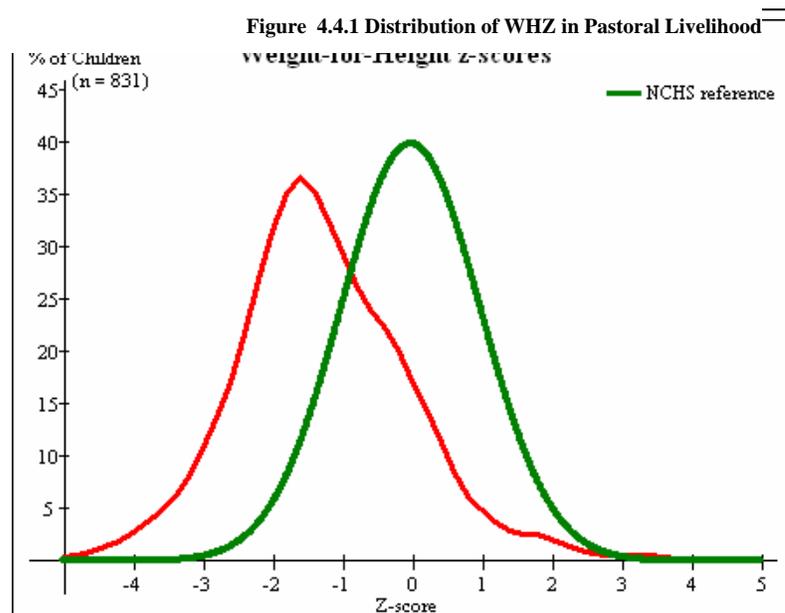
Table 4.8: Summary of Malnutrition rates in the Pastoral Livelihood

Malnutrition rates (NCHS)	Pastoral	
	No	% (CI)
Global Acute Malnutrition (<-2 Z score or oedema)	214	25.4 (22.0 – 29.0)
Severe Acute Malnutrition (<-3 Z score or oedema)	34	6.6 (4.8 – 8.7)
Oedema	3	0.4 (0 – 0.7)
Global Acute Malnutrition (<-2 Z score or oedema WHO Anthro)	228	27.4 (23.7 – 31.6)
Severe Acute Malnutrition (<-3 Z score or oedema WHO Anthro)	90	10.8 (8.3 – 14.0)
GAM (WHM<80% /oedema)	168	20.2 (16.8 – 24.1)
SAM (WHM<70% /oedema)	28	3.4 (2.1 – 5.4)
Stunting (HAZ < -2)	214	25.8 (20.9 – 31.3)
Underweight (WAZ < -2)	316	38.0 (32.7 – 43.6)

In pastoral and agropastoral livelihoods, a total of 1536 children aged 6-59 months were assessed while in the riverine LQAS assessment 198 children were assessed. The results from the pastoral livelihood using NCHS 1977 references indicate a **Very Critical** nutrition situation with GAM rates of **25.4%** (22.0 – 29.0) and SAM rate of **6.6%** (4.8 – 8.7) including three

oedema cases.

Analysis of the data using the WHO Anthro references show a slightly higher GAM rate of 27.4% (23.7 – 31.6) and almost double SAM rate of 10.8% (8.3 – 14.0). High stunting and underweight rates of 25.8% (20.9 – 31.3) and 38% (32.7 – 43.6) respectively were also recorded among the assessed pastoral children. These indicate *Alert* and *Critical* stunting and underweight levels respectively according to WHO classification.



Overall, the distribution of the weight-for-height Z scores in the pastoral assessment was shifted towards the left depicting a poorer nutrition situation according to WHO standards (Fig 4.4.1). A summary of the Nutrisurvey quality checks for the assessments is given in appendix 7.

On the other hand, the LQAS assessment among the riverine community identified 43 out of the assessed 198 as acutely malnourished and based on LQAS decision rule, the result indicate that GAM rate in the riverine population is >20% showing a **Very Critical** nutrition situation. The anthropometric measurements from the agropastoral livelihood recorded a GAM rate of >20%, however the data was of insufficient quality after carrying plausibility checks using Epi-ENA software, likely due to reduced supervision due to insecurity. For this reason, the point prevalence is not reported but integrated analysis of the assessment data and health and feeding facility data shows a **likely Very Critical** situation.

4.4.2 Malnutrition by Sex in pastoral Livelihood

Table 4.9 Distribution of children by nutritional status (WHZ-score or oedema) and child sex

Nutrition status	Pastoral			
	Males		Females	
	n	%	n	%
GAM (WHZ<-2 /oedema)	116	27.8	98	23.6
SAM (WHZ<-3 /oedema)	34	8.1	11	2.3
Oedema	0	0	3	0.7

As in the past assessments, a higher proportion of boys, 27.8% than girls 23.6%, were acutely malnourished in pastoral livelihood (Table 4.9). However, statistically both sexes were equally likely to be acutely malnourished ($p > 0.05$) and both sexes recorded **Very Critical** levels of acute malnutrition.

4.4.3 Malnutrition by Age in pastoral Livelihood

Months (Age)	Pastoral	Agropastoral
	SAM	GAM
6-17	15 (7.0%)	47 (21.9%)
18-29	15(7.8%)	57(29.7%)
30-41	13 (6.6%)	56 (28.3%)
42-53	11 (6.5%)	45(26.5%)
54-59	1 (1.7%)	11(19.0%)
Total	55 (6.6%)	214 (25.4%)

The proportion of acutely malnourished children varied across age category in pastoral livelihood but generally children from all age groups recorded **Very Critical** levels of acute malnutrition. Children aged 18-29 months recorded the highest proportion (29.7%) of the acutely malnourished children while those aged 54 – 59 months recorded the lowest proportion (19%) of acutely malnourished children. However, analysis of distribution of acute malnutrition between the breastfeeding age group 6-24 months and the 25-59 months category, showed no statistical difference among them ($p>0.05$).

Equally there was no statistical difference ($p>0.05$) in acute malnutrition levels among the children in the age of 6-29 months and 30-59 months age bands.

Malnutrition rates	Pastoral		Agro-pastoral	
	No	% (CI)	No	% (CI)
<i>Child MUAC</i>				
GAM (MUAC< 12.5 cm or oedema)	165	19.8 (16.5 – 23.2)	92	13.0 (10.2 – 15.9)
SAM (MUAC< 11.0 cm or oedema)	21	2.5 (1.3 – 3.7)	7	1.0 (0.3 – 1.7)
<i>Pregnant Women MUAC</i>				
Total malnourished (MUAC< 23.0 cm)	N=113 34	30.1 (19.0 – 41.2)	N=78 25	32.0 (18.4 – 45.8)
Severely malnourished (MUAC≤ 20.7 cm)	14	12.4 (6.0 – 18.7)	10	12.8 (4.9 – 20.7)
<i>Non pregnant women MUAC</i>				
Total malnourished (MUAC≤ 18.5 cm)	N=318 5	1.6 (0.0 – 3.7)	N=318 1	0.3 (0.0 – 0.8)
Severely malnourished (MUAC< 16.0 cm)	1	0.3 0 -1.0	0	0

4.4.4 Acute Malnutrition by MUAC in Pastoral and Agropastoral Livelihoods

Based on MUAC measurements, 19.8% (16.5 – 23.2) of the pastoral children were acutely malnutrition (MUAC< 12.5 cm or oedema) indicating a slightly lower prevalence when compared with WHZ rates but like WHZ

findings, MUAC results showed a *Very Critical* nutrition situation. Analysis of MUAC data from agropastoral livelihood showed a significantly lower proportion (13%) of acutely malnourished children which indicate a *Critical* nutrition situation as compared to a *likely Very Critical* situation recorded using WHZ indicators (see Table 4.11).

Pregnant women recorded very high levels of acute malnutrition compared to their non pregnant counterparts. In both pastoral and agro-pastoral livelihoods, about a third of the assessed pregnant women were acutely malnourished (MUAC<23 cm) while only <2% of the non pregnant women were acutely malnourished (MUAC≤18.5 cm). A high proportion of pregnant

women were also severely (MUAC < 20.7 cm) at risk of acute malnutrition as indicated in Table 4.12. Pregnancy raises physiological and nutritional demands of women making them vulnerable to malnutrition and this may partly explain their high acute malnutrition levels.

Table 4.12: Women Health status

Women health status	Pastoral		Agro-pastoral	
	n	%	n	%
Received tetanus vaccine	233	41.3	94	21.5
Reportedly ill	422	55.3	93	22.3

In addition, results indicated high morbidity levels among the women with 55.3% of the pastoral and 22.3% of agropastoral women reportedly been ill two weeks prior to the

assessment. The most common illnesses reported included suspected malaria/febrile illness, joint pain and anaemia. Tetanus vaccination among the women of reproductive age was low with only 41.3% of the pastoral and 21.5% of the agro-pastoral women reportedly having received tetanus vaccine.

4.5 Mortality

Mortality assessments were conducted in pastoral and agro-pastoral livelihoods where a combined total of 8040 persons, 2095 of them under fives from 1520 households were assessed. Out of these, 53 deaths were reported, 20 of them children under five years of age.

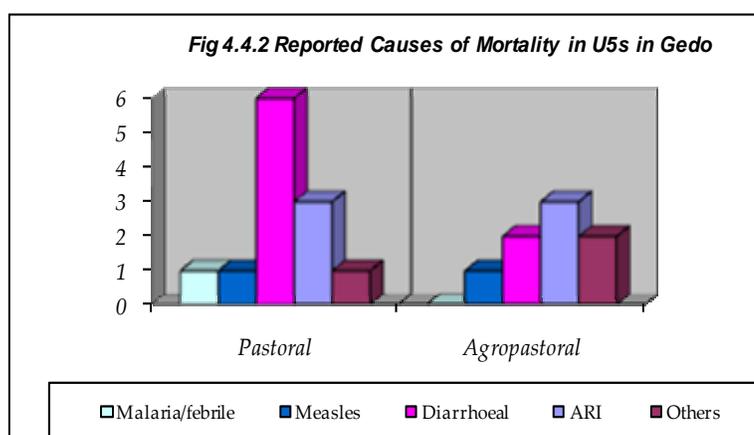
Table 4.13 Mortality among the Pastoral and Agro-pastoral Lzs in Gedo

	Pastoral		Agro-pastoral	
	U5	Total	U5	Total
Total HHS surveyed		807		715
Total Population assessed in HHS	1169	4337	926	3703
Number who joined the HHS	6	197	3	59
Number who left the HHS	60	327	4	96
Number of births	77		62	
Number of deaths	12	30	8	23
Mortality rate	1.15 (0.33 – 3.88)	0.69 (0.34 – 1.37)	0.99 (0.44 – 2.20)	0.69 (0.39 – 1.23)

The specific distributions of these figures per livelihood are shown in table 4.13.

The pastoral livelihood recorded respective crude and U5 mortality rates of **0.69** (0.34 – 1.37) and **1.15** (0.33 – 3.88). More or less similar rates

of crude and under five mortality rates of **0.69** (0.39 - 1.23) and **0.99** (0.44 – 2.20) respectively were recorded in agropastoral population. The crude and under five mortality rates in the two livelihoods were below alert levels according to WHO classification.



As shown on figure 4.4.2, diarrhoeal diseases, and ARI were the main causes of under five mortality according respondents' recall. Other suspected causes of death included accidents and birth related complications.

Respiratory infections; diarrhoeal diseases,

suspected malaria, physical injuries (killings/accidents) and others like anaemia and hunger were reported as likely causes of death among those aged five or more years.

4.6 Qualitative Information

Information on food security, water & sanitation and childcare practices was collected through qualitative approaches. Semi-structured interviews with key informants and community focus groups were used for collecting the information. The team also stopped randomly at settlements along the road for rapid assessments, and ensured that rural communities were included in the assessment. More information was collected during the FSAU post Deyr '08/09 seasonal assessment.

According to the FSAU post Deyr'08/09 analyses¹³, the rural population in Northern Gedo are classified in **Humanitarian Emergency** while Southern Gedo is in **Acute Food and Livelihood Crisis** phase. In general, the number of people in **Humanitarian Emergency** has increased to 35,000 and those in the **Acute Food and Livelihood Crisis** to 90,000. The classification is linked to the cumulative effect of the current and past rainfall performances and the impact on different livelihoods, including cereal and livestock production as well as the impact of market forces and civil insecurity. The FSAU Post Deyr '08/09 analysis further indicates that parts of Gedo region received poor rainfall resulting in average water availability and pasture conditions and poor cereal production: 37% of Post-War Average. The main water sources, which include water catchments, boreholes, shallow wells and the Juba river have either dried or water levels have gone low. In addition, even when these water sources have adequate water, the quality has remained of concern and normally there is minimum or no water treatment. The pasture condition in the Dawa Pastoral areas is notably poor, leading to livestock migration to the riverine areas. The in-migration of livestock from Elwak, Kenya to Gedo region was also reported and this is expected to create excessive pressure on water and pasture conditions in the region. The overall livestock body condition in the region is average, while milk production from livestock is low. The out migration of livestock from the pastoral and agropastoral in Gedo coupled with low milk production in the region has greatly reduced milk access and consumption in these livelihoods particularly affecting the family members who are left behind when livestock migrate away from homes. Households facing food insecurity are using various coping strategies that include borrowing food on credit, reduced meal quantity and frequency, sale of bush products, skipping of meal, reduced purchase of non-food item, shifting to less preferred food types and increased reliance on food aid and begging.

High levels of morbidity were reportedly common with diarrhoea, suspected whooping cough, common cold, malaria, fever, diarrhoea and anaemia being more prevalent. Access to health facilities in most rural areas is low while the health seeking behaviour is poor with most child caregivers reportedly taking up to four days after noticing illness before seeking any health services. This often complicates the illness and hence affects the overall health and nutrition status of the children. Access to sanitation is very low with most of the population using bush for human waste excreta. Child feeding and care practices remain largely suboptimal. Breastfeeding duration for children is usually for a maximum of 12 months with few extending to 18 months from birth. Water is often given to the newborn at birth. A sugary solution is given to the baby within the first week of birth for about four times in a day while most children are given complementary food (animal milk – mostly goat milk) before they are one month old. For most children, semi solid foods are introduced as early as 2-4 months of age and solid foods like rice

¹³ FSAU Post Deyr'08/09 Analysis Report March 2003

or *canjera* are introduced at the age of 8-12 months. Main foods given to infants (1 – 12 years) are goat milk 3 to 4 times a day in most cases and sometimes *canjero* or rice mixed with sugar and oil/butter and porridge made from flour, sugar and oil. Food insecurity/hunger and sometimes ill health are the major constraints to breastfeeding of young children below two years. Other factors cited as affecting breastfeeding include closely spaced pregnancies and wrong perception that breast milk alone is not sufficient for children from birth to the age of 6 months. Lack of clean water, cooking & storage facilities and too much work for women were mentioned as the main hindrances to food preparation and storage. Women have to travel long distances at times (during dry spells) or spend a lot of time away from home and do not have enough time to prepare food.

5.0 Discussion

Results indicate a **Very Critical** nutrition situation in the pastoral livelihood with a Global Acute Malnutrition (GAM) rate of **25.4%** (22.0 - 29.0) and a Severe Acute Malnutrition (SAM) rate of **6.6%** (4.8 – 8.7) which included three (0.4%) oedema cases. High stunting and underweight rates of 25.8% (20.9 – 31.3) and 38% (32.7 – 43.6) respectively were also recorded in the pastoral livelihood. In the riverine community, LQAS assessment identified 46 children out of the assessed 198 as acutely malnourished and basing on 33x6 LQAS decision rule the acute malnutrition rate is **>20%** and hence a **Very Critical** situation. The results from the two livelihoods indicate a sustained **Very Critical** nutrition when compared with the most recent assessments conducted in the in May 2008 where GAM rates of 23.3% (18.9 – 27.7) and 21.5% (17.6 – 25.4) were recorded in pastoral and riverine livelihoods respectively. Analysis of the pastoral data using the WHO Anthro references show a slightly higher GAM rate of 27.4% (23.7 – 31.6) and almost double SAM rate of 10.8% (8.3 – 14.0). The anthropometric result from agro-pastoral populations show a GAM rate of **>20%**, however the data was found to be of insufficient quality after carrying out plausibility checks using Epi-ENA software, likely due to reduced field supervision occasioned by insecurity. For this reason the point prevalence of the survey is not reported but an integrated analysis of the survey data together with current health and targeted feeding facilities' data shows that the nutrition of agropastoral community likely to have deteriorated from *critical* levels, with GAM rate of 18.8% (15.1 – 22.3) recorded in May 2008 to a *likely Very Critical* situation. These results from the three livelihood are consistent with acute malnutrition rates recorded across the border areas of Mandera district in Kenya where LQAS assessments conducted by ACF¹⁴ indicated that acute malnutrition rate is **>20%** indicating *very critical* nutrition situation. This shows that the population at the border areas of the two countries are equally affected and this could be attributed to the fact that these communities are related and practice similar livelihood activities.

The mortality results indicate that crude and under five mortality rates for the pastoral and agro-pastoral livelihoods are below the alert levels according to the WHO classification with respective CMR and U5MR rates of **0.69** (0.34 -1.37) and **1.15** (0.33 – 3.88) in the pastoral and **0.69** (0.39 – 2.20) and **0.99** (0.44–3.60) in the agro-pastoral livelihood zones. The pastoral CMR and U5MR mortality rates in the current assessment are within the same levels recorded in the most recent assessment conducted in May 2008 when respective rates of 0.9 (0.49 -1.32) and 1.52 (0.77 – 2.36) were recorded. On the other hand the current CMR and U5MR rates in the agro-pastoral assessment are lower than the respective alert rates of 1.37 (0.79 – 1.95) and 2.14 (0.68 – 3.60) reported in may 2008 assessment. In the two livelihoods, diarrhoea, suspected malaria/febrile illness and ARI were the main reported causes of deaths.

As in the past assessments, high morbidity levels were recorded in pastoral and agro-pastoral

¹⁴ ACF, 2008: Sentinel Surveillance Report, Garissa and Mandera December 2008.

livelihood with respective 61.2% and 12.3% of the children reported to have suffered from one or more common childhood illnesses in the two weeks prior to the assessments. Specifically, respective pastoral and agro-pastoral common illnesses prevalence were diarrhoea 18.6% and 6.2%, ARI 28.2% and 8.1%, suspected malaria 28.5% and 6.5% and measles 4.2% and 2.4%. However, a rapid diagnostic test for malaria conducted concurrently in the two livelihoods reported low malaria (positive for *Plasmodium falciparum*) prevalence rate of 4.8% and 0.7% among pastoral and agro-pastoral populations respectively. Even though the actual coverage of the three assessed health programmes could not be accurately identified due to lack of health records, the reported vitamin A supplementation, measles vaccination and polio immunization status by recall fell below the recommended coverage of 95%. Lack of these services deprives the majority of the children health and nutrition benefits associated with these health services. Access to health services was also unacceptably low at 57.6% and 14.7% among the pastoral and agropastoral livelihoods respectively as was the access to safe water at <10% in both livelihoods. Consumption of unsafe water has often been associated with increased morbidity especially water born diseases such as diarrhoea. Past assessments in Gedo have shown strong association between acute malnutrition and morbidity rates, particularly with diarrhoea. Diarrhoea is often linked with lack of safe drinking water and poor disposal of human excreta waste and poor hygiene practices.

Results further indicate poor dietary diversity in the two livelihoods with 24% and 38.1% of pastoral and agro-pastoral households respectively reportedly consuming poorly diversified diet comprised of three or fewer food groups. However, dietary diversity in the two livelihoods has improved slightly compared to May 2008 assessments when 29.1% of pastoral and 55.5% of the agropastoral populations were consuming poorly diversified diets. The most commonly consumed food types in the two livelihoods were cereals, sugar, milk and oil while fish, eggs, fruits and vegetables were least consumed food types. Milk consumption was noted to have increased when compared with May 2008 assessment but of concern is the fact that as many as 55.1% of the pastoral were accessing milk through purchase with possibility of inadequate consumption. The majority of both pastoral 80% and agropastoral 55.7% households were reported to have consumed two meals 24 hour prior to the assessment. This implies that some households skipped some meal. Qualitative data showed that households facing food insecurity had resorted to various coping strategies that included borrowing food on credit, reduced meal quantity and frequency, sale of bush products, skipping of meal, reduced purchase of non-food item, shifting to less preferred food types and increased reliance on food aid and begging. For the children under the age of five years, majority of those aged 6-12 months met the recommended feeding frequency that varies between 2-4 times while most of the those aged more than a year were fed for fewer than recommended 4-5 times a day. Qualitative information generated through focus group discussion continue to poor child care and feeding practices where colostrum is discarded, exclusive breastfeeding is never practiced while children are introduced to complementary food too early in a life. Further, data indicated that heavy work burden among the women, close-spaced birth interval and lack of knowledge as key impediments to breastfeeding and child feeding. Overall, the rural population in Northern Gedo is classified in **Humanitarian Emergency** phase while Southern Gedo is in **Acute Food and Livelihood Crisis**. The classification is linked to the cumulative effect of the current and past rainfall performances and the impact on different livelihoods, including cereal and livestock production as well as the impact of market forces and civil insecurity.

In conclusion the nutrition situation in Gedo region is **Very Critical** in the three livelihoods indicating a sustained situation in pastoral and riverine livelihoods and deterioration from critical to very critical situation in agropastoral livelihood since *Gu'08*. These results are consistent with malnutrition rates of >20% recorded across the border in Mandera district in Kenya. On the other hand, the rural food security and livelihood situation in Northern Gedo is classified in **Humanitarian Emergency** while Southern Gedo is in **Acute Food and Livelihood Crisis** phase. The estimated number of people in **Humanitarian Emergency** has increased to 35,000 and those in the **Acute Food and Livelihood Crisis** to 90,000. This is linked to the cumulative effect of the current and past rainfall performances and the impact on different livelihoods, including cereal and livestock production as well as the impact of market forces and civil insecurity. The worsening nutrition situation is partly attributed to the cumulative effects of seasons with poor crop harvests and low milk production and the resultant decline in food availability and access at the household. Other factors that have affected food access are hyperinflation, increased food prices and civil insecurity. The ongoing civil insecurity has disrupted delivery of health and nutrition-related assistance to the affected population by humanitarian agencies. Notably, the suspension of such activities like food distribution in Northern Gedo, scaling down or discontinued mobile outreach activities by INGO/NGO which identify acutely malnourished and ill children for appropriate referral, have had a negative impact on the nutrition situation. Other potential factors influencing the nutrition situation include the chronic issues of poor child care and feeding practices and limited access to basic human services such as health, sanitation and safe water, often lead to high morbidity and corresponding high levels of acute malnutrition. Diarrhoea is particularly associated with high acute malnutrition rates in the region.

6.0 Recommendations

The nutrition and food security situation in Gedo region has remained dire over long time now despite various interventions in the place. Intervention efforts, therefore, need to be reviewed with an aim of strengthening and expanding them to address both immediate life saving needs such as rehabilitation of acutely malnourished children and measures to cushion against the impact of food prices and poor rain performance. This is in addition to developing longer term strategies to address the chronic poor nutrition and food insecurity including enhanced provision of basic services, sustainable strategies for livelihood support and social protection mechanisms. Cross border planning and strategising of humanitarian intervention is important given the fact that the equally affected population in the three countries of Somalia, Kenya and Ethiopia will cross borders to either side wherever humanitarian assistance is available. Integrated intervention is also important due to the fact that the multiple causes of malnutrition are inter-related.

Specific recommendations include:

Immediate Interventions

- Rehabilitation of acutely malnourished children through existing selective feeding programs coupled with active case finding of malnourished children in the rural areas until household food security is restored and critical public health issues are addressed. Capacity building of the existing MCH and the community to manage acute malnutrition could be explored.
- Improving household food security to prevent further deterioration of the nutrition situation. This may be achieved by intensifying provision of food and non-food items to affected households in the short term and support to the recovery of livelihoods.
- There is need to focus on programmes that improve dietary diversity and consumption of micronutrient rich foods. Production and consumption of vegetables and fruits which are good sources of micronutrient need to be promoted.

- There is need to have interventions to cater for livestock in the region given that food aid meant for human consumption is often shared with livestock. Provision of water and fodder for the livestock in strategic places could be explored as it could reduce out migration of livestock leaving family members without milk.
- Intervention programmes on water and health to address the problem of high morbidity.

Long term Interventions

- To address the issues of limited access to safe water, there is a need for rehabilitation/protection of water systems including the well and water catchments. The community should be trained on maintenance of the water systems and treatment of drinking water at household levels.
- To initiate income generating activities to improve the socio-economic situation in Gedo region and boost purchasing power for food and non-food items. Introduction of small-scale credit system for small business so as to raise income given that most households rely on food purchase as main food source.
- There is need for establishment or strengthening of health facilities and satellite services especially in rural villages where there are no health facilities.
- Intensifying health and nutrition education activities at the household level to address care concerns, targeting mothers, and other caregivers. The main areas of focus should include promoting exclusive breastfeeding, appropriate young child feeding, diet diversification, and improvements in household hygiene including health seeking behaviours.
- In order to mitigate the impact of the current rain failure and past drought, there is need for interventions to cushion livelihoods from diminishing further as well as assisting those who have lost livelihoods start afresh. This could include provision of farm inputs, irrigation equipment, and rehabilitation of canal and restocking of livestock.
- Participatory approaches to boost access and utilization of sanitation facilities such as latrines. To enlighten the proportion of the households that see no need of using sanitation facilities, education on the importance of proper disposal of waste including excreta should form part of such initiative.

QNO:

APPENDIX 1: GEDO NUTRITION ASSESSMENT HOUSEHOLD QUESTIONNAIRE, DECEMBER 2008

Household Number _____ Date _____ Team Number _____ Cluster Number _____ Cluster Name _____
District: _____

Q1-7 Characteristics of Household

Q1. Household size¹⁵? _____

Q2. Number of children less than 5 years (0-59 months)? _____

Q3. Sex of household head¹⁶? 1=Male 2=Female

Q4a. How long has this household lived in this locality? 1= Resident 2= IDP<3 months 3=IDP March '07 4=IDP before 2007

b. Are you hosting any recently (in the last 6 months) internally displaced persons? 1= Yes 2= No

c. If yes, Number of persons _____

d. If yes, what is the impact of IDPs on the household? 1=Receive food aid 2=Increased income for the household 3=Less resources available 4=

Q5. Does household have mosquito net? _____ 1= Yes 2= No
type 3= Not seen

Q6. If yes, ask to see the net: _____ 1= GFSOM label 2=Other

Q7. What is the household's main source of income? 1= Animal & animal product sales 2= Crop sales/farming 3= Trade 4= Casual labour
5= Salaried/wage employment 6= Remittances/gifts/zakat 7= Others, specify

Q8-11 Feeding and immunization status of children aged 6 – 59 months in the household.

¹⁵ Number of persons who live together and eat from the same pot at the time of assessment

¹⁶ One who controls and makes key decisions on household resources (livestock, assets, income, and food), health and social matters for and on behalf of the household members.

First Name	Age (months)	Q8 How many times do you feed the child in a day (besides breast milk)? 1= 1 time 2=2 times 3=-3 times 4= 4 times 5= 5 times	Q 9 Has child been provided with Vitamin A in the last 6 months? (show sample) 1=Yes 2= No	Q10 Has child been Vaccinated against measles? 1=Yes 2= No	Q11 Has the child ever been given polio vaccine orally? 1=Yes 2= No
1					
2					
3					
4					

Q12-27 Anthropometry and morbidity for children aged 6 – 59 months in the household

First Name	Q12a Age	Q13 Sex 1=Male 2=Female	Q14 Oedema 1=yes 2= No	Q15 Height (cm) To the nearest tenth of a cm	Q16 Weight (kg) To the nearest tenth of a kg	Q17 MUAC (cm) To the nearest tenth of a cm (≥6 mo)	Q18 Diarrhea ¹⁷ in last two weeks 1= Yes 2= No	Q19 Serious ARI ¹⁸ (<i>Oof Wareen/Wa reento</i>) in the last two weeks 1=Yes 2= No	Q20 Febrile illness/ suspected Malaria ¹⁹ in the last two weeks 1=Yes 2= No	Q21 Suspected Measles ²⁰ (<i>Jadeeco</i>): in last one month 1=Yes 2= No	Q22 Did the child sleep under a mosquito net last night? 1=Yes 2= No	Q23 Where did you seek healthcare assistance when child was sick? (If yes in Q18 – 21) 1=No assistance sought 2=Own medication 3=Traditional healer 4 = Sheikh / Prayers 5=Private clinic/ Pharmacy 6= Public health facility	Q24 Is the child currently registered any of the feeding centres 1= SFP 2= TFC 3= OTP/C 4= Other 5=None
1													
2													
3													
4													

25: Anthropometry (MUAC) for adult women of childbearing age (15-49 years) present at the household

Sno	Name	Age (years)	Received Tetanus vaccine? 1= Yes 2= No	MUAC (cm)	Physiological status 1=Pregnant 2= Non pregnant	Illness in last 14 days? If yes, what illness?
1	Mother:					

Codes for adult illnesses

0= None	1= ARI
2=Diarrhoeal	3=Malaria/febrile
4=Joint	5=Urinal
6=Organ	7=Anaemia
8= Reproductive	9=Other, specify

¹⁷ Diarrhoea is defined for a child having three or more loose or watery stools per day

¹⁸ ARI asked as *oof wareen* or *wareento*. The three signs asked for are cough, rapid breathing and fever

¹⁹ Suspected malaria/acute febrile illness: - the three signs to be looked for are periodic chills/shivering, fever, sweating and sometimes a coma

²⁰ Measles (*Jadeeco*): a child with more than three of these signs– fever and, skin rash, runny nose or red eyes, and/or mouth infection, or chest infection

Q 26 Food Consumption & Dietary Diversity

Twenty four-hour recall for food consumption in the households: The interviewers should establish whether the previous day and night was usual or normal for the households. If unusual- feasts, funerals or most members absent, then another day should be selected.

<p>Food group consumed: What foods groups did members of the household consume in the past 24 hours (from this time yesterday to now)? Include any snacks consumed.</p>	<p>Did a member of your household consume food from any these food groups in the last 24 hours?</p> <p>1=Yes 0= No</p>	<p>*Codes:</p> <p>1= Own production 6=Borrowed 2=Purchases 7=Gathering/wild 3=Gifts from friends/ relatives 8=Others, specify____ 4=Food aid 9=N/A 5=Bartered</p>
<p>Type of food</p>		<p>What is the main source of the dominant food item consumed? (Use codes above)?</p>
<p>1. Cereals and cereal products (e.g. maize, spaghetti, rice, caanjera, bread)?</p>		
<p>2. Milk and milk products (e.g. goat/camel/ fermented milk, milk powder)?</p>		
<p>3. Sugar and honey?</p>		
<p>4. Oils/fats (e.g. cooking fat or oil, butter, ghee, margarine)?</p>		
<p>5. Meat, poultry, offal (e.g. goat/camel meat, beef; chicken or their products)?</p>		
<p>6. Pulses/legumes, nuts (e.g. beans, lentils, green grams, cowpeas; peanut)?</p>		
<p>7. Roots and tubers (e.g. potatoes, arrowroot)?</p>		
<p>8. Vegetables (e.g. green or leafy vegetables, tomatoes, carrots, onions)?</p>		
<p>9. Fruits (e.g. water melons, mangoes, grapes, bananas, lemon)?</p>		
<p>10. Eggs?</p>		
<p>11. Fish and sea foods (e.g. fried/boiled/roasted fish, lobsters)?</p>		
<p>12. Miscellaneous (e.g. spices, chocolates, sweets, beverages, etc)?</p>		
<p>Q27 In general what is the <u>main</u> source of staple food in the household? (*Use codes in 26 above) _____</p>		
<p>Q28 Total number of food groups consumed in the household: _____</p>		

Q29 How many meals²¹ has the household had in the last 24 hours (from this time yesterday to now)? 1= One 2=Two 3= Three

Q30-32 Access to water (quality and quantity)

Q30 What is the household's main source of drinking water? 1 = Tap/ piped water 2= Tanker truck 3= Tube well/ borehole 4= Spring 5= Bottled water

6= rooftop rainwater 7= Surface water (river, stream, dam, pond, open well; water catchments; berkad, etc)

Q31a Is drinking water drawn from a protected/safe source? 1=Yes 2=No

Q31b Is water treated at the: a) source? 1= Yes 2= No b) storage level? 1= Yes 2= No

Q31c If treated, what is the method of treatment? 1= Boiling 2= Chlorination 3= straining/filtering 4= Decanting/ letting it stand and settle 5= Other, specify

Q 32 Access to Health Care

Q32a Do you have access to a health facility?

1 = Yes 2 = No

Q32b If yes, do you use it? 1 = Yes 2 = No

Q32c If not, why not? 1 = Too expensive 2 = Too far 3 = Not enough time 4 = Others specify

Checked by supervisor (signed): _____

²¹ A meal refers to food served and eaten at one time (excluding snacks) and includes one of the three commonly known: - breakfast, lunch and supper/dinner

APPENDIX 3: Traditional Calendar of events

Month	Events	2004	2005	2006	2007	2008
Jan.	Beginning of Jiilal	59 Siditaal	47 Siditaal	35 Siditaal Safari park retreat	23 Siditaal	11 Carafu
Feb.	Mid of Jiilal	58 Arafo/Dul-Xaj	46 Arafo/Dul-Xaj	34 Arafo/Dulxaj	22 Arafo/Dulxaj Sheikh Indhocaadde-Baidoa attack	10 Seko
Mar.	End of Jiilal	57 Sako	45 Sako	33 Sako	21 Sako/Safar Sheikh Ibrahim Bardera ceremony	9 Safar
Apr.	Beginning of Gu'	56 Safar	44 Safar	32 Safar	20 Safar/Mawliid	8 Safar/ Mowliid
May	Mid of Gu'	55 Mawlid	43 Mawlid	31 Mawlid	19 Mawlid/Jamadul-awal.	7 Mawlid
Jun.	End of Gu'	54 Malmadoone/ Milihore	42 Malmadoone/ Milihore	30 Malmadoone/ Milihore ICU took control	18 Malmadoone/ Milihore/Jamadul-awal	6 Malmadoone / Milihore/Jam adul-awal
July	Beginning of Xagaa	53 Jamadul-Awal/	41 Jamadul-Awal/	29 Jamadul-Awal/	17 Jamadul-Awal/	5 Jamadul-Awal/
Aug.	Mid of Xagaa	52 Jamadul-Akhir/	40 Jamadul-Akhir/	28 Jamadul-Akhir/	16 Jamadul-Akhir/	4 Jamadul-Akhir/
Sep.	End of Xagaa	51 Rajab/Shacbaan	39 Rajab/Shacbaan	27 Rajab/Shacbaan	15 Rajab/Shacbaan	3 Rajab/Shacbaan
Oct.	Beginning of Deyr	50 Shacbaan Election of president Abdulahi Yusuf in Kenya.	38 Shacbaan/	26 Shacbaan/	14 Shacbaan	2 Shacbaan
Nov.	Mid of Deyr	49 Soon (Ramadhan)	37 Soon (Ramadhan)	25 Soon (Ramadhan)	13 Soon (Ramadhan)	1 Soon (Ramadhan)
Dec.	End of Deyr	48 Soonfur	36 Soonfur	24 Soonfur ICU overthrown from Mogandishu	12 Sidatal	

Appendix 4: List of the sampled Clusters by Livelihood- December 2008

Pastoral Livelihood Clusters			
District	Geographical unit	Population size	Cluster Number
Luuq	Dogob	430	1
Luuq	Mundolow	400	2
Luuq	Yurkud	2000	3, 4
Elwak	Town - Hawlwadaag	3040	RC
Elwak	Town - October	1560	5
Elwak	Shamarole	900	6
Elwak	Nus Dariq	500	7
Elwak	Cel Banda	400	8
Dolo	Town	2750	9
Dolo	Gedweyne	750	10
Garbahare	Dhubbaa	420	11
Garbahare	Town A	3000	12, 13, 14
Garbahare	Town B	3000	15, 16
Garbahare	Dabley	600	17
Garbahare	Ceel Guduud	1500	18
Garbahare	Ceel Cadde	2000	19, 20
Bellet Hawa	Gaawido	1500	21, 22
Bellet Hawa	Oda	1400	23
Bellet Hawa	Malmalley 1	2250	24, 25
Bellet Hawa	Jiracle	750	26
Bellet Hawa	Lo' lays	475	27
Bellet Hawa	Carra Case	200	28
Bardera	Faafaxadhun	840	29

Agropastoral Livelihood Clusters			
District	Geographical unit	Population size	Cluster
Luuq	Ceel Boon	1000	31
Garbahare	Tulo - Barwaqo	1000	32
Garbahare	Maracade	300	33
Garbahare	Fadhweyn	350	34
Bardera	Qasaaleey	200	35, 36
Bardera	Bullagaduud	438	37
Bardera	Laamalooshe	432	38
Bardera	Burcambaar	260	39
Bardera	Warguduud	300	40
Bardera	Baradhufle	231	41
Bardera	Bulo-abaq	456	42
Bardera	Shabbadda	760	43
Bardera	Galooley	150	44
Bardera	Lebibuul	398	45
Bardera	Jiidow	160	46
Bardera	Hareeri	400	47
Bardera	Humbaawe	206	RC (can be used as replacement)
Bardera	Shongolooow	2520	48
Bardera	libato	1600	49
Bardera	Bakal Wabeeri	250	RC (can be used as replacement)
Bardera	Buula Qansax	320	50
Bardera	Daleeldheerey	387	51, 52
Bardera	Waraabaale	250	53
Bardera	Hilo Shiid	670	54
Bardera	Kormaraay	480	55
Bardera	Biciibley	800	56
Bardera	Dhaydheere	200	57, 58

Riverine Clusters			
District	Geographical unit	Population size	Cluster
Luuq	Town - Hillac	2000	61, 62, 63
Luuq	Town - Waaberi	1500	64,65,66
Luuq	Town - Sheikh Maxad	2000	67,68,69
Luuq	Town - Buula Musley	1500	70,71
Luuq	Town - Bulla Qodaxley	1500	72,73
Luuq	Town - Cakararo	1600	74
Luuq	Town - Aqabuul	1500	75
Luuq	Maganey	500	76
Luuq	Ban Mudule	1000	77,78
Luuq	Halbow	678	RC (can be used for replacement)
Luuq	Madaway	550	79
Luuq	Abdikheyr	570	80,81
Dolo	Dhuusay	600	82,83,84
Dolo	Xamare	500	85
Dolo	Wagadeey 1	300	86
Bardera	Barow Diinle	580	87
Bardera	Bakal Washaq	400	88
Bardera	Buuloweyne	1200	89,90,91,92
Bardera	Shimbiroole	400	93

Appendix 5. Gedo December 2008 Assessment Team

Name	Role
<ol style="list-style-type: none"> 1. Mohamed Jamal Ahmed 2. Mohamed Hassan Elmi 3. Mohamed Hassan Dahir 4. Mohamed Mohamud Warsame 5. Mohamed Osman Saasaale 6. Abdirahim Sheikh Abshirow 7. Ahmed Siraad Abdulahi 8. Moalim Farah Mohamed 9. Jawahir Salad Omar0 10. Adam Ahmed Warsame 11. Ahmed Hussein Mowlid (AMA) 12. Abdul azizi Sheikh Omar 13. Omar Qoombe (AMA) 14. ibrahim Ali Musse 15. Abdinoor Hussein Buraale (NCA) 16. Abdi Adam Mohamed (NCA) 17. Arab Mohamed Adam (SRCS) 18. Abdi Ali Noor 19. Dahir Salad Omar 20. Ibrahim Ali Musse 	Enumerators
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<ol style="list-style-type: none"> 2. Joseph Waweru (FSAU) 	Data analysis & Report writing

APPENDIX 6: REFERRAL FORM FOR MALNOURISHED CHILDREN

Name of the village: _____ Date: _____

Name of the child: _____ Sex of child: _____

Age of child: _____ Name of caretaker: _____

Child diagnosed (suspected) with (state the condition): _____

Child referred to: _____

Child referred by: _____

Appendix 7: Assessments plausibility checks

Criteria		Missing/Flagged data	(% of in-range subjects)	Overall Sex ratio	(Significant chi square)	Overall Age distribution	(Significant chi square)	Dig pref score - weight
		Incl %		Incl P		Incl p		Incl #
	Score	5		0		0		2
Gedo Pastoral	Category	Accept	2.80%	Good	p=(0.862)	Poor	(p=0.005)	Good
	Score	5		0		10		0
Gedo Riverine	Category	Good	0.80%	Good	p=(0.829)	Unacceptable	(p=0.000)	Good
	Score	0		0			10	0
Gedo A/Pastoral	Category	Accept	3.40%	Poor	p=(0.039)	Unacceptable	(p=0.000)	Accept
	Score	5		4		10		2

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