DANGOROYO & EYL DISTRICTS

NUTRITION SURVEY REPORT
August 8-15, 2005

FSAU/UNICEF/MOH/ADRA/SRCS

FSAU

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ABBREVIATIONS AND ACRONYMS

ADRA	Adventist Development and Relief Agency
ARI	Acute Respiratory Infections
FAO	Food and Agriculture Organisation
FSAU	Food Security Analysis Unit
GAM	Global Acute Malnutrition
IDP	Internally Displaced People
MCH	Maternal and Child Health
MOH	Ministry of Health
NCHS	National Centre for Health Statistics
NGOs	Non-Governmental Organisations
NIDs	National Immunisation Days
SACB	Somalia Aid Coordination Body
SRCS	Somali Red Crescent Society
UN	United Nations
UNICEF	United Nations Children's Fund
WFP	World Food Programme
W/H	Weight for Height
WHO	World Health Organisation

Definitions
55/1.3x1.3

Deyr Season:
Short rains normally expected from October to December all over Somalia. Deyr rains are less widespread and less reliable than the Gu rains. They are usually patchy and localised. Its harvest is normally expected between December and January and provides key food requirement to take households through the Jilaal season. The harvest is normally not significant when compared to the primary/main harvest of the year.

Jilaal Season
This is the dry season of the year in Somalia normally between January and March. There is normally no crop production during this season and the river levels normally drop. Consequently, most livestock migrate in search of water and pasture during this period.

Gu Season
The main rainy season in Somalia normally expected between April and June. About 70% of the annual crop and livestock production depend on the Gu rains. This is the heaviest and most reliable rainfall in Somalia. Its harvest is normally expected between July and August.

Hagaa Season
This is the dry and windy season in Somalia, normally expected from July through September. There may be occasional showers particularly along the coast.

1 ACKNOWLEDGEMENTS

The Food Security Analysis Unit (FSAU) and UNICEF acknowledge the participation of Ministry of Health (MOH) Puntland, Adventist Development and Relief Agency (ADRA) and Somali Red Crescent Society (SRCS) in the Dangoroyo and Eyl districts nutrition survey.

FSAU undertook the overall responsibility for the coordination and implementation of the nutrition survey. FSAU funded personnel related expenses, led the training of survey teams, supervised data collection, undertook data entry and analysis and compiled the survey report.

UNICEF coordinated the logistical aspect of the survey, funded survey vehicles, provided survey equipment, provided technical input the training of survey teams and into the survey report. The provision of enumerators, team leaders and supervisors by MOH, ADRA and SRCS is gratefully acknowledged. ADRA additionally, reviewed the draft report and provided comments which have been incorporated.

Thanks too to the local authorities, parents/care takers, community guides and the community as a whole in Dangoroyo and Eyl districts for their cooperation, time and provision of information individually and in focus group discussions that helped the survey team get a better understanding of the nutrition situation in the area.

FSAU and UNICEF also express their sincere appreciation to the entire survey team for the high level of commitment, sincerity and initiatives demonstrated during all stages of the survey.

2 EXECUTIVE SUMMARY

Dangoroyo and Eyl districts in Nugal Region constitute of four pastoral livelihood zones: The coastal deer, Hawd and Sool Plateau, and Nugal Valley (Pastoral).

The FSAU led Post Gu 2005 analysis conducted in July 2005 indicates that the coastal deer as faced a livelihood crisis, the Hawd, Sool and Nugal valley with a livelihood crisis with pockets of humanitarian emergency. The key driving forces for the situation include the prolonged drought, freezing temperatures, flooding and tsunami, all of which have disrupted livelihoods in the past year. Mitigating factors include humanitarian response, social support and increased access to livestock products (as a result of water and pasture availability following the evenly distributed good Gu' rains).

FSAU and UNICEF, in collaboration with partners (ADRA, MOH and SRCS) undertook a nutrition survey on August 8-15, 2005 in Dangoroyo & Eyl Districts to determine the nutrition situation of population groups affected by the acute livelihood crisis and humanitarian emergency. A 30 by 30 cluster sampling methodology was used. The main survey objectives were to determine:

1. The level of acute malnutrition in children aged 6 - 59 months (or 65 - 110 cm tall) using weight for height z scores.
2. Retrospective crude and under five mortality rates in the preceding three months
3. The coverage of measles vaccination and Vitamin A supplementation
4. Factors influencing the nutrition status of children and mortality in relation to care practices, food security, health, water and sanitation situation.
5. The prevalence of vitamin A deficiency

A total of 909 children from 523 households were assessed. Survey results indicate global acute malnutrition (weight for height <-2 Z score or oedema) of 8.9 % (CI: 7.2 – 11.0) and severe acute malnutrition (weight for height <-3 Z score or oedema) of 1.0 % (CI: 0.5 – 1.9). Disease incidence in the preceding two weeks does not have statistically significant association ($p>0.05$) with malnutrition.

The retrospective (92 days) under five mortality rate (U5MR) is 1.33/10,000/day (CI: 0.55 – 2.11) and crude mortality rate (CMR) 0.22 deaths/10000/day (CI: 0.09 – 0.36). A total of 5.2% of the assessed mothers (N=444) were malnourished (MUAC<21 cm).

No disease outbreaks have been reported during the survey, except incidences of those endemic in the area. In the two weeks preceding the survey, the prevalence of the following diseases (through recall method) was reported: diarrhoea (about 10%), ARI (13%), suspected malaria (11%). It is notable that these incidences had not been confirmed with laboratory tests. About 89% of the households seek medical assistance during illness. Reasons for not seeking assistance by 11% were mainly limited access to health facilities, or lack of income to access the private facilities.

The main source of water for drinking for about 47% of the households is berkards. Berkards are also the main source of water for cooking and personal hygiene for about 49%. The other major source of water is rain water catchments. Majority of the households (81%) dispose of faecal matter in the bush/open and not in toilets (11%), raising the risk of contaminating water sources. Majority of the assessed households (76%) travel less than one kilometre to access water.

Conclusion:
The nutrition situation of 8.9% (CI: 7.2 – 11.0) is consistent with the long term trends for the area, though poor according to WHO categorization. This is attributed to the acute livelihood crisis and pockets of humanitarian emergency faced with the population. The situation is mitigated by the large scale humanitarian response and social support network system. The crude (0.27/10,000/day) and under five (1.34/10,000/day) mortality rates are within acceptable levels (WHO categorization). Most of the deaths are attributed to diarrhoeal diseases.

Recommendations

Based on the analysis of the findings, the survey team provided the following recommendations:

1. Continued humanitarian assistance to increase access to food and income.
2. Humanitarian agencies to finalize the currently on-going plans for distribution of fishing equipment at the earliest opportunity and to provide the much needed fishing equipment for the fishing season which commenced in September 2005.
3. Intensified preventive health care interventions focusing on immunisation, hygiene, and control of water related diseases.
4. Improved access to primary health care services by increasing the number of public health facilities/or mobile clinics; while also ensuring adequate medical supplies
5. Promote nutrition education focusing on breastfeeding, complementary feeding and frequency of feeding of infants and young children as well as feeding of sick children.
6. Promote alternative income generating activities through a credit programme to reduce reliance on humanitarian assistance.

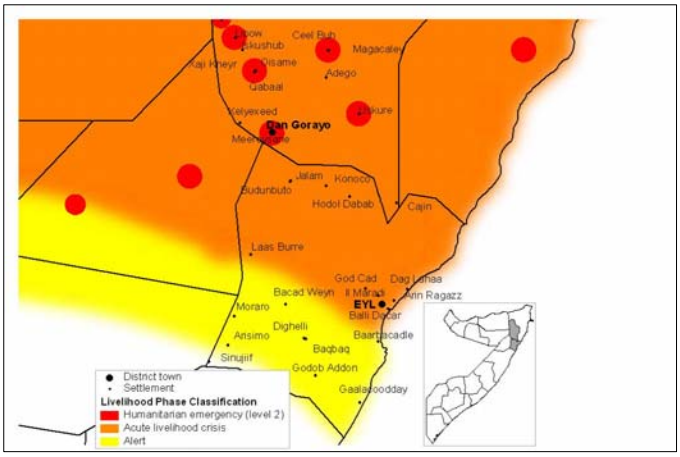
SUMMARY OF FINDINGS

Indicator	Proportion	
	No	%
Children under five years screened during the survey	909	100%
Global acute malnutrition – W/ H <-2 Z score or presence of oedema	81	8.9% (CI 7.2-10.8)
Severe acute malnutrition – W/ H <-3 Z score or presence of oedema	9	1 (CI 0.5 – 1.9)
Global acute malnutrition – W/ H <- 80% of median or presence of oedema	34	3.7 (CI: 2.6 – 5.2)
Severe acute malnutrition – W/ H <- 70% of median or presence of oedema	4	0.3 (CI: 0.1-1.0)
Oedema	2	0.2 (CI 0.0-0.9)
Proportion of children with diarrhoea in two weeks prior to survey (by recall) N=909	89	9.7
Proportion of children with ARI in two weeks prior to survey (by recall) N=909	121	13.2
Proportion of children with Suspected malaria in two weeks prior to survey (By recall) N=909	103	11.3
Proportion of children with measles in one month prior to survey (by recall): N=909	40	4.4
Proportion of children supplemented with Vitamin A in the last six months prior to the survey (N=909)	275	30.1
Proportion of children aged 9-59 months, immunised against measles N=893	379	41.4
Proportion of malnourished women with MUAC< 21 cm (N=444)	23	5.2
Under five mortality rate (deaths/10,000/day) N=884	1.33 (CI: 0.55 – 2.11)	
Crude mortality rate (deaths/10,000/day) N=5305	0.22 (CI: 0.09 – 0.36)	

3 INTRODUCTION

Background Information

Dangoroyo and Eyl districts comprise of four pastoral livelihood zones: The coastal deer, Hawd, Sool and Nugal Valley. The total estimated population is about 43,000.



The FSAU led post Gu 2005 analysis which was conducted in July 2005 has classified the coastal deer population groups as faced with an acute livelihood crisis, resulting from asset depletion.

The community is highly indebted and lacks income, which is usually generated from fish sales (FSAU field analysts' reports, Tsunami Assessment report). Fishing activities have stopped since the winds and waves are too strong for the fishing boats to be used during the Hagaa season (July-September); additionally, the fish become scarce at the shores. (See picture by FSAU).

The situation is being mitigated by large scale humanitarian assistance, social support, and improving access to livestock products (due to increased access to water, pasture for livestock).

Additional findings from the Gu 2005 analysis indicate a livelihood crisis with pockets of humanitarian assistance in the Hawd, Sool and Nugal valley. This population is faced with widespread diffuse destitution, near complete asset depletion, high indebtedness (declining trend), and credit limits that are nearly exhausted. There is high dependence on humanitarian assistance for food and non-food items.

Population groups at the Coastal deer, Hawd, Sool and Nugal valley cope through dependence on food and non-food aid, reduced meal intake, limiting meal portions (sentinel sites surveillance FSAU June 205).

Survey Justification

Prolonged drought, one episode of freezing temperatures, flooding, tsunami and disease outbreaks in Dangoroyo and Eyl districts over the past few years remain key driving forces for acute livelihood and spatial humanitarian emergency. This has resulted in asset depletion, leading to widespread diffuse destitution and high indebtedness in the affected population groups. Humanitarian interventions currently in place to mitigate the situation are as follows:

- Action Aid is operational in Eyl town, and provides relief food regularly to 300 targeted families.
- ILO provided cash for work for road rehabilitation in May – June 2005
- CARE provides food aid regularly in Maraya and Dhanane, two villages affected by the tsunami. Care also provides water trucking and rehabilitation activities in the two villages.
- ADRA has programs on basic education in the tsunami affected areas. ADRA is currently in the process of providing non-food items (which include tents for shelter, cooking utensils). ADRA is also involved in water and sanitation programs.
- WFP is the major distributor of food aid. WFP distributed food aid in Dangoroyo and Eyl districts upto May 2005, and then again in August and September 2005.
- ICRC distributed food aid in June 2005
- SRCS runs five MCH clinics in Dangoroyo and Eyl districts: Hasbahale, Qarhis, Godob, Dangoroyo town and Eyl town. SRCS is funded with UNICEF
- UNICEF provides medical supplies and vaccines through SRCS. UNICEF is also involved in health and nutrition programs through mobile teams.

In February 2005, FSAU in collaboration with partners (MOH) established a sentinel sites surveillance system to monitor nutrition and mortality trends in the area. Surveillance data collected in February, April and June 2005 indicated a trend of high levels of acute malnutrition and mortality in Budunbuto, an area with high concentration of destitute in Dangoroyo district. Additionally, the findings of the Post Gu 2005 assessment classified Dangoroyo and Eyl districts population groups as faced with acute livelihood crisis with pockets of humanitarian emergency. A detailed nutrition survey was deemed necessary by FSAU and UNICEF to investigate the issue and determine the causes.

Survey Objectives

1. To determine the levels of acute malnutrition in children aged 6 - 59 months (or 65 - 110 cm tall) in Dangoroyo and Eyl districts using weight for height z scores.
2. To determine the retrospective crude and under five mortality rates in Dangoroyo and Eyl districts in the past three months
3. To determine the coverage of measles vaccination and Vitamin A supplementation in Dangoroyo and Eyl districts.
4. To describe factors influencing the nutrition status of children and mortality in relation to care practices, food security, health, water and sanitation situation.
5. To determine the prevalence of vitamin A deficiency in the survey area
6. To determine the levels of malnutrition among adult women using Mid Upper Arm Circumference

4 METHODOLOGY

Survey Design
The study was both descriptive and analytical in nature. Cross -sectional data was collected through a standard household questionnaire for nutrition (see appendix 2) Retrospective mortality data for the past 92 days prior to the survey was also collected among the study households (see appendix 4). Qualitative data was collected by survey supervisors and coordinators through focus group discussions and key informant interviews to provide further understanding of the underlying causes of malnutrition.

The sampling procedure

Using a two-stage cluster sampling methodology, 30 clusters were randomly selected based on population proportional basis from Dangoroyo and Eyl districts. Initially a sampling frame was adapted from the WHO NIDs population figures for year 2003 from which a representative sample could be drawn. A list of all villages in Dangoroyo and Eyl districts, with their respective populations was used to construct cumulative population figures.

An estimated population of 43,000 was used from which a cluster interval of 1433 was calculated. Using a table of random numbers, a random number, 1118 was chosen within the cluster interval to determine the first cluster. The subsequent clusters were determined systematically by adding the cluster interval (1433) to the first randomly selected number (see appendix 1). In four of the clusters in Eyl district (Gabac, Dhanane, Qulule and Falfah) the populations had migrated to other areas. Following discussions with elders in Eyl town, these clusters were replaced with (Eyl town, Qarhis, Godob and Maraya) where the population groups had migrated to.

From the 30 randomly selected clusters, a total of 915 children between the heights/length of 65 and 110cm and 6-59 months old were randomly surveyed. However, insufficient information on some children and extreme measurements led to the dropping off of 6 children at anthropometric analysis. Thus only 909 were included in the analysis of child data.

In each of the clusters, mortality questionnaires were exercised to 30 households. Same sampling frame was used in cluster selection hence the same clusters selected for the nutrition data were also used for the mortality data. In total, mortality data was collected from 906 households irrespective of whether or not there was an under-five.

Study population and sampling criteria

The study population consisted of people living in Dangoroyo and Eyl districts and comprised all the children aged 6-59 months, measuring 65-109.9 cm for height/length. On the visit to each cluster, the centre was identified and a pen was spun to determine the direction to follow in the selection of the households with children aged 6 to 59 months. The total number of the households from the centre to the end was established and given numbers to enable random selection of the first household with a child of the required age or height. From the first household with a child aged 6-59 months, the same direction was followed to get the next household. On reaching the edge of the cluster the right-hand direction (clockwise direction) was followed until details of 30 children were collected from that cluster. If a cluster was exhausted of children before the required 30 children had been reached, a neighbouring area was randomly selected. All eligible children in the household were measured and if a child or primary caregiver was absent, an appointment was booked for a later visit in the course of survey. If a child was in a relative or neighbour's house, the child could be called and assessed.

With reference to mortality, the data was collected retrospectively with the first questionnaire being exercised on the first randomly selected household irrespective of presence of an under-five child or not. Same direction (which has been randomly picked by spinning a pen) as indicated above

was followed but unlike the survey for children where only households with children were visited for interview, the mortality questionnaire was exercised in every household in the identified direction. The survey team turned to the right side on reaching the cluster edge, until 30 households were surveyed from the cluster.

Data collection

Anthropometric measurements

The anthropometric data were collected using the procedure stipulated by the WHO (1995) for taking anthropometric measurements. Adherence to this procedure was ensured. The protocol used was as follows:

Weight. Salter Scale with calibrations of 100g-unit was used. This was adjusted before weighing every child by setting it to zero. The children would be lightly dressed before having the weight taken. Two readings were taken for each child and the average recorded on the questionnaire.

Height. For height, a vertical or horizontal measuring board reading a maximum of 175cm and capable of measuring to 0.1cm was used to take the height or length of a child. The child would stand on the measuring board barefooted; have hands hanging loosely with feet parallel to the body, and heels, buttocks, shoulders and back of the head touching the board. The head would be held comfortably erect with the lower border of the orbit of the eye being in the same horizontal plane as the external canal of the ear. The headpiece of the measuring board was then pushed gently, crushing the hair and making contact with the top of the head. Height/length was then read to the nearest 0.1cm. Two readings were recorded and the computed average used in the analysis.

Length. For children aged 6 to 23 months or between 65cm to 84.5cm length instead of height was taken. The child was made to lie flat on the length board. The sliding piece was placed at the edge of the bare feet as the head (with crushing of the hair) touched the other end of the measuring device. Then two readings were taken and the average computed.

Child age determination

Difficulties were encountered in determining the exact ages of children. Useful documents like growth monitoring/clinic attendance cards, or any other viable formal card were used when available. Calendars of events (see in the appendix) were also used as proxies to accurate age determination. Though not entirely accurate, ages were still regarded as important indicators though not used for anthropometric analysis and were approximate/average pointers. The nutrition indicator employed was *weight for height* as interest was in the wasting status (acute malnutrition).

Oedema

Defined as bilateral oedema on the lower limbs detected by gently pressing the feet to check if a depression is left after at least three seconds of pressing.

Morbidity

Diarrhoea: Diarrhoea was defined for a child having three or more loose or watery stools per day.

Measles: A child with more than three signs of the following was considered having measles: fever, and skin rash, runny nose or red eyes, and/or mouth infection, or chest infection

Acute Respiratory Infection (ARI): Asked as *oof wareen or wareento.* The signs asked included cough, rapid breathing and fever.

Suspected malaria/acute febrile illness: The signs to be asked for were periodic chills, fever, sweating and sometimes a coma.

Mortality

A proxy indication of mortality was taken retrospectively to provide some idea on the health situation of the population. The mortality assessment was done concurrently with nutrition survey in which a 30 by 30 cluster sampling methodology was used. The survey methodology used for the nutrition survey was adopted with the exception that households were selected as the second sampling unit. The selection of clusters and households were the same as for nutrition survey. At least 30 households were randomly selected in each cluster and the mortality questionnaire administered to a responsible member of that household. All households within the selected cluster were eligible for inclusion in the mortality survey, whether there was under-five or not. Households were systematically surveyed until the 30th household. Each household surveyed was asked the composition of their members in two parts; - those members less than 5 years and the total number of household members. The household was then asked how many if any of the household members had died in the last three months. The mortality questionnaire is appended in the report. A total of 905 households with and with no under-five child at the time of the survey were included in the survey.

The overall mortality was calculated by taking the total number of deaths multiplied by a factor (10,000). This was divided by the population of the surveyed households using the formulae below:

MR=n/{[(n+N)+N]/2}
Where n=total number of persons reported dead in the households surveyed
N=total number of people living in those households at the time of survey

The mortality was calculated retrospectively for the past 3 months, the recall period. Mortality rates per 10,000 persons per day were obtained by dividing the figure above by 92 days that was used as the recall period. Calculation of under-five mortality rates was done using the same formulae but with a denominator of under-five children in the surveyed households.

In case a member had died, the household was asked to explain the signs and symptoms of the person before he/she died.
Mortality rates can be interpreted according to the following reference

For under-five years old children
-Under-five mortality rates >= 2 deaths/10,000/day indicate a situation of alert
-Under five mortality rate >=4 deaths/10,000 children/day indicate an emergency
For the total population
-Mortality rates >=1 deaths/10,000 persons/day indicate an alert situation
-Mortality rates >=2 deaths/10,000 persons/day indicate an emergency.

Dietary Diversity

Dietary diversity was determined by taking a simple count of various food groups (FAO classification) consumed in a given household over the past twenty four hours. The food groups considered were Cereals/staples; Beans and other pulses; Dairy and dairy products (milk); Fats/oil/Ghee; Sugars in tea and others; Meat and meat products; Eggs; Fish and sea food; Roots and tubers; Fruits; Vegetables and Beverages, spices & other products

Adult Women Nutritional Status

Adult nutritional status was determined among mothers in households surveyed by use Mid Upper Arm Circumference (MUAC). The overall nutritional status was defined as: mothers with MUAC less than 21 cm as being malnourished while those with a MUAC equal or greater that 21 cm were of normal nutritional status

Vitamin A Deficiency
Vitamin A deficiency (VAD) can be assessed via clinical assessments namely night blindness, bitots spots, corneal xerosis and corneal ulceration; biochemical or dietary assessments. During the survey, VAD was assessed if any members of a household suffered from night blindness.

Consumption Coping Strategies
Consumption coping strategy was determined and calculated as per The Coping Strategies Index Field methods manual by CARE and WFP. Respondents were asked to identify how many times a given coping strategy had been in the past 30 days prior to survey.

Description of survey activities

Chronology of activities for the Dangoroyo and Eyl districts nutrition survey

Major Activity	**Dates. 2004**
Preparation of tools, methodology & review of secondary data	July 15-August 4th
Training of enumerators and pre-testing (Garowe)	August 5 -7
Cluster Identification	August 8
Collection of data	August 8 – 15
Entry of data	August 9 – 16,
Preliminary analysis	August 17
Presentation of preliminary results (in the NEZ Health Coordination Meeting)	August 27 – 28
Report writing	Sept 1 – Oct 11
Circulation of report	October 12

Overall coordination of the survey was undertaken by FSAU (technical) and UNICEF (logistical), support from the MOH PHC coordinator. Support and overall supervision during the data collection was undertaken by three FSAU nutritionists and the MOH PHC coordinator, who also provided qualitative information.

Six teams consisting of two enumerators, a team leader and a supervisor conducted the survey with each team handling one cluster a day. Supervisors were seconded from the participating partners namely; ADRA, SRCS, and FSAU. UNICEF staff and FSAU field nutrition analysts selected experienced enumerators who had participated in previous nutrition and multi-indicator cluster surveys undertaken by UNICEF. An elder from each cluster assisted the team to identify the centre of the cluster.

Quality control procedures
A comprehensive training of enumerators and supervisors was conducted covering interview techniques, sampling procedure, inclusion and exclusion criteria, sources of errors taking of measurements, standardising the questions in the questionnaire, levels of precision required in measurements, diagnosis of oedema, verification of deaths within households, handling of equipment, interview techniques and the general courtesy during the survey.

Rigorous pre-testing of the questionnaire and equipment was carried out in a village in the outskirts of Garowe (training of survey team was undertaken in Garowe). Pre-testing also involved familiarising survey teams with village/cluster entry; administering the questionnaire, sampling procedure, correct taking of measurements and documentation. After the field exercise, views were exchanged to address the difficulties identified; appropriateness of the questions reviewed and necessary changes were made.

Quality of data was also ensured through (i) close monitoring of fieldwork by FSAU team led by three nutritionists and the national MOH PHC coordinator, (ii) crosschecking of filled questionnaires on daily basis and (iii) daily review undertaken with the enumerators 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 after entry in the field that made it easy to detect any outliers/ mistakes and to replace or repeat households depending on magnitude of error and (vi) monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights.

5 DATA ANALYSIS

Entry, cleaning, processing and analysis

Data was entered and analysed using Epiinfo computer based package. Running and tabulating all variable frequencies was carried out as part of data cleaning. The Nutrition Program of Epiinfo Windows was used to convert the measurements (weight and height) into nutritional indicators and comparison made with the National Centre for Health Statistics (NCHS) references as designed by WHO (1998). Analysis of certain variables e.g. total food groups consumed and the total losses in livestock ownership was also undertaken in Epi-info for windows.

General characteristics of study population

Frequencies and cross-tabulations were used to give percentages, means and standard deviations in the descriptive analysis and presentation of general household and child characteristics.

Creation of nutritional status indices

The anthropometric measurement of weight and height were used to compute

- the W/H nutritional status indicators of the studied children. Weight For Height (W/H) expressed the weight of the child as a percentage of the expected weight for the standard child of that height as given by NCHS. WFH measures acute malnutrition or wasting.

  Using the Nutrition program of Epiinfo windows, WFH Z-scores were generated and the anthropometric indicator, WFH, was used to classify children into categories of nutritional status as follows:

  < -3 Z-Scores or oedema = Severe acute malnutrition
  -3 Z-Scores ≥WFH< -2 Z-Scores = Moderate acute malnutrition
  <-2 Z-score or oedema = Global/total acute malnutrition
  ≥ -2Z-Scores = Normal

- The Weight for age status indicators of the studied children. Weight for age (WFA) expressed as the weight of the child as a percentage of the expected weight for the standard child of that age. WFA measures underweight.

  Using the Nutrition program of Epiinfo windows, WFA Z-scores were generated and the anthropometric indicator, WFA, was used to classify children into categories of nutritional status as follows:

  < -3 Z-Scores = Severe underweight
  -3 Z-Scores ≥WFA< -2 Z-Scores = Moderate underweight
  <-2 Z-score = Total underweight
  ≥ -2Z-Scores = Normal

- The height for age status indicators of the studied children. Height for age (HFA) expressed as the height of the child as a percentage of the expected height for the standard child of that age. HFA measures stunting, or chronic malnutrition.

  Using the Nutrition program of Epiinfo windows, HFA Z-scores were generated and the anthropometric indicator, HFA, was used to classify children into categories of nutritional status as follows:

  < -3 Z-Scores = Severe stunting
  -3 Z-Scores ≥HFA< -2 Z-Scores = Moderate stunting
  <-2 Z-score= Ttotal stunting
  ≥ -2Z-Scores = Normal

6 SURVEY RESULTS

Household characteristics of study population

Household characteristics	*N*	*(%)*
Sex – Household head (n=523):		
Male	331	63.3
Female	192	36.7
Total population in the HH	3377	100
Total under 5s in the HH	961	100
Household size (Mean):	6.5	
Under fives (mean) per household	1.8	
Household residence status (n=523)		
Residents	495	94.6
IDPs/Internal migrants	23	4.4
Returnees	2	0.4
Destitute	2	0.4
Others	1	0.2
Place of origin (n=28):		
South and Central Zone	6	20.6
Megaga Mudug	18	62.0
Bari	1	3.4
Mudug	3	10.3
Date of arrival (n=28)		
=<12 months	16	58.6
>12 months	12	41.4
Reason for movement (n=27):		
Insecurity	2	7.4
Lack of income	6	22.2
Food shortage	19	70.4

The nutrition survey covered a total of 523 households with a mean household size of 6.5 persons. Male headed households comprised 63.3% while the rest are female-headed households (36.7%). The mean number of the under fives per household was 1.8.

As indicated in the table, most (63.3%) of the households were male-headed, while 36.7% female headed.

Most of the respondents (94.6%) were resident with a fewer proportion being IDPs, returnees or destitute.

Most of the non resident respondents came from SCZ, Bari and Mudug regions and 58.6% of these had resided in the area for a year or less.

The reason for movement was attributed mainly to shortage of food and income.

Livelihood, Assets Ownership

Distribution of households by means of Assets Ownership

As indicated on the table, there has been a tremendous decrease in livestock holdings from the last three years: shoats to 7.7%, camels to 5.4% and cattle to 6.5%.

Livestock Holdings (N=523)	**N**	**%**
Shoats (HH=291)		
Number 3 years ago	27315	100
Current number	2102	7.7
Camels (HH = 94)		
Number 3 years ago	37	100
Current number	2	5.4
Cattle (N=11)		
Number 3 years ago	733	100
Current Number	48	6.5

Distribution of households by consumption coping strategies

As indicated on the table below, the major coping strategies undertaken are:

- 37% Switching from high to low quality less expensive foods all the time or pretty often
- 27.3% purchasing food on credit
- 17.3% limiting portion sizes at meal times
- 12% reducing the number of meals consumed in a day

Consumption coping strategies (N=523)	All the time Every day	Pretty often 3-6*/wk	Once a week 1-2*/wk	Hardly at all <1*/wk	Never 0*/wk
	%	%	%	%	%
Switch from high to low quality less expensive foods	1	25.8	11.7	11.7	50.1
Borrow food or rely on help from relatives	0.4	4	16.8	26.4	52.4
Purchase food on credit	1.1	26.2	27.5	17	28.1
Gather wild food or hunt	0	2.1	3.3	3.6	91
Send household members to eat elsewhere?	0	0	1.7	4.6	93.7
Limit portion size at mealtimes	1.0	16.3	11.9	11.5	59.5
Restrict consumption of adults in order for small children to eat	0	8.2	17.8	11.3	62.7
Reduce number of meals eaten in a day	0	12	16.1	13.2	58.7
Skip entire days without eating	0	5.5	16.6	10.3	67.5

Less than 5% of the assessed households: borrow food/relying on help from relatives, gather wild food, send household members to eat elsewhere. Unfortunately, 32.5% of the households skip entire days at given times in order to cope with the lack of food.

Consumption of wild food as a coping strategy is minimal – with 91% of the assessed households never involved. (FSAU Post Gu analysis 2005)

6.1 Water access, sanitation and hygiene

As shown in the table below, majority of the households rely on berkads (46.5%) and rain (30.2%) for their drinking water. The main sources of water for cooking and personal hygiene are berkards (48.8%). Public tap (14.5%) and unprotected wells (19.1%). About 23.9% have to cover over 1 km to reach the nearest water point.

Water access	*N*	*%*
Main source of drinking water (n=523):		
o Piped water	2	0.4
o Public tap	75	14.3
o Tube well/borehole	1	0.2
o Protected well or spring	22	4.2
o Rain water	158	30.2
o Unprotected well/spring	1	0.2
o Other1	21	4.0
o Berkads	243	46.5
Main source of cooking water & personal hygiene (n=523):		
o Piped water	4	0.8
o Public tap	76	14.5
o Tube well/borehole	0	0
o Protected well or spring	34	6.5
o Rain water	54	10.3
o Unprotected well/spring	100	19.1
o Berkads	255	48.8
Distance to the nearest water point: (n=523)		
0 – 500 metres	211	40.3
501 – 1000 metres	187	35.8
1001 – 5000 metres	60	11.5
>5000 metres	65	12.4
Average amount of water used in the HH per day		
More than 15 litres	477	91.2
11-15 litres	18	3.4
6-10 litres	7	1.3
less than 6 litres	21	4.0
Sanitation and hygiene		
Sanitation facility (n=523):		
Improved/ventilated pit latrine	56	10.7
Traditional pit latrine	40	7.6
Open pit	105	20.1
Bush/open grounds	330	61.3
Wash hands after defecation (n=523)		
Always	462	86.8
Often	67	12.6
Sometimes	3	0.6
Hardly rarely	0	0
Wash hands before eating or food preparation: (n=523)		
Always	462	86.2
Often	70	13.0
Sometimes	2	0.4
Hardly rarely	2	0.4

91.2% of the household use more than 15 liters a day while the rest spend less.

61.3% of the assessed households dispose of feacal matter in the bush or open ground.

The practice of hand-washing after using the toilet is undertaken always by about 86.8% with the rest doing so often, sometimes or rarely. Hand-washing before eating is not always undertaken by about 13.7% of the assessed households.

6.2 Health seeking behaviour

Table 9: Health seeking behaviour

	N	*%*
Seek healthcare assistance when a member is sick (n=523):		
Yes	466	89.1
No	57	*10.9*
Where (n=463):		
Traditional healer	17	3.6
Private clinic/pharmacy	355	76.7
Public health facility	91	19.7

Majority (89.1%) of the households seek healthcare assistance when sick, mainly from a private clinic/pharmacy. Others seek assistance from Public/NGO health facilities (19.7%) and from traditional healers (3.6%). Reasons given for not seeking health assistance were: lack of money to access the private clinics/pharmacy, or limited access to the public health facilities.

6.3 Formal and informal support

	N	**%**
Informal support (N = 523)	**90**	**17.2**
Loans	90	17.2
Gifts	19	3.6
Remittances from abroad	2	0.4
Zakat from better off households	10	1.9
Remittances from within Somali	2	0.4
Formal support (N = 523)		29
Free food	154	29.4
Free cash	9	1.8
Supplementary food	64	12.2
Water subsidy	11	2.1
Cash for work	0	0
Food for work	38	7.2
Transportation of animals subsidy	2	0.4
Veterinary care	2	0.7

preceding three months

At the time of survey about 17.2% of the households had received informal support, in the preceding three months prior to the survey, mainly in form of loans.

Additional findings indicate that about 29.0% of the households had received formal support, mainly food aid within the

.

6.4 Characteristics of study children

Distribution of children according to age and sex
A total of 909 children were surveyed of whom 53.1% (N=483) were boys and 46.9% (N=416) girls. The ratio of boys to girls is 1.13:1. The 909 children came from the 523 households surveyed in Dangoroyo and Eyl districts.

Age group	Total assessed			
	Boys		Girls	
	N	%	N	%
6-11 months	3	4.7	2	3.0
12- 23 months	18	9.4	8	8.1
24- 35 months	25	12.8	11	5.6
36-47 months	30	16.1	15	8.0
48-59 months	52	19.1	27	10.0

6.5 Nutritional status of survey children using anthropometry

Summary of Global Acute malnutrition and Severe Acute Malnutrition

Malnutrition Rates	*Proportion*	*No.*
Global Acute Malnutrition (<-2 Z score or oedema)	8.9% (CI 7.2 – 11.0)	81
Severe Acute Malnutrition (<-3 Z score or oedema)	1% (CI 0.5 – 1.9)	9

As shown on the table, the global acute malnutrition using W/H Z score (<-2 z-scores or oedema) is 8.9% while severe acute malnutrition (<-3 z-score or oedema) was 1%. Oedema cases alone accounted for 0.2%.

Distribution of children by nutritional status (weight/ height z-score or oedema); child sex and Age group

Nutrition status categories	*Total*		*Males*		*Females*	
	Proportion	*No.*	*Proportion*	*No.*	*Proportion*	*No.*
Global acute malnutrition (W/H<-2 z score/oedema)	8.9% (CI: 7.2–10.8)	81	11.0	53	6.6%	28
Severe acute malnutrition (W/H <-3 z score/oedema)	1.0% (CI 0.5 – 1.9)	9	0.8%	7	0.2%	2
Oedema	0.2% (CI: 0.0 – 0.9)	2	0.1	1	0.1%	1

Global acute malnutrition among children aged 6 - 59 months in Dangoroyo/Eyl districts is 8.9% (CI: 7.2 – 10.8) using weight for height <-2 Z score or presence of oedema. The median for the W/H z score is – 0.73. There is a statistically significant difference in malnutrition between boys and girls, with boys being more malnourished than girls (P value = 0.02). There is no statistical significance of malnutrition across age groups.

Age group	Total malnourished	
	Boys (%)	Girls (%)
6-11 months	4.7	3.0
12- 23 months	9.4	8.1
24- 35 months	12.8	5.6
36-47 months	16.1	8.0
48-59 months	19.1	10.0

Malnutrition prevalence using W/H percentage of median categories

Nutrition status categories		
	Proportion	*No.*
Global acute malnutrition (W/H<80% or oedema)	3.7 CI: 2.6 – 5.2	34
Severe acute malnutrition (W/H<70% or oedema)	0.3 CI: 0.1 – 1.0	3
Oedema	0.2% CI: 0.1 – 1.0	2

The global acute malnutrition among children aged 6 - 59 months using weight for height <80% of median or presence of oedema is 3.7% (CI: 2.6 – 5.2) while the severe acute malnutrition <70% of median or presence of oedema, 0.2% (CI: 0.1 – 1.0).

Total chronic malnutrition: 17.7% (CI: 15.3 – 20.3), n=161, of the assessed children had height for age (HAZ) < -2z scores.

Total Underweight: A total of 19.1% (CI: 16.6 – 21.8), n=174, of the assessed children had weight for age WAZ < -2z scores.

6.6 Morbidity, measles immunisation, polio vaccination and vitamin A supplementation

	Number	*%*
Incidence of major child illnesses (n=909) by Recall		
ARI	120	13.1
Diarrhoea within two weeks prior to survey	89	9.7
Suspected malaria within two weeks prior to survey	103	11.3
Measles within one month prior to the survey	40	4.4
Measles immunisation (Children aged 9 months & above) N=893		
Children receiving measles vaccination in the past six months – verified by card	25	2.8
Children receiving measles vaccination in the past six months – by recall	92	10.3
Children receiving measles vaccination before the past six months – verified by card	17	1.9
Children receiving measles vaccination before the past six months – by recall	234	26.2
Children never been vaccinated against measles	525	58.9
Children vaccinated against measles (recall and/or verification by card)	368	41.1
Children who have ever received Polio dose (N= 909)		
One to two times	125	13.7
Three times	467	51
None	323	35.3
Vitamin A supplementation (N=909)		
Children receiving Vitamin A supplementation in past 6 months	275	30.1

Morbidity rates (obtained through recall method) were typical for the area. Diarrhoeal episodes comprise about 9.7%, ARI 13.1% and suspected fever, 11.3%.

For children aged 9-59 months, the measles vaccination coverage is 41.1% both by card and recall.

About 35.3% of the assessed children have not received a single polio dose (based on recall or verification on the card). Vitamin A supplementation in the preceding 6 months is at 30.1%.

6.7 Children's feeding practices

	N	*(%)*
Are you breastfeeding child (age 6-24 months) (n=588):		
Yes	27	4.6
No	561	95.4
Age when child stopped breastfeeding (n=561):		
1 - 5 months	432	73.5
6 - 11 months	119	20.2
12 months or more	37	6.3
Weaning age (age 6-24 months) (n=799):		
0 - 3 months	593	74.2
4 – 6 months	156	19.5
7 months or more		6.1
Feeding frequency (n=):		
Once	31	3.4
2 times	158	17.3
3 times	577	63.1
4 or mores times	147	16.1

As indicated on the table, 95.4% of children aged two years and below do not breastfeed. Majority (73.5%) of the children have not been exclusively breastfed in the first 6 months of life.

Introduction to complementary foods is conducted at 0-3 months, for children aged 6-24 months.

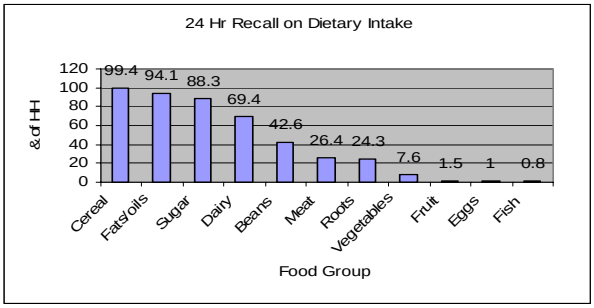
The feeding frequency for majority of the children (79.2%) is three times and above.

6.8 Dietary diversity among children

In the 24 hours prior to the survey, most of the households consumed a diet from four food groups:

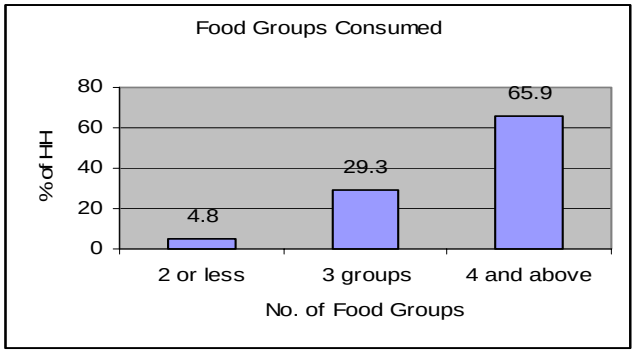
- cereal (99.4% of the households),
- fats/oil/ghee (94.1% of the households)
- sugar in tea (88.3 of the households) and
- dairy products (69.4% of the households).

Less than half of the households consume beans, meat/offal, roots and tubers. Fish/sea foods, eggs, fruits, vegetables and beverages are hardly consumed as indicated in the chart.



Dietary diversity in the assessed households

About 66% of the households consume a diversified diet of four groups and above.; about 30% consume three food groups and about 5% consume 2 groups or less – as indicated in the chart.



6.9 Adult Women Malnutrition

Malnutrition rates among adults were investigated using mid upper arm circumference (MUAC) measurements of women of child bearing age (15 – 49 years). Of the 444 women assessed, 5.2% (23) were malnourished with MUAC <21 cm. Two women i.e. 0.5% had MUAC below 16 cm.

6.10 Vitamin A deficiency

Vitamin A deficiency

	N	*%*
Night blindness n= (3377)		
Yes	3367	99.7
No	10	0.3

Vitamin A deficiency (VAD) as assessed by way of night blindness. About 0.3% (10 persons from the assessed households – with a total population of 3377) of the assessed households' population suffer from night blindness. This is within the acceptable levels according to Sphere 2004 and may be attributed to the high consumption of vitamin A fortified vegetable oil (by 94% of the households) and milk and milk products (69% of the households) which are good sources of vitamin A.

6.11 Mortality rates

A total of 906 households were surveyed for mortality indicator with a recall period of 92 days prior to the survey being used. The results were as presented below:

Under five Mortality rates; For children aged 0-59 months (under-five mortality rate)

Under 5 population in surveyed households on May 8th, 2005		= 1138
Under five population in surveyed households now		= 629
Average population during this period		= 884
Number of under five deaths		=11
Total population during this period (average + deaths)		= 895
Recall period		= 92 days
Under five mortality rate	=	11 deaths/895/92 days
	=	1.33/10,000/day (CI: 0.55-2.11)

Crude mortality rate: For the total population

Total population in surveyed households in May		=5625
Total population in surveyed households now		= 4985
Average population in this period		=5305
Number of deaths in the households		= 13
Total population during this period (average + deaths)		=5318
Recall period		= 92 days
CMR	=	13 deaths/5318/92 days
	=	0.22 /10,000/day (CI: 0.09 – 0.36)

Six of the 13 deaths (46.1%) were associated with diarrhoeal diseases. The other deaths were attributed to pneumonia (1 death i.e. or 7.6%), TB (1 case,. 7.6%) and an unspecified cause (7.6%).

6.12 Relationship between malnutrition and other factors

The risk factor that had a significant association with malnutrition is child sex only (P=0.01).

Risk factors and relation to total malnutrition

Exposure variable	*N*	*(%)*	*Crude RR*	*95% CI of OR*	*p-value (Fisher exact)*
Child sex:					
Male	**483**	**53.1**	**1.70**	**1.07-3.01**	**0.01**
Female	**426**	**46.9**			
Diarrhoea:					
Yes	86	9.5	0.65	0.30-1.34	0.11
No	823	90.5			
Suspected malaria:					
Yes	746	89.1	0.52	0.25-0.95	0.18
No	84	10.9			
Measles:					
Yes	39	4.3		0.2-2.1	0.24
No	870	95.7			
Vitamin A:					
Yes	273	30.0	1.57	0.91-3.03	0.05
No	636	70.0			
ARI					
Yes	792	87.1	0.82	0.4-1.69	0.30
No	117	12.9			
Breastfeeding					
Yes	114	12.5	0.67	0.33-1.21	0.10
No	795	87.5			

Boys were almost twice as likely to be malnourished, compared to girls. Further investigation would determine the reason to this.

Presence of disease (diarrhoea, suspected malaria, measles) in the preceding two weeks prior to the survey, vitamin A supplementation and breastfeeding do not have significant association with acute malnutrition.

6.13 Qualitative information

Qualitative information was collected from focus group discussions and key informants. A total of six focus group discussions were held, four with mothers and two with community leaders. The discussions were centred on feeding and care practices, health care, food security, water and sanitation issues. Additionally, over five key informants were conducted with the MOH staff, the FSAU food security analysis and the MCH workers in Dangoroyo and Eyl districts. Following is a summary of the discussions.

Factors which contribute to good nutrition in the population:

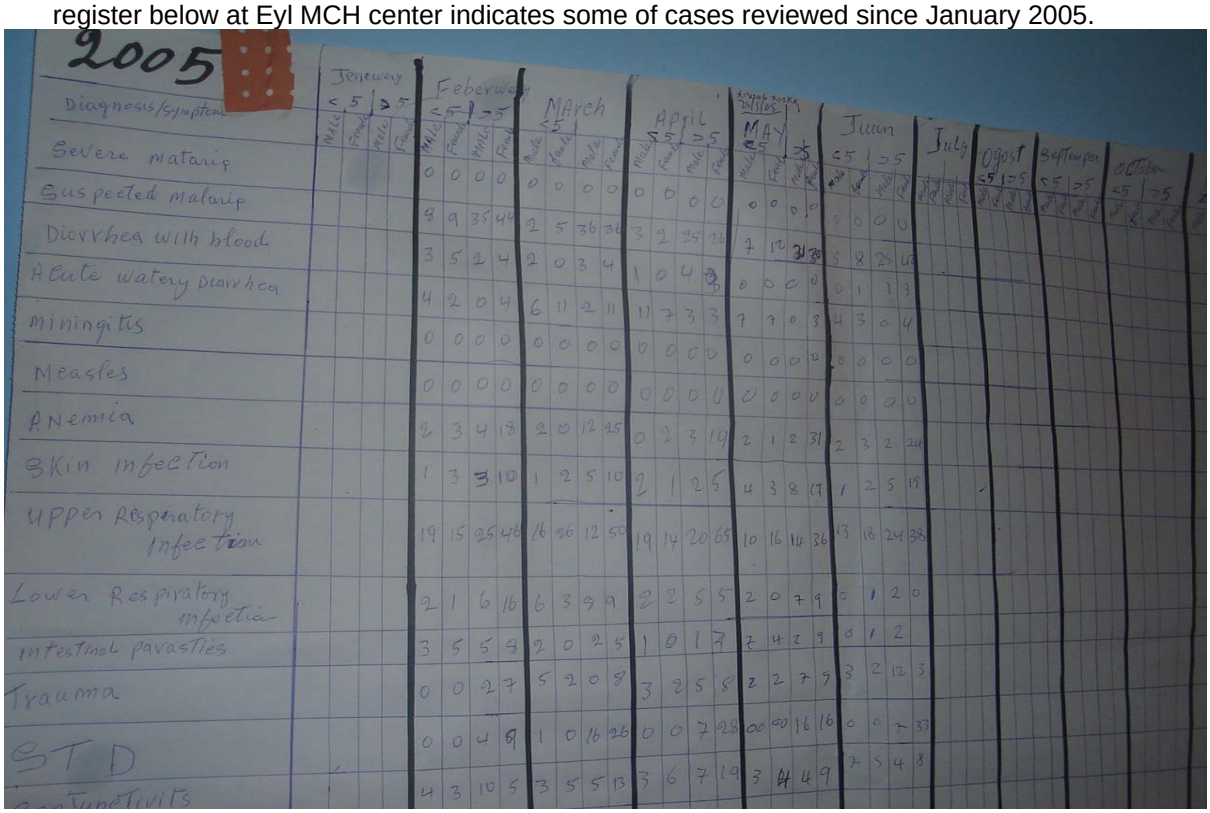
- Relatively good security situation, that has enabled free movement of the affected communities
- Food assistance from humanitarian agencies. The food stocks from May 2005 food distribution by WFP contribute a significant proportion of the diet. The stocks, however are diminishing since there has been no further distribution after the capture of the WFP ship with food.
- Strong social support network
- Increased access to milk and milk products from shoats following water and pasture availability with the Gu rains
- Children are fed 3-4 times a day
- The cash obtained from cash for work activities in selected villages in Qardo district is trickling into Dangoroyo and Eyl districts.
- Migration from the coast to the inland where there is more access to milk and food assistance

Malnutrition is mainly attributed to:

- Limited access to food
- Lack of income: This is usually derived from fish sales. Currently, there is the seasonal sea closure which prevents this livelihood strategy from being undertaken. Additionally, there has been no food distribution since May 2005 – when the WFP ship ferrying food was hijacked in

the high seas. People currently rely on the food stocks.

- Limited access to safe water for drinking. The available water in most of the places is of poor quality, leading to diarrhoeal diseases. The price of safer water is high, up o about Ssh 20,000 which is unaffordable for majority
- Limited access to health services. Thus seeking assistance from Garowe and or Bossasso
- Incidences of disease mainly ARI, TB, diarrhoeal diseases and suspected malaria. The 2005 register below at Eyl MCH center indicates some of cases reviewed since January 2005.



- Poor sanitation, with no toilets around. Majority of the people dispose faecal matter in the bush. This results in contamination of rain water and berkads, the major sources of drinking and cooking water.
- Reducing consumption of foods taken at meals and/or skipping of meals to expand the on food aid stocks from humanitarian assistance
- Lack of education. There are curricula schools in Eyl and Dangoroyo towns, and major villages (Qarhis and Hasbahale), but not in the smaller villages, particularly at the coast, among the fishing communities.
- Poor care practices in terms of initiation of breastfeeding, introduction to complementary foods and persistence in breastfeeding.

Scenario analysis for the coming three months:

Best case scenario

In the next about 3 months, the following are anticipated:

- Most of the camels and shoats are pregnant, leading to anticipated kidding and calving. This will lead to increased access to milk for consumption and sale.
- Resumption of fishing activities from September will open up opportunities for sales and income
- Continued supply of humanitarian assistance, both food and non-food items.

On this basis, it is projected that there will be improved dietary diversity and access to income which will contribute to improved nutrition situation in the next three months.

Worst case scenario

- The goats may dry up after about 1-1.5 months of kidding
- The population groups that have migrated inland, from the Coast, are scheduled to return to the coast from September. Unfortunately, they do not have fishing equipment to resume fishing – since the on-going plans by humanitarian agencies to distribute fishing equipment

have not yet been effected on the ground. It is possible that this will lead to limited fishing and sales and minimize access income.

- Food stocks from humanitarian assistance are getting exhausted, and subsequent distributions are subject to the successful negotiations between WFP and ship-hijackers. Should this not be fruitful, then access to food will be minimal.

On this basis, it is possible that the nutrition situation will deteriorate.

Food Security situation in Dangoroyo and Eyl districts, from FSAU's field analyst

Rainfall: the rainfall of this Gu was better, in all over the area assessed, compared to the previous one and, the best in 10 years except in Southern Hawd of Eil and Garowe where the focus groups interviewed identified this Gu as the best in five years.
The coverage, distribution, intensity and magnitude have been very good almost in all areas assessed except the coastal belt of Eyl.

Water: Water is readily available in all sources, all berkads refilled and the underground water systems replenished by multiple run-off rains. The current average price for 20 lt. jerrican is 1,000 shilling, last year's price was 5,000 shilling and in 2001 was 700 shilling.

Water trucking is deployed only in the areas with pack camel problem. The average transport cost per 200lt drum of water is 35,000 shilling. Water trucking is becoming a structural vulnerability in those areas. The distance to pastures is short (1-10 km), but is expected to widen as the as Hagaa season inches into its final days.

Livestock condition: the conditions of all types of livestock are exceptionally good in all areas assessed; many of them, the body weight recovery are more than 100%.

Livestock migration: Due to distribution and the area coverage there is no migration of livestock. There is some migration from the coastal areas towards Dangoroyo. This migration is within the seasonal norm. It is not at all a distress migration.

Livestock ownership: with regard to natural deaths, many individual and focus group pastoralists interviewed during the exercise argue that livestock deaths since Deyr was minimal (below 5%). Despite herd size increase since Deyr, livestock holding is still below normal compared to baseline

Livestock production and reproduction: the average per cent of female goats that have given birth in the last six months is 57%; the average per cent of female sheep that have given birth in the same period is 51%; the average per cent of female camels expected to give birth this year is 70%. There was no camel or cattle calving in the previous six month (since Deyr 2005); the death rate of camel since Deyr was negligible.

The average per cent gross increase of shoats since Deyr is 51%, while the average gross total herds loss (sheep and goat) since last Deyr is19% (this includes natural death, sales and gift away, death by accident or by predators etc.). Since Deyr, the average net herds increase for shoats is 32%.
As of milk availability, camel milk was nil in the Eastern Dangoroyo and Eyl districts and rare in the Eastern Hawd . For goat milk, it was plenty during the Gu, but of late it is declining as goats are again conceiving in large scale, therefore drying up.

Prices of goat milk as follows: the average current price is 6,000 shilling, the average price at this time last year had been 16,000 shilling, and the average price 3 months ago was 7,000 shilling.

Risk factors and coping strategies: pastoralists in the drought affected areas can be divided in three categories: those survived with viable herd size, the near-destitute and the destitute.
The first group is food secure because of the Good Gu and Deyr seasons compounded with high birthing rates of shoats and the good recovery of their livestock body conditions; they are also prospecting yet another Deyr with high birthing rates of camel and shoats.

The second group is combining a number of coping strategies:

a) Family splits in that some members are joining the destitute camps along the main villages and are where food aid is distributed, they share resources with their family members still tending animals in symbiotic manner: one side contributes on the provision of staple food and receives in exchange milking goats and perhaps one or two animals to sell, while the other side provides milking goats and tend the animals for future herd reconstitution. The herd size recovery was better in the villages where food aid and other forms of assistance were provided.

b) Seeking restocking from their kith and kin. Interviewed pastoralists in the less drought affected areas complained about the sheer number of assistance seekers in terms of animals on the hooves.

c) Families with able-bodied members go seasonally for fishing lobsters. In the coastal areas where the tsunami hit hardest, there is a concerted effort among the international agencies to ameliorate the situation; therefore food aid is delivered in the area. A big chunk of this aid goes to adjacent pastoral areas.

The third group are the complete destitute with remnants of shoats from 0-20. These animals are either sold or left behind with relatives. Now they are adopting adaptive coping strategy. Some of them have already moved to big towns (Dangoroyo and Eyl); joined their relatives in various villages, or moved closer to the road sides to target assistance from formal and informal groups (see picture).

Current terms of trade compared to baseline
Export quality goat: 1.38 (69 kg)
Export quality sheep: 1.25 (62 kg)

Market supply/Demand of the various categories of livestock
For shoats, there is high demand in the local markets, for camel and cattle no supply and demand.

Livestock diseases
No outbreaks of livestock diseases

Environmental issues
Gulley erosions and rill erosions encroaching grazing valleys due to overgrazing, droughts and tree cuttings

Destitution
Destitution camps following the previous droughts, the cold rains in the last deyr and tsunami, are sprouting in the districts of Dangoroyo and Eil district, WFP and other international agencies are providing food aid and other forms of assistance.

Remittance
Direct remittance from the diaspora to the poor pastoralists is very rare, but they do benefit largely assistance from local sources which benefit from the diaspora.
The remittance levels are already declining as relatives in the diaspora are aware the above normal rains of Gu and the Deyr, while on the other hand the stress calls from the pastoralists are subsiding.

Livelihood support

Livelihood support is part and parcel of the symbiotic nature of the social fabric of the Somali tradition. The pastoralists tend to share the meager resources they come across. They are giving something out of the remaining shoats as well as the food aid and the cash aid to the less fortunate fellow pastoralists.

Because of the scale of the disaster wreaked by the droughts in terms of asset losses, the traditional restocking alone will not bring about recovery in one or two years time. Destitute pastoralists are marauding around in the countryside, especially in the less affected areas, where the local pastoralists are overwhelmed by the sheer number of assistance seekers.

Humanitarian interventions currently in place to mitigate the situation are as follows:

- Action Aid is operational in Eyl town, and provides relief food regularly to 300 targeted families.
- ILO provided cash for work for road rehabilitation in May – June 2005
- CARE provides food aid regularly in Maraya and Dhanane, two villages affected by the tsunami. Care also provides water trucking and rehabilitation activities in the two villages.
- ADRA has programs on basic education in the tsunami affected areas. ADRA is currently in the process of providing non-food items (which include tents for shelter, cooking utensils). ADRA is also involved in water and sanitation programs.
- WFP is the major distributor of food aid. WFP distributed food aid in Dangoroyo and Eyl districts upto May 2005, and then again in August and September 2005.
- ICRC distributed food aid in June 2005
- SRCS runs five MCH clinics in Dangoroyo and Eyl districts: Hasbahale, Qarhis, Godob, Dangoroyo town and Eyl town. SRCS is funded with UNICEF
- UNICEF provides medical supplies and vaccines through SRCS. UNICEF is also involved in health and nutrition programs through mobile teams

7. DISCUSSION

Dangoroyo and Eyl districts nutrition survey results indicate global acute malnutrition (weight for height <-2 Z score or oedema) rate of 8.9 % (CI: 7.2 – 11.0) and severe acute malnutrition (weight for height <-3 Z score or oedema) of was 1 % (CI: 0.5 – 1.9).These are categorized as 'poor' according to the WHO classification but are consistent with the long term trends for the area. These rates are also among the better ones in Somalia. A total of 5.2% of the assessed women (444) had MUAC of less than 21cm, a rate is considered acceptable for the area.

The under five mortality rate (U5MR) of 1.33/10,000/day and crude mortality rate (CMR) 0.22 deaths/10000/day are within the acceptable levels according to WHO categorization. These deaths are attributed mainly related to diarrheal diseases 46.1%

No disease outbreaks have been reported during the survey, except those endemic in the area. In the two weeks preceding the survey, the prevalence of the following diseases (through recall and not biochemical method) was reported: diarrhea (9.7%), ARI (13.2%), fever/Suspected malaria (11.3%). Statistical analysis does not provide significant relationship between acute malnutrition and disease incidence in the preceding two weeks ($p>0.05$). About 89.1% of the households seek medical assistance when a member is sick. It is however notable that about 10.9% of the households do not seek medical assistance during illness, mainly due to limited access to health facilities, or lack of income.

The main source of water for drinking (46.5), cooking and personal hygiene is 48.8%) are berkards and rains. Majority of the households (81.3%) dispose of faecal matter in the bush/open and not in toilets (10.7%), raising the risk of contaminating the water sources. Intake of contaminated water/food may have contributed to the diarrhoeal diseases that are the major cause of mortality in the general population.

The population groups in the coastal deer faced with a livelihood crisis while those in the Hawd, Sool plateau and Nugal livelihood zones are faced with an acute livelihood crisis with spatial pockets in the humanitarian emergency phase classification (FSAU 2005 Post Gu analysis). This has resulted in limited access to food and non-food items. The presence of humanitarian interventions in the area is nevertheless notable and may have increased the communities' access to food and non-food items, subsequently mitigating malnutrition. Additionally, there is increasing in access to milk and milk products following gradual recovery of livestock with the Gu season. This is a further mitigating factor.

The majority of the households (about 66%) currently consume four or more food groups (FAO classification), mostly cereal (99% of the households), fats (94%), sugar (88%), dairy products (69%). Increased dietary diversity is associated with better nutrition status. The smaller proportion consuming two or less food groups may be at risk of malnutrition.

Care practices are generally poor with about 74.2% of children aged upto 23 months having been introduced to other foods by the age of three months, and 73.5% having stopped breastfeeding by the fifth month of age. The frequency of feeding is also poor with about 16.1% of the children fed four or more times a day. These may have contributed to the poor nutrition situation.

The low level of night blindness 0.3% (through recall method) is within the acceptable levels according to Sphere 2004 and may be attributed to the high consumption of vitamin A fortified vegetable oil (by 94% of the households) and milk and milk products (69% of the households) which are god sources of vitamin A.

Conclusion and Recommendations:

The nutrition situation of 8.9% (CI: 7.2 – 11.0) in Dangoroyo and Eyl districts is consistent with the long term trends, though poor according to WHO categorization. The crude (0.27/10,000/day) and under five (1.34/10,000/day) mortality rates are within acceptable levels (WHO categorization). Following the presentation of preliminary survey results, discussions of the same with partner agencies and scenario analysis for the coming three months, the following recommendations have been made.

- Continued humanitarian assistance to increase access to food and income.
- Humanitarian agencies to finalize the currently on-going plans for distribution of fishing equipment at the earliest opportunity and to provide the much needed fishing equipment for the fishing season which commenced in September 2005.
- Intensified preventive health care interventions focusing on immunisation, hygiene, and control of water related diseases.
- Improve access to primary health care services by increasing the number of public health facilities/or mobile clinics; while also ensuring adequate medical supplies
- Promote nutrition education focusing on breastfeeding, complementary feeding and frequency of feeding of infants and young children as well as feeding of sick children.
- Promote alternative income generating activities through a credit programme to reduce reliance on humanitarian assistance.

Sunset in Eyl. August 14th, 2005 (Eyl Nutrition survey)

8. APPENDICES

Appendix 1: Sampling Frame for the Dangoroyo & Eyl Districts Nutrition Survey, August 2005

Dangoroyo and Eil Districts				
No.	**Town/Village**	**Total Population**	**Cummalative population**	Clusters
1	DangorayoTown	3000	3000	1,2
2	Libaaxo/Barweyn	595	3595	
3	Budunbuto/Farxamur	675	4270	3
4	Baqbaq	1990	6260	4
5	Garmaal	2345	8605	5,6
6	Usgure	1710	10315	7
7	Suuj	1750	12065	8
8	Qundheed/Falfalax/Buqs	2015	14080	9,10
9	Celbuh	1845	15925	11
10	Haji khayr	1250	17175	12
11	Yibayil	1325	18500	13
12	Eyl town	6950	25450	14,15,16,17
13	Xasbahale	2430	27880	18,19
14	Warguduud	1255	29135	20
15	Diilin	750	29885	21
16	Godob	2550	32435	22
17	Jiifle	605	33040	23
18	Gaala,ood	730	33770	
19	Dhanaane	675	34445	24
20	Qoryale	280	34725	
21	Ilig	445	35170	
22	Qullule	585	35755	25
23	Dhiganle	1840	37595	26
24	Kabaal	660	38255	
25	Dhariin	430	38685	27
26	Ladega	750	39435	
27	Gabbac	625	40060	28
28	Kabal waq	480	40540	
29	Qarxis	2460	43000	29,30
	Total	**43000**		
cluster sampling intervals		**1433.333333**		
Starting point		**1118**		

Cluster sampling interval 1433 and the first random number 1118.

Appendix 2: Dangoroyo Eyl Districts Nutrition Survey Questionnaire

Date_____ Team Number _____ Cluster Number _____ Name of Supervisor_____ Name of District _____

Name of Village/ _____ Name of section_____ Household Number _____ Name of the household head _____

Q1-14 Characteristics of Household

Q1 What is the sex of the household head? *1=M, 2=F*

Q2 How many people live in this household (Household size)? _____

Q3 How many children are below five years in this household (Number of < 5 years)? _____

Q4 What is your present household residence status? *1= residents 2=Internally displaced 3= Returnees 4= Destitute 5=0thers specify*_____ (If RESIDENT, skip to question 8)

Q5 Where did you come from before settling in this current location? (Place of origin) _____

Q6 How long have you lived in this current location?_____

Q7 What was your reason for coming to this current location? (Can select more than one option if appropriate): *1= Insecurity 2=Lack of jobs 3= Food shortage 4=Water shortage*

Q8 What is your main means of Livelihood ?...*a). Pastoral b) Agro-pastoral c) Settlement self-employed d) Irrigated agriculture/cash crops e) Others; specify* _____

Q9. Wealth Groups: **Livestock Ownership:**

Household Ownership	**Q10 Present** Number	**Q11 Three Years Ago** Number
1. Shoats		
2. Camels		
3. Cattle		

Q12-22 Morbidity, feeding & immunization status of children aged 6 – 59 months (or 65 – 110cm) in the household.

Sno	**Name**	**Q12** Diarrhoea in last two weeks *1= Yes 2= No*	**Q13** ARI in the last two weeks *1=Yes 2=No*	**Q14** Suspected malaria in the last two weeks *1=Yes 2=No*	**Q15** Measles in last one month *1=Yes 2=No*	**Q16** Vaccinated against measles *1=In past six months (by card) 2=In past six months (Recall) 3=Before six months (by card) 4=Before six months (Recall) 5= None*	**Q17** Vit. A provided in the last 6 months (Show Vit. A capsule) 1=Yes 2=*No*	**Q18** Are you breast feeding the child? *1=Yes 2=No*	**Q19** If not breast feeding, how old was the child when you stopped breast-feeding? 1= Less than 6 months *2= 6 – 11 months 3=12 – 18 months 4=18 months or more 5= Never breastfed*	**Q20** At what age was child given water/ foods other than breast milk 1=0-3 months 2=4-6 months 3=7 months or more.	**Q21** How many times do you feed the child in a day? *1= Once 2= Twice 3= 3-4 times 4= 5 or more times*	**Q22** How many times has the child ever been given polio vaccine orally 1=1-2 times 2=3 and above 3=Never
1												
2												
3												

Q23 When your child is sick, do you seek assistance? *1= Yes 2=No*
Q23a If yes where do you seek assistance? *1= Traditional healer 2= Private clinic/Pharmacy 3= Public health facility 4= Other specify* _____
Q23b If No, why? _____
Q24 Does any member of this household have difficult seeing at night or in the evening when other people do not? *1= Yes 2= No*
Q24a If yes specify member *1= < 5 years 2 = > 5 years*

Q25 - 31 Anthropometry for children aged 6 – 59 months (or 65 – 110cm) in the household

SNo	Name	Q25 Sex *(1=M 2=F)*	Q26 Age in months	Q27 Oedema *(1=Yes 2=/No)*	Q28 Height (cm)	Q29 Weight (kg)	Q30 MUAC (cm)	Q31 Received UNIMIX in past 6 months (1=Yes 2=No)
1								
2								
3								

Q32 What is the MUAC measurement of the childs mother _____ (or in absence, a woman of child bearing age in the household)? _____

Q33 Consumption Coping Strategies

In the past 30 days, if there have been times when you did not have enough food or money to buy food, how often has your household had to:	Relative Frequency				
	All the time? Every day	Pretty often? 3-6 */week	Once in a while? 1-2 */week	Hardly at all? <1 */ week	Never 0*/week
a. Switch from high quality to low quality less expensive foods?					
b. Borrow food, or rely on help from a friend or relative?					
c. Purchase food on credit?					
d. Gather wild food or hunt?					
e. Sell livestock at give-away price to buy staples?					
f. Send household members to eat elsewhere?					
g. Send household members to ask for Sadaka?					
h. Limit portion size at mealtimes?					
i. Restrict consumption of adults in order for small children to eat?					
j. Ration the money you had and buy prepared food?					
k. Reduce number of meals eaten in a day?					
l. Skip entire days without eating?					
m. Deplete assets to get food, i.e. sell livestock, land, jewelry, etc?					
Use assets as security to get food e.g. jewellery, berkads etc?					

Q 34 Dietary Diversity

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

Food consumption and source of food, source of income for food purchases What members of this household consumed these foods in the last 24 hours?	Beginning yesterday when people woke up, did any of these members in your household consume these foods. **1=Yes 0=No**	Codes: **0**=none **1**= once **2**= twice **3**=3 times **4**=4 times **5**=5 or more times	
Type of food		**Freq. (<5yrs)**	**Freq- >5yrs**
a) Cereals/staples (rice, wheat, pasta, sorghum, maize)			
b) Beans and other pulses/legumes			
c) Dairy and dairy products (milk)			
d)Fish/ sea foods			
e) Eggs			
f) Meat/offal			
g) Sugar in tea and others			
h) Fats/oils/ghee			
i) Roots and tubers			
j) Fruits			
k) Vegetables			
i) Beverages, spices & other products			

Q35 - 40 Access to water for Human Consumption (quality and quantity)

Q35 Main source of drinking water *1 = piped 2 = public tap 3 = Tube well/borehole 4= protected well or spring 5 = Rain water 6= unprotect spring and well 7= river 8= other*

Q36 Main source of water for cooking and personal hygiene *1 = piped 2 = public tap 3 = Tube well/borehole 4= protected well or spring 5 = Rain water 6= unprotect spring and well 7= other*

Q37 Average household water use per day per household for drinking, cooking and personal hygiene is *1= 0-2 litres 2 = 3 – 5 litres 3 = 6-10 litres 4= 11-15 litres 5= more than 15 litres*

Q38 Distance to the nearest water point *1= 0-500 metres 2 = 501 – 1000 metres 3= 1001 – 5000 metres 4 = more than 5000 metres*

Q39 Water and systems are maintained such that quantities of water are available *1 = never 2 = sometimes 3 = almost always 4= always*

Q40 Number of clean water storage containers of 20 litres *1= 1-2 containers 2 = 3-4 containers 3 = 4-5 containers 4= more than 5 containers*

Q41 - 45 Sanitation and Hygiene (access and quality)

Q41 Type of toilet used by most members of the household 1= Improved pit latrine 2=Traditional pit latrine 3=Open pit 4=Bush 5= Other (specify) _____

Q42 Number of people who use the same toilet 1= 1-5 people 2= 6-10 people 3 = 11-15 4= 16 – 20 people 5= more than 20 people 6= Not applicable

Q43 Household members wash their hands after using the toilet 1= always 2= often 3=sometimes 4= hardly rarely

Q44 Household members wash their hands before eating or food preparation 1= always 2= often 3=sometimes 4= hardly rarely

Q45 Distance between toilet and water source 1 = 0 – 5 metres 2= 6 – 10 metres 3= 11- 20 metres 5= 21 - 29 metres 5= 30 metres or more

Q46 - 47 Formal and Informal Support or Assistance in last three months (circle all options that apply)

Q46 Informal support received in last three months *1= Yes 2=No*

Q46a Amount and Frequency of each

Type of support	Frequency	Amount (Where applicable)
1=Zakat from better-off households		
2=Remittances from Abroad		
3=Remittances from within Somalia		
4=Gifts		
5=loans		
9=Other (Specify) _____		

Q47 Formal international or national aid support received in last three months *1= Yes 2=No*

Q47a Amount and Frequency of each

Type of support	Agency	Frequency	Amount (Where applicable)
1=Free cash			
2=Free food			
3=Cash for work			
4=Food for work			
5=Supplementary food			
6=water subsidy			
7=Transportation of animals subsidy			
8=Veterinary care			
9=Other (Specify) _____			

Appendix 3: Dangoroyo Eyl Districts Nutrition Survey Questionnaire - Somali Version

Weydiimaha Sahanka Nafaqada iyo Badbaadada cuntada ee Degmoyinka Dangorayo iyo Eyl August 05

Tarikh_____ Lanbarka Koxda_____ Lanbarka Goobta_____ Magaca Kormeraha_____ Magaca Degmada_____

Magaca Tulada/Magalada_____ Magaca Qaybta_____ Lanbarka Qoyska_____ Lanbaraka Madaxa qoyska_____

S1-14 Dabeecadaha Qoyska

S1 Muxuu yahay jinsiga madaxa qoysku? 1= L, 2= Dh
S2 Imisa qof ayaa qoysku ka kooban yahay (Baaxadda qoyska)?
S3 Imisa Carruur < 5 sano ayaa u jooga qoyska (Tirada < 5 sano)
S4 Xaaladda Degannaanta qoysku waa caynkee? 1 = Degaan rasmi ah 2= Gudaha ku barakacay 3= Soo laabtay 4 Gudaha kasoo hayaamay 5 = Nooc kale, caddee
S5 Intaadan halkan degin xaggee awal ka timid ? (Degaankaad u dhalatay)
S6 Halkan imisaad ku noolayd?
S7 Maxay ahayd sababtaad halkan u timid?
(waxaad xulan kartaa in kabadan hal mid haddii ay habboontahay 1= Amnidarro 2= Shaqo la'aan 3 Cuntoyari 4 Biyo yari
(Can select more than one option if appropriate): *1= Insecurity 2=Lack of jobs 3= Food shortage 4=Water shortage*

S8 *Shayga ugu muhiimsan ee noloshiinu ku tiirsan tahay waa kuma? B) Xoolo T) Beero-xolaleey J Xoogsi X) Beeraha waraabka Kh) Nooc kale; caddie----------*
S9. Waxahaysashada
Lahaanshaha Dhulka iyo Xolaha

Lahaanshaha qoyska	**S10 Hadda** Tirada	**S11 Saddex sano ka hor Tirada**
1. Ari		
2. Geel		
3. Lo'		

S12-22 Cudurrada, Quudinta & xaaladda tallaal ee ilmaha jira 6 -59 bilood (ama 65-110 cm) dherer le'eg ee jooga guriga

Tirsi	Magac	S12 Shuban 2-dii Usbuuc ee tagtay *1= Haa* *2= Maya*	S13 Ofwaren 2-dii usbuuc eetagtay *1=Haa* *2=Maya*	S14 Duumo 2-dii Usbuuc ee tagtay? *1=Haa* *2=Maya*	S15 Jadeeco bishii tagtay? *1=Haa* *2=Maya*	S16 Malagatallaalay *Jadeeco* *1= Kaar lixdii bilod oo tagtay ah baa yaal* *2 = Xusuusasho lixdii bilod ee tagtay ah* *3= Kaar lix bilod ka hor ah baa yaal* *4= Xusuusasho lix bilod ka hor* *5= Midna*	S17 Lixdi bilod ee tagtay malasiiyey Vit A ? (tus kabsol-ka) 1=Haa 2= *Maya*	S18 Ilmaha Naasaha ma u dhigtaa ? *1=Haa* *2=Maya*	S19 Haddii aanu naasaha nuugin imisuu jirey marki laga guriyey/gooyey? 1= kayar 6 bilod *2= 6 – 11 bilod* *3=12 – 18 bilod* *4=18 bilod ama ka badan* *5= Weligi lamasiin*	S20 Imisuu jirey ilmuhu markii la siiyey cunto iyo cabbid aan ahayn caanaha naaska? 1=0-3 bilod 2=4-6 bilod 3=7 bilod ama ka badan	Q21 Malinti imisa jeer ayad quudisa ilmaha? *1= Mar* *2= Laba* *3= 3-4 jeer* *4= 5 ama ka badan*	Q22 Weligi inte goor tallalka dabaysha afka laga siiyey 1=1-2 jeer 2=3 & kabadan 3=Marna
1												
2												
3												

S23 Marki ilmuhu kaa jirrado, kaalmo mala raadsataa? 1=Haa 2=Maya
S23b *Haddi ay haa tahay xaggee u raadsataa? 1-Dawo dhaqameed 2=Barcafimad gar loo leyahay/Farmashi 3= Baraha caafimadka bulshada 4= Meel kale, caddee*
S23t Haddii aan la raadsan waayo?_____

S24 *Ma jiraa qof dadka qoyska ka mid ah oo araggiisu liito habeenkii ama fiidki iyadoo dadka kale caadi wax u arki karaan? 1 = Haa 2= Maya*
S24b Haddi ay haa tahay caddee

S25 – 31 jircabbirka ilmaha jira 6- 59 bilod (ama 65-110cm) ee qoyska ka mid ah

Tirsi	Magac	S25 Jinsi *1= (L)* *2=(Dh)*	S26 Da' bilo ah	S27 Barar *1=Haa* *2= Maya*	S28 Height (cm)	Q29 Culays (kg)	Q30 Dhexrorka Bartamaha Cududda Sare (DHBCS) (cm)	Q31 Malasiiyey UNIMIX 6di bilod e tagtay (Tusi UNIMIX) (1=Haa 2=Maya
1								
2								
3								

S 32 Waa imisa Cabbirka DHBCS ee Hooyada Ilmaha

Isticmaalka xeeladaha isdebiridda (Consumption Coping Strategies)

Q33 kii casho ee tagtay haddi ay jirtey xilli aydaan haysan lacag aad ku iibsataan ama raashin idinku filan inta badan maxaa la samayn jirey	Soo noqnoqodka isticmalka				
	Markasta Maalin walba	Inta badan 3-6 casho usbuuciiba	Marmar 1-2 jeer usbuuciiba	Mar dhif ah Ka yar halmar usbuuciiba	Marna Lama isticmalin
B. Inlaga tago cuntada tayada leh lana isticmaalo cunto jaban oo tayadeedu lidato					
In cunto lasoo deynto ama lagu xirnaado kalmo lagahelo saaxiibo ama qaraabo					
j. Cuntada in deyn lagu soo qaato					
a. Duurka in qaraabasho ama ugaarsi loo doonto					
b. Xoolaha in lagu iibsado qiimo xooris ah si raashin loogu beddesho					
c. Xubnaha qoyska in loo diro inay meelo kale wax ka soo cunaan					
d. Xubnaha qoyska in tuugsi loo diro					
e. In layareeyo xaddiga cuntadii la karsan jirey markiiba					
f. Cuntada dadka waaweyn in laga xannibo si ilmaha cuntada loogu quudiyo					
g. Raashin diyaarsan in suuqa laga soo gato					
h. In la yareeyo intii jeer maalinti wax la cuni jirey					
i. Maalin dhan inaan dab la shidan					
j. In la baabi'iyo hantida si raashin loo helo : in la gado Xoolo, Dhul ama dahab					
in hantida dammaanad ahaan loo isticmaalo sida Berkad ama Dahab si raashin loo helo					

S 34 Kaladuwanaanta cuntoyinka (Q34 Dietary Diversity)
Xusuusashada cuntadii qoysku isticmaalay 24kii saac ee tagtay. Waraystuhu waa inuu caddeeyo in shalay ay caadi`u ahayd qoyska iyo inkale. Hadii ay jireen Alle-bari (Walimo), Duug ama xubnaha inta badani maqnaayeen, kolka maalin kale waa in la doorta sida dorraad. Ama beddelkeed dooro qoys kale

Isticmalka rashinka & isha raashinka, isha dakhliga lagu soo gatay rashinka Imisa qof oo qoyska ka mid ah ayaa cuntoyinkan isticmaalay 24ki saac ee tagtay?	Laga soo bilabi shalay marki la kaakacay qof dadka qoyska ka mid ahi macunay cuntoyinkan. **1=Haa** **0=Maya**	Furaha **0**=maya **1**= mar **2**= laba **3**=3 saddex **4**=4 jeer **5**=5 ama in kabadan	
Nooca Cuntada		**Intajer (<5yrs)**	**Intajer >5y rs**
a) Firaley (Bariis, Qamadi, Basto, Badar, Gelley, Canjero, Bur)			
b) Digirta iyo qolofleyda kale			
c) Caano(milk)			
d)Kalluun/cunto badeed			
e) Ukun			
f) Hilib			
g) Sokorta Shaaha iyo tan kaleba			
h) Dufan/Saliid/Subag			
i) Xididaley/buruqley(Bataati)			
j) Miro			
k) Khudaar			
i) Cabitan, Geed adari, waxyabo kale			

Q35 - 40 Helitaanka Biyaha Aadamigu isticmaalo (quality and quantity)
S35-40 Sahlanaan ku helidda biyaha dadku isticmaalo (Tayo ahaan iyo tiro ahaan)
S 35 Isha ugu muhmsan ee biyaha la cabbo 1= tuubo guriga toos u keenta biyo 2= Qasabadaha dadweynaha u dhaxeeya 3= tubo ceel hoos u qodan 4= Ceel lama il burqanaysa oo la xafiday 5= Ceel am ail an la xafidin 7 webi 8= kale
S36 isha ugu muhimsan ee biyaha karinta iyo nadaafadda jirka 1= tuubbo guriga toos u keento biyo 2= qasabadaha dadweynaha u dhaxeeya 3 Tubo ceel hoos u qodan 4 il burqanaysa ama ceel la xafiday 5 biyo roob 6 il iyo ceel aan xafidnayn 7 wax kale
S 37 Biyaha qoysku maalintii u isticmalo cabid, karsi iyo nadaafadda dadka 1= 0-2 litir 2 3-5 litir 3 6-10 litir 4 11-15 litir 5 ka badan 15 litir
S38 Masaafada barta biyaha ee ugu dhow 1 0-500 tallabo 2 501-1000 tallabo 3 1001-5000 talabo 4 ka badan 5000 tallabo
S39 Biyaha iyo habka lagu helaba waa la ilaaliyey si joogto ah sidaas darteedna waa la heli karaa intii looga baahnaa 1 Marna 2 marmar 3 intabadan markasta 4 Mar kasta

S40Tirada weelka biyaha si nadiif ah loogu kaydsado ee qaada 20 litir 1 1-2 shay 2 3-4 shay 3 4-5 shay 4 ka badan 5 shay

Q41 - 45 Sanitation and Hygiene (access and quality)
S41-45 Fayadhawrka iyo Nadaafadda (u sahlanaanta iyo tayada)
S41- Nooca Musqusha xubnaha qoyska inta badani isticmalan 1=Musqul god leh oo habaysan(saxan leh) 2= Musqul caadi ah 3 God af bannaan 4 Bannaanka 5 Wax kale (tilman)----------
S42Tirada dadka halkii musqul isticmaasha 1 1-5 2 6-10 3 11-15 4 16-20 5 ka badan 20 qof 6 kuma habboona
S43 Dadka gurigu markay saxarodan ka dib faraha madhaqdan 1= Mar kasta 2 inta badan 3 marmar 4 Dhif iyo nadir
S44Dadka gurigu ma gacmo dhaqdaan intaan wax la cunin ama xilliga diyaarinta cuntada 1=badanaa 2 intabadan 3 =marmar 4 dhif iyo nadir
S45Masaafada ay isu jiran musqusha iyo isha biyaha 1= 0-5 tallabo 2 6-10 tallabo 3 11-20 tallabo 4 21-29 talabo 5 30 tallaabo iyo ka badan

Q46 - 47 Formal and Informal Support or Assistance in last three months (circle all options that apply)
Kaalmada tooska ah iyo tan aan ahayn ee 3dii bilood ee tagtay (Goobaab dhammaan inta la isticmalay)

S46 Kaalmo aan toos ahayn oo lahelay 3 bilood ee tagtay 1=Haa 2 Maya

Nooca Kaalmada	Soo noqnoqodka	Xaddiga (halkii ay suurtogal tahay)
1=Zako laga helay dadka ladan		
2=Xawalad laga helay dibadda		
3 = Xawaaalad laga helay gudaha		
4=Deeq		
5=Amaah		
9=Wax kale (Tilmaan)_____		

S47 Ma jirtaa Kalmo toos ah oo caalamiya ama gudaha laga helay 3dii bilood ee tagtay *1= Haa 2=Maya*
S 47b Xaddiga iyo soo noqnoqodka midkiiba

Nooca kaalmada	Soo noqnoqodka	Xaddiga (halkii ay suurtagal tahay)
1= Lacag bilaash ah		
2=Rashin bilash ah		
3=Lacag shaqo lagu beddeshay		
4=Rashin shaqo lagu beddeshey		
5=Raashin siyaado ah		
6=biyo kabid ah		
7=Rarist xoolaha oo la kabay		
8=Dawaynta xoolaha		
9=Wax kale (tilmaan _____		

Appendix 4: Dangoroyo Eyl districts Mortality Questionnaire Set

DANGOROYO & EYL DISTRICTS MORTALITY QUESTIONNAIRE 0805

Qaabka Su'aalaha Qoyska ee Foomka dhimashada.

Date_____ Team Number _____ Cluster Number _____
Tariikh_____ Numbarka koxda_____Kalaster Numbar_____
Name of Interviewer _____Name of Village/ _____
Magaca waydiiyaha_____ Magaca Tuulada/magallo_____
Name of section _____ Household Number _____
Magaca Qaybta_____ Nambarka Gurga_____.
Name of the household head _____
Mgaca madaxa Qoyska _____

MORTALITY MODULE (SU'ALLAHA DHIMASHADA.	
CHILD: *(This questionnaire should be preferably administered to all women in the household)*	
1. Have you ever given birth? Weligaa Ilma ma dhashay. *(Birth- a child who ever breathed or cried or showed signs of live even if he/she lived only a few minutes or hours)* *Ilma nool oo neefsanaya markuu dhasho oo leh callmadihii nololed.*	Yes…… Haa No…… Maya
2. Have you any live birth between the **May 8 2005** and now? Miyaad dhashay ilma nool intii u dhaxaysay **May 8, 2005** iyo hadeertada aynu joogno.	Yes…… No…….. Haa……Maya If yes, how many?… Haddii ay haa tahay waa imisa?…….
3. Have you any under five child other than your own in your household coming in since the**. May 8 2005** **Miyey jiraan wax carruur ah shan sano ka yar oo aadan dhalin oo idiin yimi ilaa. May 8 2005**	Yes……. No…….. Haa…….Maya If yes, how many?……. Haddii ay haa tahatay waa imisa……
4. How many under 5yrs children were living in this household as on the **May 8 2005** 5. Imisa carruura oo shan sano ka yar ayaa gurigan ku nool illaa **May 8 2005**	Number…….. Tirada……
6. How many Under 5yrs children live with you now? Imisa carruur shan sano ka yar ayaa hadda ku nool guriga.	Sons at home…….. Imasa wiilaal ah Daughters at home …… Imisaa gabdh ah
7. Do you have any Under 5yrs child who has died since the **May 8 2005?** **8. Imisa wax carruur shan sano ka yar ayaa kaa dhintay ilaa May 8 2005?**	Yes…….No……If yes, then Sons dead …… Haa…….Maya……haday jirti imisa wiil.. ama gabdhood baa dhintay……. Daughters dead……..
9. If there has been death of an Under 5yrs child in this household, then what were the signs and symptoms of death?/suspected cause of death? Miyuu jiraa ilmo shan sano kar oo ka dhintay gurigan, muxuuse ahaa calamadaha ama waxa aad umalaynaysid inuu u dhintay.	Child1…….. Ilmaha kowaad…….. Child2…….. Ilmaha Labaad…….. Child3…… Ilmahasadexaad…… Child4 ……
ABOVE FIVE YEARS OLD IN THE HOUSEHOLD(Inta ka weyn shan sanadood ee Gurigaan)	
10. How many above five years old were living in this household as on the **May 8 2005?** **11. Imisa qof oo shan sano ka weyn ayaa gurigan ku noolaa ilaa May 8 2005?** *(List the names somewhere separate and account for everybody as per the questions below)* **Ku qor magacyada meel gaara ee dadkan**	Number >5yrs…….. Tirada shan sano ka yar……
12. How many above 5 yrs live in this household now? Imisa qof oo shan sano ka weyn ayaa ku nool gurigiina imika?	Number…….. Tirada……..
13. Do you have any over 5 years old person in this household who has died since the **May 8 2005?** **14. 14 Miyuu jiraa qof shan sano ka weyn oo gurigan ah oo dhintay ilaa May 8 2005?**	Yes…. No…….. Haa……Maya……..haday jirti imisaa ka yar shansano…… If yes, no. >5yrs……..
15. If there has been death of >5yrs person in this household, then what were the signs and symptoms of death? Haddii uu jiro qof ka weyn shan sano oo dhintay, maxay ahaayeen calamadihii iyo sababtii uu u dhintay, imisa qofbaa se dhintay?	Person1 Ilmaha 1aad…… Person2…… ILmaha 2aad……... Person3…… Ilmaha 3aad…… Person4.. Ilmaha 4aad……

Appendix 5: Traditional Calendar of Events

Month	2000	2001	2002	2003	2004	2005
Jan	(sidatal)	55(sidatal)	43(sidatal)	31(sidatal)	19(sidatal	7(sidatal
Feb	(Arafo) **XAJ**	54(Arafo) **XAJ**	42(Arafo) **XAJ**	30(Arafo) **XAJ**	18(Arafo)	6(Arafo)
March	(Dago)	53(Dago)	41(Dago)	29(Dago) **Dagalkii Ciraq**	17(Dago)	(Dago)
Apr	(Safar)	52(Safar)	40(Safar)	28(Safar) **Doorashadii Madaxweynaha**	16(Safar)	(Safar)
May	(Mawliid)	51(Mawliid)	39(Mawliid)	27(Mawliid)	15(Mawliid)	(Mawliid)
Jun	(Rajal-hore)	50(Rajal-hore)	38(Rajal-hore)	26(Rajal-hore)	14(Rajal-hore)	(Rajal-hore)
Jul	(Rajal dhexe)	49(Rajal dhexe)	37(Rajal dhexe)	25(Rajal dhexe)	13(Rajal dhexe)	(Rajal dhexe)
Aug	(Rajal dame)	48(Rajal dame)	36(Rajal dame)	24(Rajal dame)	12(Rajal dame)	(Rajal dame)
Sep	59(Sabuux)	47(Sabuux) **Qaraxyadii Maraykanka**	35(Sabuux)	23(Sabuux)	11(Sabuux)	
Oct	58(Soon-eri)	46(Soon-eri)	34(Soon-eri)	22(Soon-eri)	10(Soon-eri)	
Nov	57(Soon)	45(Soon)	33(Soon)	21(Soon)	9(Soon)	
Dec	56(Sonfur)	44 (Sonfur)	32(Sonfur)	20(Sonfur)	8(Sonfur)	

Jiilaal
IGU'
Xagaa
Deyr

7 Survey Team

1	Enumerators	Axmed C/raxman Fahiye
2		Foosiyo Maxamed `cumar
3		C/rishiid Maxamed Samatar
4		Shugri Faarax Yuusuf
5		Fartun Cusman Cali
6		Maxamud Jaamac Samatar
7		Addeec C/Qaadir
8		Farxiyo Siciid Nour
9		C/baashi Maxamed Barkhadle
10		Maxamed Cabdi
11		C/risaaq Nadiif
12		Zaynab Maxamed Cali
13	Team Leaders	Maxamuud Cabdi (Huruuse)
14		Maxamed Nour Geelle
15		C/kariim Faarax
16		Xaliimo Maxamed C/laahi
17		C/nour sheikh Xassan
18		C/xakiim Maxamed Cusmaan
19	Supervisors	Ismaciil Muuse Faarax
20		Maxamuud Faatax
21		Jaamac Faarax
22		Ibrahim Mohamed – FSAU
UNICEF FSAU 23	MOH Representative	C/nasir Siciid C/rahman
24	Data Entry using Epiinfo Windows/ Preliminary Analysis	Mr. Qassim/Khalif Nouh/Ahono Busili
	Ibrahim Shire	1. Overall logistical coordination 2. Survey facilitator/trainer 3. Provided technical input in the whole survey process
	Mohamed MoalimKhalif Nouh	1. Survey Trainer/facilitator 2. Coordinated Data collection in Dangoroyo District
	Osman Abdulle	The FSAU food security analyst for Nugal Region analyzed and compiled the write-up on the food security situation in Dangoroyo/Eyl districts
	Khalif Nouh	1. SurveyTrainer/Facilitator 2. Coordinated data collection in Eyl district
	Ahono Busili	Overall survey coordination, data cleaning/analysis and compiling of the survey report

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