

**BUALE AND SAKOW DISTRICTS
MIDDLE JUBA REGION
SOMALIA**

Nutrition Assessment Report

April 2006



**Food Security Analysis Unit (FSAU/FAO)
World Vision International
United Nations Children's Fund (UNICEF)
World Food Program (WFP)**



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ACKNOWLEDGEMENT

WVI provided the logistical support and organization, and with funding from UNICEF, met the cost of enumerators (mainly WVI staff), supervisors, data entry and vehicle hire. WFP provided their National VAM officer who worked together with the FSAU food security analyst collected qualitative data.

FSAU provided technical coordination of the assessment through two nutritionists, four nutrition field analysts (supervisors) and a food security analyst. FSAU trained the assessment team, coordinated and supervised data collection, entry and analysis, produced the draft and final reports. Participating agencies (FSAU nutrition and food security team, WVI, UNICEF and WFP) reviewed and provided comments on the draft report which have been incorporated into this report.

FSAU, WVI, UNICEF and WFP greatly appreciate the contribution of local authorities in ensuring security for the fieldwork in Buale and Sakow districts. The data could not have been obtained without the co-operation and support of the communities assessed, especially the mothers and caregivers who took time off their busy schedules to respond to the interviewers. Their involvement is highly appreciated.

FSAU, WVI, UNICEF and the WFP 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.

ABBREVIATIONS AND ACRONYMS

ARI	Acute Respiratory Infections
FAO	Food and Agriculture Organisation
FSAU	Food Security Analysis Unit
GAM	Global Acute Malnutrition
HAZ	Height- for- Age Z scores
HAZ	Height for Age Z scores
IDP	Internally Displaced Person
MCH	Maternal and Child Health
MUAC	Mid Upper Arm Circumference
NCHS	National Centre for Health Statistics
NGOs	Non-Governmental Organisations
NGO	International Non-Governmental Organisation
NIDs	National Immunisation Days
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

EXECUTIVE SUMMARY

Buale and Sakow districts are located in Middle Juba Region. Buale district has an estimated population size of 46,520 and Sakow, 87,935 (WHO, 2005 NIDS figures further verified by the survey team). The two districts are located along the Juba River.

The FSAU led Post Deyr 2005/6 Food Security and Nutrition situation analysis/projections for January through June 2006¹, classified most parts of Buale and Sakow districts as faced with a humanitarian emergency and other areas, an acute food and livelihood crisis/high risk of humanitarian emergency. This was primarily attributed to the impact of below normal Gu 2005 rains, followed by completely failed Deyr 2005/6 rains which resulted in complete crop failure. This impacted negatively on the lives and livelihoods of the populations groups. From April 22nd-27th, 2006, FSAU, WVI, UNICEF and WFP conducted a joint assessment to analyze the nutrition situation and retrospective mortality rates in Buale and Sakow districts. A 30 by 30 cluster sampling methodology was used and 898 children and 347 adult women aged 15 – 49 years were assessed. Mortality data was collected from 927 households.

Findings indicate global acute malnutrition rate (weight for height <-2 Z score or oedema) of 21.9% (CI:19.3-24.8) and severe acute malnutrition (weight for height <-3 Z score or oedema) of 6.6% (CI:5.1-8.4). This highlights a critical nutrition situation (WHO) and a worsening one when compared to long term estimates of malnutrition for the area. Additionally, about 40% of the 97 assessed pregnant women had MUAC < 23.0 cm, while 3% of the 250 non-pregnant women had MUAC <18.5cm and were categorized as malnourished. The crude mortality rate was 0.61 (CI: 0.39 – 0.83) deaths/10,000/day and the under five mortality rate 1.98 (CI:1.26 – 2.69) deaths/10,000/day which are acceptable (WHO). About 38% of the children were introduced to complementary foods at the age of 6 months and above. A summary of assessment findings is indicated in the table below.

Qualitative data indicates poor household food access due to high food prices, and general unavailability of animal products, most of the livestock having either died, migrated back to areas of origin or, in too poor body condition to provide milk and milk products.

The critical nutrition situation is attributed to poor dietary intake and presence of communicable diseases. About 30% of the children came from households consuming a poorly diversified diet comprising of three or fewer food groups². Previous studies have indicated an association between malnutrition and dietary diversity. Additionally, about 49% of the children reported having suffered from an episode of a communicable disease in the preceding two weeks.

The high disease incidence may be partly attributed to limited access to preventive and curative health care services, with Sakow district having no health facility. However, in Buale, WVI/UNICEF operates an MCH/OPD/EPI with 38 health posts. Additionally, about 75% of the children came from households which consume water from unsafe sources (the river, unprotected wells or water catchments) and about 50% came from households that dispose of faecal matter in the bush. Consumption of unsafe river water is a possible cause of diarrhoeal infections and subsequent malnutrition.

Mitigating factors include vitamin A supplementation (69%) and measles vaccination coverage (about 93%) attributed to the recent immunization campaigns in Buale and Sakow districts. Nevertheless these are below the SPHERE minimum recommendation of 95%. About 64% of the children came from households reporting to access formal humanitarian support in the preceding three months, mainly in the form of food assistance (about 46%) in February 2006; and informal humanitarian support, mainly in the form of gifts (about 43%). About 0.12% of the assessed population was reported to have night blindness³. On-going humanitarian interventions which may also have mitigated the nutrition situation

¹ FSAU Technical Series No. IV 8

² FAO classification

³ SPHERE recommends night blindness prevalence of < 1%

include: food assistance by the WFP/WVI, health care services, a water and sanitation program in Buale by the World Vision and supplementary feeding by the African Muslim Aid (AMA).

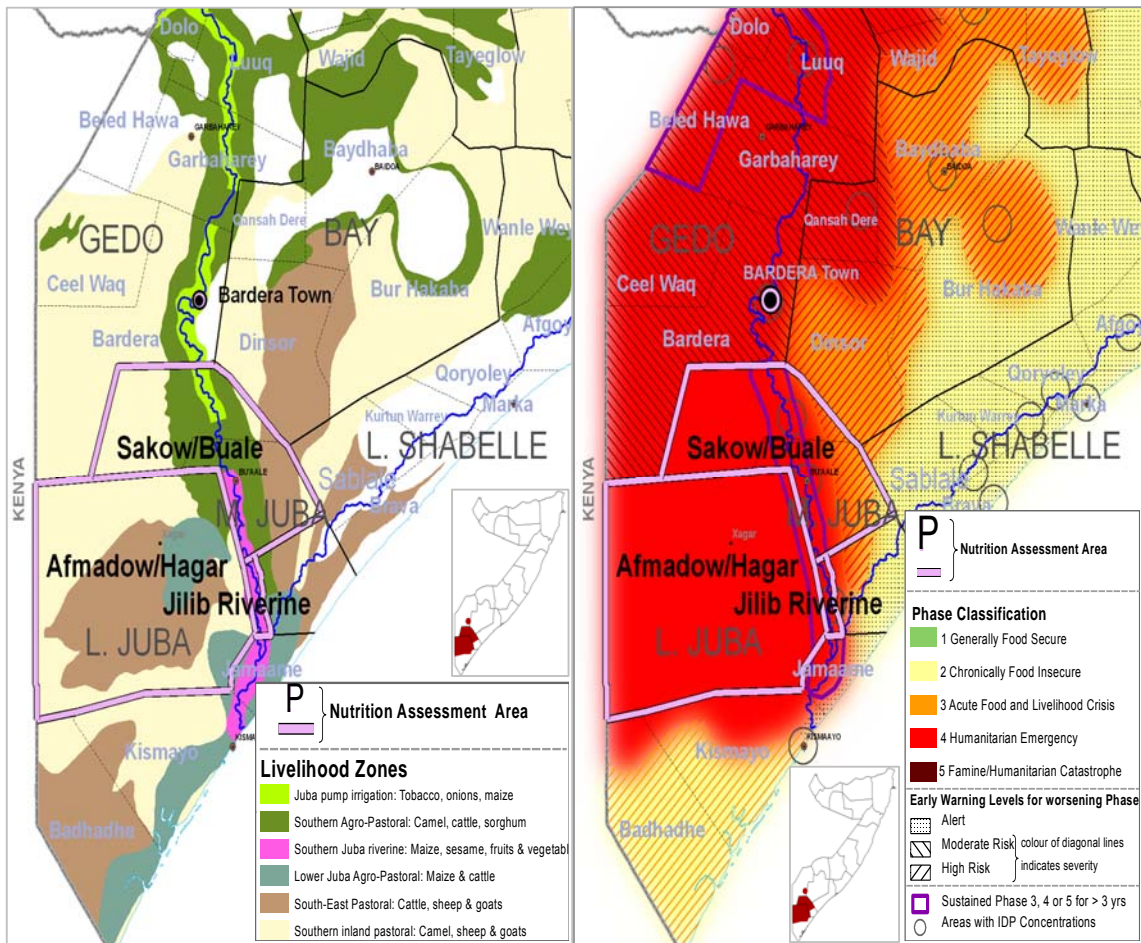
The assessment team recommends: improved access to food (short & long term approaches), health care services; safer water for consumption; and rehabilitation of the malnourished children and women.

SUMMARY FINDINGS FOR BUALE SAKOW ASSESSMENT

Indicator	No.	Percentage
Under-five children screened during the assessment.	898	100
Number of boys in the sample	420	46.8 (43.5-50.1)
Number of girls in the sample	478	53.2 (49.9-56.5)
Number of households assessed	548	100
Total population in the assessed households	5439	100
Global acute malnutrition - Weight For Height Index in Z-Score or presence of oedema	197	21.9(CI:19.3-24.8)
Severe acute malnutrition - Weight For Height Index in Z-Score or presence of oedema	59	6.6 (CI:5.1-8.4)
Global acute malnutrition - Weight For Height Median or presence of oedema	150	16.7 (14.4-19.3)
Severe acute malnutrition - Weight For Height in % Median or presence of oedema	39	4.3 (3.1-5.9)
Proportion of Malnourished pregnant women MUAC<23.0cm N=97	39	40.2 (30.4-50.7)
Proportion of severely malnourished pregnant women MUAC<20.7cm N=97	18	18.6 (11.4-27.7)
Proportion of Malnourished Non-pregnant women MUAC<23.0cm N=250	8	3.2 (1.4-6.2)
Proportion of children from households that consumed ≤ 3 food groups N=898	273	30.4 (25.4 – 36.5)
Proportion of children from households that consumed ≥ 4 food groups N=898	626	69.6 (64.5 – 74.6)
Proportion of children with diarrhoea in two weeks prior to the assessment N=898	246	27.3 (24.5-30.5)
Proportion of children with ARI in two weeks prior to the assessment. N=898	128	14.3 (12.1-16.8)
Proportion of children with suspected malaria in two weeks prior to the assessment. N=898	238	26.5 (23.7-29.5)
Proportion of children with Measles in one month prior to the assessment.	181	21.3 (18.7-24.1)
Proportion of people with suspected night blindness n=5439	66	0.12
Proportion of children supplemented with Vitamin A in six months prior to the assessment.	562	68.6 (65.3-71.8)
Proportion of children (≥ 9 months) immunised against Measles. N=873	812	92.5 (91.6-94.6)
Proportion of children immunised against Polio N=898	816	90.0 (87.8-92.1)
Proportion of children (≤ 24 months) breastfed less than 6 months N=294	58	19.7 (15.3-24.7)
Proportion of children introduced to food before 4 months. N=353	121	18.2 (15.4-21.4)
Proportion of children introduced food after 6 months of age N=353	252	37.8 (34.2-41.7)
Proportion of children from resident households N=898	824	91.6 (89.5-93.3)
Proportion of children from displaced households N=898	24	2.8 (1.8-4.2)
Proportion of children from returnee/refugee households: N=898	46	5.3 (4.0-7.1)
Proportion of children from internal migrant households: N=898	3	0.3 (0.1-1.1)
Main source of food		
Purchases N=895	530	59.3 (55.9-62.6)
Humanitarian food assistance N=895	133	15.1 (12.8-17.7)
Household own crop production N=895	85	9.9 (8.0-12.1)
Main Livelihood: Riverine	442	51.7 (48.3-55.1)
Proportion of children from HH receiving informal support, mainly gifts	153	15.3 (15.2-20.4)
Proportion of children from HH receiving formal support (free food aid 45.6%)	570	64.5 (60.2-66.7)
Main source of drinking water is the river N=898	426	49.2 (45.8-52.6)
Proportion of children from HH disposing off Faecal into the bush	436	50.3 (47.0-53.7)
Crude Mortality Rate CMR (90 days recall period) N=5439	0.61 (0.39 – 0.83)	
Under-five Mortality Rate (90 days recall period) U5MR N=1669	1.98 (1.26 – 2.69)	

1 INTRODUCTION

Buale and Sakow districts are located in the Middle Juba Region. Buale district has an estimated population size of 46, 520 and Sakow, 87,935 (WHO, 2005 NIDS figures further verified during the survey team training). The two districts are located along the Juba River. Buale district has five main livelihood zones: the southern inland pastoral (5%), southern east pastoral (15%), southern agropastoral (25%), Southern Juba riverine (50%) and the urban (5%). Sakow district has four livelihood zones: the southern agro-pastoral (45%), Juba pump irrigated riverine (30%), southern inland pastoral (20%) and urban (5%).



Sakow is one of the worst affected districts in Middle Juba region from a decade old civil strife and natural calamity. Since 2000, the district has experienced the cumulative effect of drought, poor harvest, reduced pastures and population movement causing deterioration in food security. UN agencies and international non-governmental organisations have been providing humanitarian assistance to the population, but their efforts are often disrupted by insecurity.

2 BACKGROUND INFORMATION

2.1 Administration:

Each of the administration of Buale and Sakow districts is governed by the district council (21 members) which comprises of a district commissioner appointed by the clan elders; a deputy district commissioner and 19 representatives from the clans and sub-clans. The district council, religious leaders and the elders in the district intervene to solve any issues of concern in the districts.

2.2 Security:

Sakow is one of the districts in Middle Juba region mostly affected by the 13 years of civil insecurity, drought and floods. Civil insecurity as a result of inter clan fighting persisted until 2005 limiting humanitarian access. The main contentious issue is leadership, which has now been resolved through appointment of the district council.

The security situation in Buale and Sakow districts is currently relatively calm.

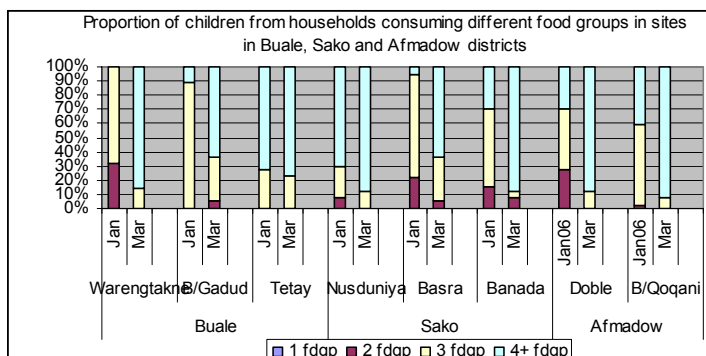
2.3 Nutrition context

In January and March 2006, FSAU conducted two rounds of sentinel sites surveillance mainly among pastoral and agropastoral communities of Buale, Sakow and Afmadow districts. In each of the sites, a minimum of 50 children were assessed.

Data from the sites showed high proportions of malnourished children and varying levels of diversity in the assessed households.

A supplementary (wet) feeding program targeting the malnourished children was and still is managed by Africa Muslim Aid (AMA), in Sakow, Salagle, Banada and parts of Buale and Sakow districts.

Nevertheless, treatment for severely malnourished children is unavailable in the district; the severely malnourished are referred to MSF-Belgium TFC in Marere or Huddur.

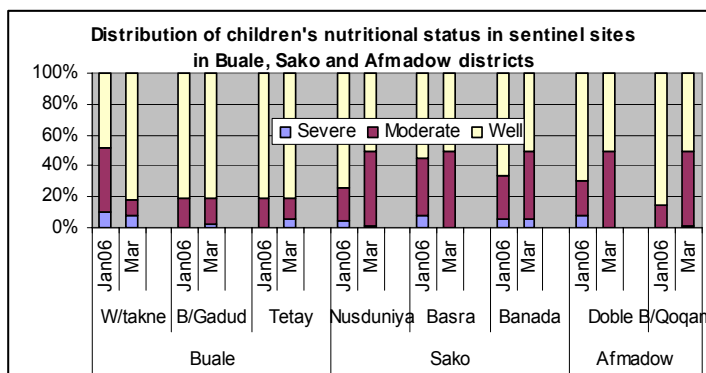


FSAU estimates the long term trend of the nutrition situation in Buale and Sakow districts to be between 15-19.9%.

2.4 Health context

The WVI with support from UNICEF, manages an MCH /OPD together with 38 health posts in Buale. No health facility exists in Sakow district due to insecurity.

UNICEF/WHO are involved with polio and measles campaigns.



2.5 Water and environmental sanitation

Access to safe water for human and livestock consumption has been a major problem in Buale and Sakow districts, with majority relying on the river as a source.

The World Vision is currently involved in a water and sanitation project and currently undertakes irrigation and construction of hand dug wells.

Juba Charity Centre is involved in water trucking.

2.6 Education

The Social development initiative organization, a local agency in Sakow town is involved in secondary school education and has been operational since March 2006. Additionally, SAWA, a local agency provides adult education services in Buale.

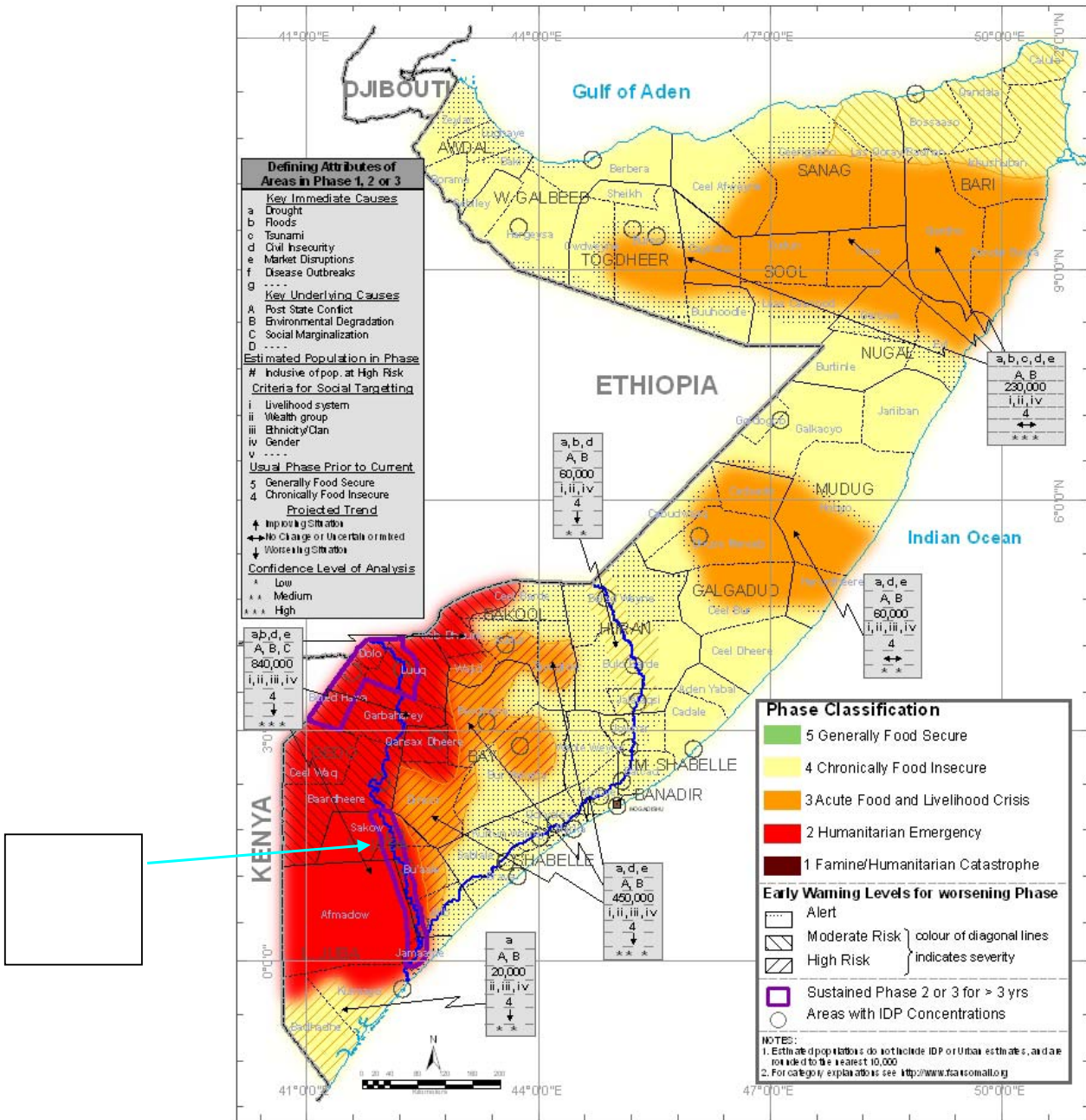
2.7 Food Security Context

Following the failure of Gu and Deyr 2005/06 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, Technical Series Report No IV. 8, the Middle Juba region has experienced extremely poor crop production, poor conditions and production of livestock and is faced with a humanitarian emergency with pockets of livelihood crises (refer to map below). The least affected are the camels while cattle and shoats more affected by the drought. As a result of the drought and until the onset of the Gu rains in April 2006, livestock moved within the region in search of pasture and water, limiting the access of households to milk.

The cumulative effect of drought, poor harvest over years, high asset depletion, population displacement, and high transportation costs has continuously exposed communities to strains and stresses and undermined their coping strategies. According to the FSAU Integrated food security and humanitarian phase classification shown in the figure below, Buale and Sakow districts is in the Humanitarian emergency with early warning level of moderate risks of famine.

Currently, WFP/WVI provides humanitarian food assistance to vulnerable households.

Map 1: Integrated Food Security Phase Classification



1.1 JUSTIFICATION FOR THE NUTRITION ASSESSMENT

The persistent food insecurity in the district has deteriorated due to the prevailing drought condition following the failure of both the Gu and Deyr 2005/06 rains. Consequently, the pastures are depleted and water shortage problems escalated. Hence a nutrition assessment was important to confirm the situation of malnutrition levels.

1.2 ASSESSMENT OBJECTIVES

1. To determine the level of malnutrition and nutritional oedema among children aged 6-59 months or with height/length of 65-109.9cm
2. To determine the level of malnutrition among the women aged 15-49 years in Buale and Sakow districts.
3. To identify some factors influencing nutrition status of the children in the district
4. To determine the prevalence of some common diseases (measles, diarrhoea, malaria, and ARI) in the district.
5. To determine the measles and polio vaccination and Vitamin A supplementation coverage among children in Buale and Sakow districts
6. To assess general feeding and weaning practices in Buale and Sakow districts.
7. To determine the crude and under-five mortality rates in Buale and Sakow districts.

3 METHODOLOGY

3.1 Sample size

The target population was children 6-59 months (or heights between 65cm and 109.9cm). In order to provide valid estimates of the prevalence of malnutrition in children with a 95% confidence level, a total of 898 children were to be examined using 30x30 cluster sampling.

3.2 Sampling methodology

A two-stage cluster sampling methodology was used. A list of villages with population estimates for all villages in Buale and Sakow districts was obtained from the WHO, 2005 Somalia polio population estimates (46,520 for Buale and 87,935) for Sakow) records and confirmed by the community members. Cluster selection was done during the training session (See Annex 1). Mortality data was collected from the same clusters.

Household sampling was carried out in the cluster, where the first and subsequent households were selected. With the help of assessment guides selected by the local authorities, each team went to the middle of the cluster assigned and determined a random direction by spinning a pencil. The team then moved to the boundary of the cluster following the direction of the pencil. At the boundary of the cluster a pencil was again spun and all households along the direction pointed by the pencil were counted and assigned numbers on a piece of paper. The assessment guide randomly selected the first household to be visited from the number and the subsequent households were selected by moving to the next household in the right hand direction from the household exit (door or gate). If the household did not have an under-five child, teams administered the mortality questionnaire and then moved to the next household in the right hand direction. All eligible children in each household visited were measured. The MUAC of the care giver (a mother or woman aged 15-49 years) was also taken. If a caregiver or child was absent an appointment was made, and the household revisited to examine the child before leaving the cluster. The missing children were noted in the assessment form though no other child specific details were collected. If population from the selected clusters had moved, the team followed them to their new sites and where the population could not be located a cluster with similar characteristics was used to replace the originally selected cluster.

Additional qualitative information was collected using focus group discussions and key informants interviews.

3.3 Quality Control

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 general courtesy during the assessment. Pre-testing exercise at the field helped in identifying the enumerators with weaknesses and any question or assessment procedure that was not clear to both supervisors and enumerators. After pre-testing all the mistakes observed were addressed and also the teams' member composition reviewed on the basis of strengths and weaknesses of the enumerators. Furthermore, supervisors accompanied the enumerators in all households while administering questionnaires and taking measurements to ensure that standard procedures were followed. The coordinators also reviewed all questionnaires for any erroneous information on daily basis.

3.4 Variables examined

Age – Only children aged 6-59 months and whose length/height is 65-109.9cm were selected for examination. The age of a child was determined from the mother/caregiver's recall, the under fives growth monitoring card, or from a local events calendar (*See Annex 2*) in instances where date of birth was not stated.

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.

Women MUAC- 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 woman aged 18-49 years.

Oedema – Children were examined for the presence of bilateral pedal oedema. The occurrence of pitting as a result of thumb pressure on the foot or leg for 3 seconds was indicative of nutritional oedema.

Diarrhoea – Mothers/caregivers were interviewed regarding any episode of three or more loose, watery stools in a day, within the preceding two weeks.

Acute Respiratory Infections (ARI) – collected from interviewing the mother/caregiver whether the child had “*oof wareen or wareento*” (local term of pneumonia) two weeks prior to the assessment. This term was validated by further asking if the child had cough, fever and rapid breathing.

Breastfeeding: child having received breast milk within the last 12 hours.

Suspected malaria/acute febrile illness: - collected from interviewing the mother/caregiver whether the child had malaria two weeks prior to the assessment. Validated by asking the mother if the child had the following signs; periodic chills/shivering, fever, sweating and sometimes a coma

Measles-the child who had more than three of the following signs was considered to have had measles; fever and skin rash, runny nose or red eyes and/or mouth infection, or chest infection.

Night blindness- information was collected by asking the respondent to state whether there was any member of the family who has difficulty in seeing at night.

Measles immunisation status – the information was obtained by asking the mother if the child had received measles vaccination and/or confirmed from the child's vaccination card.

Polio immunization- the information was collected by asking the caregiver whether the child (aged 9-59 months) had received polio vaccine or and/or counter checking with child vaccination card.

Vitamin A supplementation - the information was collected from interviewing the mother and recorded child's the child's vaccination card. A Sample vitamin A supplement was used to help the mother in identification of Vitamin A.

Residential status – In all households visited, the mother/caregiver was asked whether they were originally resident in the village, or if they were displaced from elsewhere.

Sex of household head – The mother/caregiver was asked to state the sex of the person who makes decisions regarding welfare of all household members.

Feeding – Introduction of breastfeeding and weaning practices and frequency of feeding children was assessed by interviewing mother/caregiver to all children.

Dietary diversity -Dietary diversity as household dietary diversity was determined by taking a simple count of various food groups consumed in a given household over the past twenty four hours.

Public health facilities- health facilities offering health assistance and usually sponsored by humanitarian organisations, pharmacies and private health services providers

Coping strategies- Information on the frequency of using different coping strategies was collected

Water access-information on source of water, distance to water points, availability of water container, amount of water used per person per day was sought from the interviewee.

Sanitation- interviewer solicited information pertaining to availability and type of toilet, washing of hands after defecation or before food handling and use of soap.

Mortality-

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

$$\text{CDR} = \frac{\text{Number of Death}}{(\text{Total Mid point Population}) \times \text{Time interval}} \times 10,000$$

$$\text{Mid Point Population} = \frac{(\text{Current Population} + \text{Population at Beginning})}{2}$$

$$\text{Population at beginning} = \text{Current population} + \text{Deaths} + \text{Number left} - \text{Births} - \text{Arrivals}$$

3.5 Description of activities

Table 3.1: Chronology of activities for the Buale Sakow Districts Nutrition Assessment

Major Activity	2006
Preparation of tools, methodology & review of secondary data (Nairobi)	March 1- April 15 th , 2006
Resource mobilization; Joint planning meetings with partners (Nairobi and Buale Sakow districts)	April 1-16 th , 2006
Training of enumerators, pre-testing and cluster identification	April 22-24 th , 2006
Collection of data	April 25 – 27 th , 2006
Entry of data in Buale	April 27 th – May 1 st , 2006
Preliminary analysis in Buale	May 1 st - 2 nd , 2006
Presentation of preliminary results to the Buale partner agencies	May 2 nd , 2006
Further data cleaning and analysis	May 3 rd – 15 th , 2006
Report writing	May 15- June 12 th , 2006
Circulation of first draft report	June 13 th , 2006
Circulation of the final report	July 3 rd , 2006

3.6 Assessment team composition

Ten teams each consisting of two enumerators and one supervisor conducted the assessment. Each team handled one cluster in a day. An elder from each particular village/cluster assisted the teams in identification of the cluster, its centre and boundary. Supervisors were seconded from the participating partners namely; FSAU and the WVI. The technical coordination was provided by two FSAU senior nutritionists while the logistical support, enumerators and most of the supervisors (mainly WVI staff) were provided by the WVI. Additionally, WFP's national VAM officer and FSAU's food security analysts reviewed the food security context.

3.7 Nutrition indicators and cut-offs

Weight for height (W/H)- expressed in Z score - is the most appropriate indicator for quantifying wasting in a population during an emergency. Weight for height percent of median compares the weight of the measured child with the median weight of the children of the same height in reference population. MUAC measures the muscle mass help in determining children at risk of death in emergency. During data collection W/H was calculated on the spot and the severely malnourished children referred for treatment. The three modes of expression in the table below were used for presentation of results.

Table 3.2 Nutrition Cut-offs

Nutritional status	WFH in Z-score	WFH % of Median	MUAC
Global acute malnutrition	< -2 or oedema	< 80% or oedema	<12.5 cm
Moderate malnutrition	≥-3 Z-score<-2	≥-70% and <80%	<12.5 cm & ≥11 cm
Severe acute malnutrition	< -3 or oedema	< 70% or oedema	<11 cm
Pregnant women Nutrition Status Cut offs			
Moderate malnutrition	MUAC<23.0cm		
Severe malnutrition	MUAC<20.7cm		
Non-pregnant Women nutrition status			
Moderate Malnutrition	MUAC<18.5 cm		
Severe malnutrition	MUAC<16.0 cm		

3.8 Data preparation and analysis

During the data collection phase, each questionnaire was thoroughly checked by the field supervisors for omissions, inappropriate responses and for unlikely weight for height measurements. Pre-coded responses were entered into EPI Info windows version for data analysis. Data entry was done concurrently with data collection while addressing any anomalies in the data. Confidence intervals were used to test for significant differences between prevalence of malnutrition among different age, illnesses, dietary diversity and social economic factors. Relationship between variable was taken to be statistically significant if $p \leq 0.05$.

4 THE ASSESSMENT RESULTS

4.1 Household Characteristics of Study Population

The nutrition assessment covered a total of 898 children aged 6-59 months and 424 women aged 15-49 years from 548 households. The total number of people in the assessed households was 5432 with a mean household size was 6.049. The household size ranged between 2 to 13 people. The under five population size was 2031 and a mean size of 2.306 per household (SD=0.03).

Table 4.1.1: Household Characteristics

	<i>N</i>	<i>% (CI)</i>
<i>Household size (Mean):</i>	6.04	(SD=0.06)
<i>Mean No of Under fives</i>	2.3	(SD=0.03)
<i>Residence status (N=898)</i>		
Residents	823	91.6 (89.6-93.3)
Internally displaced	24	2.7 (1.8 – 4.0)
Returnees	48	5.3 (4.0-7.1)
Internal Migrant	3	0.3 (0.1-1.1)

Most (91.6%) of the children from the assessed households were residents⁴, about 5.3% were returnees; 2.7% were IDPs; and 0.3% were internal migrants. The non residents were mainly from within the Lower Juba region.

Overall the non residents had stayed in their current locations for an average of about 9 months. The main reasons for movement were related to water and pasture (46.8%) and food shortage/hunger (38.3%), lack of employment or for civil insecurity.

Table 4.1.2: Livelihood Systems

	No	Proportion	Confidence Interval (95%)
Pastoral	59	6.7	5.1-8.6
Agro pastoral	167	18.8	16.4-21.6
Urban	187	21.1	18.5-24.0
Riverine	457	51.6	48.2-54.9

The main livelihood system in the assessed population was the riverine, as indicated in the chart below.

Table 4.1.3: Main source of income

The main source of income for the households is crop sales (61.1%), and casual labour (20%). Remittances play an insignificant role since the community is resident with few members to the

Diaspora.

	No	Proportion	Confidence Interval (95%)
Animal & products	103	11.6	9.6-13.9
Crop sales	544	61.1	57.8-64.3
Petty trade	39	4.4	3.2-6.0
Casual labour	178	20.0	17.4-22.8
Salaried employment	25	2.8	1.9-4.2
Remittances	2	0.2	0.0-0.9

⁴ Residents were taken as those who dwelt in the places of their residences for an extended period or permanently

Water Access and Quality

Most of the assessed children came from households that drew water from unprotected water sources like the river (48.4%), or unprotected wells (20.4%). Only about 24.8% of the households relied on water from protected wells.

Table 4.1.4: Water Access and Quality

	<i>N</i>	<i>(%)</i>
<i>Main source of drinking water (N=898):</i>		
River	435	48.4 (45.1-51.8)
Protected wells, boreholes or springs	223	24.8 (22.1 – 27.8)
Unprotected wells	183	20.4 (17.8-23.2)
<i>Water fetching time (N=898):</i>		
< 30 minutes	490	54.6 (51.2-57.9)
30 – 59 minutes	271	30.2 (27.2-33.3)
1 – 2 hours	125	13.9 (11.8-16.4)
> 2 hours	12	1.3 (0.7-2.4)
<i>Number of clean water containers(N=898)</i>		
1 - 2 containers	561	62.5 (59.2-65.4)
3 - 4 containers	263	29.3 (26.4-32.4)
5 containers	64	7.1 (5.6-9.1)
> 5 containers	10	1.1 (0.6-2.1)

A lot of time is spent on water fetching with about 43.4% coming from households taking 30 or more minutes to and from the water source including waiting time. Households also have few and insufficient clean water storage and collecting

containers implying that they require frequent trips to fetch water. About 62.5% of the households have only 1-2 containers for fetching or storing water. SPHERE (2004) guidelines recommend a minimum of 2 clean containers of 10-20 litres for water collection alone, in addition to enough storage containers to ensure there is always water in the household.

Sanitation and Hygiene Practices

Majority (50.2%) of assessed children came from households that had no access to sanitation facilities and used the bush. Traditional pit latrines (16.4%), improved ventilated pit latrines (24.5%) and open pits (7.7%) were reported as the commonly used sanitation facilities. About 47.8% of the assessed children came from households in which the distance between area of faecal disposal and water source was 30 meters or more as recommended by SPHERE (2004).

Table 4.1.5: Sanitation & Hygiene

Sanitation and hygiene	n	% (CI)
<i>Access to Sanitation facility (N=898)</i>		
VIP latrines	220	24.5 (21.7 – 27.5)
Traditional pit latrine	147	16.4 (14.0-19.0)
Open pit	69	7.7 (6.1-9.7)
No latrine at all (Bush)	451	50.2 (46.9-53.5)
<i>Distance from latrine to water source (N=508)</i>		
< 30meters	265	52.2 (47.4-56.6)
≥ 30 meters	243	47.8 (43.4-52.3)
<i>Washing agent used in the household (N=898)</i>		
Soap	491	54.7 (51.4-58.0)
Ash	84	9.4 (7.6-11.5)
Plant extracts	299	33.3 (30.2-36.5)
Shampoo	5	0.6 (0.2-1.4)
None	19	2.1 (1.3-3.3)
<i>Method of Food Storage (N=898)</i>		
Suspended in hooks/ropes	99	11.0 (9.1-13.3)
Put in pots beside fire	292	32.5 (29.5-35.7)
Put in covered containers	293	32.6 (29.6-35.8)
Don't store	196	21.8 (19.2 (24.7)

About 54.7% of the assessed children came from households that used soap for washing; ashes (9.4%); plant extracts (33.3%). About 2.1% came from households that did not use any washing detergent at all. The use of soap or an appropriate hand washing item e.g. plant extracts is a recommended hygiene practice that reduces the chances of ingestion of dirt and/or faecal matter.

About 21.8% of the assessed children came from households that did not store any food; and 32.6% from households that stored food in covered containers while 32.5% from households that stored food in pots besides fire. Some 11.0% of the children came from households that suspend their food in ropes/hooks. Safe storage of cooked food (e.g. through covered containers or suspending in ropes/hooks) helps retain cleanness of the food minimizes contamination with insects. Intake of dirty food predisposes one to diarrhoeal diseases, a major cause of malnutrition.

About 21.8% of the

Health Seeking Behaviour

Table 4.1.6: Health seeking behaviour

	<i>N</i>	<i>%</i>
<i>Seek healthcare assistance when a member is sick (N=608):</i>		
Yes	506	83.2 (80.0-86.1)
No	102	16.8 (13.9-20.0)
<i>Where (n=506):</i>		
Private pharmacy/clinic	130	21.4 (18.2-24.9)
Own medication	164	27.0 (23.5-30.7)
Public health facility	103	16.9 (14.1-20.2)
Traditional healer	109	17.9 (15.0-21.3)

Majority of the children who fell sick during the two weeks prior to the assessment came from households that used own medication (27%), sought health care assistance from private clinics/pharmacy(21.4%); or sought assistance from public health facilities (16.9%) while the rest visited traditional healers (17.9%) or were administered

self-prescription/medication by their caregivers.

Formal and informal support

Table 4.1.7: Formal and informal support

<p>About 42.5% of the assessed children came from households that reported having received some informal support during three months prior to assessment. Most of the social support was mainly in the form of gifts (17.8%) and remittances from abroad (9.1%) or from within Somalia (5.0%).</p> <p>About 64% of the assessed children came from households that reported to have received formal support, mainly in form of free food assistance (45.7%), and water subsidy (8.2%).</p>		N	% (CI)
	<i>Informal support (N = 898)</i>		
	Received:		
	Yes	312	42.5 (29.3-46.9)
	No:	516	57.5 (54.1-60.7)
	Type of support (N=257)		
	Zakat from better off households	45	5.0 (3.7-6.7)
	Remittances from abroad	82	9.1 (7.4-11.3)
	Remittances from within Somalia	52	5.8 (4.4-7.6)
	Gifts	160	17.8 (15.4-20.5)
Loans	43	3.5 (3.5-6.5)	
<i>Formal support (N = 898)</i>			
Received:			
Yes	575	64.0 (60.8-67.2)	
No	325	36.0 (32.8-39.2)	
Type of support (N=898)			
Free food	410	45.7 (42.4-49.0)	
Veterinary care	31	3.5 (2.4-4.9)	
Others (animal transport; water)	74	8.2 (6.6-10.3)	

4.2 Characteristics of the Assessed children

A total of 898 children aged 6-59 months and 424 women aged 15-49 were assessed from 548 households. The household size ranged between 2 to 13 people with mean of 6 and standard deviation 1.792.

Age and gender distribution of children assessed

The summary of the assessed children categorised by age and gender is as presented in Table 2. Out of 898 children examined during the assessment, 420 (46.8%) were boys and 478 (53.2%) were girls, with a sex ratio of 1:1. The ratio of males to females for the 54-59 age category was lowest with the highest ratio recorded at 42-53 age category where the number of boys was almost double that of girls.

Table 4.2.1 Distribution of sample by age and sex in Buale and Sakow districts

Age in months	Boys		Girls		Total		Sex ratio
	No.	%	No.	%	No.	%	
6 – 17	97	10.8	93	10.3	190	21.2	1 : 0.96
18 – 29	129	14.3	162	18.0	291	32.4	1 : 1.26
30– 41	87	9.6	104	11.6	191	21.3	1: 1.20
42– 53	74	8.2	70	7.8	144	16.0	1 : 0.95
54– 59	33	3.7	49	5.4	82	9.1	1: 1.48
Total	420	46.8	478	53.2	898	100	1: 1.14

4.2 Anthropometric analysis

The results of anthropometric analysis were obtained by using weight for height expressed in Z-score or oedema and percentage of the median of the reference population. The table below shows rates of children who were severely, moderately malnourished, normal and the total malnourished.

Table 4.2.2 : Distribution of nutrition status

Severe		Moderate		GAM		Normal	
No	%	No	%	No	%	No	%
59	6.6 (5.1-8.4)	138	15.4 (13.1-17.0)	197	21.9 (19.3-24.8)	701	78.1 (75.2-80.7)

The chart indicates a significant shift to the left, in the levels of acute malnutrition. This demonstrates deterioration in nutrition situation.

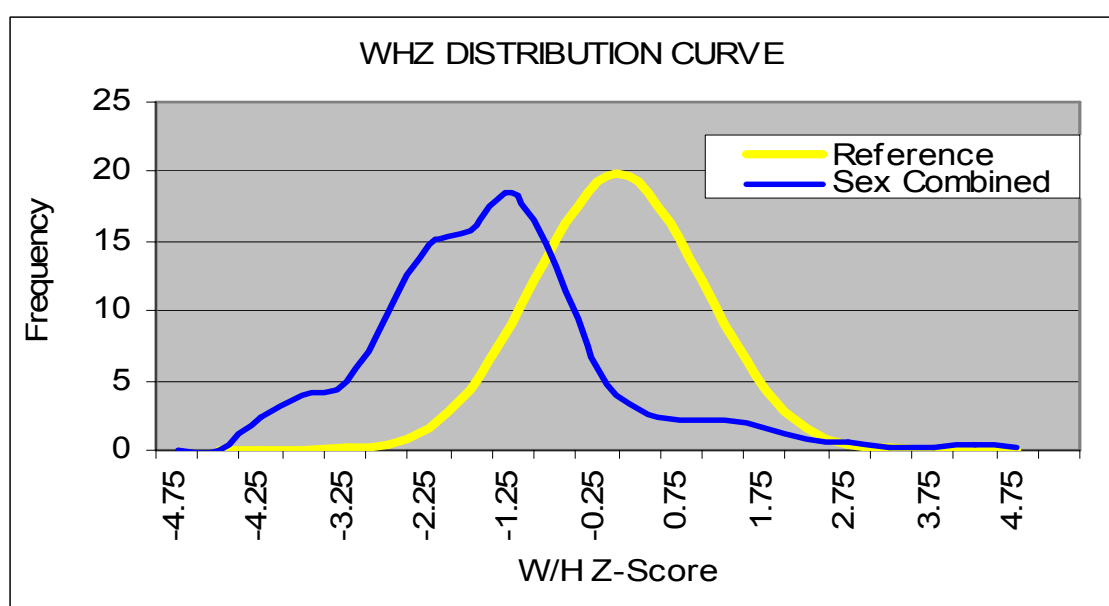


Table 4.2.3 Distribution of the nutrition status of the children by age

Age Groups	Severe (<math><-3z</math> scores or oedema)		Moderate (<math><-2</math> - $\geq 3 z$ score)		Normal ($\geq -2 z$ score)	
	No.	%	No.	%	No.	%
6-17 months	12	1.3	36	4.0	142	15.8
18-29 months	18	2.0	50	5.6	223	24.8
30-41 months	8	0.9	29	3.2	154	17.1
42-53 months	12	1.3	17	1.9	115	12.8
54-59 months	1	0.1	8	0.9	73	8.1
Total	51	5.7	140	15.6	707	78.7

About 21.9% of the assessed children were malnourished, using <-2 Z-score or oedema cut-off while 6.6% of the assessed children were severely malnourished, using <-3 Z-score or oedema cut-off. About 15.3% of the children were moderately malnourished. Eleven cases of oedema were identified in the assessment. The age category 54-59 months had the least number of malnourished children while highest malnutrition was in age category 18-29 months.

Table 4.2.4 Distribution of children by nutrition status based on Z-score or oedema by sex

Sex	≥ -2 Z score		< -2 and ≥ -3 Z score		< -3	
	No.	%	No.	%	No.	%
Boys	321	35.7	71	7.9	28	3.1
Girls	380	42.3	67	7.5	31	3.4
Total	701	78.1	138	15.3	59	6.6

Table 4.2.5 Distribution of children by nutritional status, based on percentage of the Median

Age	6-59 months	
	Proportion	No
Global acute malnutrition	16.7 (CI: 14.4 – 19.3)	150
Moderate malnutrition	12.4 (10.3-14.7)	111
Severe acute malnutrition	4.3 (3.1-5.9)	39

Based on the weight for height as percentage of the median, 16.7% of the assessed children were malnourished (WHM $<80\%$ or oedema) with 4.4% of the children being severely malnourished (WHM $<70\%$ or oedema). The distribution of the nutrition status of the children by sex basing from percentage of the median is shown below

Table 4.2.6 Distribution of children by nutrition status based on W/H % of median and or oedema by sex

Sex	WHM <70		≤ 70 WHM >80		WHM ≥ 80	
	No.	%	No.	%	No.	%
Boys	16	1.8	55	6.1	349	38.9
Girls	23	2.6	56	6.2	399	42.4
Total	39	4.3	111	12.3	748	83.3

The statistical analysis showed no significance difference between the nutrition status of the boys and girls by W/H percent of median indicators.

The chronic malnutrition rate based on Height for age, HAZ <-2 was 35.6% (32.5 – 38.9) while underweight rate based on weight for age, WAZ <-2 was 39.9% (CI 36.7-43.26)

4.3 Children malnutrition by MUAC

The mid-upper arm circumference of the 502 children aged 12 months and above was taken alongside the height and weight measurements. Basing on the MUAC measurements, 30.6% of the children assessed were malnourished MUAC <12.5 cm/oedema with 7.60% of them being severely malnourished MUAC <11.0 cm/oedema. The table below summarizes the results.

Table 4.3.1 Children (aged 12 months and above) malnutrition rates by MUAC

Malnutrition	No.	Proportion
Global acute malnutrition MUAC<12.5 cm	255	30.6 (27.6-33.9)
Moderate malnutrition <12.5 MUAC≥11cm	192	23.1 (20.3-26.1)
Severe acute malnutrition MUAC<11.0 cm	63	7.6 (5.9-9.6)

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

Table 4.4.1: Morbidity, measles immunisation, polio vaccination and vitamin A supplementation

	No.	%(CI)
<i>Incidence of major child illnesses (N=898)</i>		
ARI within two weeks prior to assessment	128	14.3 (12.1 – 16.8)
Diarrhoea within two weeks prior to assessment	246	27.3 (24.5 – 30.5)
Malaria (suspected) within two weeks prior to assessment	238	26.5 (23.7 – 29.5)
Measles within one month prior to the assessment (N=861)	190	21.3 (18.7 – 24.1)
<i>Immunization Coverage (N=906)</i>		
Children (9-59 months) immunised against measles (N=809)		
In the past 6 months	460	59.9 (53.4 – 60.3)
Before 6 months	290	35.8 (32.6-39.3)
Not immunized	59	7.3 (5.6 – 9.4)
<i>Children who have ever received Polio dose (N= 898)</i>		
Yes		
– 1 -2 times	172	21.5% (18.7-24.5)
– 3 and above	549	68.6 (65.3-71.8)
No	79	9.9 (7.9-12.2)
<i>Vitamin A supplementation (N= 898)</i>		
Children who received Vitamin A supplementation in past 6 months or before	539	68.6 ((65.3-71.8)
Children aged 9 months and above with measles vaccination (n=809)	750	92.7
<i>Micronutrients Deficiencies (N=5439)</i>		
Members with night blindness (n=66) in the assessed households (N=5439):	66	0.12

The incidences of ARI (14.3%) and diarrhoea (27.3%) within two weeks prior to the assessment were high but no disease outbreak was reported during the period.

About 26.5% had suspected malaria and the incidence of measles among children in the one month prior to the assessment was 21.3%.

Measles vaccination coverage for eligible children (9-59 months old) was 92.7%. About 90.1% of the children aged 6-59 months had received at least a dose of polio vaccine. About 68.6% of the surveyed children had received Vitamin A supplementation in the 6 months prior to the assessment. Coverage was relatively high for the three immunizations and supplementation programmes as a result of the recent campaigns by UNICEF, WHO and local partners.

4.5 Vitamin A Deficiency

About 0.12% (N=66) of the people from the assessed households (Total HH size=5439) were reported to be faced with night blindness, which is a proxy indicator for vitamin A deficiency. This is within acceptable levels (Sphere).

4.6 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 4.6.1: Children feeding practices

<i>Children aged 6-24 months (N=294)</i>	<i>N</i>	<i>% (CI)</i>
<i>Is child breastfeeding?</i>		
Yes	58	19.7 (15.3-24.7)
No	236	80.3 (75.3-84.7)
<i>Age stopped breastfeeding (N=524):</i>		
Never	2	0.4 (0.1-1.5)
1 - 5 months	56	10.7 (8.2-13.7)
6 - 11 months	218	41.6 (37.4-46.0)
12 - 18 months	152	29.0 (25.2-33.1)
≥ 18 months	96	18.3 (15.2 - 22.0)
<i>Introduction of Complementary feeding</i>		
0 - 3 months	121	18.2 (15.4 -21.4)
4 - 6 months	293	44.0 (40.2-47.9)
Over 6 months	252	37.8 (34.2 - 41.7)
<i>Feeding frequency:</i>		
Once	39	10 (7.4-13.7)
2 times	187	48.7(43.6-53.8)
3 - 4 times	157	39.8 (34.9-44.9)
5 or more times	45	1.3 (0.3-5.6)

About 18.2% 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. Additionally, about 44.0% were introduced to complementary feeding at 4-6 months.

About 51% of the assessed children were fed twice or less times a day with mainly cereal-based diets. About 39.8% were fed 3-4 times a day.

4.7 Dietary Diversity

Table 4.7.1: Distribution of dietary diversity among children

<i>No of food groups consumed (N=898)</i>	<i>N</i>	<i>% (CI)</i>
1 food group	20	2.2 (1.4 - 3.5)
2 food groups	181	20.2 (17.6 - 23.0)
3 food groups	72	8.0 (6.4-10.0)
4 food groups	208	23.2 (20.5 - 26.5)
5 food groups	417	46.2 (38.2 -57.6)
Mean HDDS		
<i>Main source of food (N=898)</i>		
Purchasing	530	59.3 (56.0 - 62.5)
Food Aid	133	14.9 (12.6-17.4)
Own production	90	10.1 (8.2-12.3)
Bartering	42	4.7 (3.4-6.4)

About 30.4% of the children came from households that consumed poorly diversified meal comprising of three or less food groups, while 69.4% came from households consuming four or more food groups in the preceding 24hours prior to the assessment.

Households consumed an average (HDDS) of 4.35 food groups (SD=1.8) with the number of food groups consumed ranging from one to 11. Cereal-based diets especially sorghum and maize were the most common. Other food items commonly consumed were sugar (as tea), oil, meat and beans.

About 59.3%) of the households surveyed mainly obtained their food through purchasing, 14.9% relied on food aid, 10.1% on their own production and 4.7% relied on bartering.

4.8 Adult Malnutrition by MUAC

Table 4.8.1. Adult nutrition status by MUAC

	n	%	95% CI
<i>Non Pregnant (N=250)</i>			
Severe acute malnutrition (MUAC<16.0 cm)	7	2.8	1.1-5.7
Moderate risk (MUAC>=16.0 and <18.0)	1	0.4	0.0-2.2
Global acute malnutrition (MUAC≤18.5)	8	3.2	1.4-6.2
Normal	242	96.8	93.8-98.3
<i>Pregnant women (N=97)</i>			
Severe Risk (MUAC≤20.7 cm)	18	18.6	11.4 – 27.7
Moderate Risk (MUAC ≥20.7 and <23.0)	21	21.6	13.9 – 31.2
Total at risk (MUAC≤23.0 cm)	39	40.2	30.4-50.7
Normal	58	59.8	49.3-69.6

About 40% of pregnant women were malnourished (MUAC<23.0cm) with 18.6% severely at risk of malnutrition (MUAC<20.7cm). About 3.2% 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).

4.9 Relationship Between Malnutrition and Other Factors

Table 4.9.1: Risk factors and relation to total malnutrition (WHZ<-2)

<i>Exposure variable</i>	<i>N</i>	<i>(%)</i>	<i>Crude RR</i>	<i>95% CI</i>	<i>p-value</i>
<i>Child sex: n=898</i>					
Male	99	23.6	1.15	0.90 – 1.47	0.30
Female	98	20.5			
<i>Age group:</i>					
6-24 months	100	25.3	1.20	1.02 – 1.41	0.04*
25-59 months	97	19.3			
<i>Morbidity patterns</i>					
<i>ARI</i>					
Yes	23	12	0.82	0.54 – 1.24	0.409
No	169	88			
<i>Diarrhoea: (N=237)</i>					
Yes	57	24.1	1.15	0.9 – 1.47	0.31
No	135	21.5			
<i>Health programmes</i>					
<i>Vitamin A Supplement: N=539</i>					
Yes	113	21.0	0.93	0.82 -1.05	0.23
No	60	24.5			
<i>Measles vaccine (N=866)</i>					
Yes	164	21.9	0.91	0.64-1.29	0.67
No	28	14.6			
<i>Dietary & feeding patterns</i>					
<i>Breastfeeding (N=239)</i>					
Yes	50		0.97	0.76-1.26	0.90
No	83				
<i>Dietary diversity</i>					
≤ 3 food groups	58	21.2	0.94	0.66-1.36	0.80
≥ 4 food groups	139	70.6			

There is significant statistical between acute malnutrition and age group. This may be attributed to poor feeding practices of children and infants.

QUALITATIVE DATA ON THE FOOD SECURITY SITUATION

BUALE DISTRICT

Rainfall situation

GU rains started in the riverine areas in the south of Buale in the third dekad of March 2006. The riverine areas in the south of Buale include Banta village to Jiilaalow all the way to Anole in the south Buale. The heaviest was received Anole down south up to Jiilaalow. The latest rains fell into Buale town to Buulo-Galool. Though the start of the rains looked below normal in the month of March-April06, a significant improvement was noted in the first one week of May. This replenished water sources and led to regeneration of pasture and vegetation in the agro-pastoral and pastoral livelihoods zones.

Crop Condition

The poor households do not have inputs especially seeds, having exhausted it during drought period. Poor farmers started to lease away their fields to better off households with plans to share the harvest. Standing crops, mainly sesame and vegetables have been severely attacked by pests (army worms). Unfortunately, these middle and poor households now have little or no seed stock to replant during the rainy season and require assistance to replant the destroyed crops.

Food security situation

All livelihoods in Buale experienced two consecutive crop failures GU05 and Deyr 05/06 seasons. The food stock is depleted as a result. Currently the cereal prices is high in all areas. For instance one bag of sorghum is currently 250,000 S.Sh for Bu'ale towns market. No local produced cereals available in the market. Few cereals available remained from previously distributed food aid by WFP in collaboration with World Vision.



Food sources of poor and middle wealth group of southern agro-pastoral and riverine livelihoods are food aid in almost all areas. The poor wealth group mostly do not have seeds and farmers who managed to plant faced serious pest armyworm attack, hence the need for re-plantation. Most of poor and middle wealth group eat 1-2 times per day.

The food comprises mainly of cereal (cooked maize flour locally known as Soor) consumed with wild vegetables such as Ambaqa (refer to the picture). Consumption of Ambaqa is only done during extreme food insecurity. Milk is not available in the market of Buale as camel livestock, which moved to the area during the drought has moved back to their origin and hence and higher prices of it.

Income source is limited to few agriculture labour opportunities offered by better off farmers and this is open to clan affiliated poor households. Though the prospect is that the cycle of drought, which hit the area of Buale, is ending, it will take few months' before the community of Buale fully recover from the effect of the drought. The poor and middle wealthy group continue to depend on food aid before GU harvest scheduled for August 2006. Qualitative information (key informant interview and focus group discussion) indicates that coping strategies implored during the drought are now exhausted and there is a possibility of starvation.

Vulnerability ranking

Despite the start of GU in most areas of Buale the effect of drought persists longer due to lack of previous carry over food stocks and lack of cattle milk production attributed to higher culling rate of animals (slaughtering younger calves to save the mother cow). Many weak cattle have died during the onset of the GU rains and due to effect of diseases transmitted by Tse Tse fly.

SAKOW DISTRICT**Rainfall situation**

Generally rains started on third dekad of March 2006. Rains fell in all areas except areas starting from Gomir up to Anole near the border with Dinsor district. Water trucking is ongoing in Rakale and Borrow where no rains have been to-date. The area between Baarka and Bohosha received only once for the past 45 days. Generally, the rainfall performance is below normal in the district of Sakow. However, in the first one-week of May 2006, all areas in Juba valley zone including Sakow district received good rains.

Crop condition

The total acreage of crop is below normal. This is linked to labour migration during the drought to areas outside Sakow and lack of seeds. In the riverine areas, crop planted were limited due to the fear of possible floods. Lack of seeds/farm inputs of the poor and the middle wealth groups led to the abandonment of farms and/or renting it to better off households within the community.

Livestock condition

An estimated 80% of cattle died for the past two months for drought related factors. The camel condition is normal attributed availability of browsing pasture even during the past Jiilaal dry season. More weak livestock especially cattle died during the onset of the GU rains.

Food market prices

Current cereals prices are the highest compared to the past two years. 1kg of sorghum costs 11,000 because there is no carried-over stock of the past. Limited amount of food aid is available at the market of Sakow, which according to key informants mainly transported from Salagle with donkey carts. One mitigated factor could be the availability of Camel milk with reasonable prices i.e. 3,000 S.Sh for 1 litre of milk in Sakow town. The prices of livestock are low as the body condition is still weak. For instance, an export quality goat is 200,000 S.Sh while local quality cattle is 1,100,000 S.Sh. The current income sources of the poor households are primarily collection of bush products and few agriculture labour opportunities of the starting GU field preparation and planting exercises. A bundle of firewood of women is 1,000 S.Sh at the market of Sakow while a full donkey cart with firewood ranges between 13,000 S.Sh and 15,000 S.Sh.

Food security situation

Despite Sakow benefiting from irrigation of Juba river, currently there is no carried forward maize stocks from previous seasons due to the shift of irrigated farmers to fodder production instead of maize grain production after two consecutive rain failures hit in all agro-pastoral and pastoral areas of Sakow district. Two early consecutive (Deyr 04/05 and GU06) seasons of non-food cash crop production e.g. sesame also contributed the early depletion of food stocks within the districts.

Food consumption varies by livelihoods and by wealthy groups. The body condition of the remaining cattle is improving.

Remittance is very limited in the area of Sakow as the community here did not flee the homeland for the past 15 years and therefore majority do not have relatives in Diaspora. All poor & middle wealth groups

do not have stocks at the moment and mainly depend on purchase of what remained from cereal food aid distributed in March 2006 by WFP especially the late food aid being distributed in Salagle. No major disease outbreak is reported in Sakow. However, due to lack of provision of health services and according to discussion with the community there is high prevalence of certain diseases such as malaria, diarrhoea, dysentery, and conjunctivitis. Schools have been closed in the district due to high dropout attributed to the drought.

Majority of the poor and middle wealth group of all livelihoods eat 1-2 meals per days composed of mainly cereals with hardly additives. No diversity foods available and fish is not available in Desheks as it was dry and just refilled by the current onset of GU rains.

There are limited agricultural labour opportunities not open to everybody, but rather based on clan or relative affiliation.

The vulnerability ranking

Though, the drought effect has been felt across all livelihoods in the district, the Southern agro-pastorals and riverine livelihoods groups are most vulnerable in the Sakow district due to depleted household stocks during the successive rain failures.

4.10 MORTALITY

The retrospective mortality assessment was done co-currently with the nutrition assessment in 30 selected clusters. All households in the selected clusters were eligible for the administration of the mortality questionnaire irrespective of whether or not they had under-five. A total of 927 households were assessed and the retrospective mortality rates calculated on the basis of recall period of 93 days from January 23rd, 2006 – April 24th, 2006. Data was entered in Epi info and mortality rates calculated using the formulae below.

i). Crude mortality rate (CMR)

$$\text{CMR} = \frac{\text{Number of Death}}{\text{Total Mid point Population}} \times \text{Time interval}$$

$$10,000$$

$$\text{Mid Point Population} = \frac{\text{Current Population} + \text{Population at Beginning}}{2}$$

$$\text{Population at beginning} = \text{Current population} + \text{Deaths} + \text{Number left} - \text{Births} - \text{Arrivals}$$

Number of deaths=29

Current Population=5083

Number of those arrived (Arrivals) =6

Number that left= 202

Number of Births=61

Time interval=93 days

CMR =0.61 deaths/10,000 persons/day (CI: 0.39 – 0.83).

Basing from the WHO categorization, the CMR of Buale Sakow districts is within acceptable levels.

ii). The Under five mortality rate (U5MR)

$$\text{U5MR} = \frac{\text{Number of Death of under-five}}{\text{Mid point population of under-five}} \times \text{Time interval}$$

$$\text{Mid point population of under-five} = \frac{\text{Current population of under-five} + \text{Population of under-five at beginning}}{2}$$

$$\text{Population at beginning of recall} = (\text{population present} + \text{left} + \text{deaths}) - (\text{joined} + \text{births})$$

Number of death of under-five=29

Current population of under-five=1589

Number of under-five that left=16

Number of Births=61

Time interval= 93 days

Number of under-five that arrived=6

U5MR=1.98/10,000/day (CI:1.26 – 2.69)

Basing from the WHO classification, the U5MR of Buale Sakow of approximately 1.53 deaths/ 10,000 persons per day indicates an acceptable situation.

The main causes of deaths were diarrhoeal diseases: 2.0% (17 cases), malaria: 1.2% (10 cases), birth complications: 0.8% (7 cases) and to HIV/Aids 0.6% (5 cases) to HIV/Aids. Other causes of death reported included measles and ARI.

5 DISCUSSION AND CONCLUSIONS

Nutrition Status

Findings indicate a global acute malnutrition rate (weight for height <-2 Z score or oedema) of 21.9% (CI:19.3-24.8) and severe acute malnutrition (weight for height <-3 Z score or oedema) of 6.6% (CI:5.1-8.4). This highlights a critical nutrition situation (WHO) which is worsening when compared to long term estimates of malnutrition (15-19.9%) for the area. Additionally, about 40% of the 97 assessed pregnant women had MUAC < 23.0 cm, while 3% of the 250 non-pregnant women had MUAC <18.5cm and were categorized as malnourished.

Retrospective Mortality

The crude mortality rate was 0.61 (CI: 0.39 – 0.83) deaths/10,000/day and the under five mortality rate 1.98 (CI:1.26 – 2.69) deaths/10,000/day which are acceptable (WHO categorization).

Child care related issues

About 38% of the children were introduced to complementary foods at the age of 6 months which is the recommended age. Thus, majority of the children (about 62%) were introduced to foods either early or later in life, a sub-optimal feeding practice that could lead to poor nutrition situation. About 51% of the assessed children were fed twice or less times a day with mainly cereal-based diets which is also a sub-optimal practice (a minimum of 4 feeds that are diverse in nutrients is recommended).

There was a statistical significance ($p < 0.04$) between malnutrition and the age group with the 6-24 months category being more likely to be malnourished. 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 negatively impact on the nutrition status of the children.

The relatively high measles immunisation and vitamin A supplementation coverage serves as good mitigating factor to a poor nutrition situation and is associated with a recent measles immunisation campaigns.

Morbidity

Diseases and children's nutritional status exhibit a vicious cycle relationship. Sick children will usually suffer anorexia reducing food intake while food absorption is also compromised ultimately predisposing the children to poor nutrition. Likewise, malnourished children are more prone to diseases as their body's immune system is low. About 49% of the assessed children reported to have suffered from an episode of a communicable disease in the preceding two weeks. The high morbidity may be associated both to endemic diseases and limited access to health care services, particularly in Sakow where there is not a single health facility. The prevalence of diarrhoea (27%) and malaria (26%) in the two weeks prior to the assessment were particularly high and may have contributed to the critical nutrition situation.

Additionally, about 75% of the children came from households which consumed water from unsafe sources (the river, unprotected wells or water catchments) and about 50% came from households that dispose off faecal matter in the bush. Consumption of unsafe river water is a possible cause of diarrhoeal infections and subsequent malnutrition.

Dietary diversity

About 30.4% of the children came from households that had consumed meals from three or less food groups (based on FAO classification), while about 69.6% came from households consuming a more diverse diet of four or more food groups in the previous 24 hours. Cereal based diets especially sorghum and maize were the most common. Other food items commonly consumed were sugar and oil.

Previous studies have indicated an association between malnutrition and dietary diversity. A significant proportion of children consumed a less diverse diet of less than four food groups in this study, which could have contributed to acute malnutrition.

Qualitative Data

Qualitative data indicates poor household food access due to high food prices, and general unavailability of animal products, most of the livestock having either died, migrated back to areas of origin or, in too poor body condition to provide milk and milk products. The food stocks are also exhausted and the population groups coping strategies have almost collapsed. Limited access to food may have contributed to poor dietary intake and subsequently acute malnutrition.

Mitigating Factors

Mitigating factors include vitamin A supplementation (69%) and measles vaccination coverage (about 93%) attributed to the recent immunization campaigns in Buale and Sakow districts. Nevertheless these are below the SPHERE minimum recommendation of 95%. About 64% of the children came from households accessing formal humanitarian support in the preceding three months, mainly in the form of food assistance (about 46%) in February 2006; and informal humanitarian support, mainly in the form of gifts (about 43%). On-going humanitarian interventions which may also have mitigated the nutrition situation include: food assistance by the WFP/WVI, health care services and a water and sanitation program in Buale by the World Vision and supplementary feeding by the African Muslim Aid (AMA).

6 CONCLUSION AND RECOMMENDATIONS

The global acute malnutrition (weight for height <-2 Z scores or oedema) of 21.9% depicts a critical nutrition situation in Buale and Sakow districts. Limited access to food, high morbidity and poor child care practices are among the underlying factors contributing to the critical nutrition situation. The crude mortality rate of 0.61/10,000/day and the under five mortality rate of 1.98/10,000/day are however within acceptable levels (WHO categorization).

Following presentation and discussion of assessment findings with partners, the following recommendations were made:

Short term recommendations:

- i) Increased access to food (both the short and longer term interventions).
- ii) Continuation and intensification of health, water and sanitation interventions especially immunization programs, rehabilitation and protection of water points and provision of sanitary facilities
- iii) Rehabilitation of cases with severe malnutrition.

Long-term Recommendations

- i) As high levels of malnutrition have been seen throughout the camps, it is 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.
- ii) Improve access to quality for medical care through establishment of a clinic or hospital in Buale Sakow districts.
- iii) Health/nutrition education for the population focusing especially on appropriate child feeding practices and management of diarrhoeal diseases.
- iv) Establish projects geared towards livelihood recovery

7 APPENDICES

7.1 APPENDIX 1: Population Estimate for Buale and Sakow Districts

S.#	Village/Town	Population	Cumulative	Clusters	
1	Buale	7500	7500	1,2,3,4	
2	Gobate	1550	9050		5
3	Sukeyla	810	10460		6
4	Qardhale	635	11970		7
5	Canole	900	14035		8
6	J.Kore	605	15590		9
7	Dal-la-helay	600	16790		10
8	Dalxis	450	18840		11
		13050			
9	Sakow	12000	32040	12,13,14,15,16,17,18	
10	Arbay	725	32765		19
11	Nebsoy	750	33815		20
12	Birbiriso	750	36215		21
13	Gurmayso	1800	38345		22
14	Dodey 1	400	39295		23
15	Bar M Dhorow	1500	41695		24
16	Nusduniya	1000	42695		25
17	Kurawo	700	44740		26
18	Sako Yare	700	46080		27
19	Qayd Cajuz	900	48080		28
20	Basra	800	49480		29
21	Qaboobe	400	51230		30
	Inaccessible areas due to sludgy or muddy roads – omitted from the sampling frame				
1	Qararey	545			
2	Bidi	435			
3	Afgoye	455			
4	Kaskey	445			
4	Farbito	1000			
5	Manane	645			
6	Shingani	710			
7	Hurufle	600			
8	Arabow	400			
9	Kurtun	400			
10	Kafinge	490			
11	Qoryale	500			
12	Bilweyn	200			
13	Raxole	845			
14	Waregta Hose	505		22 Gomir	1200
15	Jirmo	300		23 Bagaday	605
16	Cilmi	600		24 Ashirow Lizan	485
17	Markanbka	300		25 banada	3000
18	Booho	250		26 Aliyow kerow	400
19	Bulo Idow	600		27 Galagal onle	2500
20	Somba	250		28 Gololey	800
21	A.Arbow	950			

Table of Random Numbers

Range: 1 to 500, Number: 500

449	73	286	338	409	215	133	410	176	240	452	223
77	111	94	84	264	35	180	431	440	54	415	404
225	320	297	145	453	262	378	304	273	457	483	475
383	488	141	212	430	331	263	434	261	28	330	368
382	71	258	186	447	134	121	149	298	224	80	284
371	190	472	254	419	458	235	60	159	97	492	497
436	17	441	103	230	271	205	280	489	340	89	74
213	367	464	199	64	196	337	310	45	148	251	496
239	33	471	69	114	70	131	47	420	21	13	143
104	158	105	85	339	61	429	142	63	495	113	332
92	308	327	341	396	292	272	365	373	168	234	112
171	306	127	358	379	247	62	444	170	485	53	486
96	343	169	493	290	184	248	52	423	187	24	245
346	65	189	132	300	117	494	31	303	188	218	355
41	57	323	115	301	364	380	90	499	37	144	455
313	172	1	326	466	249	174	269	259	203	226	242
422	432	12	498	244	8	482	333	217	268	393	42
406	229	500	480	407	51	446	412	107	157	198	185
317	390	163	443	260	427	191	448	288	25	161	228
194	43	256	474	467	270	456	147	470	231	139	178
363	16	372	384	305	246	342	9	319	459	370	140
221	152	4	19	302	484	118	257	130	220	473	160
283	58	421	164	287	232	350	321	318	135	50	79
128	388	439	40	359	151	408	14	351	428	253	26
201	3	282	451	20	295	361	124	289	125	175	328
329	126	101	122	34	353	469	450	153	110	209	344
202	29	233	324	374	481	78	267	454	219	357	243
417	386	123	402	487	181	23	206	66	182	400	312
375	129	238	5	150	237	22	72	56	76	362	405
146	442	167	461	392	119	38	377	108	266	10	394
55	334	208	391	385	437	154	195	345	86	183	192
349	276	315	356	311	179	81	204	27	490	314	39
222	293	136	68	44	82	360	397	281	250	418	274
325	36	285	381	227	137	2	155	6	197	478	11
291	438	30	278	87	83	435	401	241	491	369	156
75	18	211	277	477	166	352	426	335	366	275	88
413	354	322	463	98	162	91	398	279	389	411	299
100	214	395	309	316	465	399	387	433	193	15	138
210	116	414	7	32	445	479	99	425	207	336	307
265	46	416	462	165	120	476	177	376	49	200	106
102	255	348	468	236	252	59	294	460	173	296	48
403	347	67	424	109	216	95					

7.2 APPENDIX 2: Traditional Calendar For Nutrition Assessment In Buale And Sakow Districts

	2001	2002	2003	2004	2005
January		52 Carafo	40 Carafo	28 Carafo	16 Carafo
February		51 Sakow	39 Sakow	27 Sakow Sakow market burnt	15 Sakow
March		50 Safan	38 Safar	26 Safar	14 Safar
April		49 Mawlid Rabicul- Akwal	37 Mawlid Rabicul Awal	25 Mawlid Rabicul Awal	13 Riverine floods - Mawlid Rabicul Awal
May		48 Malmowane Rabicul- Akhir	36 Iraq War Malmowane Rabicul Akhir	24 Malmowane Rabicul Akhir	12 Rabicol Awal Malmowane
June	59 Jamadil Awal	47 Jamdul Awal	35 Jamadul Awal	23 Jamadul Awal	11 Jamadul Awal
July	58 Jamadil Akmir	46 RRA fighting in Baidoa	34 Death of General Gabyoo -jamadul Akhir	22 Jamadul Akhir	10 Jamadul Akhir
August	57 Rajab	45 Rajab	33 Rajab	21 Rajab	9 Rajab
September	56 September 11 Shacban	44 Shacban	32 Shacban	20 Shacban -World Vision moved from Buale - Buale reconciliation meeting	8 Shacban
October	55 Soon	43 Soon	31 Soon Death of former Buale DC	19 Election of Somali President Abdulahi Yusuf	7 1 st food distribution by WV
November	54 Soonfur	42 Buale Fighting -Soonfur	30 Soonfur	18 Good deyr rain Soonfur	6 Soonfur
December	53 Sidataal	41 Sidataal	29 Sidataal	17 Sidataal	

7.4 APPENDIX 4a : Nutrition Assessment Questionnaire Somali version

Tariikh _____ Lambarka Kooxda _____ Lambarka Goobta _____ Magaca Kormeeraha _____ Magaca Degmada _____

Magaca Tuulada/Magalada _____ Magaca Qaybta _____ Lambarka Qoyska _____

S1-14 Dabeecadaha Qoyska

S1 Muxuu yahay jinsiga madaxa qoysku? 1= L 2= Dh

S2 Imisa qof ayaa qoysku ka kooban yahay (tirada xubnaha qoyska)? _____

S3 Imisa Carruur 5 sano ka yar ayaa u jooga qoyska (Tirada 5 sano ka yar) _____

S4 Xaaladda Degannaanta qoysku waa nooc ee? 1 = Degaan joogto ah 2= Gudaha ku barakacay 3= Soo laabtay 4= Gudaha ka soo hayaamay 5 = Nooc kale, caddee

S5 Intaadan halkan degin xaggee awal ka timid? (Degaankaaga asalka ah

S6 Halkan imisaad ku noolayd? _____

S7 Maxay ahayd sababtaad halkan u timid? _____

(waxaad xulan kartaa in kabadan hal mid haddii ay habboontahay 1= Amnaan darro 2= Shaqo la'aan 3= Cuntoyari 4 Biyo yari

S8 Shayga ugu muhiimsan ee noloshiinu ku tiirsan tahay waa kuma? 1) Xoolo 2) Beero-xolaleey 3) Xoogsi 4) Beeraha waraabka, 5) Ganacagsi yar yar , 6) Mush,haari ah, 7) iibka dalaga, 8) iibka Xoolaha iyo wax soo saarka xoolaha 9) xawaalad/Sadaqo 10) Nooc kale; caddee-----

S 9-11 Kaladuwanaanta cuntoyinka (Dietary Diversity)

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

S 9 Rashin nocee ayay isticmaleen dadka qoyska tirsan ka bilabato marka la soo kacay shallay subax? (kudar isticmalka cabitaan iyo caannaha naaska)	Imisa jeer ayay rashinka cuneen dadka qoyskan katirsan? 0=maya 1= mar 2= laba 3=3 saddex 4=4 jeer 5=5 ama in kabadan		Tirade guud ee noocyada cuntada iyo kooxaha la isticmaalay S-10 iyo 11 {Waxaa buuxinaya kormeeraha } 1. Firaley (Bariis, Qamadi, Basto, Badar, Gelleey, Canjero, Bur) 2. Digirta iyo qolofleyda kale 3. Caano(milk) 4. Kalluun/cunto badeed 5. Hilib iyo ukun 6. Sokorta Shaaha iyo tan kaleba 7. Dufan/Saliid/Subag 8. Xididaley/buruqley(Bataati 9. Miro 10. Khudaar	
Nooca da Cuntada	Inta jeer (<5yrs)	Inta jeer >5yrs		
1.				
2.				
3				
4				
5				
6				
7				

S12. Intabadan rashinka laga isticmalay guriga intuu inka soo gallyay? 1=Xoolaha/dhalaga beerta 2=Soo iibsasho 3=Siismo saxiib/qarabo 4=Raashin gargaar ah
 5=ku doorsasho 6=Amaah 7=Qaraan 8=kuwa kale (caddee) _____

S13-23 Cudurrada, Quudinta & xaaladda tallaaf ee ilmaha jira 6 -59 bilood (ama 65-110 cm) dherer le'eg ee jooga guriga

Tirsi	Magac	S13 Shuban 2- dii Usbuuc ee tagtay 1= Haa 0= Maya	S14 Ofwaren 2-dii usbuuc ee tagtay 1=Haa 0=Maya	S15 Duumo 2-dii Usbuuc ee tagtay? 1=Haa 0=Maya	S16 (9-59 Billood) Jadeeco bishii tagtay? 1=Haa 0=Maya	S17 (9-59 Billood) Ma laga tallaalay Jadeeco 1=Haa 0=Maya	S18 Lixdii bilod ee tagtay mala siiyey Vit A ? (tus kabsol-ka) 1=Haa 0= Maya	S19 Ilmaha Naasaha ma nuujisaa hada 1=Haa 0=Maya	S20 Haddii aanu naasaha nuugin imisuu jirey marki laga guriyey/gooyey? 1= ka yar 6 bilod 2= 6 – 11 bilood 3=12 – 18 bilood 4=18 bilood ama ka badan 5= Weligii lama siin	S21 Imisuu jirey ilmuhu markii la siiyey cunto iyo cabbid aan ahayn caanaha naaska? 1=0-3 bilood 2=4-6 bilood 3=7 bilood ama ka badan	S22 Malinti imisa jeer ayaad quudisa ilmaha? 1= Mar 2= Laba 3= 3-4 jeer 4= 5 ama ka badan	S23 Weligi inte goor tallaalka dabaysha afka laga siiyey 1=1-2 jeer 2=3 & kabadan 3=Marna
1												
2												
3												

S24 Marki ilmuhu kaa jirrado, halkee gargaar caafimaad ka raadsataa? 1-Dawo dhaqameed 2=Bar caafimad gaar loo lehay/Farmashi 3= Baraha caafimaadka bulshada 4= Meel kale, caddee 5=Ma xanunsan

S25 Ma jiraa qof dadka qoyska ka mid ah oo araggiisu liito habeenkii ama fiidki iyadoo dadka kale caadi wax u arki karaan? 1 = Haa 2-6 Sano= 2=haa ka badan 6 Sano 3=Mayo majiro

S26 – 33 jir cabbirka ilmaha jira 6- 59 bilod (ama 65-110cm) ee qoyska ka mid ah

Tirsi	Magaca Kowaad	S26 Jinsi <i>1=(L) 2=(Dh)</i>	S27 Da'da oo' bilo ah	S28 Barar <i>1=Haa 0= Maya</i>	S29 Dhererka (cm)	S30 Culayska (kg)	S31 Dhexroork a Bartamaha Cududda Sare (MUAC) (cm)	S32 Dhereka Bartamaha \Cududa MUAC {Cm}	S33 Xaalada \Daryeellaha
1									1- Urey 2- Uur Lahayn
2									
3									

S 34. Isticmaalka xeeladaha isdebiridda (Consumption Coping Strategies)

S34 30 Kii casho ee tagtay haddi ay jirtey xilli aydaan haysan lacag aad ku iibsataan ama raashin idinku filan inta badan maxaa la samayn jirey	Soo noqnoqodka isticmalka
a) In laga tago cuntada tayada leh lana isticmaalo cunto jaban oo tayadeedu lidato	
b) In cunto la soo deynto ama lagu xirnaado kalso laga helo saaxiibo ama qaraabo	
c) Cuntada in deyn lagu soo qaato	
d) Duurka in qaraabasho ama ugaarsi loo doonto	
e) Xoolaha in lagu iibsado qiimo xooris ah si raashin loogu beddesho	
f) Xubnaha qoyska in loo diro inay meelo kale wax ka soo cunaan	
g) Xubnaha qoyska in tuugsi loo diro	
h) In la yareeyo xaddiga cuntadii la karsan jirey markiiba	
i) Cuntada dadka waaweyn in laga xannibo si ilmaha cuntada loogu quudiyo	
j) Raashin diyaarsan in suuqa laga soo gato	
k) In la yareeyo intii jeer maalinti wax la cuni jirey	
l) Maalin dhan inaan dab la shidan	
m) In la baabi'yo hantida si raashin loo helo : in la gado Xoolo, Dhul ama dahab	
n) in hantida dammaanad ahaan loo isticmaalo sida Berkad ama Dahab si raashin loo helo	

Q35 - 40 Helitaanka Biyaha Aadamigu isticmaalo (Tayo ahaan iyo tiro ahaan - quality and quantity)

S 35 Isha ugu muhimsan ee biyaha la cabbo 1= tuubo guriga toos u keenta biyo 2= Qasabadaha dadweynaha ka dhaxeeya 3= tubo ceel hoos u qodan 4= Ceel lama il burqanaysa oo la xafiday 5= Ceel am il aan la xafidin 7 webi 8= kale

S36 isha ugu muhimsan ee biyaha karinta iyo nadaafadda jirka 1= tuubbo guriga toos u keento biyo 2= qasabadaha dadweynaha ka dhaxeeya 3 Tubo ceel hoos u qodan 4 il burqanaysa ama ceel la xafiday 5 biyo roob 6 il iyo ceel aan xafidnayn 7 wax kale cadee-----

S 37 Biyaha qoysku maalintii u isticmalo cabid, karsi iyo nadaafadda dadka 1= <20 litir 2= 20-60 litir 3= 60-120 litir 4= >120 litir

S38 Masaafada barta biyaha ee ugu dhow 1= 0-500 tallaabo 2= 501-1000 tallaabo 3= 1001-5000 talaabo 4= ka badan 5000 tallaabo

S39 Biyaha iyo habka lagu helaba waa la ilaaliyey si joogto ah sidaas darteedna waa la heli karaa intii looga baahnaa 1= Marna 2= marmar 3= inta badan mar kasta 4 =Mar kasta

S40Tirada weelasha biyaha si nadiif ah loogu kaydsado ee qaada 20 litir 1= 1-2 Caag 2= 3-4 Caag 3= 4-5 Caag 4= ka badan 5= Caag

S41-47 Fayadhawrka iyo Nadaafadda (u sahlanaanta iyo tayada - access and quality)

S41 Nooca Musqusha xubnaha qoyska inta badani isticmalan 1=Musqul god leh oo habaysan(saxan leh) 2= Musqul caadi ah 3= God af bannaan 4= Bannaanka 5= Wax kale (tilmaan)

S42Tirada dadka halkii musqul isticmaasha 1=1-5 2= 6-10 3= 11-15 4= 16-20 5= ka badan 20 qof 6= kuma haboona

S43 Dadka gurigu markay saxaroodaan ka dib faraha ma dhaqdaan 1= Mar kasta 2= inta badan 3= marmar 4= Dhif iyo nadir

S44 Dadka gurigu ma gacmo dhaqdaan intaan wax la cunin ama xilliga diyaarinta cuntada 1=badanaa 2= inta badan 3 =marmar 4= dhif iyo nadir

S45 Qoyska miyu haysta sabuun? 1=Haa 0=Maya

S46 Xubnaha qoyska ma isticmalan sabuun ay ku gacma dh'aqdaan sharada kadiib ii goorta rashinka ladiyarinayo? 1 =Haa 0= Maya

S47 Masaafada ay isu jiran musqusha iyo isha biyaha 1= 0-5 tallaabo 2= 6-10 tallaabo 3= 11-20 tallaabo 4= 21-29 talaabo 5= 30 tallaabo iyo ka badan

**7.5 Appendix 4b: BUALE AND SAKOW NUTRITION ASSESSMENT QUESTIONNAIRE-English version
BUALE/SAKO DISTRICTS NUTRITION ASSESSMENT, APRIL 2006
HOUSEHOLD QUESTIONNAIRE**

Date _____ Team Number _____ Cluster Number _____ Name of enumerator _____

 Name of Village/Town _____ District _____ Household Number _____ Name of the Respondent _____

Q1-8 Characteristics of Household

- Q1** How many people live in this household (Household size)⁵ ? _____
Q2 How many children are below five years in this household (Number of < 5 years)? _____
Q3 What is your present household residence status? 1= Resident⁶ 2=Internally displaced⁷ 3=Returnees⁸ 4=Internal immigrant⁹ 5=Other (specify) _____

If answer to the above is 1, then move to Question 7.

- Q4** Place of origin (categorize during questionnaire design) _____
Q5 Duration of stay _____
Q6 Reason for movement: 1= Insecurity 2=Lack of jobs 3= Food shortage 4=Water shortage 5=Others; specify _____
Q7 What is the livelihood systems used by this household? 1= Pastoral 2=Agro- pastoral 3=Urban 4= Riverine (irrigated agriculture; fishing)
Q8 What is the household's main source of income? 1= Animal & animal product sales 2= Crop sales 3= Petty trade 4= Casual labour
 5= Salaried employment 6= Remittances 7= Other, specify _____

Q9-16 Feeding and immunization status of children aged 6 – 59 months (or 65 – 109.9 cm) in the household.

⁵ Number of persons who live together and eat from the same pot at the time of assessment
⁶ A person who dwells in a particular place permanently or for an extended period
⁷ A person or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights, or natural or human-made disasters, and who have not crossed an internationally recognized State Border" source, guiding principles on internal displacement
⁸ Refugees who have returned to their country (Somalia) or community of origin, Somalia, either spontaneously or through organized repatriation [UNHCR definition]
⁹ A person who moves (more or less permanently) to a different administrative territory due to a wide range of reasons (e.g. job related, security)

Sn o	First Name	Q9 (If 6-24 months) Are you breastfeeding ¹⁰ the child? (if no, skip to Q14) 1=Yes 2=No	Q10 If breast feeding, how many times/day? 1=<3 times 2=3-6 3=On demand	Q11 If not breast feeding, how old was the child when you stopped breast-feeding? 1=<6 months 2=6-11 months 3=12 – 18 months 4=≥18 months 5= Never breastfed	Q12 At what age was child given water/ foods other than breast milk 1=0-3 months 2=4-5 months 3=6 months or more.	Q13 How many times do you feed the child in a day (<i>besides breast milk</i>)? 1= Once 2= Twice 3= 3-4 times 4= 5 or more times	Q 14 Has child been provided with Vitamin A in the last 6 months (<i>show sample</i>) 1=Yes 2=No	Q15 (If ≥9 months old) Has child been Vaccinated against measles? 1=In past 6 months 2=Before 6 months 3=None	Q16 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									
4									

Q17-27 Anthropometry and morbidity for children aged 6 – 59 months or (65 – 109.9cm) in the household

¹⁰Child having received breast milk either directly from the mothers or wet nurse breast within the last 12 hours

Sno <i>As per table on page 1</i>	First Name	Q17 Child Sex <i>1=Male 2=Female</i>	Q18 Age in months	Q19 Oedema <i>1=yes 2=no</i>	Q20 Height (cm)	Q21 Weight (kg)	Q22 MUAC (cm)	Q23 Diarrhoea ¹¹ in last two weeks <i>1= Yes 2= No</i>	Q24 Serious ARI ¹² in the last two weeks <i>1=Yes 2=No</i>	Q25 Febrile illness/suspected Malaria ¹³ in the last two weeks <i>1=Yes 2=No</i>	Q26 (If ≥9 month) Suspected Measles ¹⁴ in last one month <i>1=Yes 2=No</i>	Q27 [Applicable for a child who suffered any of the diseases in Q23 – 25 Where did you seek healthcare assistance when (Name of child) was sick? <i>1=No assistance sought 2=Own medication 3=Traditional healer 4=Private clinic/Pharmacy 5= Public health facility</i>
1												
2												
3												
4												

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

Sno	Name	Age (years)	MUAC	Physiological status <i>1=Pregnant 2=Non pregnant</i>	Illness in last 14 days? If yes, what illness?
1	<i>Mother:</i>				
2					
3					

Q29 Does any member of the household have difficulty seeing at night or in the evening when other people do not? 1= 2- <6 years 2= ≥ 6 years 3= None

¹¹ Diarrhoea is defined for a child having three or more loose or watery stools per day

¹² ARI asked as oof wareen or wareento. The three signs asked for are cough, rapid breathing and fever

¹³ Suspected malaria/acute febrile illness: - the three signs to be looked for are periodic chills/shivering, fever, sweating and sometimes a coma

¹⁴ Measles (Jadeeco): a child with more than three of these signs– fever and, skin rash, runny nose or red eyes, and/or mouth infection, or chest infection

Q30-33 Access to water (quality and quantity)

Q30 Main source of drinking water 1 = piped 2 = Unprotected well 3 = Water catchments 4 = Protected well, boreholes or spring 5 = River 9 = other

Q31 Average time taken to and from the nearest water point (*including waiting and collecting time*) 1 = <30 min 2 = 30 – 60 min 3 = 1-2 hrs 4 = more than 2 hrs

Q32 Number of water collecting and storage containers of 10-20 litres in the household: 1 = 1-2 containers 2 = 3-4 containers 3 = 4-5 containers 4 = more than 5

Q33 What is the method of water storage in the household? 1 = Covered containers 2 = Open containers 3 = Constricted neck/end (*Ashuun*)

Q34-40 Sanitation and Hygiene (access and quality)

Q34 Type of toilet used by most members of the household: 1 = Improved pit latrine (VIP) 2 = Traditional pit latrine 3 = Open pit 4 = Designated area 5 = Bush

Q35 Distance between toilet and water source 1 = 0- 30 metres 2 = 30 metres or more

Q36 what washing agents do you use in your household? 1 = Soap 2 = Shampoo 3 = Ash 4 = Plant extracts 5 = None

Q37 How do you store prepared food? 1 = Suspend in ropes/hooks 2 = Put in pots beside the fire 3 = Put in covered containers 4 = Don't store 5 = Other, specify _____

Q 38 Food Consumption Diversity

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

<p>Food group consumed: What foods groups did members of the household consume in the past 24 hours (from this time yesterday to now)? Include any snacks consumed.</p>	<p>Did a member of your household consume food from any these food groups in the last 24 hours?</p> <p>1=Yes 0=No</p>	<p><i>Codes:</i></p> <p>1= Own production 6=Borrowed 2=Purchases 7=Gathering/wild 3=Gifts from friends/families 8=Others, specify _____ 4=Food aid 9=N/A 5=Bartered</p>
<p>Type of food</p>		<p>What is the main source of the dominant food item consumed? (Use codes above)?</p>
<p>1. Cereals and cereal products (e.g. maize, spaghetti, pasta, caanjera, bread)?</p>		
<p>2. Meat, poultry, offal (e.g. goat/camel meat, beef; chicken/poultry)?</p>		
<p>3. Eggs?</p>		
<p>4. Roots and tubers (e.g. potatoes, arrowroot)?</p>		
<p>5. Vegetables (e.g. leafy vegetables, tomatoes, carrots, onions)?</p>		
<p>6. Fruits (e.g. water melons, mangoes, grapes)?</p>		
<p>7. Pulses/legumes, nuts (e.g. beans, lentils, green grams, cowpeas)?</p>		
<p>8. Milk and milk products (e.g. goat/camel/fermented milk, milk powder)?</p>		
<p>9. Oils/fats (e.g. fat, butter, ghee, margarine)?</p>		
<p>10. Sugar and honey?</p>		
<p>11. Fish and sea foods (e.g. fired/boiled/roasted fish, lobsters)?</p>		
<p>12. Miscellaneous (e.g. spices)?</p>		
<p>Q39 In general what is the main source of food in household?</p>		<p>_____</p>
<p>Q40 Total number of food groups consumed (filled by enumerator): _____</p>		

Q41 - 42 Informal and formal Support or Assistance in last three months (circle all options that apply)

Q41 Which of these informal supports did you receive in last three months

1=Zakat from better-off households 2=Remittances from Abroad 3=Remittances from within Somalia
 4=Gifts 5=Loans 6=None 7=Other (specify) _____

Q42 Which of this formal international or national aid support did you receive in last three months?

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=None 10=Other (specify) _____

7.6 APPENDIX 5: QUESTIONNAIRE FOR QUALITATIVE DATA

(Data collected through: key informant interviews, focus group discussions, literature review, general observation)

Name of facilitator _____ No. of participants in focus group (Males/Females) _____

Area/Location _____ Livelihood¹⁵ _____

a). Population and Demography (Key informants, direct observation and literature review)

- Estimated population size of a) town/village _____ b) If sampled population if different _____
- Is there any unusual population movement in or around this site? _____
- If yes from ----- , To:-----
- What is the estimated number of households that have moved a) Into the area _____ b) Out of the area _____
- Who is moving? _____
- Who is **not** moving ? _____

What is the cause of the unusual population movement? a) Security b) Food shortage c) Water scarcity d) others, specify :

What is the effect of the unusual movement on people’s overall well being (health, nutrition, lives)?

b) Food security

- What is the current main source of food for the households? _____
- What is the current main source of income for the households? _____

Has there been any change in the source of **household food** in the last three months? Yes/No
If yes, what is the change?

Has there been any change in the source of **household income** in the last three months? Yes/No
If yes, what is the change?

Has the change in the means of access to food and income in the last three months affected the food consumed?
Yes/No/Not applicable. If yes, explain how?

¹⁵ A livelihood comprised the capabilities, assets, activities and strategies required and pursued by households and individuals for a means of living (FSAU 2005)

c) Identify the most commonly applied coping strategies by the poorest households, in the last three months (Administer the relevant coping strategies for each specific livelihood)

Coping strategy Questionnaire – Pastoralist Livelihood

In the past 30 days, if there have been times when you did not have enough food or money to buy food, has your household had to:	1= Yes 2=No
a. Reduce home milk consumption and sell more of milk produced?	
b. Consume less preferred cereals	
c. Borrow food on credit from another household (<i>Aamah</i>)?	
d. Reduce number of meals per day?	
e. Reduce the portion size/quantity consumed at meal times (<i>Beekhaamis</i>)?	
f. Rely on food donations (gifts) from the clan/community (<i>Kaalmo</i>)?	
g. Consume weak un-saleable animals (<i>caateysi</i>)?	
h. Send household members to eat (for food) elsewhere?	
i. Skip (go an) entire days without eating (<i>Qadoodi</i>)?	
j. Beg for food (<i>Tuugsi/dawarsi</i>)?	
k. Rely on hunting for food (<i>ugaarsi</i>)?	

Coping strategy Questionnaire – Agro-pastoralist Livelihood

In the past 30 days, if there have been times when you did not have enough food or money to buy food, has your household had to:	1= Yes 2=No
a. Shift from high priced cereal varieties to low price cereal varieties?	
b. Shift from high quality cereals to low quality cereals (from <i>osolo to obo</i>)?	
c. Borrow food on credit from shop (<i>Deyn</i>)?	
d. Borrow food on credit from another household (<i>Aamah</i>)?	
e. Reduce home milk consumption and sell more of milk produced?	
f. Reduce the number of meals in a day by adults?	
g. Stop all home milk consumption and sell all milk produced?	
h. Rely on food donations (gifts) from the close relatives (<i>Qaraabo</i>)?	
i. Rely on food donations (gifts) from the clan/community (<i>Kaalmo</i>)?	
j. Skip (go an) entire days without eating (<i>Qadoodi</i>)?	
k. Community identified your household as in need of food and fives support? (<i>Qaraan</i>)	
l. Send household children to live or eat with relatives (elsewhere)?	

Coping strategy Questionnaire – Riverine Livelihood

In the past 30 days, if there have been times when you did not have enough food or money to buy food, has your household had to:	1= Yes 2=No
a. Shift to less preferred foods (e.g. white maize to yellow maize)?	
b. Reduce the portion size/quantity consumed at meal times (<i>Beekhaamis</i>)?	
c. Consume poor quality foods (unsafe or spoilt)?	
d. Reduce number of meals per day by one (e.g. from three to two)?	
e. Consume wild foods and fish from the river?	
f. Consume immature crops (fruits or cereals)?	
g. Reduce number of meals per day by two (e.g. from three to one)?	
h. Feed particular members (elderly, children) at the expense of other household members?	
i. Consume seeds meant for future planting?	
j. Borrow food for consumption (to be repaid in future – in kind)?	
k. Eat prohibited/ unacceptable foods (animal skins, grass, roots, clotted blood, tree leaves, warthogs, etc)?	

Baseline Data (collect on first visit and then only if the situation has changed from the preceding months)

b). Shelter: (Observation and key informant interviews)

- What is the kind of shelter /houses used by the communities in this site?
a) grass thatched mud houses b) other specify

Currently, is there any change in the kind of shelter/houses, the affected community resides in?
If yes, what is the change?

c). Water and Sanitation (Household interviews, observation, visits to water points, FGD)

- What is the usual source of water for this community?
a). protected well b). un-protected well c). water catchments d) river e)other, specify _____
- Where is fecal matter disposed of? a) latrines ____ b) bush ____ c) Other _____ (specify)

Has there been any change in the source of water in the past three months?
If yes, please specify:

Has there been any outbreak of diarrheal diseases in the past three months?
If yes, please specify:

d) Health Issues

- *Where do the affected households seek for health assistance when sick?*
- a) Hospitals ____ b) MCH/OPD ____ c) Health posts ____ d) private clinic/pharmacy ____ e) traditional
- f) Other specify _____
If no, why? a) Long distance to the health institution b) other specify _____

Are there particular groups of people whose health problems are especially bad? Yes/No
If there is, in what ways?
Reasons:

Has there been any disease outbreaks in the in the area in the last three months? Yes/No
If yes, please explain:

e) Education

- Are there any formal schools/educational institutions in this area?

Has there been any dropout from schools/educational institutions in the past three months? Yes/No
If yes, indicate the reasons:

8. ASSESSMENT TEAM

Serial No.	Name	Agency	Role
1	Adan Moalim Hassan	WVI	Enumerator
2	Ali Ibrahim Magan	WVI	Enumerator
3	Abdullahi Hassan Awdahir	WVI	Enumerator
4	Kadar Osman Rashid	WVI	Enumerator
5	Ayhanshe mohammed Husein	WVI	Enumerator
6	Ayan Adan Bile	WVI	Enumerator
7	Abdi Adan hassan	WVI	Enumerator
8	Ahmed Adan Osman	WVI	Enumerator
9	Liiban Abdi Sanior	WVI	Enumerator
10	Ibrahim Ahmed ibrahim	WVI	Enumerator
11	Mohamud Mohamed moalim	WVI	Enumerator
12	Fadumo aji Osman	WVI	Enumerator
13	Rukiya Idle Adan	WVI	Enumerator
14	Kaadro mohamed Ali	WVI	Enumerator
15	Abdirahaman Bare Dubad	WVI	Enumerator
16	Abdiker Sheik Bashir	WVI	Enumerator
17	Kariye Nunow Ali	WVI	Enumerator
18	Moalim Ugas Isaak	WVI	Enumerator
19	Mohamed Abdi Ali	WVI	Supervisor
20	Ibrahim Moalim Abdirahaman	WVI	Supervisor
21	Abdulahi Shidiye Dhagane	WVI	Supervisor
22	Adan Ibrahim Isaac	WVI	Supervisor
23	Safia Dhagane Hanshi	WVI	Supervisor
24	Adan Ali Ibrahim	WVI	Supervisor
25	Said issk Kalmoy	WVI	Supervisor
26	Ajéis Sheik Mohamed	WVI	Supervisor
27	Farah Bile Mohamed	WVI	Supervisor
28	Ibrahim A Hussein	WVI	Data entry
29		WVI	Data entry
30		WVI	Data entry
31	Mohamed Hassan Gani	FSAU	Trainer/Field supervision and coordination
32	Khaliif Nouh Abdullah	FSAU	
33	Ibrahim Mohamed	FSAU	
34	Osman Warsame	FSAU	
35	Josephine muli	WVI	Logistical coordination
36	Mohamed Mudir	WVI	Logistical coordination
37	Barnabas Okumu	WVI	Logistical coordination
38	Hersi Mohamoud	WFP	Aanalyzed the food security situation
39	Abdirizak	FSAU	Analyzed the food security situation
40	Peter Kingori	FSAU	Nutritionist – Assisted in technical coordination, supervised data entry
41	Ahono Busili	FSAU	Coordinated the Assessment Data Analysis and report writing
42	Noreen Prendiville	FSAU	Provided Technical Advice, overall leadership and managerial support at all stages of the assessment

9. REFERENCES

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