

NUTRITION ASSESSMENT

WAJID DISTRICT BAKOOL REGION SOMALIA.

Food Security Analysis Unit (FSAU/FAO)
United Nations Children's Fund (UNICEF)
Action Contre La Faim (ACF)



January 2006

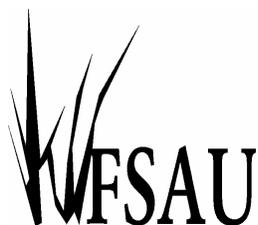


Table of Contents

	<u>Page</u>
TABLE OF CONTENTS	2
ABBREVIATIONS & ACRONYMS	4
ACKNOWLEDGEMENTS	5
EXECUTIVE SUMMARY	6
SUMMARY OF FINDINGS	7
1. INTRODUCTION	8
1.1 Overview	8
1.2 Assessment Justification.....	9
1.3 Assessment Objectives	9
2. BACKGROUND INFORMATION	10
2.1 Administration and Security.....	10
2.2 Interventions	10
2.3 Nutrition	10
2.4 Water and Sanitation	10
2.5 Health Issues.....	11
2.6 Food Security	11
3. METHODOLOGY	12
3.1 Assessment Design	12
3.2 Sampling Procedure	12
3.2.1 Study Population and Sampling Criteria	12
3.3 Data Collection Methods	13
3.3.1 Anthropometric Measurements	13
3.3.2 Child age Determination	13
3.3.3 Oedema	13
3.3.4 Morbidity	13
3.3.5 Mortality	14
3.3.6 Dietary Diversity	14
3.3.7 Vitamin A Deficiency	14
3.4 Description of Assessment Activities	15
3.5 Quality Control Procedures	15
3.6 Data Processing and Analysis	16
3.6.1 Data Entry, Cleaning, Processing & Analysis	16
3.6.2 General Characteristics of Study Population	16
3.6.3 Creation of Nutritional Status Indices	16

4. ASSESSMENT RESULTS	17
4.1 Household Characteristics of Study Population	17
4.2 Livelihood, Assets Ownership and Source of Income	17
4.3 Water Access and Quality	18
4.4 Sanitation and Hygiene	18
4.5 Health Seeking Behaviour	19
4.6 Formal and Informal Support	20
4.7 Characteristics of Assessment Children	20
4.8 Nutritional Status of Children Using Anthropometry.....	20
4.9 Morbidity, Immunization & Vitamin A Supplementation	22
4.10 Vitamin A Deficiency	23
4.11 Feeding Practices	23
4.12 Dietary Diversity	24
4.13 Adult Malnutrition by MUAC	24
4.14 Relationship Between Malnutrition & Other Factors	25
4.15 Death Rates	26
4.16 Qualitative Information	27
4.17.1 Care and Feeding Practices	27
4.17.2 Food Security	28
4.17.3 Health Related Issues	28
4.17.4 Coping strategies	28
4.17.5 Case Study	29
5. DISCUSSION	30
6. CONCLUSIONS AND RECOMMENDATIONS	31
7. APPENDICES	32
.....	
8. REFERENCES	48
.....	

Abbreviations and acronyms

ARI	Acute Respiratory Infections
CSI	Coping Strategy Index
FAO	Food and Agriculture Organisation
FSAU	Food Security Analysis Unit
GAM	Global Acute Malnutrition
GIT	Gastrointestinal Tract
HAZ	Height- for- Age Z scores
HDDS	Household Dietary Diversity Score
HFA	Height for Age
IDA	Iron Deficiency Anaemia
IDP	Internally Displaced Person
KM	Kilo Metres
MCH	Maternal and Child Health
MT	Metric Tonnes
MUAC	Mid Upper Arm Circumference
NCHS	National Centre for Health Statistics
NGOs	Non-Governmental Organisations
NRC	Norwegian Refugee Council
LEZ	Livelihood Economic Zones
LNGO	Local Non-Governmental Organisation
INGO	International Non-Governmental Organisation
NIDs	National Immunisation Days
OR	Odds Ratio
RR	Relative Risk
SACB	Somalia Aid Coordination Body
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

ACKNOWLEDGEMENTS

This assessment was undertaken through the collaborative efforts of ACF, UNICEF, WFP and FSAU. ACF provided the necessary logistics for the assessment, funded personnel related expenses; provided a data entry clerk, enumerators and supervisors for data collection. UNICEF funded assessment vehicles, provided supervision and assessment equipment WFP provided a supervisor for qualitative data during the assessment. FSAU led the training of assessment teams, supervised data collection, undertook data cleaning and analysis, produced assessment report and led the overall coordination of the assessment. All participating organisations were invited to review and comment on the draft assessment report.

We are also grateful to the local authorities, parents/care takers, community guides and the community as a whole for their cooperation, time and provision of information individually and in focus group discussions that helped the assessment team get a better understanding of the nutrition situation in the area.

FSAU, ACF and UNICEF also express their sincere appreciation to the entire assessment team for the high level of commitment, diligence and ingenuity demonstrated during all stages of the assessment.

EXECUTIVE SUMMARY

Between 23rd and 30th January 2006 an interagency nutrition and mortality assessment was conducted by FSAU, ACF and UNICEF in Wajid District, excluding IDPs¹ in Wajid town. Using a two-stage (30x30) cluster sampling methodology, a total of 906 children, aged 6-59 months and/or measuring 65-109.9 cm in height/length were surveyed. A total of 904 households were surveyed for mortality and child data collected from 476 of these.

The global acute malnutrition (GAM) rate (weight for height <-2 Z score or oedema) was 14.7% (95%CI: 12.5 – 17.2) and severe acute malnutrition (weight for height <-3 or oedema) was 2.2% (95%CI: 1.4 – 3.5). Six cases of oedema were recorded. Children under the age of two years appeared more vulnerable to malnutrition than the older children (RR=0.73 (CI: 0.55-0.97); p=0.03). Only diarrhoea showed significant association with acute malnutrition

Using MUAC, 0.8% of the 361 non pregnant women were malnourished (MUAC<18.5 cm) and 0.3% were severely malnourished (MUAC<16.0 cm). About 40% of the 84 pregnant women were malnourished (MUAC<23.0 cm), while 7.1% were severely malnourished (MUAC< 20.7cm).

The under-five death rate was 1.24 (CI: 0.32-2.16) per 10,000/day and the crude mortality rate was 0.57 (CI: 0.26-0.89/10,000/day). Diarrhoeal diseases, ARI and birth related complications were the main reported causes of under-five deaths while ARI and anaemia were the main causes of death among adults and children over five years.

The assessment results indicate a serious malnutrition situation according to international standards but consistent with the long term tendencies for Wajid District. Residents have just begun to experience the impact of the drought. Food stocks have been depleted in most households, especially the northern part, and households are coping with less diversified (sorghum-based) diets with 84.0% consuming three or less food groups. Most of the unprotected wells and water catchments, the predominant water sources have dried up and livestock movements for pasture towards the Southern part of the district and Bay region have been reported, while the very poor households are moving towards Wajid and Huddur towns. Animal deaths were observed in some areas and milk production; and hence accessibility has declined.

Following discussions held after sharing the results with partners and the community and detailed data analysis, both short- and long-term recommendations were made:

Short term recommendations:

1. The observation of many oedema and marasmus cases in Wajid district calls for an establishment of system to manage severe malnutrition cases within the district.
2. As food security continues to deteriorate, interventions that improve household access to food are indicated for the next 4-7 months.
3. Continuation and intensification of health, water and sanitation interventions especially immunization programs, rehabilitation and protection of water points and provision of sanitary facilities

Long-term Recommendations

1. As high levels of malnutrition have been seen throughout the district in recent years, it is highly recommended that the local MCHs / local health personnel are equipped with the knowledge and skills to manage severe malnutrition both during and outside periods of crisis.
2. Improve access to quality for medical care through establishment of a clinic or hospital in Wajid town with a doctor who could provide the increasingly demanded medical services.
3. Health/nutrition education for the population focussing especially on appropriate child feeding practices and management of diarrhoeal diseases.
4. The situation in the Wajid district and the neighbouring districts would require close surveillance of the nutrition and morbidity to prompt appropriate intervention for any adverse changes.

¹ A separate assessment and analysis of the Wajid IDP situation was undertaken.

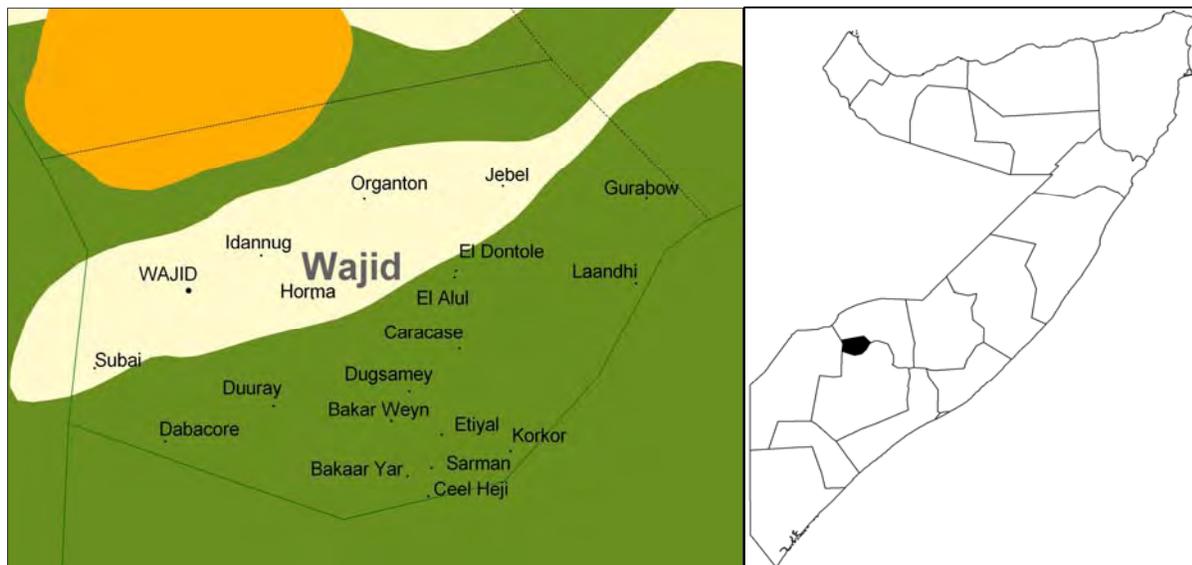
SUMMARY OF FINDINGS

Indicator	No	%	95% CI
Total number of households surveyed	476	100	
Number of Female headed households	43	9.0	6.7 – 12.1
Mean household size	5.5 (SD=1.8)		
Mean number of children less than five years per household	1.9 (SD=0.8)		
Total number of children assessed	906	100	
Child Sex:			
Males (boys)	432	47.7	44.4 – 51.0
Female (girls)	474	52.3	49.0 – 55.6
Global Acute Malnutrition (WHZ<-2 or oedema)	133	14.7	12.5 – 17.2
Severe Acute Malnutrition (WHZ<-3 or oedema)	20	2.2	1.4 – 3.5
Oedema	6	0.7	0.3 -1.5
Global Acute Malnutrition (WHM<80% or oedema)	79	8.7	7.0 – 10.8
Severe Acute Malnutrition (WHM<70% or oedema)	9	1.0	0.5 -1.9
Proportion of malnourished women (MUAC≤18.5; N=361).	3	0.8	0.2 - 2.6
Proportion of severely malnourished women (MUAC≤16.0)	1	0.3	0.0 - 1.8
Proportion of malnourished pregnant women (MUAC≤23.0; N=84).	34	40.5	
Proportion of severely malnourished pregnant women (MUAC≤20.7)	6	7.1	
Proportion of children with diarrhoea in 2 weeks prior to assessment	150	16.6	14.2 – 19.2
Proportion of children with ARI within two weeks prior to assessment	219	24.2	21.4 – 27.1
Children with suspected malaria in 2 weeks prior to assessment	50	5.5	4.2 – 7.3
Suspected measles within one month prior to assessment (N=861)	49	5.7	4.3 – 7.5
Children (9-59 months) immunised against measles (N=861)	868	79.7	76.8 – 82.3
Children who have ever received polio vaccine (N=906)	782	86.3	65.5 – 71.6)
Children who received vitamin A supplementation in last 6 months or before (N=906)	677	74.7	71.7 – 77.5)
Proportion of households who consumed ≤3 food groups	400	84.0	80.4 – 87.1
Proportion of households who consumed ≥4 food groups	76	16.0	12.9 – 19.6
Proportion of children 6-24 months who are breastfeeding (N=339)	211	62.2	56.8 – 67.4
Proportion of children introduced to other foods before 4 months	304	89.7	85.8 – 92.6
Under five Death Rate (U5DR) as deaths/10,000/ day	1.24		0.32 – 2.16
Crude Death Rate (CDR) as deaths/10,000/ day	0.57		0.26 – 0.89

1 INTRODUCTION

1.1 Overview

Wajid is one of the five districts in Bakool region. Bakool region covers an area of approximately 26,000 sq. km and consists of five districts, Huddur, the headquarters of the region, Wajid, Tieglow, El-Berde and Rabdhure. Wajid is located 90km Northwest of Baidoa town and 90km from the Somali border with Ethiopia. The population size estimated during the 2005 polio immunisation campaign was 255,980. Population movement into and out of the region is strongly influenced by food security factors and civil insecurity.



Together with the neighbouring Bay region, Bakool region was the worst hit during a decade of armed conflict. The general impact was ‘an extraordinary destruction of infrastructure and little opportunity for economic development.

According to FSAU Livelihood zone classification, around 90% of the population of Wajid District are agro-pastoralists, while 10% are pastoralists. The agro-pastoralists occupy about 70% of the geographical area in the district.

Before the war Wajid District contained around 60-80,000 people. During the past five years, much of Wajid town, Burduhule and satellite villages in Wajid district were destroyed and many houses were burnt during inter-clan fighting. Two years of drought in Bakool region worsened an already precarious nutrition situation in Wajid District. Today the population residing in the District is estimated at around 30,000 of whom around 6,700 live in Wajid town (WHO, 2005).

Currently the security situation is relatively calm but civil insecurity affecting most regions in Southern Somalia, mainly Baidoa and Gedo region and the current drought has lead to influx of immigrants and IDPs in Wajid District. The drought has lead to drying of pasture and reduced water access in the area forcing the pastoral communities to migrate to other regions including Juba valley. The effects of the drought following the failure of the Gu and Deyr 2005 rains has constrained humanitarian interventions of UN and other international Non-Governmental organizations operating in the area.

1.2 Justification for a nutrition study

The persistent food insecurity in the district has deteriorated significantly due to the failure of both the Gu and Deyr/2005 rains. Consequently, pastures are depleted and water access is generally inadequate. According to the Integrated FSAU phase classification, a larger part of Wajid district is classified to be in acute food and livelihood crisis with a high risk to humanitarian emergency while the rest is in humanitarian emergency (FSAU technical Series, Report No. IV.8, 22 February, 2006). Data from the World Vision supported health facility as well as data from the FSAU sentinel sites in Gobato and Geliye show a high proportion of malnourished children in the district. A Wajid District nutrition assessment conducted by UNICEF in 2000 during food security crisis following two years of drought indicated global acute malnutrition rates of 21%; CI: 18.4 – 23.8. Although estimates of the levels of malnutrition have been available, international organisations operating in the area and planning to increase operations, needed more accurate estimations of the rates, prior to the impact of the current crisis.

1.3 Objectives of the study

2. To estimate the level of acute malnutrition and nutritional oedema among children aged 6-59 months or with height/length of 65-109.5 cm.
3. To estimate the level of malnutrition among adults (women aged 15-49 years and men aged 18 years and above) in Wajid District.
4. To identify factors likely to have influenced malnutrition in young children in the district
5. To estimate the prevalence of some common diseases (measles, diarrhoea, malaria, and ARI) in the district.
6. To estimate measles and polio vaccination and Vitamin A supplementation coverage among children in Wajid District
7. To estimate the crude and under-five mortality rates in Wajid District.

2 BACKGROUND INFORMATION:

2.1 General Overview

Bakool is recognised as one of the most food insecure regions of Somalia. Events in recent years such as successive crop failures and insecurity have demonstrated that the population is an extremely vulnerable one. Health and welfare as well as livelihoods have suffered. One of the more easily measured indicators, nutritional status, has demonstrated this decline most vividly. The community that offers to provide humanitarian assistance to this region faces many challenges including access to areas in need. With the neighbouring Bay region, Bakool region was the worst hit during a decade of armed conflict. The general impact has been 'an extraordinary destruction of infrastructure and little opportunity for economic development.

Bakool region has become a focus of attention in recent months due to the steadily worsening food security situation that has resulted in much population movement and continues to threaten the livelihood of over 100,000 people in the region.

The clan-based organization of the area is very important to consider because it determines the system of rules and regulations of the area. All the problems encountered by the population are solved according to the clan rules and regulations. The security of the district has remained relatively calm without major incidences of insecurity being reported. The calm security situation has attracted the immigrants from other regions and IDPs. There are presently three IDP camps around Wajid town.

2.2 Humanitarian Interventions

WFP supports food for work and targeted feeding programmes. ADRA and ACF are involved in water & sanitation projects in the district while World Vision supports health and agricultural programmes.

2.3 Nutrition

In the past five years, high levels of malnutrition have been recorded in the district. The World Vision managed MCH in Wajid as well as data from the FSAU sentinel sites in Gobato and Geliye show a high proportion of malnourished children in the district. The increased morbidity and low dietary diversity has contributed to the poor nutrition condition in the district. The district assessment conducted in February 2000 by UNICEF indicated a Global Acute Malnutrition (GAM) rate of 21% (CI: 18.4 – 23.8).

2.4 Water and Environmental Sanitation

The main source of water for Wajid District is the catchments in the villages and (open, non- protected) hand dug well with poor sanitation which predisposes diarrhoeal diseases to the community in the area especially under five years old children. ACF launched a water and sanitation program in the district in May 2003 with the objective of improving access of the most vulnerable population to safe drinking water and to provide them with knowledge and skills for preventing waterborne diseases. The program consists of well rehabilitation including setting up well management committees. In order to improve the sanitary conditions and to prevent waterborne diseases, ACF is carrying out a hygiene promotion programme. The sessions focus on the promotion of food, personal and domestic hygiene emphasizing the importance of maintenance and cleaning of the water points. ADRA also manages water projects in the district. Although there has been good water availability in the district owing to the high water table, the prevailing drought condition has led to drying of most water points and/or lowering of the water levels in the wells and boreholes.

2.5 Health Issues

WVI is the main international organization involved in the health activities and has one MCH and ten health posts in the main villages and an OPD in Wajid town. UNICEF provides basic medical supplies to the MCHs while WHO is involved in immunization campaigns. Other health related services are provided by some private pharmacies in the town and traditional healers. The common diseases reported from both the sentinel sites and Wajid MCH includes diarrhoea, ARI and malaria.

2.6 Food Security

In July 2004, ACF also launched a food security programme aiming to improve the diversity of income and food sources in Wajid. This was to be accomplished through cash for work activities and the improvement of farming practices. However, in much of the district, food insecurity has increased following the failure of Gu and Deyr 2005 rains. The sorghum crop in most areas never reached maturity while pasture and water scarcity has affected the whole district. According to the FSAU 2005/06 Post Deyr analysis, Bakool region has experienced extremely poor crop production, poor conditions of livestock and decreased production and condition of livestock (FSAU technical Series, Report No. IV.8, 22 February, 2006). The least affected are the camels while cattle, sheep and goats are more affected by the drought. Livestock movement in search of pasture and water has increased within the region. Due to lack of quality pasture, livestock milk production declined and price of milk, when available, is high. Livestock are also currently far from the households so further limiting milk availability and access to the households.

3. METHODOLOGY

3.1 Assessment Design

The study was cross-sectional among the Wajid population in which both qualitative and quantitative techniques were used. Quantitative data was collected through a standard household questionnaire for nutrition (see appendix 2). Retrospective mortality data for 90 days prior to the assessment was also collected among the study households (see appendix 3). Qualitative data was collected by assessment supervisors and coordinators through focus group discussions and key informant interviews to provide further understanding of possible factors influencing malnutrition.

3.2 Sampling Procedure

Using a two-stage cluster sampling methodology, 30 clusters were randomly selected based on population proportion to size. Initially a sampling frame was constructed from which a representative sample could be drawn. A list of all settlements within the district, with their respective populations was used to construct cumulative population figures for the assessment area. Using WHO Polio population figures, generated during National Immunization Days (WHO, Nov 2005) and the input of key informants from the district, all settlements/villages were listed in the sampling frame and their population estimates further verified for authenticity by the assessment team. An estimated population of 23,805 from all settlements/villages was obtained from which 30 clusters were selected. Using the Nutri survey software a random number, 143 was chosen to determine the first cluster. The subsequent clusters were determined systematically by adding the cluster interval (794) to the first randomly selected number (see appendix 1). From the 30 randomly selected clusters, a total of 906 children aged 6-59 months and/or height/length of 65-109.9 cm from 476 households were surveyed.

In each of the clusters, mortality questionnaires were administered to 30 randomly selected households. The same sampling frame used for nutrition assessment was employed in cluster selection for the mortality assessment. In total, mortality data was collected from 904 households irrespective of whether or not the household had a child under-five.

3.2.1 Study population and sampling criteria

The study population consisted of people living in Wajid district (excluding the IDPs in Wajid town who were assessed separately, but concurrently) and comprised all the children aged 6-59 months or measuring 65-109.9 cm for height/length. Sampling procedure as outlined in the SMART Guidelines was followed in this assessment. On the visit to each cluster, the centre was identified and a pen was spun to determine the direction to follow in moving to the edge of the cluster. On reaching the edge of a cluster, a pen was spun a second round, until the pen pointed inward the cluster/village to determine the direction to follow in the systematic selection of the households with children aged 6 to 59 months. The households in this direction were counted / established as the team crossed to the other edge and given numbers. A random number within the total number of households encountered was drawn to enable random selection of the first household to be visited. From the first household, the team always moved in right direction to the next household. This procedure was followed until the required 30 children were obtained in a cluster.

All sampled households were visited, the supervisor noting whether it was empty and whether children in the target age group were present or not. In households without children in the target age group, the household and mortality questionnaires were administered. If a cluster was exhausted of children before the required 30 children had been reached, a neighbouring area was selected to complete the cluster. All eligible children in the households were measured and if a child or primary caregiver was absent, an appointment was booked for a later visit in the course of the assessment.

3.3 Data Collection

3.3.1 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 female children would be lightly dressed before having the weight taken while clothes for the male children were removed. Two readings were taken for each child, shouted loudly and the average recorded on the questionnaire.

Height: For height, a vertical or horizontal measuring board reading a maximum of 175cm and accurate 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 24 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.

Arm Circumference: The Mid Upper Arm Circumference was measured using a MUAC tape to the nearest 0.1 cm. Two readings were taken and the average recorded for each child.

3.3.2 Child Age Determination

Where useful documents like growth monitoring/clinic attendance cards and birth certificates were available, they were used to determine the child's age. Calendars of events (appendix 4) were also used as proxies to age determination. Though not entirely accurate, ages were still regarded as important indicators and were approximate/average pointers for identification. The nutrition indicator employed as preference was *weight for height* as the best nutrition status (acute malnutrition) for emergency and transitory populations.

3.3.3 Oedema

Oedema, defined as bilateral oedema on the lower limbs was assessed by gently pressing the feet to check if a depression is left after at least three seconds of pressing and was confirmed if present by the supervisor and then recorded.

3.3.4 Morbidity

Morbidity pattern was assessed by asking about incidences of common communicable diseases i.e. diarrhoea, acute respiratory infection, malaria and measles in the two weeks prior to the assessment.

Diarrhoea: Diarrhoea was defined as 'three or more loose or watery stools per day'.

Measles: Defined as 'more than three signs of the following: 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*. Defined as 'cough, rapid breathing and fever'.

Suspected malaria/acute febrile illness: Defined as 'periodic chills, fever, sweating or coma.

3.3.5 Mortality

The mortality assessment was done concurrently with nutrition assessment in which a 30 by 30 cluster sampling methodology was used. The assessment methodology used for the nutrition assessment was adopted with the exception that households were selected as the second sampling unit. 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 assessment, whether there was a child under the age of 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, left or arrived in the last three months (appendix 3). A total of 904 households were included in the assessment.

The crude and unadjusted mortality rates were generated automatically by the Nutri survey software as deaths per 10,000 persons per day using a recall period of 90 days. If a member had died, the respondent was asked to describe the signs and symptoms of the illness likely to have caused the death.

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.

3.3.6 Dietary Diversity

Dietary diversity as household dietary diversity score (HDDS) was determined by taking a simple count of various food groups consumed in a given household over the past twenty four hours. A total of 12 FAO recommended food groups were considered which included Cereals & cereal products; Roots & tubers; Vegetables; Fruits; Meat and meat products, Eggs; Fish; Legumes; Milk & its products; Fats & oil; Sugar & honey and Miscellaneous.

3.3.7 Vitamin A Deficiency

During the assessment, Vitamin A deficiency (VAD) prevalence was estimated by assessing if any member(s) of the households experienced night blindness.

3.4 Description of assessment activities

Table 1: Chronology of activities for the Wajid Nutrition Assessment

Major Activity	Dates, 2006
Preparation of tools, methodology & review of secondary data (Nairobi)	3 rd – 11 th Jan
Resource mobilization; Joint planning meetings with partners (Wajid)	5 th – 22 nd Jan
Training of enumerators and pre-testing	23 rd – 25 th Jan
Cluster Identification	25 th Jan
Collection of data	26 th – 30 th Jan
Entry of data in Wajid	28 th – 31 st Jan
Preliminary analysis in Wajid	1 st – 3 rd Feb
Presentation of preliminary results to partners & community in Wajid	3 rd Feb
Further data cleaning and analysis	6 th – 9 th Feb
Report writing	7 th – 14 th Feb
Circulation of draft report	27 th Feb
Circulation of final report	3 rd Mar

Six teams each consisting of two enumerators; a team leader and one supervisor conducted the assessment with each team handling one cluster in a day. An elder from each village/cluster assisted the teams in identification of the cluster, its centre and boundaries. Supervisors were seconded from the participating partners namely; ACF, FSAU, UNICEF and WFP. Overall support, supervision and co-ordination were done by two FSAU Senior Nutritionists, and one ACF coordinator who also assisted in the identification of the qualified enumerators selected on the basis of their experience with previous assessments, need for participation in future nutrition activities and ability to learn nutrition assessment procedures during training.

3.5 Quality Control Procedures

A comprehensive training of enumerators and supervisors was conducted covering interview techniques, sampling procedure, inclusion and exclusion criteria, sources and reduction of errors, taking of measurements, standardisation of questions in the 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.

Standardisation of measurement and pre-testing of the questionnaire and equipment was carried out in two villages in the outskirts of Wajid town, which were not selected clusters for the actual assessment. Pre-testing involved familiarising assessment teams with village/cluster entry; administering the questionnaire, sampling procedure, correct taking of measurements and recording. After the field exercise, views were exchanged to address the difficulties identified; appropriateness of the questions reviewed and necessary changes made.

Quality of data was also ensured through (i) monitoring of fieldwork by coordination team led by the FSAU and ACF assessment coordinators, (ii) crosschecking of filled questionnaires on daily basis and recording of observations and confirmation of measles, severe malnutrition and death cases by supervisors. All households sampled were visited and recorded including empty ones (iii) daily review 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 upon and after entry which made it easy to detect any outliers/ mistakes and to replace or repeat households depending on magnitude of error (vi) monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights and (vii) continuous reinforcement of good practices. All measurements were loudly shouted by both the enumerators reading and recording them to reduce errors during recording.

3.6 Data Processing & Analysis

3.6.1 Data entry, Cleaning, Processing and Analysis

Data was entered and analysed using Nutri survey, SPSS and EPIINFO computer based packages. Running and tabulating all variable frequencies was carried out as part of data cleaning. The Nutri survey Anthropometry and EPINUT programmes were 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 (1983). Analysis of certain variables e.g. total food groups consumed and the total losses in livestock ownership was undertaken in Microsoft Excel.

3.6.2 General Characteristics of Assessment Population

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

3.6.3 Creation of Nutritional Status Indices

The anthropometric measurement of weight and height were used to compute the WFH nutritional status indicators of the studied children. Weight For Height (WFH) 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 EPINUT, 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 \leq WFH < -2 Z-Scores	= Moderate acute malnutrition
< -2 Z-score or oedema	= Global/total acute malnutrition
\geq -2Z-Scores	= Normal

Similarly, MUAC measurements were also used to classify children into categories of nutritional status and mortality risks as follows according SACB Nutrition assessment guidelines:

<11.0 cm	= Severe malnutrition
\geq 11.0 < 12.5	= Moderate malnutrition
\geq 12.5 < 13.5	= At risk of Malnutrition
\geq 13.5	= Normal

For adults, the following categories were used:

a) For men and non pregnant women:

< 16.0 cm	= Severe Acute malnutrition
< 18.5 cm (with oedema)	= Severe acute Malnutrition
\leq 18.5 cm	= Global (Total) Acute Malnutrition
> 18.5 cm	= Normal

b) For pregnant women:

\leq 20.7 cm	= Severely at risk
\leq 23.0 cm	= Total at risk
> 23.0 cm	= Normal

4 ASSESSMENT RESULTS

4.1 Household Characteristics of Study Population

The nutrition assessment covered a total of 476 households with a mean household size of 5.5 (SD= 1.8) persons, of which 91% were headed by males and 9% by females. The mean number of the under fives per household was 1.9 (SD=0.8).

Table 2: Household Characteristics

	N	% (CI)
<i>Sex of Household Head:</i>		
Male	433	91 (87.9 – 93.3)
Female	43	9 (6.7-12.1)
<i>Household size (Mean):</i>		
	5.5	(SD=1.8)
<i>Mean No of Underfives</i>		
	1.9	(SD=0.8)
<i>Household residence status (N=476)</i>		
Those in their residence (for ≥2 years)	454	95.4 (93.0 – 97.0)
Internally displaced	20	4.2 (2.7 – 6.5)
Pastoral (not settled)	2	0.4 (0.1 – 1.7)
<i>Reason for movement (n=22):</i>		
Water and pasture shortage	11	50.0
Fighting/ civil insecurity	8	36.4
Food shortage (hunger)	3	13.6

Most (95.4%) of the assessed households were residents². About 4.2% of the households were IDPs while 0.4% of the households were pastoral with no definite settlements. The non residents were mainly from within Wajid and Rabdure districts.

Overall the non residents had stayed in their current locations for between 1 and 10 months with most (63.6%) of them having arrived into the locations 1 -3 months prior to the assessment. The main reasons for movement were drought related water and pasture shortage (50.0%), civil insecurity

(36.4%) and food shortage (hunger).

4.2 Livelihood, Asset Ownership and Source of Income

Table 3: Distribution of households by means of livelihood and Assets Ownership

Livelihoods and Income Source (N=476)	N	%
Agro-pastoral	268	56.3 (51.7 – 60.8)
Casual/farm labour	156	32.8 (28.4 – 37.0)
Trade	43	9.0 (6.7 – 12.1)
Pastoral	6	1.3 (0.5 – 2.9)
Destitute (Remittances/ gifts)	3	0.6 (0.2 -2.0)
Livestock Ownership		
Camels:		
Have	186	39.1 (34.7 – 43.6)
Don't have	290	60.9 (56.4 – 65.3)
Mean number owned	5.0	SD=5.7
Sheep and goats:		
Have	261	54.8 (50.2 – 59.3)
Don't have	215	45.2 (40.7 – 49.8)
Mean number owned	13.0	SD=16.9

Majority (56.3%) of the surveyed households were mainly agro-pastoralists while 32.8% of the households depended on casual/farm labour as their source of livelihood. About 9.0% relied on petty business and the rest were either pastoral (1.3%) or destitute (0.6%).

Only 39.1% of the households interviewed had camels while majority (54.8%) of the households kept sheep and goats.

Those with camels kept an

average of 5 camels (SD=5.7) per household while those who kept sheep and goats had an average of 13 (SD=16.9) sheep and goats per household.

4.3 Water Access and Quality

Most (72.5%) of the surveyed households drew water from unprotected wells while some 22.3% of the households relied on water from protected wells. The rest (5.3%) used water from

² Residents were taken as those who had stayed in their residences for over two years

Table 4a: Water Access and Quality

Water access and Quality	N	(%)
<i>Main source of drinking water (N=476):</i>		
Unprotected well	345	72.5 (68.2 – 76.4)
Protected wells	106	22.3 (18.7 – 26.3)
Others (water catchments/shallow wells)	25	5.3 (3.5 – 7.8)
<i>Average water use/person/day (N=476):</i>		
≤ 2 litres	8	1.7 (0.8 – 3.4)
3 – 5 litres	1281	26.9 (23.0 – 31.2)
6 – 10 litres	01	21.2 (17.7 – 25.2)
11 – 15 litres	37	7.8 (5.6 – 10.6)
> 15 litres	202	42.4 (38.0 – 47.0)
<i>Distance to the nearest water point: (N=476)</i>		
0 – 250 metres	90	18.9 (15.5 – 22.8)
251 – 500 metres	49	10.3 (7.8 – 13.5)
501 – 750 metres	44	9.2 (6.9 – 12.3)
750 – 1000 metres	52	10.9 (8.3 – 14.2)
>1000 metres	241	50.6 (46.0 – 55.2)
<i>Number of clean water storage containers:</i>		
1 - 2 containers	209	43.9 (39.4 – 48.5)
3 - 4 containers	171	35.9 (31.6 – 40.4)
4 – 5 containers	69	14.5 (11.5 – 18.1)
> 5 containers	27	5.7 (3.8 – 8.2)

other sources including shallow wells, water catchments or water trucks. There was an association between the source of water and incidences of diarrhoea. Those who drew their water from unprotected sources were three times more likely (2.03<RR=3.1<4.74; p<0.001) to experience diarrhoea episodes than those who drew their water from protected wells.

In the majority (42.4%) of the households persons were using more than 15 litres/person/day while slightly over one quarter (26.9%) used an average of 3-5 litres/person/day. In some 7.8% of the households, average water utilization was 6-10 litres/person/day while

in 1.7% of the households persons were actually using less than 3 litres/ person/ day. From the analysis it is apparent that more than half (57.6%) of the surveyed households were not accessing the recommended water quantity of 15 litres/ person/day (Sphere, 2004).

Only 29.2% of the households in the assessment accessed water within 500m - the recommended maximum distance from any household to a water point (Sphere guidelines, 2004). Majority (50.6%) of the households reported travelling over one kilometre in search of water.

4.4 Sanitation and Hygiene Practices

Majority (64.3%) of surveyed households had no access to sanitation facilities and used the bush. For those households who had access to sanitation facilities use of open pit (35.1%) was frequently reported, while the rest (0.6%) used traditional pit latrines. Sphere guidelines recommend that no more than 20 people should use one communal toilet. However 9.4% of the toilets were shared by more than 20 people. The majority (38.2%) of the households who used latrines had 6-10 persons share a toilet while 24.1% shared among 5 persons or less. In majority (71.8%) of the cases, the distance between latrine and water source was more than 30 meters as recommended by Sphere (2004).

Table 4b: Sanitation & Hygiene

Sanitation and hygiene	n	% (CI)
<i>Access to Sanitation facility (N=476):</i>		
Traditional pit latrine	3	0.6 (0.2 – 2.0)
Open pit	167	35.1 (30.8 – 39.6)
No latrine at all (Bush)	306	64.3 (59.8 – 68.6)
<i>Number using the same latrine/toilet (N=170)</i>		
1 – 5 persons	41	24.1
6 – 10 persons	65	38.2
11 – 15 persons	33	19.4
16 – 20 persons	15	8.8
> 20 persons	16	9.4
<i>Distance from latrine to water source (N=170):</i>		
≤ 5 meters	9	5.3
6 – 10 meters	15	8.8
11 – 20 meters	13	7.6
21 – 29 meters	11	6.5
≥ 30 meters	122	71.8
<i>Wash hands before eating or food preparation:</i>		
Always	354	74.4 (70.2 – 78.2)
Often	57	12.0 (9.3 – 15.3)
Sometimes	29	6.1 (4.2 – 8.7)
Rarely	36	7.6 (5.4 – 10.4)

Hand washing always before handling food (74.4%) was reported by majority of the households. A significant proportion however, did not wash their hands always before handling food (25.6%).

Hand washing practice by caregivers showed some associations with incidences of diarrhoea. Those caregivers who washed their hands always reported fewer episodes of diarrhoea among the children than those who washed their hands less often before handling food ($1.07 < RR = 1.24 < 1.45$; $p = 0.004$). Similarly, more diarrhoea incidences were observed among children whose caregivers did not always wash their hands before handling food ($0.50 < RR = 0.69 < 0.95$; $p = 0.027$).

4.5 Health Seeking Behaviour

Table 5: Health seeking behaviour

	N	%
<i>Seek healthcare assistance when a member is sick (N=476):</i>		
Yes	463	97.3 (95.3 – 98.5)
No	13	2.7 (1.5 – 4.7)
<i>Where (n=463):</i>		
Public health facility	423	91.4 (88.3 – 93.7)
Private pharmacy/clinic	31	6.7 (4.7 – 9.5)
Traditional healer /self medication	9	1.9 (1.0 – 3.8)

A large majority (97.3%) of the households sought health care assistance when the child is sick, mostly from the public health facility (91.4%). Some 6.7% of the households seek assistance from private pharmacy/ clinics while the remaining 1.9% practice self-prescription/medication or consult traditional healers.

4.6 Formal and Informal Support

Table 6: Formal and informal support

Even though social support networks, especially remittances are a major source and/or supplement of livelihood undertakings among the Somalis, informal support among the interviewed households in Wajid was low. Only 6.3% of the households had received some informal (social) support, within three months prior to the assessment mainly in the form of loans.

Formal support was received by 5.7% of the households, with supplementary food being the main item received (87.3%). These included mainly the households bordering Rabdure district where IMC provides supplementary food to children.

	N	% (CI)
<i>Informal support (N = 476)</i>		
Received:		
Yes	30	6.3 (4.4 – 9.0)
No:	446	93.7 (91.0 – 95.6)
Type of support (N=30)		
Zakat from better off households	1	3.3
Remittances within Somalia	1	3.3
Remittances from abroad	3	10.0
Gifts	4	13.3
Loans	21	70.0
<i>Formal support (N = 476)</i>		
Received:		
Yes	27	5.7 (3.8 – 8.2)
No	449	94.3 (91.8 – 96.2)
Type of support (N=27)		
Cash for work	2	7.7
Free food	6	23.1
Supplementary food	18	65.4

4.7 Characteristics of Assessment Children

Table 7: Distribution of children according to age and sex

Age	Boys		Girls		Total		Ratio
	n	%	n	24.5	N	%	
6-17 months	119	27.5	103	24.7	222	24.5	1: 1.16
18-29 months	98	22.7	126	24.8	224	24.7	1: 0.78
30-41 months	106	24.5	119	17.9	225	24.8	1: 0.89
42-53 months	77	17.8	85	8.1	162	17.9	1: 0.91
54-59 months	32	7.4	41	100	73	8.1	1: 0.78
Total	432	47.7	474	52.3	906	100	1: 0.91

A total of 906 children were surveyed from 476 households of whom 47.7% were boys and 52.3 % were girls. The ratio of boys to girls was 1.00:0.91.

4.8 Nutritional Status of Assessment Children Using Anthropometry

Table 8: Summary of Global Acute malnutrition and Severe Acute Malnutrition

Malnutrition Rates	N _Q	Proportion
Global Acute Malnutrition (<-2 Z score or oedema)	133	14.7 (12.5 – 17.2)
Severe Acute Malnutrition (<-3 Z score or oedema)	20	2.2 (1.4 – 3.5)
Oedema	6	0.7 (0.3 – 1.5)

median=-0.98; SD=1.02) were skewed towards the left depicting a poorer nutrition situation according to international (WHO) standards (Fig 3).

The global acute malnutrition using WFH Z score (<-2 z-scores or oedema) was 14.7% (CI: 12.5-17.2) while severe acute malnutrition (<-3 z-score or oedema) was 2.2 % (CI: 1.4-3.5). Six cases of oedema were detected during the assessment. Distribution of the weight-for-height scores (mean=-0.95;

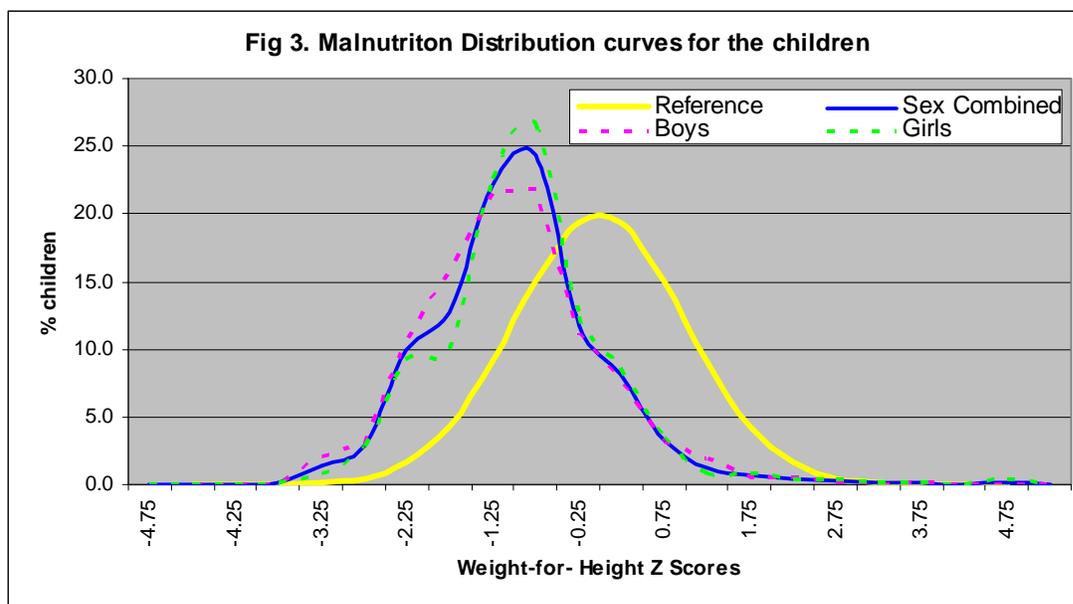


Table 9: Distribution of children by nutritional status (weight/ height z-score or oedema) and child sex

Nutrition status categories	Males		Females		Total	
	No	% (CI)	No	% (CI)	No	% (CI)
Global acute malnutrition (WFH<2 z score/oedema)	71	16.4 (13.1 – 20.3)	62	13.1 (10.2 – 16.5)	133	14.7 (12.5 – 17.2)
Severe acute malnutrition (WFH <-3 z score/oedema)	14	3.2 (1.9 – 5.5)	6	1.3 (0.5 – 2.9)	20	2.2 (1.4 – 3.5)
Oedema	5	1.2 (0.4 – 2.8)	1	0.2 (0.0 – 1.4)	6	0.7 (0.3 – 1.5)

About 16.4% of boys and 13.1% of girls were acutely malnourished in the surveyed Wajid district population using weight for height <-2 Z score or presence of oedema, the level of malnutrition was however not significantly different ($p>0.5$) among the two sexes. As shown on Table 10, acute malnutrition rates varied among age groups with children in the breastfeeding age (6-24 months) being 1.5 times more likely to be malnourished (WHZ<-2 or oedema) than children aged above two years (RR=1.77; CI: 1.27 – 2.46; $p=0.03$).

Table 10: Distribution of Acute Malnutrition by Age

Age groups	Severe (WH<-3Z)	Moderate (WH>=-3Z<-2Z)	GAM (Total malnourished-WH<-2Z)	Normal (WH>=-2Z)	Total
6-17 months	1 (0.5%)	21 (9.5%)	22 (9.9%)	200 (90.1%)	222 (24.5%)
18-29 months	6 (2.7%)	33 (14.7%)	39 (17.4%)	185 (82.6%)	224 (24.7%)
30-41 months	7 (3.1%)	21 (9.3%)	28 (12.4%)	197 (87.6%)	225 (24.8%)
42-53 months	3 (1.9%)	24 (14.8%)	27 (16.7%)	135 (83.3%)	162 (17.9%)
54-59 months	3 (4.1%)	14 (19.2%)	17 (23.3%)	56 (76.7%)	73 (8.1%)
Total	20 (2.2%)	113 (12.5%)	133 (14.7%)	854 (92.4%)	906 (100%)

Table 11: Malnutrition prevalence using WFH percentage of median categories

Nutrition status categories	Males		Females		Total	
	N _Q	Proportion (%)	N _Q	Proportion (%)	N _Q	Proportion (%)
Global acute malnutrition (WFH<80% or oedema)	38	8.8 (6.4 – 12.0)	41	8.6 (6.3 – 11.6)	79	8.7 (7.0 – 10.8)
Severe acute malnutrition (WFH<70% or oedema)	7	1.6 (0.7 – 3.5)	2	0.4 (0.1 – 1.7)	9	1.0 (0.5 – 1.9)

The global acute malnutrition among children aged 6 - 59 months using weight for height <80% of median or presence of oedema was 8.7% (CI: 7.0 - 10.8%), while the severe acute malnutrition <70% of median or presence of oedema was 1.0% (CI: 0.5% – 1.9%).

Using mid upper arm circumference (MUAC) measurements for children aged 12-59 months, 16.5% (CI: 14.0 – 19.3) of the children were malnourished (MUAC<12.5 cm or oedema). About 3.4% (CI: 2.3 – 5.0) were severely malnourished (MUAC<11.0 cm or oedema) while 25.2% (CI: 22.3 – 28.4) were at risk (MUAC 12.5- <13.5 cm).

Table 12. Nutrition status of Children by MUAC

Malnutrition	Males		Females		Total (N=813)	
	N	%	N	%	N	% (95% CI)
Severe (MUAC <11 cm) or oedema	13	3.4 (1.9-5.9)	15	3.5 (2.0-5.8)	28	3.4 (2.3-5.0)
Total (MUAC <12.5 cm) or oedema	58	15.2 (11.8-19.3)	76	17.6 (14.2-21.6)	134	16.5 (13.6-18.7)
At risk (MUAC 12.5- <13.5 cm)	94	24.7 (20.5-29.4)	111	25.7 (21.7-30.1)	205	25.2 (22.3-28.4)
Normal (MUAC >=13.5 cm)	229	60.1 (55.0-65.0)	245	56.7 (51.9-61.4)	474	58.3 (54.8-61.7)
Total	381	46.9 (43.4-50.4)	432	53.1 (49.6-56.6)	813	100

4.9 Morbidity, Measles Immunisation, Polio Vaccination and Vitamin A Supplementation

Table 12: Morbidity, measles immunisation, polio vaccination and vitamin A supplementation

	No.	% (CI)
Incidence of major child illnesses (N=906)		
ARI within two weeks prior to assessment	219	24.2 (21.4 – 27.1)
Diarrhoea within two weeks prior to assessment	150	16.6 (14.2 – 19.2)
Malaria (suspected) within two weeks prior to assessment	50	5.5 (4.2 – 7.3)
Measles within one month prior to the assessment (N=861)	49	5.7 (4.3 – 7.5)
Immunization Coverage (N=906)		
Children (9-59 months) immunised against measles (N=861)	868	79.7 (76.8 – 82.3)
Children who have ever received Polio dose (N= 906)		
Yes	782	86.3 (81.5 – 91.1)
No	124	13.7 (11.6 – 16.1)
Vitamin A supplementation (N= 906)		
Children who received Vitamin A supplementation in past 6 months or before	677	74.7 (71.7 – 77.5)
Micronutrients Deficiencies (N=476)		
Households who reported night blindness (N=476)	10	2.1 (1.1 – 4.0)
Member with night blindness (n=10):		
< 5 years	5	50.0
≥ 5 years	5	50.0

The incidences of ARI (24.2%) and diarrhoea (16.6%) within two weeks prior to the assessment were high but

no disease outbreak was reported during the period.

About 5.5% had suspected malaria and the incidence of measles among children aged 9-59 months one month prior to the assessment was 5.7%.

Measles vaccination coverage for eligible children (9-59 months old) was 79.7%. Most (86.3%) of the children aged 6-59 months had received at least a dose of polio vaccine. About three-quarters (74.7%) of the surveyed children had received Vitamin A supplementation in the 6 months prior to the assessment. Coverage was high for the three immunizations and supplementation programmes as a result of the recent campaigns by UNICEF, WHO and local partners.

4.10 Vitamin A Deficiency

About 2.1% of the households reported cases of night blindness, which is a proxy indicator for vitamin A deficiency. Half of these night blindness cases were reported among children less than five years.

4.11 Feeding practices

None of the assessed children were exclusively breastfed for the recommended first six months. About two-thirds (62.2%) of the children aged 6-24 months were breastfeeding at the time of the assessment. Of those who had stopped breastfeeding, about 11.7% had stopped breastfeeding before six months of age, 35.9% before their first birthday and the rest (52.3%) within their second year of life.

Table 13: Children feeding practices

Children aged 6-24 months (N=339)	N	% (CI)
<i>Is child breastfeeding?</i>		
Yes	211	62.2 (56.8 – 67.4)
No	128	37.8 (32.6 – 43.2)
<i>Age stopped breastfeeding (N=128):</i>		
0 - 5 months	15	11.7 (6.7 – 18.6)
6 - 11 months	46	35.9 (27.7 – 44.9)
12 – 18 months	48	37.5 (29.1 – 46.5)
More than 18 months	19	14.8 (9.2 – 22.2)
<i>Introduction of Complementary feeding</i>		
0 - 3 months	304	89.7 (85.8 – 92.6)
4 – 6 months	35	10.3 (7.4 – 14.2)
<i>Feeding frequency:</i>		
Once	17	5.0 (3.0 – 8.1)
2 times	78	23.0 (18.7 – 27.9)
3 – 4 times	137	40.4 (35.2 – 45.9)
5 or more times	107	31.6 (26.7 – 36.8)

Most (89.7%) of the children aged 6-24 were introduced to foods other than breast milk early in life between the time of birth and the third month of life. The rest (10.3%) were introduced to complementary feeding at 4-6 months.

Most children (72.0%) were fed at least thrice a day with mainly cereal-based diets. The majority were fed 3-4 times (40.4%). Slightly less than one-quarter (23.0%) were fed 2 times while (5.0%) of the children were fed only once.

4.12 Dietary Diversity

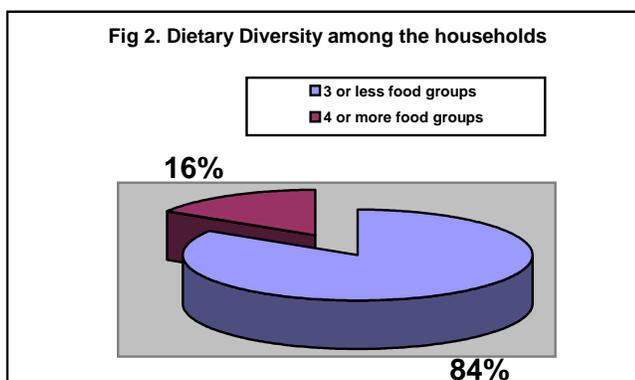
Table 14: Distribution of dietary diversity among children

No of food groups consumed (N=476)	N	% (CI)
1 food group	36	7.6 (5.4 – 10.4)
2 food groups	214	45.0 (40.4 – 49.6)
3 food groups	150	31.5 (27.4 – 35.9)
4 food groups	68	14.3 (11.3 – 17.8)
5 food groups	8	1.7 (0.8 -3.4)
Mean HDDS	2.6	SD=0.9
Main source of food (N=476)		
Purchasing	432	90.8 (87.7 – 93.1)
Own production	38	8.0 (5.8 – 10.9)
Gifts/donations	3	0.6 (0.2 – 2.0)
Bartering	3	0.6 (0.2 – 2.0)

As shown on table 14, more than half (52.6%) of the households had consumed two or fewer food groups within 24 hours prior to the assessment. About one-third (31.5%) had consumed 3 food groups and only 16.0% consumed four or more food groups within the same period.

Households consumed an average (HDDS) of 2.6 food groups (SD=0.9) with the number of food groups consumed ranging from one to five. Majority (84%) did not consume a diversified (Fig 2). Households consumed 1-7 food items, an average of 3.2 (SD=1.1) food items per household. Cereal-based diets especially sorghum; maize and rice were the most common. Other food items commonly consumed were sugar (as tea), milk, oil, meat and beans.

Most (90.8%) of the households surveyed mainly obtained their food through purchasing, 8% relied on their own production, 3% relied on food donations and 3% on bartering.



4.13 Adult Malnutrition by MUAC

Table 15. Adult nutrition status by MUAC

	n	%	95% CI
Men (N=228)			
Severe acute malnutrition (MUAC<16.0 cm)	0	0.0	
Global acute malnutrition (MUAC≤18.5)	0	0.0	
Normal	228	100	98.4 – 100.0
Non Pregnant (N=361)			
Severe acute malnutrition (MUAC<16.0 cm)	1	0.3	0.0 – 1.8
Global acute malnutrition (MUAC≤18.5)	3	0.8	0.2 – 2.6
Normal	358	99.2	97.4 – 99.8
Pregnant women (N=84)			
Severe Risk (MUAC≤20.7 cm)	6	7.1	
Total at risk (MUAC≤23.0 cm)	34	40.5	
Normal	50	59.5	

All the 228 adult men assessed had normal nutrition status using Mid Upper Arm Circumference (MUAC).

About 33% of pregnant women were malnourished (MUAC<23.0cm) while 7.1% were at severe risk of malnutrition (MUAC<20.7cm) (N=84). About 1% of non-pregnant women (aged 15-49 years) were malnourished

(MUAC<18.5cm) while 0.3% were at severe risk of malnutrition (MUAC<16.0 cm) (N=361).

4.14 Relationship Between Malnutrition and Other Factors

Table 16: Risk factors and relation to total malnutrition (WHZ<-2)

Exposure variable	N	(%)	Crude RR	95% CI	p-value
<i>Child sex:</i>					
Male	71	16.4	1.26	0.92-1.72	0.18
Female	62	13.1			
<i>Age group</i>					
6-24 months	38	11.2	0.73	0.55-0.97	0.03*
25-59 months	95	16.8			
<i>Hygiene</i>					
<i>Wash hands before handling food:</i>					
Always	47	13.3	0.85	0.61-1.18	0.39
Not always	86	15.6			
<i>Morbidity patterns</i>					
<i>ARI</i>					
Yes	37	16.9	1.21	0.85-1.71	0.34
No	96	14.0			
<i>Diarrhoea:</i>					
Yes	35	23.3	1.77	1.27-2.46	0.002*
No	98	13.0			
<i>Health programmes</i>					
<i>Vitamin A Supplement:</i>					
Yes	109	16.1	1.54	1.01-2.33	0.049*
No	24	10.5			
<i>Measles vaccine (N=861)</i>					
Yes	114	16.6	1.53	0.97-2.42	0.08
No	19	10.9			
<i>Dietary & feeding patterns</i>					
<i>Breastfeeding (N=339)</i>					
Yes	15	7.1	0.4	0.21-0.73	0.004*
No	23	18.0			
<i>Dietary diversity</i>					
≤ 3 food groups	118	14.2	0.72	0.4-1.17	0.26
≥ 4 food groups	15	19.7			

Malnutrition rates were higher among children aged 24 months or less (p=0.03) than those aged above 2 years.

Malnutrition showed significant association with incidences of diarrhoea (p=0.002).

Those who had received vitamin A supplements were less likely to be malnourished (p=0.049).

Children aged 6-24 months who had stopped breastfeeding were more likely to be malnourished (p=0.004).

Further analysis revealed no significant association between malnutrition and other factors.

4.15 Death Rates

A total of 904 households were surveyed for mortality indicator with a recall period of 90 days prior to the assessment being used. The results generated by the Nutri survey software were as presented below:

Death rates;

For children aged 0-59 months (under-five mortality or death rate)

$$0-5DR = \frac{\text{Number of deaths of children 0-5 years}}{\left(\frac{\text{Mid point Population* of children 0-5}}{10,000} \right) \times \text{Time interval}} = \text{Deaths/10,000/day}$$

* Mid point population = (Population at present + Population at beginning of recall)/2

Population at beginning of recall = (population present + left + deaths) – (joined + births)

Under five population (mid point) in surveyed households	=1,177
Number of under fives who joined the households	= 0
Number of under fives who left the households	= 9
Number of under five deaths	= 13

Under five death rate (deaths /10,000 children per day) = **1.24** (CI: 0.32 - 2.16)

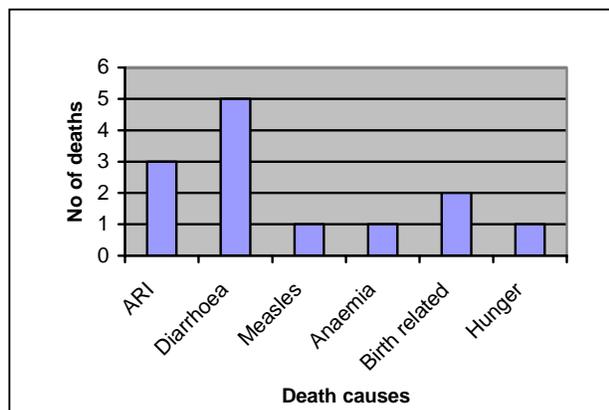
This under five death rate reflects a normal situation according to the international standards (WHO classification).

For the total population (Crude mortality/death rate):

$$CDR = \frac{\text{Number of deaths}}{\left(\frac{\text{Total Mid point Population}}{10,000} \right) \times \text{Time interval}} = \text{Deaths/10,000/day}$$

Total population in surveyed households	= 4,409
Total people who joined the households	= 9
Total people who left the households	= 144
Total number of births	= 44
Total number of deaths in the households	= 23

CMR as deaths per 10,000 persons per day = **0.57** (CI: 0.26 - 0.89)

Figure 3: Causes of underfive mortality

As shown on graph 3, diarrhoeal diseases and ARI were the main factors associated with under-five mortality. Other factors associated with child deaths included measles, anaemia, malnutrition and birth related complications.

ARI and malaria were the main causes of death among persons over five years of age. Anaemia and cardiovascular diseases were described as possible factors associated with death among adults and children over five years.

4.16 Qualitative Information

Qualitative information was collected from observations, focus group discussions and key informants. A total of six focus group discussions were held, three with mothers and three with men (elders). The discussions were centred on feeding and care practices, health care, food security, and water and sanitation issues.

4.17.1 Care and Feeding Practices

Breast feeding and complementary feeding practices were found to be sub-optimal in the district. Qualitative information indicated that mothers give water and sugar (*fax*) within a few hours after delivery and start breastfeeding late, between 24 - 48 hours. The women claim that if they breastfeed immediately, the child may get diarrhoea or 'constipation', that the mother has no milk or the baby lacks strength to suckle, the mother has abdominal pains and that breastfeeding increases bleeding. In addition to the *fax* and breast feeding, the infants are introduced to milk, preferably camel milk if available after one week while other semi solid foods such as porridge are introduced at between 2 and 3 months. Solid foods are introduced at 6-7 months.

The most common foods fed to young children are light porridge made from sorghum or maize flour with sugar and milk added. Rice with milk, sugar and ghee, oil, tea with milk, spaghetti and *caanjero* (Somali pancake) are among other foods fed to the children. Children are usually fed four or more times a day in normal times. This had not changed significantly during the assessment since more than two thirds (72%) of the children were fed at least three times a day. It was noted that children were always given priority in feeding during normal and crisis times. It was also noted that many households had no access to milk, (milk is usually a key food for children). Camel milk, for instance was inaccessible in many parts except in the southern part of the district. Hence children from the very poor families were being fed mainly on sorghum, wheat or maize porridge and occasionally rice or *caanjero*.

Qualitative data further revealed that when children are sick certain foods are withheld, for example if a child has diarrhoea, fresh milk is withheld, while fatty foods (ghee, oil, meat) were withheld for those with measles or malaria. Pregnant women however, have no food restrictions; instead they are encouraged to eat more. Caregivers also noted changes in care practices for children since mothers spent a lot of time outside the home looking for casual work or attending their petty businesses, or fetching water and firewood. Many children are therefore left taking care of their younger siblings thereby affecting childcare.

4.17.2 Food Security

People did not have any food stock at the time of the assessment except for a few households in the southern part of the district which had some dwindling stocks to last for about three weeks. Milk is not readily available or accessible and the cost is high. In the high potential northwest of the district for example, the price of milk doubled from SSh 5,000 (in the same period in 2005) to SSh 10,000/L currently. Among the southern inland pastoralists in the north/northeast of the district, milk costs SSh 6000/L. The poor households prefer to buy skimmed milk which they can afford as opposed to fresh whole milk. The households reported that different sorghum is available in the market and that those who had sufficient income were able to access diversified diets unlike the very poor households. Food purchases were the biggest proportion of the household's budget with very little left for other non food expenditure especially medical care, water and transport.

Most households currently obtain food through purchases from the market and retail shops. Money for these food purchases is derived from sale of animals and animal products, casual/farm labour and petty trade. Casual labour is mainly accessed in the farm systems and charcoal industry. The businesses include tea kiosks, groceries, sale of charcoal, building stones and *khat*. The security and homecare sectors also provide employment to many who are employed as guards, cleaners, cooks and caretakers for the better-off households in and around the town.

Livestock prices also dropped significantly during the previous one month leading to deteriorated terms of trade. In the same period in 2005, one local goat fetched SSh 250,000 and exchanged for 2-3 bags of sorghum, but now a goat costs only SSh 100,000 and exchanges for barely 35 kg of sorghum.

4.17.3 Health Related Issues

The most common diseases among children reported at the time of the assessment were ARI and diarrhoea. There were also significant cases of suspected measles. The area has insufficient access to health services and where available, the community felt that the facilities were not providing sufficient quality health care. Referral cases including severely malnourished children have to seek assistance from Huddur town which is more than 90 km from Wajid. Some residents therefore resort to self-prescription and medication.

4.17.4 Coping Strategies:

Qualitative information collected through the focus group discussion revealed that the commonly used coping strategies by many of the households assessed include purchasing food (mainly sorghum and sugar) on credit, limiting portion size at meal times, reducing number of meals, restrict consumption by adults for children to eat and slaughtering of the weak animals before they die. In a certain household in Gomor yale village, a family was observed sharing a sorghum meal with their five goats and wondered whether they can get food relief food the animals also. Some households in the northern district (Burhodle village bordering Rabdure district where a supplementary feeding programme is implemented) were reported sharing UNIMIX meant for the child by the whole family.

There were also reports of increased hunting and consumption of wild animals (like dick-dick) in Dermerka Village in the northern part of the district. Hunting is normally done at night but this has increased and now people are spotted hunting even during day time. Further qualitative information identified the following coping strategies used in the district:

- Labour migration to urban and farm areas like Wajid, Mogadishu, Baidoa, Adable (irrigated farming zone in Bay region) and near Shabelle (where there is a charcoal burning industry for export)
- Collection of bush products increased, dramatically lowering their market prices in Wajid town
- Sale of valuable assets like breeding animals; and
- Family splitting

4.17.5 Case Study in Wajid

The case study narrated below shows a desperate household situation faced with not only food insecurity but poor child feeding practices as well as inaccessibility to health services even within the town proximity.

Case Study:

Abdulahii Salax* is a 12 month old male child living in Wajid town (in Balawkaa village neighbourhood) at the edge of the town. With a weight of 5.1 kg; height of 67.4 cm and a MUAC of 9.5 cm, the boy is both severely stunted (HAZ<-3) and wasted (WHZ<-3; MUAC<11 cm). He has 2 brothers aged 2½ years and 3½ years respectively. Hassan*, the immediate elder brother to Abdullahi is also malnourished. With a weight of 7.9 kg and height of 77.3 cm and a MUAC of 12.4 cm, he is considered moderately wasted (-3 ≥WHZ<-2). The 40-year old father is a casual worker, building houses in Wajid. The income earned through this activity is quite erratic and, according to him, doesn't give the possibility to save any money.

The family owns two goats and some chicken. Their household is 200 meters far from an ACF rehabilitated well and availability of water is not a problem.

Three months ago, Abdulahi developed an acute episode of diarrhoea. At this time he was breastfed by his mother and used to take tea with sugar twice a day. At the beginning of this illness Abdullahi's mother realized that she was pregnant and in line with local customs belief she stopped breastfeeding her child. Then she started to give camel milk in place of the breast milk. This episode of diarrhoea lasted 1 month. Nothing else was given to the child at this time. No external assistance was sought by the parents even from the World Vision- supported MCH, which is just 2 km away. At the time of this interview the child was still fed on tea and sometimes camel milk.

Asked "what could have made the child sick," the father recognized the effect of a premature breastfeeding discontinuation (at nine months) and replied, "It was because the breast milk of the pregnant mother was not available anymore for his child".

The day before this visit the family (except Abdullahi) had eaten only one meal of *Soor* (Sorghum) and at the time of the visit (12midday) the cooking pot was empty and there were no signs of cooking fire. A hot tea for all the family at 7am in the morning was the only intake of the day, the family still hoping *insha Allah* (God willing) that by night they would get money to buy sorghum for a meal.

In the morning of this team's visit the mother went to the MCH after her child had been referred by the assessment team two days ago. The MCH nurse advised her to go to the MSF Therapeutic Feeding programme in Huddur, 90 km far from Wajid. She could not afford the transport cost (120.000 Somalia Shilling), thus the child was discharged and sent back home.

* Not real names

5 DISCUSSION

5.1 Nutrition Situation

The assessment results indicate a Global Acute Malnutrition (Weight-for-Height <-2 Z score or oedema) of 14.7% (CI: 12.5-17.2). This indicates a serious nutrition situation in a population about to experience a period of extreme food and livelihood insecurity. The assessment is consistent with the long term estimates of global acute malnutrition (10 – 14.9%) for Wajid District. The district assessment conducted by UNICEF in February 2000 which indicated a Global Acute Malnutrition rate of 21% (CI: 18.4 – 23.8) demonstrated the impact of acute food insecurity in the district at that time.

Malnutrition rates were higher among children aged 24 months or less than those aged above 2 years. This is usually the critical and vulnerable age among the under fives at which children are breastfed and introduced to other complementary foods. Sub-optimal feeding practices like inadequate breastfeeding practices, less frequent feeds as well as poor quality of the foods will negatively impact on the nutrition status of the children. Results also indicated that a higher proportion of children who had prematurely stopped breastfeeding before the recommended 2 years were more likely to be malnourished ($p=0.004$).

Vitamin A supplementation coverage was high in the surveyed households as a result of the recent immunization campaigns. Results indicated that those who had received vitamin A supplements were less likely to be malnourished ($p=0.049$). Vitamin A enhances body immunity hence protects against common infections. This means that those who are vitamin A deficient are more susceptible to illnesses and their food utilization in the body is compromised hence more likely to be malnourished.

5.2 Food Consumption and Food Security

Residents have just begun to experience the impact of the drought. Food stocks have been depleted in most households, especially the northern part, and households are coping with less diversified (sorghum-based) diets with mean household consumption of only 2.6 food groups. Dietary diversity has declined with the drought and most people (84%) consume only three or fewer food groups. Qualitative information reveals that in some instances, fortified blended food rations meant for the child is shared and used up within a day by the family members. Water catchments have dried up and livestock movements for pasture towards the Southern part of the district and Bay region were reported, while the very poor households are moving towards Wajid and Huddur towns; and IDP camps (located in Wajid town). Animal deaths were observed in some areas and milk production; and hence access has declined.

It seems there was shift in means of livelihood based on the baseline data. The proportion of agro-pastoralists reduced significantly during the survey. The prolonged drought has led people to shift to other means of livelihood like casual labour and petty trade.

5.3 Water, Sanitation and Health Issues

Most of the population draw water from unprotected wells. Many of these wells have dried up and more than half of the households have to walk several kilometres in search of water. The general sanitation of the population's residential areas is poor. Access to sanitation facilities is very low with majority using bush. Open pits are the most commonly used among those with access to sanitation facilities Household hygiene is suboptimal and appropriate hand-washing practices are not adhered to. This together with poor drinking water quality has contributed to incidences of diarrhoea. Results indicate that malnutrition was significantly associated with incidences of diarrhoea ($p=0.002$).

6 CONCLUSIONS AND RECOMMENDATIONS

The observed global acute malnutrition of 14.7% (CI: 12.5-17.2) indicates a serious nutrition situation as per WHO classification. However, the rates are consistent with the long term (10% – 14.9%) malnutrition levels. Diarrhoea, children's agegroup, vitamin A supplementation and breastfeeding practices are among the key factors influencing nutritional status among children in Wajid district. Poor water quality, inadequate child care practices and food insecurity remain the underlying causes of malnutrition. The crude and underfives mortality rates are within the acceptable levels according to WHO classification.

Following discussions held after sharing the results with partners and the community and detailed data analysis, both short- and long-term recommendations were made:

Short term recommendations:

1. The observation of many oedema and marasmus cases in Wajid district calls for an establishment of system to manage severe malnutrition cases within the district.
2. As food security continues to deteriorate, interventions that improve household access to food are indicated for the next 4-7 months.
3. Continuation and intensification of health, water and sanitation interventions especially immunization programs, rehabilitation and protection of water points and provision of sanitary facilities

Long-term Recommendations

1. As high levels of malnutrition have been seen throughout the district in recent years, it is highly recommended that the local MCHs / local health personnel are equipped with the knowledge and skills to manage severe malnutrition both during and outside periods of crisis.
2. Improve access to quality for medical care through establishment of a clinic or hospital in Wajid town with a doctor who could provide the increasingly demanded medical services.
3. Health/nutrition education for the population focussing especially on appropriate child feeding practices and management of diarrhoeal diseases.
4. The situation in the Wajid district and the neighbouring districts would require close surveillance of the nutrition and morbidity to prompt appropriate intervention for any adverse changes.

7 APPENDICES

Appendix 1: Sampling Frame for the Wajid Nutrition Assessment, January 2006

Villages	Type Settlement	of Est. Pop	Revised Pop	Est. Pop	U5	Cum Pop	Cluster	Intervals
Adangoley		600	300	60		300	1	143
Afgooy		800	400	80		700		
Aleemow		200	300	60		1000	2	937
Aroos Eber		170	100	20		1100		
Arshaam		600	600	120		1700		
Bakaryare		250	150	30		1850	3	1731
Bansoofi		200	200	40		2050		
Barkarwin		250	120	24		2170		
Bay Mad Ibran		430	70	14		2240		
Bershidle	Temporary	300	70	14		2310		
Biilele		425	80	16		2390		
Boloye		150	150	30		2540	4	2525
Bulafur		100	100	20		2640		
Buraddey		550	250	50		2890		
Burbakaro		515	300	60		3190		
Burduhunle (M)		2350	2500	500		5690	5, 6, 7	3319; 4113, 4907
Celjeedaw		200	250	50		5940	8	5701
Dabadhiigi		300	50	10		5990		
Dameerka		150	100	20		6090	9	6495
Dalaley	Temporary	100	50	10		6140		
Dhulsama		100	100	20		6240		
Dhurey		200	300	60		6540		
Doonkamaadi		200	150	30		6690		
Doonmogeyle		300	50	10		6740		
Eldanaan		455	400	80		7140		
Eded Kuus	Temporary	350	130	26		7270		
Gabadegsoy	Temporary	200	45	9		7315	10	7289
Garasmamow		100	100	20		7415		
Garaw		200	140	28		7555		
Garsaley		200	200	40		7755		
Geleyo		825	340	68		8095	11	8083
God-Gamas		200	150	30		8245		
Gomorjirin		500	130	26		8375		
Gomorjirin Sangar			150	30		8525		
Gomoryaale		415	415	83		8940	12	8877
Goobato		100	510	102		9450		
Gubulsagaar		350	150	30		9600		
Hinshilow		200	200	40		9800	13	9671
Hoshow		535	80	16		9880		
Ibeeray		50	70	14		9950		
Irwer		360	250	50		10200		
Jiiray	Temporary	50	50	10		10250		
Kawo		100	50	10		10300		
Kaysaney		150	70	14		10370		
Kurto (M)		550	550	110		10920	14	10465
Langaras	Temporary	200	100	20		11020		
Lafaale		250	250	50		11270	15	11259

M/Yussuf		900	90	18	11360		
Mad Foday		50	120	24	11480		
Midhowey	Temporary	100	150	30	11630		
Mlaaq Xusen	Temporary	200	80	16	11710		
Morow Isaq	Temporary	100	60	12	11770		
Moosin		150	40	8	11810		
Mushka		650	70	14	11880		
Orgafin		200	150	30	12030		
Safarnoley		200	220	44	12250	16	12053
Shidalow		640	220	44	12470		
Tareegoy		100	100	20	12570		
Tijeegiyare		350	150	30	12720		
Togisiraad		300	45	9	12765		
Towsiley N		200	270	54	13035	17	12847
Towsiley S		130	130	26	13165		
Walak	Temporary	400	400	80	13565		
W/Difir		300	170	34	13735	18	13641
W/Gaduda		200	150	30	13885		
W/Win Kamisle		100	80	16	13965		
Wajid Town		10160	9000	1800	22965	19-29	14435; etc
Weeley		840	840	168	23805	30	23169
		32050	23805	4761			

Random No 143
Cluster Interval 794

Appendix 2a: Wajid Nutrition Assessment Questionnaire

Date _____ Team Number _____ Cluster Number _____ Name of Supervisor _____
 Name of Village/Town _____ Name of section _____ Household Number _____ Name of the household head _____

Q1-12 Characteristics of Household

Q1 Sex of the household head? 1=M, 2=F

Q2 Household size _____

Q3 Number of < 5 years _____

Q4 Household residence status: 1= Residents 2= Internally displaced 3=Returnees 4=Other (specify) _____

If answer to the above is 1, then move to Question 8.

Q5 Place of origin _____

Q6 Duration of stay _____

Q7 Reason for movement: 1= Insecurity 2=Lack of jobs 3= Food shortage 4=Water shortage 5=Others; specify _____

Q8 What is the livelihood systems used by this household? 1= Pastoral 2=Agro- pastoral 3= Business 6=Other (specify) _____

Q9 What is the total size of the land cultivated (ha) _____

Q10 How many cattle does household own (ha) _____

Q11 How many shoats does the household own (number) _____

Q12a: When your child is sick, do you seek assistance 1= Yes 2= No

Q12b: If yes in Q12a, where do you seek assistance: 1= traditional healer 2= private clinic/ Pharmacy 3= Public health facility

Q13-18 Anthropometry for children aged 6 – 59 months (or 65 – 110cm) in the household

Serial No	Name	Q13 Sex (F/M)	Q14 Age in months	Q15 Oedema (Yes/No)	Q16 Height (cm)	Q17 Weight (kg)	Q18 MUAC (cm)
1							
2							
3							

18b: Anthropometry (MUAC) for adult women of childbearing age (15-49 years) present at the household

Sno	Name	Age in years	MUAC	Physiological status 1- Pregnant 2- Lactating 3- Not pregnant & not lactating	Illness in last 14 days? If yes, what?
1					
2					
3					

18c: Anthropometry (MUAC) for adult men in the households at the time of the assessment (over 18 year of age)

Sno	Name	Age in years	MUAC	Illness in last 14 days? If yes, what?
1				
2				
3				

Q19- 28 Morbidity, feeding and immunization status of children aged 6 – 59 months (or 65 – 110cm) in the household.

Sno	Name	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29
		Diarrhoea in last two weeks 1= Yes 2= No	ARI in the last two weeks 1=Yes 2=No	Malaria in the last two weeks 1=Yes 2=No	Measles in last one month 1=Yes 2=No	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	Vitamin A in the last 6 months 1=Yes 2=No	Are you breast feeding the child? 1=Yes 2=No	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	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.	How many times do you feed the child in a day? 1= Once 2= Twice 3= 3-4 times 4= 5 or more times	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												

Q30a: Does any member of the household have difficult seeing at night or in the evening while other people do not? 1=Yes 2=No

Q30 b: If yes in Q30a, specify the member: 1=<5 years 2= \geq 5 years

Q 31 Consumption 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, frequency and food sources What foods did the members of this household consume in the past 24 hours?	Codes for frequency of consumption 0=none 1= once 2= twice 3=3 times 4=4 times 5=5 or more times		Sources of foods consumed
	Frequency (<5yrs)	Frequency-adults	
1			
2			
3			
4			
5			
6			
7			
8			
9			

Q32-37 Access to water (quality and quantity)

- Q32 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
 Q33 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= river 8= other
 Q34 Average household water use per day per person 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
 Q35 Distance to the nearest water point 1= 0-250 metres 2 = 251 – 500 metres 3= 501 – 750 metres 4 = 751 – 1000 metres 5 = more than 1000 metres
 Q36 Water and systems are maintained such that quantities of water are available 1 = never 2 = sometimes 3 = almost always 4= always
 Q37 Number of clean water collecting containers of 10-20 litres 1= 1-2 containers 2 = 3-4 containers 3 = 4-5 containers 4= more than 5 containers

Q38-42 Sanitation and Hygiene (access and quality)

- Q38 Type of toilet used by most members of the household: 1=Improved pit latrine 2 = Traditional pit latrine 3 =Open pit 4 = Bucket 5= Bush 6= Others (specify) _____
 Q39 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
 Q40 Household members wash their hands after defecation 1= always 2= often 3=sometimes 4= hardly rarely
 Q41 Household members wash their hands before eating or food preparation 1= always 2= often 3=sometimes 4= hardly rarely
 Q42 Distance between toilet and water source 1 = 0 – 5 metres 2= 6 – 10 metres 3= 11- 20 metres 4= 21 - 29 metres 5= 30 metres or more

Q43 - 44 Formal and Informal Support or Assistance in last three months (circle all options that apply)

Q43 Informal support received in last three months *1 = Yes 2=No*

Q43a 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) _____		

Q44 Formal international or national aid support received in last three months

1 = Yes 2=No

Q44a Amount and Frequency of each

Type of support	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 2b: Wajid Nutrition Assessment Questionnaire (Somali Version)

Taariikh _____ Nambarka kooxda _____ Nambarka goobta _____ Magaca Kormeeraha _____ Magaca tuulada/magaalada _____
 Magaca xaafadda _____ Nambarka qoyska _____ Magaca madaxa qoyska _____

S1-12 Astaamaha Qoyska

S1 Jinsiga madaxa qoyska 1= Lab 2= Dhedig

S2 Tirada Qoyska _____

S3 Tirada caruurta ka yar shan sano _____

S4 Xaalada deegaan ee qoyska (Goobo geli Jawaab keliya) 1= Deegaan 2 = Soo Barakacay 3 =Dib u soo noqday 4 = Jawaab kale _____

Haddii Jawaabta su'aasha 4aad ay noqoto (1), u gudub su'aasha 8aad.

S5 Meesha uu markii hore ka yimid _____

S6 Mudada uu halkan Joogay (Bil ahaan u qor) _____

S7 Sababta uu u soo guuray 1= Nabadgelyo xumo 2 = Shaqo la'aan 3 = Cunto yaraan 4 = Biyo yaraan 5 = Jawaab kale _____

S8 Waa Maxay qaab nololeedka ugu badan ee qoskani: 1= Reer Guuraa 2= Reer Guuraa iyo Beeraleey 3= ganacsi 6= Jawaab kale

S9 waa immisa baaxadda dhulka aad beerato _____

S10 waa immisa tirade lo'da aad haysato

S11 waa immisa tirada ariga (Ido iyo Riyo) ee qoyskani leeyahay

S12. a: Ma raadsataa kaalmo caafimaad markuu cunug kaa jiran yahay 1= Haa 2= Maya

12b hadii ay haa tahay Xaggee: 1= dhaqtar dhaqameed 2= rug caafimaad gaar ah/farmashiye 3= Rug caafimaad dadweyne

S13-18 Miisaamidda iyo dhererinta ilmaha da'dooda u dhexeyso 6 – 59 bilood (ama 65 – 110cm) ee qoyska

Tirada Taxan	Magac	S13 Jinsi (L/Dh)	S14 Da'da oo bilo ah	S15 Barar (Haa/Maya)	S16 Dherer (cm)	S17 Miisaan (kg)	S18 Cudud Cabir (cm)
1							
2							
3							

18b: Qiyaasta jidhka ee dumarka ku jira da'da dhalikarta (15-49 sano) ee jooga qoyska

Sno	Magaca	Da' oo sanado ah	MUAC	Xaaladda qofka 4- Uur leh 5- Nuujinaysa 6- Uur ma leh, mana nuujinayso	Cudur ma jiray 14kii maalmood ee u dambeeyey? Hadday jawaabtu haa tahay muxuu ahaa ?
1					
2					
3					
4					

18c: Qiyaasta jidhka ee raga jooga qoyska xilliga la sameeyey qiimaynta (ka weyn 18 sano)

Sno	Magaca	da' oo sanado	MUAC	Cudur ma jiray 14kii maalmood ee u
-----	--------	---------------	------	------------------------------------

	ah	dambeeyey? Hadday jawaabtu haa tahay muxuu ahaa ?
1		
2		
3		
4		

S19-29: cudurada, quudinta iyo Tallaalka ee caruurta 6 – 59 bilood (ama 65 – 110cm).

NR	Magac	S19:	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29
		Shuban labadii sitimaan ee la soo dhaafay 1= Haa 2= Maya	Oofw areen (burukiito) labadii sitimaan ee la soo dhaafay 1= Haa 2= Maya	Duumo labadii sitimaan ee la soo dhaafay 1= Haa 2= Maya	Jadeeco Bishii la soo dhaafay 1= Haa 2= Maya	Laga tallaalay jadeecada 1=lixdii bilood ee la soo dhaafay gudahood (Kaar) 2=lixdii bilood ee la soo dhaafay gudahood (Xusuus) 3=Lix bilood ka hor (Kaar) 4=Lix bilood ka hor (Xusuus) 5=Lama tallaalin	Lixdii bilood ee la soo dhaafay gudahood 1= Haa 2= Maya	Cunuga ma nuujineysaa hadda 1= Haa 2= Maya	Haddii hadda aadan naaska nuujin, imisa jir buu ahaa marka aad ka joojisay 1=lix bilood ka yar 2= 6 – 11 bilood 3= 12 – 18 bilood 4= 18 bilood ama ka badan 5= Lama naasnuujin	Imisa jir buu ahaa cunuga markii la siiyay biyo/cuntadii ugu horeysay ee aan aheyn caanaha naaska 1= 0-3 bil 2= 4-6 bil 3= 7 bil ama ka badan	Imisa jeer baad quudisaa cunuga maalintii 1= hal jeer 2 = laba jeer 3 = 3 – 4 jeer 4 = 5 jeer ama in ka badan	Imisa jeer ayaa afka laga siiyey Talalka dabeysha weligiis. 1= 1-2 jer 2 = 3& ka badan 3 = Lama siin weligiis.
1												
2												
3												

S30 a) Ma jiraa xubin (xubno) qoyska ka mid ah dhibaato xagga aragtida ah qaba habeenkii ama fiidkii, taas oo xubnaha kale aysan la wadaagin ?

1= Haa

2= Maya

S30b Hadday **S30a** haa tahay, Caddee

1 = < 5 Sano

2 = > 5 ano

Q31b. Food consumption patterns assessment

Waraysiyadu waa inay caddeeyaan in maalintii hore ay ahayd mid caadi u ah qaysaskaas. Haddii aanay caadi ahayn- haddii jirtay xaflad, tacsii ama badi xubanaha qoysku haddii ay maqanyihiint, Markaas maalin kale waa in la doorto, haddii kale waa in qoys kale la xusho.

Cuntada la cunay iyo isha ka soo jeeddo, isha dakhliga cuntada lagu soo gadday ka timaado? Maxay xubnaha qoyskan cuneen 24 kii saac ee la soo dhaafay	Code: 0=waxba 1= hal mar 2= laba goor 3=3 goor 4=4 goor 5=5 goor iyo ka badan		Halka laga helo cuntada la isticmaalo
	Noocyada Cuntada	Frequency (<5yrs)	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

S32-37 Helitaanka Biyaha (Tayada iyo Tirada)

S32 Isha ugu badan ee laga helo Biyaha la cabo 1) pipe lagu keenay 2) Tubo 3) Ceel riig ah (mator leh) 4) Ceel daboolan 5) Biyaha roobka 6) war iyo ceel aan daboolnayn 7) Webi 8) meelo kale ,Caddee, ____

S33 halka ugu badan ay ka yimaadaan biyaha wax lagu karsado ama la isku nadifiyo 1) pipe lagu keenay 2) Tubo 3) Ceel riig ah 4) Ceel daboolan 5) Biyaha roobka 6) war iyo ceel aan daboolnayn 7) Webi 8) meelo kale ,Caddee, _____

S34 Celceliska biyaha xubin qoyska ah uu u isticmaalo Karin iyo nadaafadda jirka waa 1= 0-2 litir 2= 3 – 5 litir 3= 6-10 litir 4= 11-15 litir 5= Ka badan 15 litir

S35 Fogaanta isha biyo ee ugu dhaw 1= 0-250 mitir 2= 251-500 mitir 3= 501-750 mitir 4= 751-1000 mitir 5= ka badan 1000 mitir

S36 Biyaha iyo habka lagu helaba waa la ilaaliyey sidaa darteed cadadkii loo baahnaa waa diyaar 1= Marnaba 2= Marmar 3= ugu dhawaan had iyo goor 4= Had iyo goor

S37 Tirada Caagaga biyaha lagu aroorto (10-20 litres) ee qoyskan waa 1=1-2 2= 3-4 3= 4-5 5= ka badan 5 caag

S38- 42: Nadaafadda iyo Fayadhawrka

S38 Nooca musqusha ay inta badan xubnaha qoysku isticmaalaan waa 1= Nooca biyaha la raaciyo 2= Musqusha godka ah oo la sii hagaajiyey 3= Musqusha Godka ah 4= Musqul God oo dusha ka furan 5= Noocyo kale, Caddee

S39 Tirada dadka isticmaala isku hal musqul 1= 1-5 qof 2= 6-10 qof 3= 11-15 qof 4= 16-20 qof 5= ka badan 20 qof

S40 sidee bay xubnaha qoysku gacmaha u dhaqdaan Musqusha ka dib 1= Had iyo goor 2= Badanaa 3= Marmar 4= Si dhifdhif ah

S41 Sidee bay xubnaha qoysku u dhaqdaan gacmaha cuntada ka hor ama markay diyaarinayaan cuntada 1= Had iyo goor 2= Badanaa 3= Marmar 4= Si dhifdhif ah

S42 Fogaanta u dhaxeysa Musqusha iyo Isha Biyaha 1= 0-5 mitir 2= 6-10 mitir 3= 11-20 mitir 4= 21-29 mitir 5= 30 mitir iyo ka badan

Q43 -44 Taageerada toosan iyo midda dadban ee qoysku helay 3dii bilood ee la soo dhaafey (goobo geli dhamaan doorashooyinka ku habboon)**Q43** Kaalmo dadban (aan rasmi ahayn) ma helay qoyskan 3dii bilood ee la soo dhaafey?*1= Haa 2=Maya***Q43a** Cadadka iyo Inta jeer

Nooca kaalmada	Inta goor	Cadadka (xaddiga) (Markey ku haboon tahay)
1=Zako ka timaado qoysaska ladan		
2=Xawaalad dibadda ka timaadda		
3=Xawaalad ka timaadda wadanka gudahiisa		
4=Deeq		
5=Amaah		
9=Wax kale, _____		

Q44 Kaalmo rasmi ah oo caalami ah ama waddaniyadeed

3dii bilood ee u dambeeyey

*1= Haa 2=Maya***Q44a** Caddadka iyo inta goor mid walba.

Nooca Kaalmada	Inta goor	Cadadka (Xaddiga)
1= Lacag bilaash aad ku heshay		
2=Cunto bilaash lagu siiyey		
3=Lacag aad shaqo ku badalatey (Cash for work)		
4=Cunto aad shaqo ku badalatey (food for work)		
5=Cunto kabiid ahaan lagu siiyey (suppl.Food)		
6=Biyo lagu siiyey kabiid ahaan (subsidy water)		
7= xoolo lagu siiyey gaadiid ceshi		
8=Kaalmo xanaanada xoolaha (veterinary) aad heshay		
9=Kale, caddee _____		

Appendix 4: Traditional Calendar of Events for Wajid People

Month	Events	2001	2002	2003	2004	2005	2006
Jan.	Beginning of Jiilal		49 Siditaal	37 Siditaal	25 Siditaal Safari park retreat	13 Siditaal	1 Siditaal
Feb.	Mid of Jiilaal		48 Arafo/Dul-Xaj	36 Arafo/Dul-Xaj	24 Arafo/Dulxaj	12 Arafo/Dulxaj Sheikh Indhocaadde-Baidoa attack	
Mar.	End of Jiilaal	59 Sako	47 Sako	35 Sako	23 Sako	11 Sako	
Apr.	Beginning of Gu'	58 Safar	46 Safar	34 Safar	22 Safar	10 Safar	
May	Mid of Gu'	57 Mawlid	45 Mawlid	33 Mawlid	21 Mawlid	9 Mawlid	
Jun.	End of Gu'	56 Malmadoone/ Milihore	44 Malmadoone/ Milihore	32 Malmadoone/ Milihore	20 Malmadoone/ Milihore	8 Malmadoone/ Milihore	
July	Beginning of Xagaa	55 Jamadul-Awal/ Mili dhexe	43 Jamadul-Awal/ Mili dhexe	31 Jamadul-Awal/ Mili dhexe	19 Jamadul-Awal/ Mili dhexe	7 Jamadul-Awal/ Mili dhexe	
Aug.	Mid of Xagaa	54 Jamadul-Akhir/ Milidambe	42 Jamadul-Akhir/ Milidambe	30 Jamadul-Akhir/ Milidambe	18 Jamadul-Akhir/ Milidambe	6 Jamadul-Akhir/ Milidambe	
Sep.	End of Xagaa	53 Rajab/Shacbaan Hore	41 Rajab/Shacbaan Hore	29 Rajab/Shacbaan Hore	17 Rajab/Shacbaan Hore	5 Rajab/Shacbaan Hore	
Oct.	Beginning of Deyr	52 Shacbaan Dambe	40 Shacbaan Dambe Start of Edoret reconciliation meeting, Kenya	28 Shacbaan Dambe	16 Shacbaan Dambe	4 Shacbaan Dambe	
Nov.	Mid of Deyr	51 Soon (Ramadhan)	39 Soon (Ramadhan)	27 Soon (Ramadhan)	15 Soon (Ramadhan)	3 Soon (Ramadhan)	
Dec.	End of Deyr	50 Soonfur/ Furun	38 Soonfur/ Furun	26 Soonfur/ Furun	14 Soonfur/ Furun	2 Soonfur/ Furun	

Jiilaal

GU'

Xagaa

Deyr

Issues to add

- Carta meeting – The Djibouti meeting which culminated to the election of TNG
- TFG election

Appendix 5: Prevalence of chronic malnutrition based on height for age Z-score

	<i>Males (n=469)</i>		<i>Females (n=455)</i>		<i>Total (N=924)</i>	
	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>
Total chronic malnutrition (HFA<-2 z score)	21.7 (CI: 18.2 – 25.8)	102	17.4 (CI: 14.1 – 21.2)	79	19.6 (CI: 17.1 – 22.3)	181
Severe chronic malnutrition (HFA<-3 z score)	7.5 (CI: 5.3 – 10.3)	35	4.2 (CI: 2.6 - 6.6)	19	5.8 (4.5 – 7.6)	54

The prevalence of chronic malnutrition defined as height for age <-2 Z score was 19.6% (CI: 17.1 – 22.3) and severe chronic malnutrition, defined as height for age <-3 Z score, was 5.8% (CI: 4.5 – 7.6)

Appendix 6: Prevalence of underweight based on weight for age Z-score

	<i>Males (n=469)</i>		<i>Females (n=455)</i>		<i>Total (N=924)</i>	
	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>
Total Underweight Malnutrition (W/A<-2 z score)	16.4 (CI: 13.2-20.2)	77	14.9 (CI: 11.9-18.6)	68	15.7 (CI: 13.4-18.2)	145
Severe Underweight Malnutrition (W/A<-3 z score)	4.1 (CI: 2.5-6.4)	19	1.8 (CI: 0.8-3.6)	8	2.9 (CI: 2.0-4.3))	27

The prevalence of underweight malnutrition defined as weight for age <-2 Z score was 15.7% (CI: 13.4 - 18.2) while the prevalence of severe underweight malnutrition, defined as weight for age <-3 Z score, was 2.9% (CI: 2.0 – 4.3).

Appendix 7: Assessment Teams Composition (26 – 30 Jan 2006)

Team No.	Enumerators	Supervisors	Clusters
1.	1. Yusuf Haji Mohamed 2. Maryan Ibrahim Jeele	Ismail	21 = BuloTamaash/Wajid Town (26-1) 15= Lafaale (28-1) 5= Burhudunle (29-1) 22= Wajid Town (30-1)
2.	1. Mohamed Aden 2. Asha Abdinasir	Mohamed Hussein	20= Balawkaa/ Wajid town (26-1) 14= Kurto (28-1) 9= Damerka (29-1) 23= Wajid Town (30-1)
3.	1. Musdaf Sheik Ali 2. Dahabo Yusuf	Abdi Siidi	2= Caleemo (26-1) 3= Bakar yare (28-1) 12= Gomoryaale (29-1) 24= Wajid town (30-1)
4.	1. Fartun Abdi 2. Abdulqadir Mohamed	Mohamed Elmi	8= Ceeljedow (27-1) 4= Boloye (28-1) 6= Burhudunle (29-1) 25= Wajid Town (30-1)
5.	1. Habibo Ali Mohamed 2. Muktar	Osman Mohamed Osman	17= Towsile (26-1) 30= Weeley (28-1) 11= Ghelyio (29-1) 26= Wajid Town (30-1)
6.	1. Yusuf Sharif 2. Mohamed Ibrahim	Mohamed Haji	19 = Simbabwe/ Wajid town (26-1) 1= Adan Goley (28-1) 13= Hinshilow (29-1) 27= Wajid Town (30-1)
7.	1. Maryan Hassan 2. Abdi Sharif	Abdirahman Hersi	xxxxxxxxxxxxxxxxxxxxx 16= Safar Noleis (28-1) 18= W/Difir (29-1) 28= Wajid Town (30-1)
8.	1. Alfatah Abubai 2. Leila	Medina Abdirahman	xxxxxxxxxxxxxxxxxxxxx 10= Gabadegsoy (27-1) 7= Burhudunle (29-1) 29= Wajid Town (30-1)
Coordinators			
FSAU: 1. Tom Oguta 2. Joseph Waweru 3. James Kingori		ACF: 1. Matheus	WFP 1. Mohamed Hersi

Appendix 8: Supervisor's Daily Record Form

Name of Supervisor: _____ Cluster Name: _____ Team No: ____ Date: _____

	No	Which specific households?	Notes
Household Questionnaires Administered			
Oedema cases present?			
Severely malnourished (WHZ < -3)			
Mortality Questionnaires Administered			
Deaths reported			
Measles cases reported?			
Empty households encountered			
Any other important observation			

Appendix 9: 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: _____

8 REFERENCES

CARE and WFP: Field Methods Manual. The Coping Strategies Index – A tool for rapid measurement of household food security and the impact of food aid programs in humanitarian emergencies.

FEWS NET, 2003. Urban Assessment, Food economy

FSAU, September 2002: Food Utilisation in Somalia

FSAU, November 2003: Nutrition Training Manual: A guide to data collection, analysis, interpretation and use.

FSAU, April 2004: Dietary Diversity in Somalia

IRC and partners, Inter-agency Returnee Settlement Area Assessment, June 2002.

Naomi Saville, Progressive Interventions April 2004. The Contribution of Honey and other Natural Resource Products to Food Security in Somaliland.

SACB: Nutrition assessment guidelines for Somalia.

UNOCHA, Somaliland Assistance Bulletin, August 2005

Standardized Monitoring and Assessment of Relief and Transition (SMART). Standardizing Assessment methodology. Technical Series. July 23 – 26, 2002. Washington, DC.

WHO, 1995: Guide on rapid nutritional assessment in emergencies
