

NUTRITION ASSESSMENT

GUBAN/WEST GOLIS PASTORAL LIVELIHOOD ZONE



Food Security Analysis Unit (FSAU/FAO)
Ministry of Health and Labour (MOHL)
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Abbreviations and Acronyms

ARI	Acute Respiratory Infections
FAO	Food and Agriculture Organisation
FSAU	Food Security Analysis Unit
GAM	Global Acute Malnutrition
HAZ	Height- for- Age Z scores
HDDS	Household Dietary Diversity Score
HFA	Height for Age
IDP	Internally Displaced Person
KM	Kilo Metres
MCH	Maternal and Child Health
MOHL	Ministry of Health and Labour
MUAC	Mid Upper Arm Circumference
NGOs	Non-Governmental Organisations
PWA	Post War Average
LHZ	Livelihood Zones
LNGO	Local Non-Governmental Organisation
INGO	International Non-Governmental Organisation
NIDs	National Immunisation Days
OR	Odds Ratio
RR	Relative Risk
SSS	Somalia Support Secretariat
SMART	Standardised Monitoring & Assessment of Relief and Transitions
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission of Refugees
VAD	Vitamin A Deficiency
UNICEF	United Nations Children's Fund
WAZ	Weight for Age Z Scores
WFP	World Food Programme
WHO	World Health Organisation
WHZ	Weight for Height Z scores

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Executive Summary

The Guban and West Golis pastoral livelihood zones mainly cover the coastal plains and highlands of Somaliland cutting across Awdal, Galbeed, Togdheer/Sahil and parts of Sanaag. These regions are inhabited by a population of about 1.41 million¹, of which 23% (317,000 persons) are found in the Guban and West Golis pastoral livelihood zones and have diversified livestock holdings. Generally there is limited access to basic services such as health, sanitation and water in the area; these are key factors that affect the nutrition status and well being of a population. In October 2008, FSAU in collaboration with the Ministry of Health and Labour (MOHL) and UNICEF conducted a nutrition survey among the pastoralist population of the Guban and West Golis livelihood zones. This is the first nutrition survey that has been conducted in the area and will serve as a baseline. The main objective of the survey was to determine the level of wasting among the children aged 6-59 months, and to analyze the possible factors contributing to acute malnutrition.

A total of 535 children were assessed for nutritional information (anthropometric and non anthropometric), and 431 households assessed for mortality. Results indicate a global acute malnutrition (GAM weight for height <-2 Z score or oedema) rate of **20.7%** (15.3-26.2) and severe acute malnutrition rate, SAM, (Weight for height <-3 or oedema) of **2.4%** (1.4-3.5), based on NCHS reference standards. The GAM and SAM rates increased using the WHO reference standards to 22.3% (17.2-28.4) and 6.6% (4.4-9.7) for GAM and SAM respectively. This indicates a **Very Critical** nutrition situation based on WHO classification. The stunting and underweight rates reported were 17.0% and 29.5% respectively based on NCHS reference standards. One confirmed case of oedema (**0.2%**) was reported. The 90 days retrospective crude and under five mortality rates was estimated at **1.06** and **1.05** deaths per 10,000 per day respectively, and are at serious and alert levels respectively according to the WHO classification. The reported causes of death were diarrhoea, birth complications and accidents (physical injuries). Further analysis indicated among the children assessed, children aged 30-59 months of age were more likely to be acutely malnourished than children from other age groups. It was noted that a slightly higher proportion of boys (21.6%) were acutely malnourished compared to girls (19.8%), however there was no statistical difference between the two groups. The percentage of children who had suffered from one or more communicable childhood diseases in the two weeks prior to the assessment was 37.4%; with 28.6%, 17.2% and 2.2% reported to have suffered from diarrhoea, ARI and malaria (febrile illness) respectively. High morbidity rates can be attributed to the lack of access to quality health services, poor sanitation and lack of safe water in the area. Despite the fact that there was no statistical relationship between acute malnutrition and morbidity, especially diarrhoea, morbidity is a major risk factor for malnutrition among the children assessed. This demonstrated by the fact that over half the acutely malnourished children had suffered from one or more communicable disease in the two weeks prior to the assessment. About 41.1% of the households had access to toilet facilities, while the remaining proportion of the households used an open field. Access to safe water remains a challenge, with 55% of the households having access to clean drinking water. Almost a quarter (23.6%) of the households consumed less than four food groups in the preceding 24 hours, which mainly comprised of cereal, sugar and oil. Milk and meat are key components of the diet in the livelihood. Consumption of milk (33.5%) and meat (26.7%) was low for a pastoral population and was mainly attributed to out migration of livestock to the Hawd of Togdheer and Hargeisa for pasture and water since January 2008, leaving the remaining household members without access to milk, meat and income. Only 13.5% of the assessed children were fed the recommended five times a day, with majority (68.6%) being fed 2-3 times a day, Breastfeeding practices were also very poor, with only 49.1% of the children aged 6-29 months reported to be breastfeeding. Introduction of complimentary foods for majority of the children was done earlier than at the recommended six months of age, with 70.3% of the children reportedly receiving foods other than breast milk as early as their first week of life.

The worrisome nutrition situation is therefore mainly attributed to a precarious food security situation that has resulted in poor milk and meat consumption and access to other foods, lack of adequate access to proper sanitation, poor child care practices and high morbidity. Therefore there is great need to expand the delivery of basic health services and to ensure access to these services. Health education is also imperative to assist the community in making informed decisions on health matters.

¹ UNDP 2005 Population estimates

There is also need to improve the availability and accessibility of adequate protected water in the area. Proper sanitation issues should also be addressed such as setting up adequate sanitation facilities to help control the spread of diarrhoea diseases. Inappropriate disposal of human waste is a predisposing factor to diarrhoeal diseases, and consequently affects the nutritional and health status of individuals. Rehabilitation of acutely malnourished children and women through the health centres should continue; this should be followed up with intensified nutrition and health education programmes focusing on child care practices. Interventions targeting and supporting the livestock industry are also important as the main source of livelihood in the area and should be encouraged.

Summary of Assessment Findings

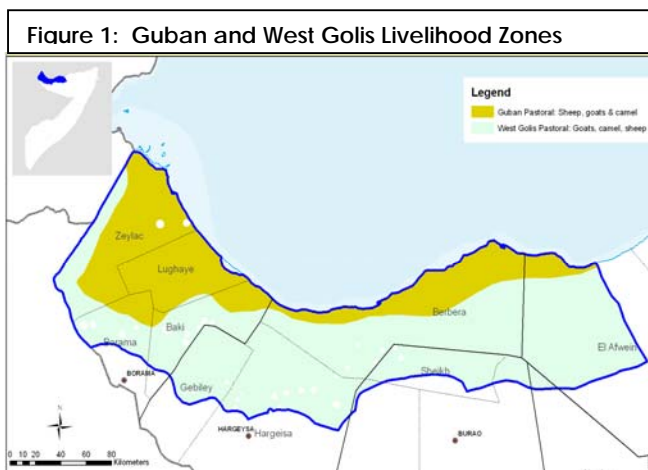
Table 1: Summary of Survey Findings Guban/Golis Pastoral Livelihood Zone

Indicator	Guban/Golis Results		
	N	%	CI
Total number of households surveyed	331		100
Mean household size	5.82		± 2.5
Total number of children assessed	535		100
Child Sex:			
Males	231	69.8	58.9-80.6
Females	100	30.2	19.3-41.0
Global Acute Malnutrition GAM (WHZ<-2 or oedema)	111	20.7	15.3-26.2
Severe Acute Malnutrition SAM (WHZ<-3 or oedema)	13	2.4	1.36-3.5
Oedema	1	0.19	0-0.6
Global Acute Malnutrition (WHO Anthro 2006)	119	22.3	17.2-28.4
Severe Acute Malnutrition (WHO Anthro 2006)	35	6.6	4.4-9.7
Global Acute Malnutrition (WHM<80% or oedema)	71	13.3	8.7-17.9
Severe Acute Malnutrition (WHM<70% or oedema)	3	0.6	0-1.2
Proportion of stunted children (HAZ<-2)	91	17.0	13.2-20.7
Proportion of underweight children (WAZ<-2)	158	29.5	24.2-34.9
Total children acutely malnourished (MUAC< 12.5cm or oedema)	43	8.0	4.0-12.0
Children severely malnourished (MUAC< 11.0cm or oedema)	3	0.6	0-1.2
Total women acutely malnourished (MUAC <18.0 cm)	10	3.1	0.9-5.3
Total preg. women acutely malnourished (MUAC <23.0 cm)	7	17.1	-
Proportion of children with Diarrhoea in 2 weeks prior to assessment	153	28.6	19.2-38.0
Proportion of children with ARI within two weeks prior to assessment	92	17.2	9.7-24.7
Children with suspected malaria in 2 weeks prior to assessment	12	2.2	0.6-3.9
Suspected measles within one month prior to assessment	28	5.2	0-10.5
Children (9-59 months) immunized against measles	230	43.0	32.3-53.6
Children who have ever received polio vaccine	375	70.1	58.4-81.8
Children who received vitamin A supplementation in last 6 months	251	46.9	36.0-57.8
Maternal Tetanus Immunization	106	32.7	23.7-41.8
Proportion of households who consumed ≤3 food groups	78	23.6	67.0-85.8
Proportion of households who consumed ≥4 food groups	253	76.4	67.0-85.8
Proportion of children 6-24 months who are breastfeeding (N=212)	104	49.1	39.7-58.3
Under five Death Rate (U5DR) as deaths/10,000/ day		1.06	(0.65-1.68)
Crude Death Rate (CDR) as deaths/10,000/ day (N=882)		1.05	(0.52-2.14)

1.0 Introduction

1.1 Historical Context

The Guban and West Golis livelihood zones are primarily pastoral. They encompass the coastal plains and highlands of Somaliland cutting across Awdal, Galbeed, Togdheer/Sahil and parts of Sanaag region. The area receives mean annual rainfall of 57mm to 93mm, the amount increases with the higher altitude. The hot dry period occurs during June-August, with temperatures reaching around 42 degrees Celsius. The cooler months are November to February. The livelihood zones have two main seasons, namely Jilaal², during which, the Hays rains come once a year in January (the only rainy season), and the GU-Xagaa which is dry period in this area (June – November). The area was severely affected by consecutive droughts over the last four years.

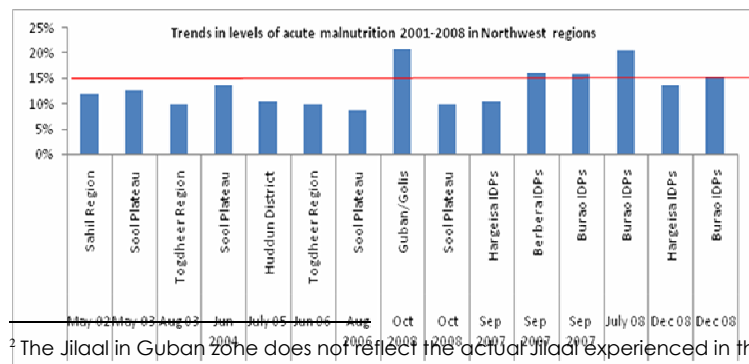


The Guban pastoral livelihood zone depends mainly on sheep goat and camel, while the Golis pastoral rely on goat, camel and sheep. However, due to successive droughts and sheep diseases over the last five years, goats have become dominant in some pockets of the livelihood zone particularly in the mountainous area such as Carrowareen and Fadhexun. Water scarcity is prominent in both livelihood zones. There are only three essential boreholes (Ceel gaal, Karuura and Kalowle). During the dry season animals are heavily concentrated at these points. In addition, there are shallow water wells that are hand dug and used as a source of water for domestic purposes. Seasonal rivers also provide temporary water supply for both human and livestock consumption. Normal livestock migration patterns dictate an intra-regional movement characteristic, however there is also in migration from Borama, Gabiley, and Hargeisa during the Hays rains that usually fall in the Jilaal season. In the bad years, all livestock in this livelihood zone move to the south agropastoral zone, and Hawd or cross to Ethiopia (Ayshica, Dawanlle, Jigjiga, Dhegar and Shiniile) according to clan relationship and affiliation.

The main market for the Guban/Golis pastoral livelihood zone is Djibouti; this is the centre for the livestock sales, cereal and non-cereal, and labour. Berbera is the main town in the region serves as the main entry port for imported commodities to Somaliland as well as the main export facility for livestock to the Gulf States. Fishing activities are also undertaken along the beaches of the Gulf of Aden and plays a significant role as source of livelihood for some people not only in Berbera town but also in other coastal villages.

1.2 Nutrition Situation and Health Context

Figure 1: Trends of Acute Malnutrition in Northwest Zone 2002-2008



The acute malnutrition levels in the northwest regions generally fall below emergency threshold levels (<15%) with the exception of the IDP population, where the acute malnutrition rates have exceeded emergency thresholds. (See figure 2). This is the first nutrition survey to be conducted in the Guban/Golis

² The Jilaal in Guban zone does not reflect the actual Jilaal experienced in the rest of the country. Likewise Gu in this zone is different from the Gu in other parts of the country.

livelihood zone. The Post *Gu* '08 nutrition assessments conducted in the Guban/Golis pastoral livelihood revealed a worrying nutrition situation. The integrated analysis of the nutrition situation showed a high proportion of children with MUAC <12.5cm, data from the health facilities indicated a high and increasing trend of acutely malnourished children. The food security situation was also precarious; the consecutive droughts had instigated abnormal livestock migration to the south, leaving households in the area without milk, meat and income. The high food prices further reduced the household's ability to access food. Morbidity was also high, with increased cases of diarrhoea in the area especially Boroma and Hariri towns. Access to clean water, proper sanitation and lack of adequate health facilities in the region further predisposes the population to malnutrition.

1.5 Assessment Justification

The Post *Gu* '08 integrated nutrition situation analysis revealed a Critical nutrition situation in Guban/Golis livelihood (See *July-August 08 Nutrition Update for details*). The high proportion of children with MUAC <12.5cm, increased numbers of malnutrition being recorded in the health facilities, high morbidity and wanting food security indicators³ warranted the need to conduct a comprehensive nutrition survey to determine the proportion of the population affected by acute malnutrition (determine the nutritional status of children between 6-59 months) and the immediate and underlying causes in order to instigate the required and appropriate humanitarian interventions in the area.

Objectives of the Study:

The specific objectives of the assessments were;

1. To estimate the level of acute malnutrition and nutritional oedema among children aged 6-59 months.
2. To estimate the level of acute malnutrition among adult women aged 15-49 years.
3. To identify factors likely to have influenced acute malnutrition in young children.
4. To estimate the prevalence of some common diseases (measles, diarrhoea, malaria, and ARI).
5. To estimate the dietary diversity of the population.
6. To estimate the status of measles and polio vaccination and vitamin A supplementation.
7. To estimate the crude and under-five mortality rates.

2.0 Methodology

A two stage Probability Proportion to Size (PPS) sampling methodology was used to select 20 households from 28 clusters in the livelihood. A list of all settlements/villages/towns within the assessed livelihood in the region and their respective populations formed a sampling frame from which the clusters were selected randomly using EPinfo-ENA software (See appendix). A cross-sectional study was conducted among the population of Guban/Golis pastoral livelihood. Both qualitative and quantitative data collection techniques were used. Quantitative data was collected through a standard household questionnaire for nutrition assessments in Somalia (see appendix 1). Retrospective mortality data for 90 days prior to the assessments was also collected among the study households using the standard questionnaires (see appendix 2). Quantitative data collected included household characteristics; child anthropometry, morbidity; vitamin A supplementation, measles and polio immunization coverage; dietary diversity; malaria related data, water and sanitation. Qualitative data was collected through focus group discussions and key informant interviews to provide further understanding of possible factors influencing nutritional status. Children aged 6-59 months from the selected households within the targeted clusters in the study area, were measured to record their anthropometric information, data on morbidity and child feeding were also collected from them. Retrospective mortality data was collected from all the households including those that did not have children aged 6-59 months.

A two-day specific training of enumerators and supervisors was conducted in Hargeisa town. The training focused on methods of collecting quality data and covered interview techniques, sampling procedure, inclusion and exclusion criteria, sources and reduction of errors, taking of measurements (height, weight and MUAC), undertaking malaria RDTs, standardisation of questions in the

³ The drought experienced in the area due to four consecutive seasons of rain failure, livestock out migration resulting to reduced milk and meat consumption and income for the households -

questionnaire, levels of precision required in measurements, diagnosis of oedema and measles, verification of deaths within households, handling of equipment, and the general courtesy during the assessment. The training stressed the importance of quality data collection and used the Nutrisurvey Quality Checks software to demonstrate quality data collection checks.

Standardization of measurement and pre-testing of the questionnaire and equipment was carried out in the IDP settlement of Sheikh Nur. Quality of data was also ensured through (i) monitoring of fieldwork by 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. (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) continuous reinforcement of good practices.

All measurements were clearly stated by both the enumerators reading and recording them to reduce errors during recording. Data quality was also checked using the Nutrisurvey plausibility check, see appendix for details. Household and child data was entered, processed (including cleaning) and analysed using EPI6 software. Mortality data was entered and crude and < 5 child mortality rates generated in Nutrisurvey software.

3. Assessment results

Table 2: Household Characteristics of Study Population

Characteristics	Guban/Golis Results		
	N	%	CI
Total Households	331		100
Total number of children assessed	535		100
Sex of Children Assessed	287	53.6	49.1-58.1
Male	248	46.4	41.50.8
Female			
Household size (Mean):	5.82		±2.5
Mean No of Under fives	1.76		±0.77
Sex of Household Head:	231	69.8	58.9-80.6
Male	100	30.2	19.3-41.0
Female			
Household residential status:			
Resident	311	93.9	87.1-100.7
IDP < 3 months	6	1.8	0.2-3.3
IDP since March 07	-	-	-
IDP Pre 2007	14	4.2	0-11.0
Households Hosting recent IDPs	11	3.3	0.77-5.8
Yes	320	96.6	94.1-99.2
No			
Mean No. of IDPs hosted per HH	2.81		±0.92
Household's main source of Income	79	23.9	15.1-32.6
Animal and Animal Product Sales	31	9.4	1.4-17.4
Crop Sales/Farming	34	10.3	4.4-16.2
Trade	96	29.0	18.3-39.1
Casual Labour	23	6.9	2.6-11.3
Salaried/Wage Employment	10	3.0	0-6.4
Remittances/ Gifts	50	15.1	6.5-23.7
Self Employment	8	2.4	0-5.6
Others			

The nutrition assessments covered a total of 331 households. The mean household size was 5.8 (±2.5), while 1.76 (±2.5) was the mean number of a child in the household (see table 2). The results showed that a larger proportion (69.8%) of the households were male headed. Majority (93.9%) of the households were residents of the area, while the remaining proportion (6.1%) was internally displaced persons, or returnees from Ethiopia. A very small proportion (3.3%) of the resident households was hosting IDPs, with the mean number of persons being hosted as 2.8 (±0.92).

The household's main source of income in was through casual labour (29.0%) and the sale of animals and animal products (23.9%). From the qualitative data collected, households reported reduced income opportunities due to the persistent drought that affected the quality and quantity of animals and animal products in the area, which is their main source of income. There were also limited job opportunities in the area.

Very few of the households (3.0%) reported receiving remittances/gifts from well wishers or family from the diaspora.

3.1 Access to Water, Sanitation and Health Facilities

The sanitation and health facilities in households assessed were inadequate. Almost half (45.0%) of the households did not have access to clean water. The main source of water for drinking in the households was unprotected surface water (60.1%). Majority of the households (92.1%) did not treat water at the source; in addition 88.5% of the households did not treat their water during storage. A large proportion of the households (77.4%) took less than one hour to fetch water, while 14% took 1-2 hours, and the remaining proportion took more than four hours to collect water from the main water point. About forty two percent of the households had 3-4 water storage containers, while a similar proportion (30.8%) had 1-2 containers for water storage all these falling below the recommended Sphere standards.

More than half (56.8%) of the assessed households did not have access to sanitation facilities, being lack of resources (58.6%) at household level to construct them. About one quarter of the households were nomads (26.7%) who were always on the move, while the remaining households (14.7%) did not see the need. Three quarters of the households (75.5%) washed their hands before eating, while only a third (33.8%) of the assessed households reportedly washed their hands before preparing food. A quarter (25%) of the households assessed reportedly washed their hands after changing the baby's diaper and visiting the toilet.

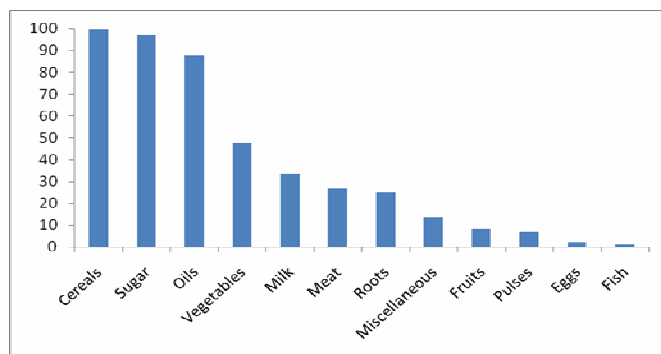
A summary of findings on access to water, sanitation and health facilities is provided in Tables 3 & 4.

Table 3: Summary of Results illustrating Access to Safe Water			
Characteristics	Guban/Golis		
	N	%	CI
Source of domestic water			
Tap/Piped	53	16.0	3.9-28.0
Tanker Truck	10	3.0	0-8.0
Tube Well	57	17.2	6.6-27.8
Spring	2	0.6	0-1.8
Roof Top	1	0.3	0-0.9
Surface Water	208	62.8	45.5-80.1
Source of Drinking Water			
Tap/Piped	56	16.9	4.3-29.5
Tanker Truck	9	2.7	0-7.7
Tube Well	64	19.3	6.8-31.8
Spring	3	0.9	0-2.8
Surface Water	199	60.1	41.9-78.3
Have access to safe water			
Yes	182	55.0	38.5-71.4
No	149	45.0	28.5-61.4
Reliable Water Supply			
Reliable Supply	260	78.6	67.0-90.1
Seasonal Supply	42	12.7	2.6-22.8
Occasional Problem	13	3.9	0.5-7.3
Frequent Problem	16	4.8	0-10.3
Water treated at Source			
Yes	26	7.9	0-17.0
No	305	92.1	83.0-101.3
Water treated at Storage			
Yes	38	11.5	5.3-17.7
No	293	88.5	82.3-94.7
Mean Time to water point			
<30 minutes	131	39.6	26.2-52.9
30-60 minutes	125	37.8	26.8-48.7
1-2 hours	47	14.2	4.9-23.5
>4 hours	28	8.5	3.7-13.2
No. Of Storage Containers			
1-2	102	30.8	19.3-42.3
3-4	141	42.6	33.8-51.3
4-5	32	9.7	5.7-13.6
>5	56	16.9	5.9-27.9

Table 4: Summary of and Sanitation results			
Characteristics	Guban/Golis		
	N	%	CI
Type of toilet used			
VIP Latrine	7	2.1	0.3-4.0
Latrine	136	41.1	27.4-54.8
Bush	188	56.8	42.9-70.6
Reason for no access to toilet			
Pastoral Movement	51	26.7	10.3-43.0
Lack of resources	112	58.6	40.0-77.3
No need	28	14.7	5.0-24.3

3.2 Household Food Security

Figure 2: Household Consumption of Food Groups



As illustrated in the figure 2 cereals provided the bulk of the food in the household diet. Cereal based diets were consumed by all the assessed households, other foods mostly consumed by the households include sugar, oil, and milk (see Table 5). A relatively lower proportion (<10%) of the households consumed the following food groups meat, pulses, roots, vegetables, fruits and eggs in the study areas.

According to the qualitative data collected, high food prices and inadequate supply of regular food commodities have led households to consuming less preferred foods. The preferred cereals consumed in the study population was mainly wheat flour, and rice, but now due to increased prices and availability, maize and sorghum are the main cereals being consumed indicating that the population were starting to practice coping strategies.

Table 5: Summary of results of households' main source of food

Characteristics	Guban/Golis		
	N	%	CI
<i>Main source of food</i>			
Own production	18	5.4	0-11.6
Purchase	257	77.6	64.7-90.6
Gifts	4	1.2	0.02-2.4
Food Aid	2	0.6	0-1.5
Bartered	3	0.9	0-1.9
Borrowed	10	3.0	0-6.0
Gathering	1	0.3	0-0.9
Others	36	10.9	0.2-21.5
<i>Main source of cereals</i>			
Own production	22	6.6	0-13.8
Purchase	292	88.2	80.6-95.7
Gifts	6	1.8	0.1-3.5
Borrowed	8	2.4	0.3-4.5
Others	1	0.3	0-0.9
N/A	2	0.6	-1.4
<i>Number of meals taken/day</i>			
One	16	4.8	1.6-8.0
Two	157	47.4	36.9-57.9
Three	158	47.7	36.6-58.9

The main source of cereals in both study areas was through purchasing (88.2%). Only 33.5% of the households consumed milk. Qualitative information from respondents mentioned that the reduction in milk consumption was due to the out migration of livestock from the area, southwards, leaving the remaining households with limited access to milk and meat products. About 47.7% of the households were consuming three meals a day, while 47.4% of the households consumed two meals a day, the remaining proportion of the households consumed a meal in a day. The average number of meals consumed in a day by the households was 2.4 (±0.1)

According to key informants, there has been a reduction in the number and portions of meals consumed due to reduced access to food because of the out migration of animals reducing access to milk, meat and income, this coupled with high food prices compromised access to food.

3.2.1 Dietary Diversity

Table 6: Number of food groups consumed in assessed households

Characteristic	Guban/Golis		
	N	%	CI
<i>No. of food groups consumed</i>			
Cereals	330	99.7	99.1-100.3
Milk	111	33.5	23.1-43.9
Sugar	322	97.3	95.6-99.6
Oils	290	87.6	80.6-94.6
Meat	88	26.7	17.2-36.1
Pulses	23	6.9	2.7-11.1
Roots	83	25.0	13.7-36.4
Vegetables	158	47.7	36.2-59.2
Fruits	27	8.2	2.7-13.6
Eggs	8	2.4	0-5.9
Fish	4	1.2	0-2.7
Miscellaneous ⁴	45	13.6	3.9-
		23.1	
<i>No. Having Diversified Diet</i>			
1-3 food groups	78	23.6	14.2-33.0
≥ 4 food groups	253	76.4	67.0-85.8
Mean HDDS	4.8		± 0.2

preceding 24 hours. Fish is a good source of protein and minerals; it is available in some of the villages along the coast, however the proportion of households that were consuming fish was notably very low (1.2%).

3.3 Child feeding, Morbidity, Immunization and Health Seeking Behaviour

High morbidity rates were noted among the children under five years in the assessed livelihood. The proportion of children reported to have fallen ill in the two weeks prior to the assessment was high at 37.4%. Half (50%) of the children who reportedly fell ill sought medical assistance from health services, while 19.5% of the children were taken to traditional healers, 10.5% received self medication by their care givers and 5% were treated by visiting the Sheikh and having prayers. About 15% of the children did not seek any type of assistance.

The proportion of the assessed children who reportedly suffered from diarrhoea in the two weeks prior to the assessment was 28.6%. There was no statistical association between acute malnutrition and diarrhoea among the children in the study, however the link between diarrhoea, morbidity and acute malnutrition has been well documented from previous assessments all over Somalia and their relationship can not be ignored. The proportion of children who had suffered from ARI two weeks prior to the assessment was 17.2%. Those reported to have suffered from febrile illness/suspected malaria were 2.2%. RDT tests for malaria were not conducted during this assessment. There were 28 cases (5.2%) reported of suspected measles among the children, none of these cases were

Table 7: Morbidity, measles immunisation, polio vaccination and vitamin A supplementation

Characteristics	Guban/Golis		
	N	%	CI
<i>Incidence of major child illnesses</i>			
Child fell sick two weeks prior to assessment	200	37.4	25.7-49.0
Proportion of children with diarrhoea 2 wks prior to assessment	153	28.6	19.2-38.0
Proportion of children with ARI within 2 wks prior to assessment	92	17.2	9.7-24.7
Children with febrile illness in 2 wks prior to assessment	12	2.2	0.6-3.9
<i>Health Services Sought</i>			
No Assistance Sought	30	15	5.8-24.2
Own Medication	21	10.5	4.0-17.0
Traditional Healer	39	19.5	7.0-32.0
Sheikh/Prayers	10	5.0	0-12.0
Private clinic	55	27.5	15.2-39.8
Public Health facility	45	22.5	6.7-38.3
Suspected measles within one month prior to assessment	28	5.2	0-10.5
<i>Immunization Coverage</i>			
Children (9-59 months) immunised against measles	230	43.0	32.3-53.6
Children who have ever received polio vaccine	375	70.1	58.4-81.8
Children who received vitamin A supplementation in last 6 months	251	46.9	36.0-57.8

Further analysis of the food consumed in the preceding 24 hours indicated a mean dietary diversity score of 4.8 (± 1.07). About a third (23.6%) of the households consumed fewer than four food groups a day, demonstrating that the households were consuming a less diversified diet.

Fruits and vegetables are good sources of micronutrients that are crucial for healthy development and growth. Among the assessed households, the consumption of vegetables was low (47.7%), while the consumption of fruits was very poor, with only 8.2% of the households consuming fruits in the

⁴ Includes foods such as spices, chocolates, sweets, beverages etc

confirmed. Measles immunization was low with only 43.0% of the assessed children vaccinated against measles. A higher proportion (70.1%) of children however had received the polio vaccination. However both polio and measles vaccination status fell below the recommended Sphere (2004) standards of 95%.

3.3.1 Child Feeding Practices

Characteristic	Guban/Golis		
	N	%	CI
Breastfeeding N=212	104	49.1	39.7-58.3
Reason for Ceasing Breastfeeding			
Pregnancy	2	15.4	0-42.7
Illness	5	38.5	12.5-64.4
Other	6	46.2	16.0-76.3
Introduction of Complimentary food			
< 1 week	64	70.3	52.7-87.9
1-3 months	7	7.7	0-17.2
4-6 months	10	11.0	2.2-19.8
>6 months	10	11.0	2.8-19.1
Complimentary feeding frequency			
2 time	145	27.1	16.4-37.8
3 time	222	41.5	31.4-51.9
4 time	96	17.9	11.5-24.4
5 time	72	13.5	6.9-20.0

Poor feeding practices persist in the region, like in other parts of Somalia. Half (50.9%) of the assessed children aged 6-24 months had stopped breastfeeding at the time of the assessment. The main reasons of ceasing breastfeeding reported by the mothers were due to illness (38.5%) and other reasons such as time, inadequate milk, and cultural practices. In addition, majority (70.3%) of the children were introduced to complimentary food at less than one week of age. It is recommended that children should be introduced to complimentary foods at 6 months of age. Only 13.5% of the assessed children were fed the recommended five times a day. About a quarter (41.5%) were fed three times a day, while 27% of the assessed children were fed twice a day, a small proportion (17.9%) of the children were fed four times a day. The analysis of distribution of levels of acute

malnutrition between the different age groups did not show a significant difference in the likelihood of acute malnutrition between the breastfeeding age groups (6-24 months) and older children. However, studies have shown that poor breastfeeding practices do not only deny the children the multiple nutritive and health benefits associated with breast milk but also expose them to malnutrition, morbidity and even death.

3.4 Nutrition Status

A total of 535 children in were assessed in the Guban/West Golis livelihood zone. The results show **very critical** nutrition levels according to WHO classification among the population, with a GAM rate of **20.7%** and SAM rate of **2.4%**. When estimating the acute malnutrition rates using WHO Anthro (2006) reference standards, a more or less similar GAM rate and almost double SAM rates of 22.3% (CI: 17.2 – 28.4) and 6.6% (CI: 4.4 – 9.7) was reported.

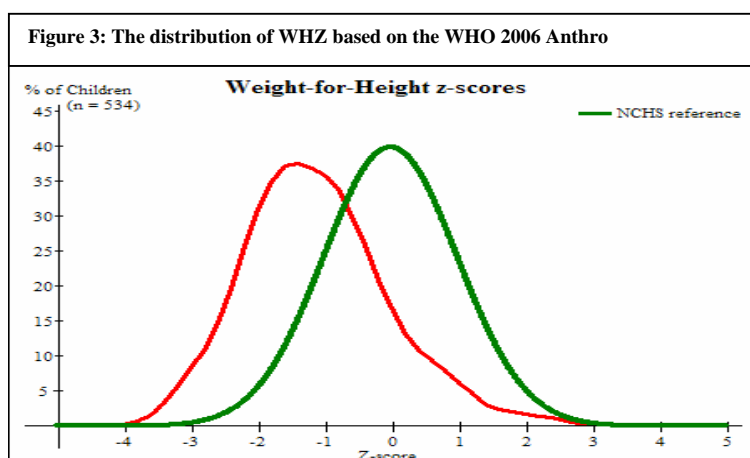
Characteristic	Guban/Golis		
	N	%	CI
Global Acute Malnutrition (WHZ<-2 or oedema)	111	20.7	15.3-26.2
Severe Acute Malnutrition (WHZ<-3 or oedema)	13	2.4	1.4-3.5
Oedema	1	0.19	0-0.6
GAM estimates by WHO Anthro (2005)	119	22.3	17.2-28.4
SAM estimates by WHO Anthro (2005)	35	6.6	4.4-9.7
Global Acute Malnutrition (WHM<80% or oedema)	71	13.3	8.7-17.9
Severe Acute Malnutrition (WHM<70% or oedema)	3	0.6	0-1.2
Proportion of stunted children (HAZ<-2)	91	17.0	13.2-20.7
Proportion of underweight children (WAZ<-2)	158	29.5	24.2-34.9

A summary of the findings for the acute malnutrition rates is given in table 9. The current results indicate a **Very Critical** nutrition situation. The Table also indicates the GAM rate (13.3%) and SAM rates (0.6%) as percent of the median (WHM). The proportion of children identified as stunted among the assessed population was 17.0% therefore classifying the chronic malnutrition situation as *alert*. Very high prevalence of underweight (WAZ<-2) among the assessed children was noted at 29.5% in the assessed

population indicating a *serious* situation.

The distribution of the weight-for-height scores in the assessment was shifted towards the left depicting a poorer nutrition situation according to international (WHO) standards (Fig 3). A summary of the

Nutrisurvey quality checks for the assessments are given in (see appendix 6) they indicate that the data collected in both assessments is of good quality. The results of acute malnutrition among the surveyed population in both the study areas using weight for height <-2 Z score or presence of oedema, did not show any statistical difference between the two sexes.



However a slightly higher proportion of acutely malnourished children comprised of boys rather than the girls (see table 10). Among the children assessed, 21.6% of the total boys in the sample size were acutely malnourished, compared to the 19.8% of the total girls in the sample size identified as acutely malnourished. Nevertheless reasons as to why boys were more likely to be acutely malnourished need further investigations as in this study there were no direct issues noted. Analysis of distribution of acute malnutrition between the different age groups did not show any major differences in both assessments. Children aged above 54 months recorded the lowest proportion (7.3%) of acutely malnourished children; while children aged 18-29 months recorded the highest proportion (27.5%) of malnourished children. Further analysis did not show any significance statistical difference in risks of acute malnutrition between the children in the breastfeeding age bracket of 6-24 months and those aged 25-29 months, indicating that the two age groups had equal risks to acute malnutrition.

Nutrition Status	Males			Females		
	N	%	CI	N	%	CI
GAM (WHZ<-2 /oedema)	62	21.6	13.8-29.4	49	19.8	14.8-24.7
SAM (WHZ<-3 /oedema)	7	2.4	0.5-4.4	6	2.4	0.7-4.1

3.4.1 Acute Malnutrition using MUAC

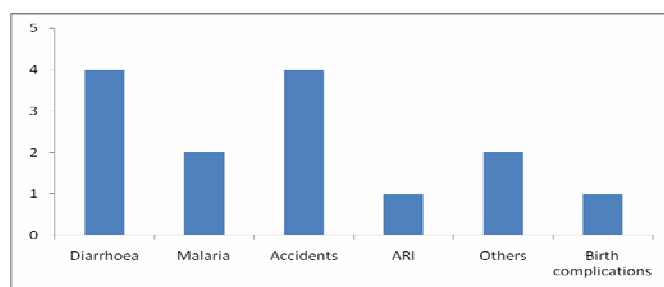
Characteristics	Guban/Golis		
	N	%	CI
Child MUAC N= 439			
GAM (MUAC< 12.5 cm or oedema)	43	8.0	4.0-12.0
SAM (MUAC< 11.0 cm or oedema)	3	0.6	0-1.2

Based on MUAC measurements, acute malnutrition rates were lower than the rates recorded by WHZ using MUAC. The assessed children recorded an acute malnutrition rate of 8.0% (MUAC< 12.5 cm or oedema). The proportion of children with a MUAC measurement less than 11cm was 0.6%.

Adult Women MUAC	N	%
Total pregnant acutely malnourished women (MUAC< 23.0 cm) N=41	7	17.1
Total non pregnant malnourished women (MUAC≤ 18.5 cm) N=283	3	1.1

Among the assessed women; the proportion of pregnant women with acute malnutrition (MUAC <23.0cm) was 17.1%. Pregnancy raises physiological and nutritional demands of women making them vulnerable to malnutrition. The proportion of non pregnant that was acutely malnourished was low at 1.1%.

3.5 Mortality



A total of 14 deaths were reported in the assessed households within a 90 day recall period prior to the assessment. The crude and U5 mortality rates reported were estimated at **1.05** and **1.06** deaths per 10,000/per day respectively. Diarrhoeal diseases, ARI, suspected malaria and accidents were the reported causes of mortality in the assessment. The main causes of mortality for children aged below 5 years were diarrhoea

and ARI.

4 Discussion

The reported GAM rate among the assessed children is **20.7%**, and the SAM rate is **2.4%**. This indicates a **Very Critical** nutrition situation according to WHO classification. This is the first comprehensive nutrition assessment to be conducted among the population of the Guban and West Golis livelihood zone, and given the alarming nutrition situation, it will be crucial to ensure that the nutrition situation of the population is closely monitored. It was noted that a slightly higher proportion of boys (21.6 %) were acutely malnourished compared to the girls (19.8%), however, there was no statistical difference between the two groups. These findings are consistent with other nutrition surveys in the country, however further investigations are required, as there are no reasons clearly identifying the reasons for this differences in malnutrition rates between girl and boys. The prevalence of chronic malnutrition was 17%, indicating an alert⁵ situation; this level of chronic malnutrition reported among the population indicates that the current very critical nutrition situation is likely to be of an acute nature. The precarious food security situation in the area and the high morbidity were the main factors identified as the causes of malnutrition. The out migration of livestock from the area southwards due to the failed *Hays* rains of January 2008, leading to reduced consumption of milk and meat and income in the households was noted as one of the main causes of malnutrition. Malnutrition among the age groups indicated that a higher proportion (53.1%) of acutely malnourished children was aged between 30-59 months of age. When higher rates of malnutrition are noted among older children (30-59 months), this insinuates a poor household food security situation, as the children are considered old enough to eat from the adult plate, and if the adults are experiencing reduced consumption of meals and amount of food, this affects the children as well. This is further underlined by the fact that, almost a quarter (23.6%) of the households consumed less than four food groups in the preceding 24 hours, showing poor dietary diversity within the household.

Although there was no statistical association between acute malnutrition and morbidity, it is imperative to note that a high proportion of the acutely malnourished children had suffered one or more communicable diseases in the two weeks prior to the assessment. About 63% of the malnourished children were reported to have suffered from one or more communicable diseases two weeks before the assessment. The morbidity rate among the assessed children was appalling, at 37.4%, indicating that more than a third of the children had suffered from a disease in the two weeks prior to the assessment. The rate of diarrhoea reported among the children was high at 28.6%, diarrhoea and malnutrition are directly related as demonstrated in previous assessments conducted in the region, and diarrhoea has a negative impact on the health and nutrition status of a child. High morbidity rates can be attributed to the lack of quality health services, poor sanitation and lack of safe water in the area. Within the sampled area, there are very limited health facilities. Of the children assessed in the area, at least half were able to seek medical attention from private/ public health facilities. Those accessing health facilities were mainly those near the towns. About 15% of the children who were ill did not seek any assistance. The remaining proportion of children sought assistance by self medication (10.5%), seeking assistance from traditional healers (19.5%) and Sheikh/prayers (5%). Health seeking behaviour remains a challenge not only in the assessed

⁵ Framework for the integrated analysis of the Nutrition Situation in Somalia – FSAU/WHO/UNICEF,WFP/Concern Worldwide, IMC,ACF

livelihood, but in the country as a whole.⁶ Poor sanitation and lack of access to water are the key factors affecting the health situation in an area. About 41.1% of the households had access to toilet facilities, while the remaining proportion of the households used an open field. Poor disposal of human waste predisposes the population to disease. Access to safe water remains a challenge, with 55% of the households having access to clean drinking water. Lack of clean drinking water coupled with poor sanitation conditions predisposes the population to disease, especially diarrhoea, which in turn has a direct impact on the nutrition situation of the population. Other risk factors such as low immunization and vitamin supplementation further aggravate the vulnerable nutrition situation of the population. Vitamin A supplementation among the children in the assessed population fell below the required standards, as was case for measles and polio vaccination. However during the time of the survey, a Child Health day campaign was underway in the whole of Somaliland. The activities included vitamin A supplementation, polio and measles vaccination and de-worming. These positive efforts will go along way in assisting to reduce the risk factors associated with malnutrition.

Feeding and child care practices are also crucial indicators that affect the nutrition situation of the children in any population; nonetheless, it is unfortunate to note the feeding practices among the assessed children were sub-optimal. Breastfeeding practices were very poor, with only 49.1% of the children aged 6-29 months breastfeeding. The benefits of breastfeeding include providing the required quantity and quality of nutrients required for optimal growth of children, and also assisting in boosting immunity to disease, therefore helping reduce the risk of malnutrition. It has been noted from past studies that the rates of acute malnutrition in the younger children may be attributed to poor feeding practices, with introduction of complementary foods early and low breastfeeding. Introduction of complimentary foods for majority of the children was done very early, with 70.3% of the children receiving foods other than breast milk as early as at one week of life. The frequency of meals consumed by a child per day was also assessed, and only 13.5% of the assessed children were fed the recommended five times a day, with majority (68.6%) being fed 2-3 times a day. Inappropriate child care practices and lack of proper adequate health services due to limited access attribute to the poor malnutrition rates.

5. Conclusions and Recommendations

This being the first comprehensive nutrition assessment conducted in these livelihoods, the **Very Critical** nutrition situation should provide an opportunity for the administration, local and international organizations to activate an emergency response preparedness and response system. This is essential to address the nutritional needs of this highly vulnerable population. Therefore there is great need to expand the delivery of basic health services and to ensure access to these services. Health education is also imperative to assist the community in making informed decisions on health matters. There is also need to improve the availability and accessibility of adequate protected water in the area. Proper sanitation issues should also be addressed such as setting up adequate sanitation facilities to help control the spread of diarrhoea diseases. Rehabilitation of acutely malnourished children and women through the health centres should continue; this should be followed up with intensified nutrition and health education programmes focusing on child care practices. Interventions targeting and supporting the livestock industry are also important as the main source of livelihood in the area and should be encouraged. In summary the following points should be considered to improve the nutrition and health situation of the population in both short and long term:

1. Expanding delivery of basic health services including intensifying EPI services/linking vitamin A supplementation with polio vaccination programmes. It is also imperative to encourage the population to visit the health facilities by ensuring that the health services are available for all.
2. Improve water quality for household level consumption through establishment of water purification systems/encourage the population to boil drinking water to prevent water borne diseases, and promote improved sanitation and hygiene practices in the settlements.
3. Rehabilitation of acutely malnourished children and women through the existing health care centres,
4. School feeding for school age children, this would not only assist in preventing malnutrition but would also improve the enrolment and attendance of children in the schools.
5. Intensify health & nutrition education focusing on care practices and micronutrient issues.

⁶ FSAU KAP Study 2007

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6. Promote the availability of micronutrient rich foods at household level through improving dietary diversification and consumption of fortified foods. Fish consumption should also be promoted as it is a readily available nutritious food. FAO through FSAU had recently distributed to health centres and partners media materials including posters, recipe books and DVDs illustrating the importance of fish and its preparation in Somaliland. It would be relevant to follow up on the impact of these products.
 7. Continued monitoring of the nutritional and food security situation.

6.0 APPENDICES

Appendix 1

NUTRITION ASSESSMENT HOUSEHOLD QUESTIONNAIRE, 2008

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

Q1-8 Characteristics of Household

Q1. Household size⁷? _____

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

Q3. Sex of household head⁸? 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 Pre 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 Q6. If yes, ask to see the net: _____ 1= GFSOM label 2=Other type 3= Not seen

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=Self-Employment (Bush products/handicraft) 8= Others, specify _____

Q8-15 Feeding and immunization status of children aged 6 – 59 months in the household.

⁷ Number of persons who live together and eat from the same pot at the time of assessment

⁸ 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) <i>(if child is more than 24 months old, skip to Q13)</i>	Q8 Are you breastfeeding ⁹ the child? <i>(if no, skip to Q10)</i> 1=Yes 2= No	Q9 (If 6-24 months) If you stopped breastfeeding before the child was 12 months, why did you stop? 1= Pregnancy 2=Illness 3=Child refused 4= Other 5= Never breastfed	Q10 (If 6-12 months) At what age was child given water/ foods other than breast milk? 1= < 1 weeks 2=1wk – 3 months 3=4-6 months 4=6 months or more.	Q11 How many times do you feed the child in a day <i>(besides breast milk)</i> ? 1= 1 time 2=2 times 3 = 3 times 4=4 times 5= 5 or more times	Q 12 Has child been provided with Vitamin A in the last 6 months? <i>(show sample)</i> 1=Yes 2= No	Q13 Has child been Vaccinated against measles? 1=Yes 2= No	Q14 Has the child ever been given polio vaccine orally? 1=Yes 2= No
1								
2								
3								
4								

Q16-27 Anthropometry and morbidity for children aged 6 – 59 months in the household

First Name	Q15a Age	Q15b Sex 1=Male 2=Female	Q16 Oedema 1=yes 2= No	Q17 Height (cm) To the nearest tenth of a cm	Q18 Weight (kg) To the nearest tenth of a kg	Q19 MUAC (cm) To the nearest tenth of a cm (≥6 mo)	Q20 Diarrhea ¹⁰ in last two weeks 1= Yes 2= No	Q21 Serious ARI (<i>oof wareen/war eento</i>) ¹¹ in the last two weeks 1=Yes 2= No	Q22 Febrile illness/ suspected Malaria ¹² in the last two weeks 1=Yes 2= No	Q23 Suspected Measles ¹³ in last one month 1=Yes 2= No	Q24 Did the child sleep under a mosquito net last night? 1=Yes 2= No	Q25 Where did you seek healthcare assistance when child was sick? (If yes in Q20-23) 1=No assistance sought 2=Own medication 3=Traditional healer 4=Sheikh/Prayers 5=Private clinic/ Pharmacy 6= Public health facility	Q26 Is the child currently registered in any feeding centres? 1= SFP 2= TFC 3= OTP/CTC 4= Other 5=None

⁹Child having received breast milk either directly from the mothers or wet nurse breast within the last 12 hours

¹⁰ Diarrhoea is defined for a child having three or more loose or watery stools per day

¹¹ ARI asked as *oof wareen* or *wareento*. The three signs asked for are cough, rapid breathing and fever

¹² Suspected malaria/acute febrile illness: - the three signs to be looked for are periodic chills/shivering, fever, sweating and sometimes a coma

¹³ 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

1													
2													
3													
4													

27: 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

Q 28 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.

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.	Did a member of your household consume food from any these food groups in the last 24 hours? 1=Yes 0= No	<i>*Codes:</i>	
		1= Own production 2=Purchases 3=Gifts from friends/ relatives 4=Food aid 5=Bartered	6=Borrowed 7=Gathering/wild 8=Others, specify____ 9=N/A
Type of food		What is the main source of the dominant food item consumed? (Use codes above)?	
1. Cereals and cereal products (e.g. maize, spaghetti, rice, caanjera, bread)?			
2. Milk and milk products (e.g. goat/camel/ fermented milk, milk powder)?			
3. Sugar and honey?			
4. Oils/fats (e.g. cooking fat or oil, butter, ghee, margarine)?			
5. Meat, poultry, offal (e.g. goat/camel meat, beef; chicken or their products)?			
6. Pulses/legumes, nuts (e.g. beans, lentils, green grams, cowpeas; peanut)?			
7. Roots and tubers (e.g. potatoes, arrowroot)?			
8. Vegetables (e.g. green or leafy vegetables, tomatoes, carrots, onions)?			
9. Fruits (e.g. water melons, mangoes, grapes, bananas, lemon)?			
10. Eggs?			
11. Fish and sea foods (e.g. fried/boiled/roasted fish, lobsters)?			
12. Miscellaneous (e.g. spices, chocolates, sweets, beverages, etc)?			
Q29 In general what is the <u>main</u> source of staple food in the household? (*Use codes in 29 above) _____			
Q30 Total number of food groups consumed in the household: _____			

Q31 How many meals¹⁴ has the household had in the last 24 hours (from this time yesterday to now)? 1= One 2=Two 3= Three

¹⁴ 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

Access to water (quality and quantity)

- Q32a** 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)
- Q32b** What is the household's main source of water for other domestic uses? _____ (Use codes in **Q33a** above)
- Q33a** Is drinking water drawn from a protected/safe source? 1= Yes 2= No
- Q33b** If household has no access to safe protected water what is the main reason? 1= Not Available 2= Distance too far 3= Security Concerns 4= Cannot afford
- Q33a** Do you get a reliable supply of drinking water from this source? 1= Reliable supply 2=Seasonal supply 3= Occasional problems 4= Frequent problems
- Q33b** Is water treated at the: **a)** source? 1= Yes 2= No **b)** storage level? 1= Yes 2= No
- Q33c** 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
- Q34** Average time taken to and from the nearest water point (including waiting and collecting time) 1= <30 min 2=30 – 60 min 3= 1-2 hrs 4= more than 2 hrs
- Q35** Number of water collecting and storage containers of 10-20 litres in the household: 1=1-2 containers 2= 3-4 containers 3=4-5 containers 4= more than 5
- Q36** How is water stored in the household? 1= Clean containers with cover 2= Closed plastic containers 3= open buckets/ pans 4= *Ashuun* (with constricted neck/end)

Access to Health Facility

- Q37a** Do you have access to a health facility?
1 = Yes 2 = No
- Q37b** If yes, do you use it? 1 = Yes 2 = No
- Q37c** If not, why not? 1 = Too expensive 2 = Too far 3 = Not enough time 4 = Security restrictions 5= Others

Sanitation and Hygiene (access and quality)

- Q38a** Type of toilet used by most members of the household 1= Bush/open ground 2= Traditional pit latrine/ Open pit 3= Ventilated Improved pit latrine (VIP) 4= Flush toilets
- Q38b** If household has no access to sanitation facility, what is the main reason? 1= Pastoral/ frequent movements 2= Lack resources to construct 3= Doesn't see the need
- Q39** Distance between latrine and water source (if underground or surface source) 1=1- 30 metres 2=30 metres or more
- Q40** How many households share/use the same facility? 1= One 2= 2- 9 3= 10 or more

Q41 What key times do you maintain hygienic hand washing practices 1= before eating 2= before preparing food 3= before feeding the baby 4= after cleaning the baby's bottom 5= after defecation 6 = None /Not applicable

Q42 What substance do you use in your household for washing utensils, hands; body and clothes? 1= Soap/Shampoo 2= Sand 3= Ash 4= Plant extracts 5= None

Checked by supervisor (*signed*):

Appendix 3: Traditional Calendar of Events Guban/Golis Nutrition ASSESSMENT, Oct 2008

Year Significant Event		Age in Months	Monthly event specific to that year	Recurring yearly events
2008	Dec	N/A	Not Applicable	
	Nov			
	Oct			
	Sept	1		
	Aug	2		Xagaa
	July	3		Xagaa
	June	4	Holiday- Independence Day from Britain 26 th	Gu
	May	5	Holiday - Somaliland becomes independent 18 th May	Gu
	Apr	6		Gu
	Mar	7		Jilaal
	Feb	8		Jilaal
	Jan	9		Jilaal
2007	Dec	10		Deyr
	Nov	11		Deyr
	Oct	12		Deyr
	Sept	13		Xagaa
	Aug	14		Xagaa
	July	15		Xagaa
	June	16	Holiday- Independence Day from Britain 26 th	Gu
	May	17	Holiday - Somaliland becomes independent 18 th May	Gu
	Apr	18	Berbera Heavy rains destroys 100 homes	Gu
	Mar	19	Diarrhoea outbreak in Togdheer/Hargeisa	Jilaal
	Feb	20		Jilaal
Jan	21		Jilaal	
2006	Dec	22		Deyr
	Nov	23	Eid alfidri-Ciidal fidri (Idd ul Fitri)	Deyr
	Oct	24	Ramadan	Deyr
	Sept	25	Bilawgii Ramadaan (Starting of Ramadhan)	Xagaa
	Aug	26	Shabcaan	Xagaa
	July	27		Xagaa
	June	28	Holiday - Independence Day from Britain 26 th	Gu
	May	29	Holiday - Somaliland becomes 18 th May	Gu
Apr	30		Gu	

	Mar	31		Jilaal	
	Feb	32		Jilaal	
	Jan	33		Jilaal	
2005	Dec	34		Deyr	
	Nov	35	IIDDIISOONFUREE LABAAD (Idd ul Fitri)	Deyr	
	Oct	36		Deyr	
	Sept	37	Parliamentary Elections In SL	Xagaa	
	Aug	38	Shabcaan	Xagaa	
	July	39		Xagaa	
	June	40	Holiday - Independence Day from Britain 26 th	Gu	
	May	41	Hargeisa Heavy rains/bridge collapse Holiday - Somaliland becomes independent 18 th May	Gu	
	Apr	42	MOWLIIDKII UDAMBEEYEE (Month of Prophet Mohamed's birth)	Gu	
	Mar	43		Jilaal	
	Feb	44		Jilaal	
	Jan	45	IIDDII ARAFO (Idd ul Hajj)	Jilaal	
	2004	Dec	46	Tsunami Disaster	Deyr
		Nov	47	IIDDII SOON FUR EE U DAMBEYSAY (Idd ul Fitr)	Deyr
Oct		48	BILOWGII RAMAANT U DAMBEYSAY (Starting of Ramadhan)	Deyr	
Sept		49		Xagaa	
Aug		50	Shabcaan	Xagaa	
July		51		Xagaa	
June		52	Holiday - Independence Day from Britain 26 th	Gu	
May		53	MOWLIIDKII KAL HORE (Month of Prophet Mohamed's birth) Holiday - Somaliland becomes independent Day 18 th May	Gu	
Apr		54		Gu	
Mar		55		Jilaal	
Feb		56	IIDDII ARAFO/ XAJKII KAL HORE (Idd ul Hajj)	Jilaal	
Jan		57		Jilaal	
2003		Dec	58		Deyr
	Nov	59		Deyr	

Appendix 4 : Focus Group Discussion Guide

FOCUS GROUP DISCUSSION GUIDE

Food Consumption and Feeding Practices

1. What is the common staple diet you are likely to find in households currently? *(List the types of foods consumed, their composition and how they are prepared)*

Meal	Foods	Composition	Method of preparation
Breakfast			
Lunch			
Supper			

2. a) For how long (duration) do mothers generally breastfeed their babies in this community?
 b) What are the common foods normally given to children below 2 years in this community? How many times per day? *(Specify ingredients)*

Common foods	Age when introduced	Ingredients	Number of times given
Water			
Sugar solution			
Cows/camel/goat milk			
Semi solid foods(porridge and others)			
Solid foods (caanjera, rice, spaghetti),			

3. At the moment, what meals are given to children 0-2 years and how many times per day? *(Specify ingredients)*

Common foods	Ingredients	Number of times given
Water		
Cows/camel/goat milk		
Semi solid foods(porridge and others)		
Solid foods (caanjera, rice, spaghetti),		

4. Has there been any change in food consumption (diets) in the last three months? Specify and give reasons for change if any.

5. What constraints do households (women) normally face in providing adequate food for their families?

In terms of:

Effective breast feeding and child feeding	
Food acquisition & preparation	
Food processing, preservation & storage	
Food service and sharing/rations	

6. What would you say is the level of current availability and accessibility of the following foods?

Foods	Codes: 1= Absent/none 2= Low 3=medium 4= High			
	Availability		Accessibility	
Meat				
Goat milk				
Cow milk				
Camel milk				
Spaghetti				
Beans/ peas				
Wheat				
Rice				
Maize				
Sorghum				
Sugar				
Cooking oil				
Potatoes				
Fish				

7. Urban Livelihood

Coping strategy	1= Yes 2=No
Shift to less preferred (low quality, less expensive) foods (from <i>osolo to obo</i>)?	
Limit the portion/quantity consumed in a meal (<i>Beekhaamis</i>)?	
Take fewer numbers of meals in a day?	
Borrow food on credit from the shop/market (<i>Deyn</i>)?	
Borrow food on credit from another household (<i>Aamah</i>)?	
Restrict consumption of adults in order for small children to eat?	
Rely on food donations from relatives (<i>Qaraabo</i>)?	
Rely on food donations from the clan/community (<i>Kaalmo</i>)?	
Seek or rely on food aid from humanitarian agencies?	
Send household members to eat elsewhere?	
Beg for food (<i>Tuugsi/dawarsi</i>)?	
Skip entire days without eating (<i>Qadoodi</i>)?	
Consume spoilt or left-over foods	

8. a) Have there been any population or animal movements in the past 3 months? If yes from where to where?

b) Have there been any reported animal deaths in the village? If yes what was the extent of this problem?

Water, Sanitation and hygiene

What is the main source of water for people in this village?	
Is drinking water treated at point of supplies and/or at point of use?	
What is the average distance to the water point?	

On average how much water is used by each person/day?	
How many people on average share a water point/source?	
How far away is the latrine from the water source for the majority?	
How many people on average share a toilet/latrine facility?	
How are children faeces disposed of?	
Do households have soap for body, utensils and clothes washing?	
How is prepared food stored/kept by most households	

10. Prices of major foods (flour, rice, milk, sugar, etc) and other essential commodities (water, cooking fuel, etc) for the village

Item/material	Price/unit in SSH (Exchange rate- 1US\$ = ____SSH)	
	In August 2007	Now (November 2007)

11. What are the main sources of income for most households in order of priority?
.....
.....
.....
.....
.....

12. What are the common illnesses in this village among children and adults?

	Illnesses	Possible causes/reasons
Children		
Adults		

13. Find out if there has been any formal support in this village in the last 3 months

Type of support/ programme	Agency	Targeted group (beneficiaries)

Appendix 5:
Overall data quality

Criteria	Flags*	Unit	Good	Accept	Poor	Unacceptable	Score
Missing/Flagged data (% of in-range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-10 10	>10 20	0 (1.7 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<0.000 10	2 (p=0.092)
Overall Age distrib (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<0.000 10	4 (p=0.004)
Dig pref score - weight	Incl	#	0-5 0	5-10 2	10-20 4	> 20 10	0 (4)
Dig pref score - height	Incl	#	0-5 0	5-10 2	10-20 4	> 20 10	2 (10)
Standard Dev WHZ	Excl	SD	<1.1 0	<1.15 2	<1.20 6	>1.20 20	0 (1.01)
Skewness WHZ	Excl	#	<±1.0 0	<±2.0 1	<±3.0 3	>±3.0 5	0 (0.30)
Kurtosis WHZ	Excl	#	<±1.0 0	<±2.0 1	<±3.0 3	>±3.0 5	0 (-0.16)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<0.000 5	0 (p=)
Timing	Excl	Not determined yet	0	1	3	5	
OVERALL SCORE WHZ =			<5	<10	<15	<25	8 %

At the moment the overall score of this survey is 8 %, this is acceptable.

Appendix 7: Team Composition

Name	Region	Org
Suleiman Abdalleh Qorsheel	Togdheer	MOHL
Ali Abdulaah Jama	Togdheer	MOHL
Khalif Mohamed Ali	Togdheer	MOHL
Ahmed Hassan Hyille	Togdheer	MOHL
Najah C. Hassan	Togdheer	MOHL
Siciid Xussen Ege	Awdal	MOHL
Cabdi Ahmed Muhamed	Awdal	MOHL
craahid ahmed Jibirie	Awdal	MOHL
Mahdi maxed Jauli	Awdal	MOHL
Luhe c. Ezmi	Awdal	MOHL
C/Qaadit Maxamed Bakri	Sahil	MOHL
Saado Yusuf Maxaud	Sahil	MOHL
Saura Maxamid C/Laani	Sahil	MOHL
Abdullahi Burale Ahmed	Sahil	MOHL
Faysa Xuseen Nuur	Sahil	MOHL
Fadumo Osmen Qagle	Sool	MOHL
Ibrahim Yousof Nuur	Sool	MOHL
Fereh A. Mohed	Sool	MOHL
Faedou Ali Ferah	Sool	MOHL
Farhan Awil Omer	Sool	MOHL
Faarax Axmed Carab	Sool	MOHL
Xasan Aamed Saala	Sanaag	MOHL
Amin C. Maxed	Sanaag	MOHL
Hodan J. Asah	Sanaag	MOHL
Cibaado Warsame Aabdi	Sanaag	MOHL
Naytaar Hasad Salih	Sanaag	MOHL
Noura Ibrahim Moicd	Hargeisa	MOHL
Ali Meygag Muse	Hargeisa	MOHL
Khadar abiiib Ahmad	Hargeisa	MOHL
Moamud Muse Jamore	Hargeisa	MOHL
Alrahiim Allahi Yusuf	Hargeisa	MOHL
Hassan Haileh	Hargeisa	MOHL
Khadra Abdi Axmed	Hargeisa	MOHL
Khadra Mohamed Mohamoud	Hargeisa	MOHL
Tom Oguta	Nairobi	FSAU
Marjika van Klinken	Nairobi	FSAU
Nura Gureh	Hargeisa	FSAU
Osman Warsame	Lasaanod	FSAU
Abdulahi Warsame	Erigavo	FSAU
Fuad Hassan	Burao	FSAU
Mohammed Hussein Nur	Beletweyn	FSAU
Bashir Osman	Gedo	FSAU
Louise Masese – Report Writing	Nairobi	FSAU

Appendix 8 : Child Referral Form

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 with (state the condition):

Child referred to: _____

Child referred by: _____

.....

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 with (state the condition):

Child referred to: _____

Child referred by: _____

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