

NUTRITION ASSESSMENT REPORT

RABDURE DISTRICT BAKOOL REGION SOMALIA

January 2006



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FSAU met the cost of coordinators and two supervisors, lead in the training of the assessment team, coordinated data collection, entry and analysis and produced the report. IMC provided the logistical support and organization, funded the cost of enumerators, supervisors and data entry. UNICEF funded assessment vehicles, provided two supervisors and anthropometric equipments.

FSAU, IMC and UNICEF greatly appreciate the contribution of local authorities in identification of enumerators and ensuring security for the fieldwork in Rabdure district. 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, IMC and UNICEF also express their sincere appreciation to the entire assessment team for the high level of commitment, diligence and ingenuity demonstrated during all stages of the assessment.

EXECUTIVE SUMMARY

In January 2006, FSAU, IMC and UNICEF conducted a nutrition assessment in Rabdure District, Bakool Region in South Somalia. The assessment was conducted in response to the emerging concern in the district over the drought condition and the need to confirm the malnutrition levels before the full impact of the drought is felt.

The main objective of the assessment was to determine the level of wasting among children below five years, some possible factors that may be contributing to child malnutrition and mortality rate in the district.

Using a two-stage cluster sampling methodology, a total of 910 children aged 6-59 months and measuring 65-109.9 cm were examined. Based on weight for height indicator (WHZ<-2 z-score/oedema), 15.9% (CI 13.6-18.5) of the children are malnourished of whom 1.4% (CI: 0.8-2.5) are severely malnourished (WHZ<-3 or oedema). The GAM rate of 15.9% indicates a critical malnutrition situation which is consistent with the typical rates for the district. Findings on the crude mortality rate of 0.9/10,000/day (CI: 0.6-1.20) and the under five mortality rate of 1.53 (CI 0.76 – 2.30) indicate an acceptable situation (WHO categorization).

Majority of households, about 91%, consumed less than four food groups. Nutrition status was found to have a significant statistical association ($p < 0.05$) with dietary diversity, implying that children from households who consumed meals from less than food groups tended to be malnourished. About 23% of the children were reported to have diarrhoea, 38% had ARI and 17% had malaria in two weeks prior to the assessment while 4% had measles in one month prior to the assessment. Although there was no statistical association ($P > 0.05$) between acute malnutrition and presence of disease, the cumulative negative effects of disease on health, compounded with poor child care practices (introduction of complementary foods before the age of six) may have predisposed children to malnutrition.

About 3% cases of children aged 2-6 years and 2% of the people aged >6 year were reported to have night blindness (difficult seeing at night). Approximately, 80% of the children had received vitamin A supplementation during the six months prior to the assessment and 78.7% vaccinated against measles. About 96.4% of the children had received polio immunization for at least once from birth. On breastfeeding, only 15.6% of the children are exclusively breastfed for the recommended six months. Majority of the children 50.4% are fed twice in a day. Diseases, limited access to quality water, and poor child-feeding practices seem to be contributing substantially to malnutrition in Rabdure district. Based on MUAC<23.0 cm, out of the 67 pregnant women more than half (53.7%) were malnourished, 6 (9.0%), severely MUAC<20.7 cm. None of the non-pregnant women was malnourished.

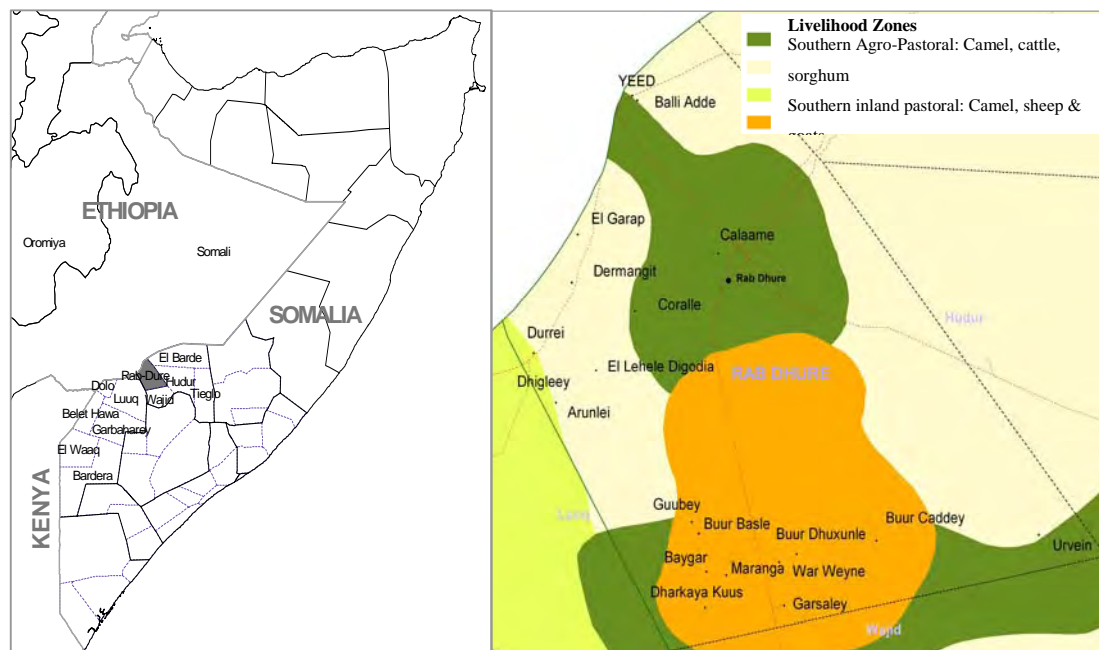
The findings of the assessment indicate a critical nutrition situation, (GAM 15.9%), which, unfortunately are consistent with the longer term trend in Rabdure district. Given the prevailing drought, urgent multi-sectoral approaches are crucial to limit deterioration and restore the nutrition situation in the district. Both short term and long term interventions that address the food needs both in quantity and quality, water and environmental sanitation and promotion of early child care are a priority. The main areas of focus could include promotion of appropriate infant and child feeding practices, diversification of diets, improvement in household hygiene and health care practices, income generation activities, and rehabilitation of water points and increase and equipping health facilities in the district.

SUMMARY OF FINDINGS

Indicator	Number	Percentage
Under-five children screened during the assessment.	910	100
Number of boys in the sample	488	53.6
Number of girls in the sample	422	46.4
Number of households assessed	424	100
Global acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema	145	15.9 (CI 13.6-18.5)
Severe acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema	13	1.4 (CI 0.8-2.5)
Global acute malnutrition according to Weight For Height Median or presence of oedema	75	8.3 (CI 6.6-10.3)
Severe acute malnutrition according to Weight For Height in % Median or presence of oedema	3	0.3 (CI 0.1-1.0)
Proportion of Malnourished pregnant women MUAC<23.0cm N=67	36	53.7
Proportion of severely malnourished pregnant women MUAC<20.7cm N=67		
Proportion of households consumed \leq 3 food groups	387	91.3
Proportion of households consumed \geq 4 food groups	35	8.7
Proportion of children with diarrhoea in two weeks prior to the assessment.	209	23.0 (CI: 20.3-25.9)
Proportion of children with ARI in two weeks prior to the assessment.	347	38.0 (CI: 35- 41.4)
Proportion of children with Malaria in two weeks prior to the assessment.	157	17.3 (CI:14.9 19.9)
Proportion of children with Measles in one month prior to the assessment.	45	4.9
Proportion of children aged 2-6 years with suspected night blindness	31	3.1
Proportion of adults aged >6 years with suspected night blindness	17	1.9
Proportion of children supplemented with Vitamin A in six months prior to the assessment.	734	80.7
Proportion of children immunised against Measles. N=872	716	81.0
Proportion of children immunised against Polio	823	96.4
Proportion of children on breastfeeding	198	21.8
Proportion of children breastfed less than 6 months	14	1.5
Proportion of children introduced food before 4 months	544	59.8
Proportion of children introduced food during 4-6 months	224	24.6
Proportion of children introduced food after 6 months of age	89	9.8
Proportion of female-headed households.	148	34.9
Proportion of displaced households	44	10.4
Proportion of returnee/refugee households	11	2.6
Two main source of food		
Purchases	362	85.2
Household crop production	44	10.4
Two main source of income		
Livestock/,farming	126	29.8
Casual labour	125	29.6
Mortality Rate		
Crude Mortality Rate CMR		0.90 (CI: 0.60 – 1.20)
Under-five Mortality Rate U5MR		1.53(CI: 0.76 – 2.30)

1.0 INTRODUCTION

Rabdure, located to the west of the Somalia border with Ethiopia is one of the five districts in Bakool region. It has an estimated population of about 35,000 people. The population can be broadly categorised into four livelihood zones namely southern agro-pastoral i.e. Dawo pastoral, Bay-Bakool agro-pastoral and southern inland pastoral. (FSAU).



It is one of the worst affected districts in Bakool region from 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.

1.1 JUSTIFICATION OF THE NUTRITION ASSESSMENT

The last nutrition assessment was conducted in September 2002 by UNICEF in collaboration with IMC in Rabdure district and indicated high malnutrition rates with GAM rate of 14.8%. 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 before the impact of the drought was felt.

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 18-49 years in Rabdure District.
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 Rabdure
6. To assess general feeding and weaning practices in Rabdure district.
7. To determine the crude and under-five mortality rates in Rabdure district.

2.0 BACKGROUND INFORMATION

2.1 Administration:

The administration of Rabdure district is governed by the district council which has been changed at least four times in the past 5 years. The current district council, appointed by the elders of Rabdure, consists of 23 members representing various clans and sub-clans. The district council, religious leaders and the strong elders in the district intervene in solving any issues of concern in the district.

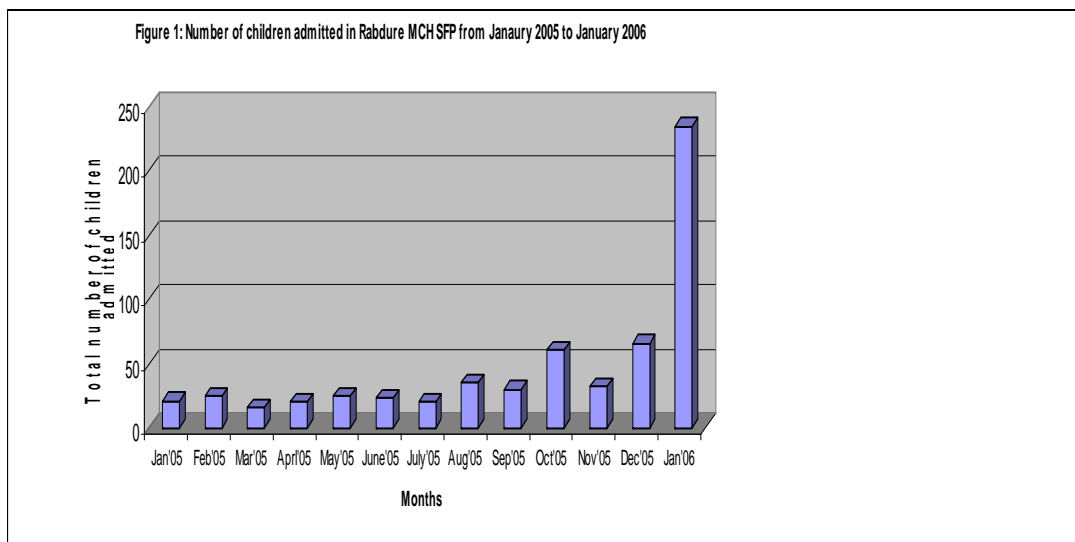
2.2 Security:

Rabdure district is one of the districts in Bakool region most affected by the 13 years of civil insecurity and natural calamities. Following inter-clan fighting arising from the SNA occupation of Bay and Bakool regions Rabdure town and some of the satellite villages were completely destroyed and many houses burnt.

Recently, from August 2004 to September 2005 there was heavy fighting's between the sub-clans of Awlyahan and Ogaden clan. During the conflict period most of the citizens in Rabdure were displaced and lost properties, livestock and stored food. Insecurity has disrupted the livelihoods and humanitarian interventions and made households more vulnerable to natural crisis such as drought.

2.3 Nutrition context

The nutrition assessment conducted by UNICEF in collaboration with International Medical Corps (IMC) in September 2002 reported the global malnutrition rate of 14.8% (CI: 11.9-18.4) in Rabdure district. More data from FSAU nutrition surveillance activities have been indicating deterioration of the nutrition situation. There is reported increase in malnutrition levels from both the health facility data and sentinel sites established in the district. In addition, data from the Rabdure MCH indicated an increasing number of children admitted in the supplementary feeding programmes SFP (see figure 1) throughout the year from January 2005 to January 2006.



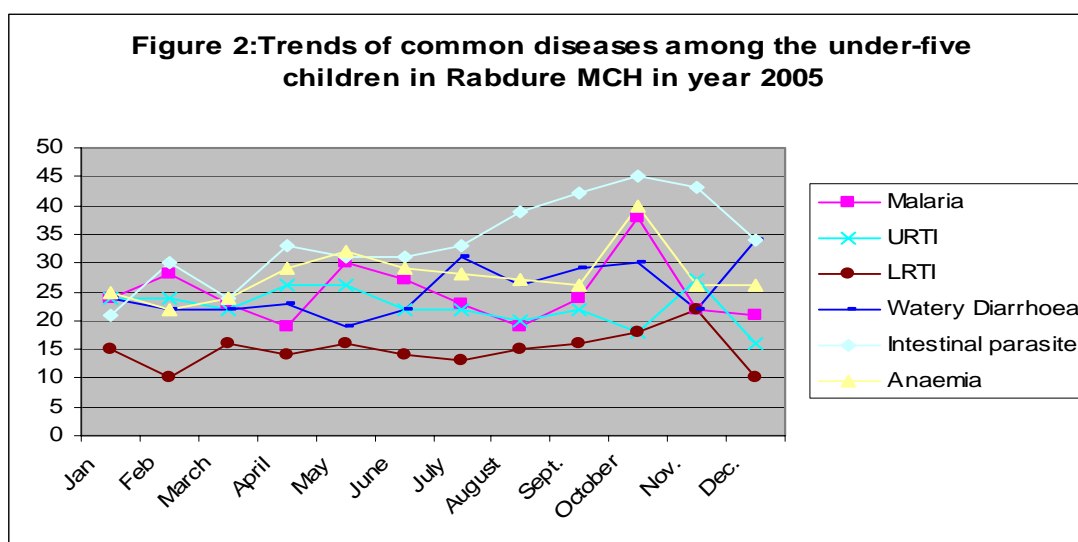
The nutrition situation in the district has remained to be either serious or critical over years. The table below summarizes the findings of the different nutrition assessments conducted in the district between February 2000 and September 2002.

Date of assessment	Agency	Assessed population	Methodology	GAM (Z-scores or oedema)	SAM
Feb 2000	UNICEF	Rabdure town	Exhaustive	30%	6%
Aug 2000	IMC	Rabdure/Elberde districts	30X03 cluster	13.7% CI:10.5-16.4	3.8% CI:1.3-6.3
Sept/Oct 2001	UNICEF/IMC/ FSAU/WFP	Rabdure district	30x30 cluster	19.3% CI: 16.0-23.2	2.6 CI:1.7-3.9
Sept. 20 02	UNICEF/IMC/ FSAU	Rabdure district	30x30 cluster	14.8% CI: 11.9-18.4	1.9% CI: 1.1-3.1

2.4 Health context

The district has one MCH (Rabdure) and four health posts which all supported by IMC while MSF-Belgium supports and an OPD. Treatment for severely malnourished children is unavailable in the district; the severely malnourished are referred to MSF-Belgium TFC in Huddur a distance of about 90 Km. Recent reports indicate that consultation among the partners operating in the district (WFP, IMC and UNICEF) has led to the reopening of Bodan Clinic which has been closed over long time.

Health data from the district have shown an increasing trend of some common illness as shown in the chart below.



2.5 Water and environmental sanitation

Access to water for human and livestock consumption has been a major problem in Rabdure district. There are 3 boreholes in the district, (located in Rabdure town, Yeed village and Shimbirow village), and 300 hand-dug wells in various locations. Although the town borehole can be rehabilitated, the high salinity and turbidity, as well as underground contamination make it unfit for human and animal consumption. This compels the people to travel long distances in search of water for domestic and livestock use and for pasture for livestock.

Majority of the hand-dug wells are located on limestone depressions and seasonal rainwater stagnation areas, with an average depth of 11m and average water column of 2.5m in the rainy season, and 1m in the dry season. Hand-dug wells are usually lined with traditional timber logs, their mouths being level with the ground or sometimes below it, making them prone to contamination from animal wastes and surface run offs.

The water table has been receding every season, drying up a great number of shallow wells and contributing to deterioration of the already bad water quality. The underground contamination and toxic mineral content of shallow wells in the dry seasons, as well as the accumulation of deadly biogas resulting from the decomposition of animal wastes, are well known causes of animal and even human deaths. The prevailing drought condition affecting the district has resulted in drying up of wells and water catchments. It's further reported the water catchments rehabilitated by UNICEF has not received water due to rain failure.

2.6 Food Security Context

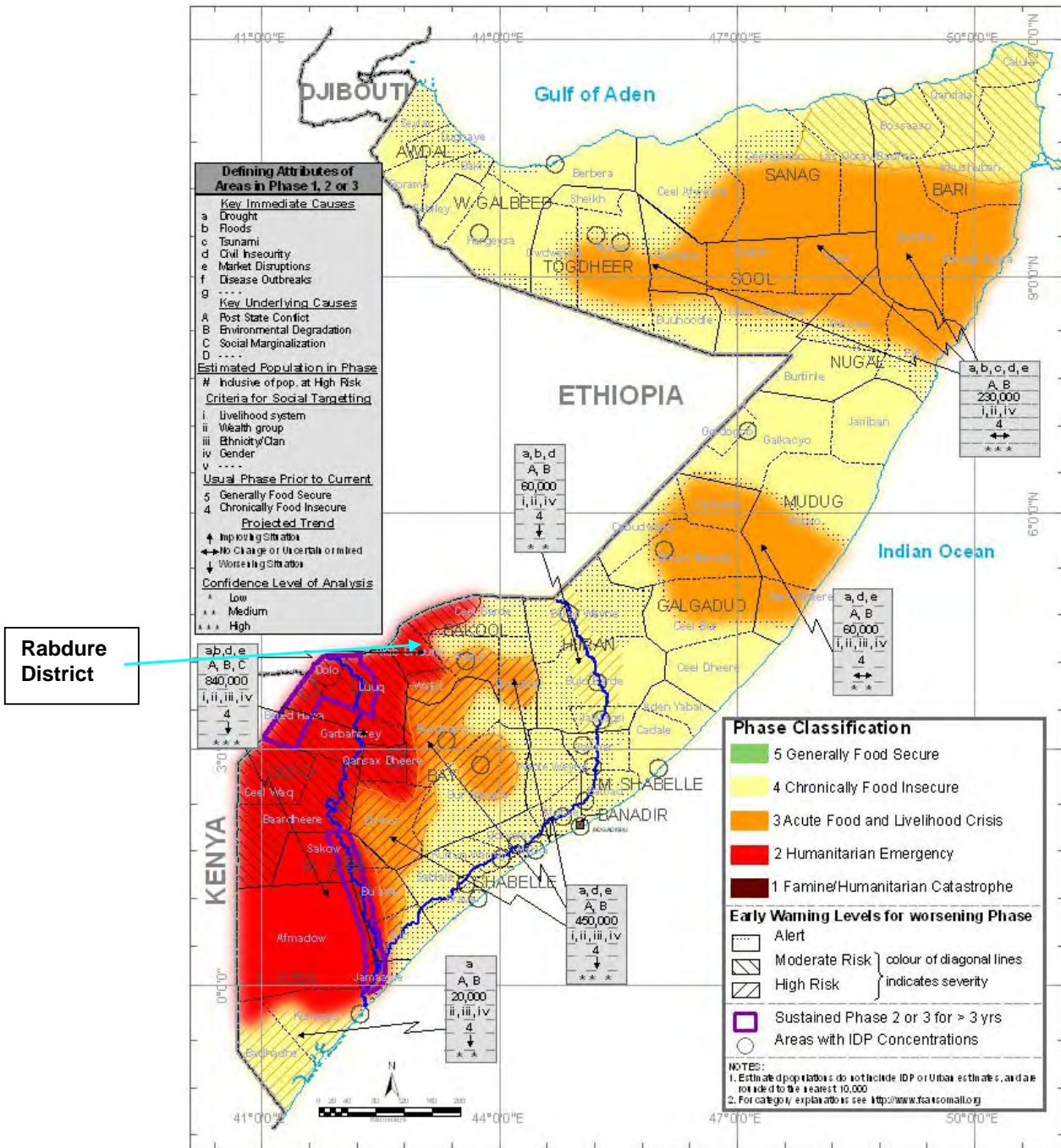
Following the failure of Gu and Deyr 2005/06 rains, the sorghum crop in most areas never reached maturity while pasture and water scarcity has affected the whole district. According to the FSAU 2005/06 Post Deyr Analysis, Technical Series Report No IV. 8, Bakool region has experienced extremely poor crop production, poor conditions and production of livestock. The least affected are the camels while cattle and shoats more affected by the drought. As a result of the drought, livestock are moving within the region in search of pasture and water, limiting the access of households to milk. Due to lack of quality pasture the livestock milk production declined resulting in increased prices where available. Livestock are also currently far from the households.

Some areas are experience severe water shortage, leading households to shift towards town to access water sources. Many water catchments are dry forcing long distance movement in search of water for both livestock and domestic purposes. Some wells are managed by the local elders to avoid conflicts due to water.

Income opportunities for the Rabdure residents have been limited to sale of livestock among the better-off groups, and collection and sale bush products in Rabdure town, by the poor. Search for casual labour is also common among the poor in their efforts to cope with stress. Generally the poor crop performance has greatly reduced income level for the agro-pastoral community thus compromising their food access. This is further complicated by increased cereal prices thus affecting the poor.

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 that seems to have undermined their coping strategies. Vulnerability risks were mostly associated with rain failures. According to the FSAU Integrated food security and humanitarian phase classification shown in the figure below, Rabdure district is in the Humanitarian emergency with early warning level of moderate risks of famine.

Map 1: Integrated Food Security Phase Classification



3.0 ASSESSMENT 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 minimum of 900 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 Rabdure district was obtained from the WHO, 2005 Somalia polio population estimates (34,585) records and confirmed by the community members. The cluster selection was done using Nutri Survey computer package where clusters were randomly selected (See Annex 1). The 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 Rabdure District Nutrition Assessment

Major Activity	2006
Preparation of tools, methodology & review of secondary data (Nairobi)	3 rd -15 th Jan.
Resource mobilization; Joint planning meetings with partners (Nairobi and Wajid/Huduur	3 rd -15 th Jan.
Training of enumerators, pre-testing and cluster identification	16 th – 18 th Jan.
Collection of data	19 th -23 rd Jan.
Entry of data in Wajid	20 th -24 th Jan.
Preliminary analysis in Wajid	24 th Jan
Presentation of preliminary results to the Rabdure community representatives	24 th Jan
Further data cleaning and analysis in Wajid	24 th -26 th Jan.
Report writing	26 th -16 th Feb
Circulation of first draft report	17 th Feb
Circulation of the final report	10 th March

3.6 Assessment team composition

Six 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, IMC and UNICEF. The technical coordination was provided by two FSAU senior nutritionists while the logistical support was provided by the IMC. Enumerators were identified by the local authority from Rabdure District.

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 version 6.04 programme 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 $p \leq 0.05$.

4.0 ASSESSMENT RESULTS

A total of 910 children aged 6-59 months and 424 women aged were assessed were from 424 households. About 40% of the visited households were female headed. The household size ranged between 2 to 13 people with mean of 6 and standard deviation 1.863.

4.1 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 910 children examined during the assessment, 488 (53.6%) were boys and 422 (46.4%) were girls, with a sex ratio of 1:1. The ratio of males to females for the 18-29 age category was lowest with the highest ratio recorded at 54-59 age category where the number of boys was almost double that of girls.

Table 4.1 Distribution of sample by age and sex in Rabdure

Age in months	Boys		Girls		Total		Sex ratio
	No.	%	No.	%	No.	%	
6 – 17	93	19.1	80	19.0	173	19.0	1.2
18 – 29	116	23.8	121	28.7	237	26.0	1.0
30– 41	106	21.7	94	22.3	200	22.0	1.1
42– 53	88	18.0	79	18.7	167	18.4	1.1
54– 59	85	17.4	48	11.4	133	14.6	1.8
Total	488	53.6	422	46.4	910	100	1.2

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 the distribution of the nutrition status of the children at different age groups.

Table 4.2 Distribution of the nutrition status of the children by age

Age group Months	Total children Number	< -3 Z-score		Moderate WH \geq -3Z and <-2		GAM WH< -2 Z-score		Normal WH \geq -2	
		No.	%	No.	%	No.	%	No.	%
6 – 17	173	3	1.7	8	6.1	11	7.6	162	21.2
18 – 29	237	3	1.3	38	28.8	41	28.3	196	25.6
30– 41	200	2	1.0	27	20.5	29	20.0	171	22.4
42– 53	167	5	3.0	30	22.7	35	24.1	132	17.3
54– 59	133	0	0	29	22.0	29	20.0	104	13.6
Total	910	13	1.4	132	14.5	145	15.9	765	84.1

About 15.9% of the assessed children were malnourished, using <-2 Z-score or oedema cut-off while 1.4% of the assessed children were severely malnourished, using <-3 Z-score or oedema cut-off. About 14.5% of the children were moderately malnourished. There was no oedema case identified in the assessment. The age category 6-17 months had the least number of malnourished children while highest malnutrition was in age category 18-29 months while those aged 30-41 and 54-59 had lowest proportion of the malnourished children. There was a significant relation between the age-group of the children and the levels of malnutrition (p=0.004) with malnutrition levels increasing with age.

Table 4.3 Distribution of children by nutrition status based on Z-score or oedema by sex

Sex	≥-2 Z score		>-2 and ≥-3 Z score		<-2 and >-3		<-3	
	No.	%	No.	%	No.	%	No.	%
Boys	410	45.1	78	14.5	78	16.0	7	1.4
Girls	355	39.0	61	14.5	67	15.9	6	1.4
Total	765	84.1	132	14.5	145	15.9	13	1.4

Data in table 4.3 shows that there was no difference in distribution of the malnutrition levels between boys and girls. Same proportion of girls and boys were malnourished and hence sex had no influence on the nutrition status of the children. There was no significant difference between the nutrition status of boy and girls ($p>0.05$).

Table 4.4 Distribution of children by nutritional status, based on percentage of the Median

Age	6-59 months	
	Proportion	No
Global acute malnutrition	8.3% (CI 6.6-10.3)	75
Moderate malnutrition	7.9% (CI 6.3-9.9)	72
Severe acute malnutrition	0.3% (CI 0.1-1.0)	3

Based on percentage of the median, 8.3% of the assessed children were malnourished based on $w/h<80\%$ of the median with 0.3% of the children being severely malnourished (using $<70\%$ of median or oedema cut offs). The distribution of the nutrition status of the children by sex basing from percentage of the median is shown below

Table 4.5 Distribution of children by nutrition status based on W/H % of median and or oedema by sex

Sex	WHM<70		≤70WHM>80		WHM<80		WHM≥80	
	No.	%	No.	%	No.	%	No.	%
Boys	2	0.3	31	6.4	33	6.8	455	93.4
Girls	1	0.4	41	9.7	42	10.0	380	90.0
Total	3	0.3	72	7.9	75	8.3	835	91.7

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 23.7% (21.0 – 26.6) while underweight rate based on weight for age, WAZ<-2 was 31.4% (CI 28.4 – 34.6)

4.3 Children malnutrition by MUAC

The mid-upper arm circumference of the 910 children was taken alongside the height and weight measurements. Basing on the MUAC measurements, 16.4% of the children assessed were malnourished $MUAC<12.5\text{cm}/\text{oedema}$ with 1.0% of them being severely malnourished $MUAC<11.0\text{cm}/\text{oedema}$. The table below summarizes the results.

Table 4.6 Children malnutrition rates by MUAC

Malnutrition	No.	Proportion
Global acute malnutrition $MUAC<12.5\text{cm}$	149	16.4% (14.1 -19.0)
Moderate malnutrition $<12.5\text{ MUAC}\geq 11\text{cm}$	129	14.2% (12.0-16.7)
Severe acute malnutrition $MUAC<11.0\text{cm}$	9	1.0 % (CI 0.5 – 1.9)

4.4 Morbidity

The overall incidence of diarrhoea, ARI and malaria among under-fives was 23%, 38% and 17% respectively. The three illnesses were particular high among the children aged one year and above. Six months prior to the assessment, 80.7% of the children had received vitamin A supplements while 78.7% (aged 9-59) were immunized against measles. The distribution of common diseases and immunization status is summarized in table 4.7. On Polio immunization, 26.9% had of the children had received polio immunization for 1-2 times while 56.9% had received it for three or more times from birth. Approximately 16% of the assessed children had not received polio immunization since the time they were born. . A total of 14.1%, 14.8%, 14% and 26.7 of the malnourished children had ARI, diarrhoea, malaria, and measles respectively. However, statistical analysis did not show a significant relationship between malnutrition and mortality ($p>0.05$).

Table 4.7: Distribution of common disease, measles vaccination and Vitamin A supplementation status by age groups

Age group months	Diarrhoea in last two weeks		ARI in last two weeks		Malaria in last two weeks		Measles cases in last one month		Measles vaccinations Children aged ≥ 9 months N=872		Vit A Supplementations in last 6 months	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6 – 17	64	30.6	89	25.6	49	31.2	2	4.4	92	13.0	123	16.8
18 – 29	64	30.6	93	25.6	41	26.1	8	17.8	198	28.0	205	27.9
30– 41	40	19.1	77	22.2	30	19.1	12	26.7	163	23.1	160	21.8
42– 53	24	11.5	54	15.6	21	13.4	19	42.2	142	20.1	135	18.4
54– 59	17	8.1	34	9.8	16	10.2	4	8.9	111		11	15.1
Total	209	23	347	38.1	157	17.3	45	4.9	716	81.0	734	80.6

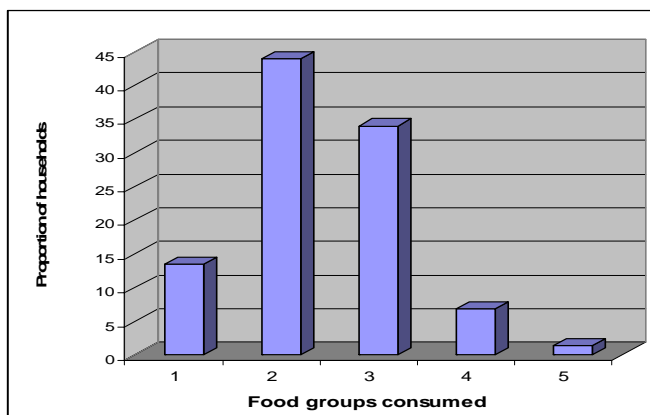
4.5 Women malnutrition

Out of the 424 women assessed in the assessment 67 (15.8%) of them were pregnant. Basing from the MUAC<23.0cm, 36 (53.7%) women were malnourished 6 (9.0%) of them severely MUAC<20.7cm/oedema. On the other hand, the non-pregnant women (N=357) were not malnourished. The data indicated that pregnant women were more likely to be malnourished with more than half of them being malnourished.

4.6 Dietary Diversity

Out of the 424 households assessed 91% consumed three or less food groups and the rest 9% consumed four or more food groups. The commonly consumed food items include products prepared from sorghum (*soor*, *ajeero* and *abulo*), maize, tea without milk, sugar, milk, oil and beans.

The consumption of three or less food groups as is evidenced in the results presented in the graph below. Statistical analysis of the data showed that number of food groups consumed was significantly associated with malnutrition of the children ($p=0.04157$). Children who had consumed three or less food groups were more likely to be malnourished WHZ<-2 than those consuming more than three food groups. About 97.2% of the malnourished children consumed three or less food groups as compared to 2.8% who consumed more than three.

Figurer 3 Distribution of the food consumed groups among the households

4.7 Social Economic characteristics of the Rabdure Population

Majority of the households assessed were local residents 87% with 2.6% and 10.4% being returnees and internally displaced persons (IDP) respectively. The mean house hold-size in the district is 6. Insecurity, food and water shortage are the main factors attributed to population movement. About 40% of the households assessed were female headed.

Data showed that the sale of crops and animals as well as their products and casual labour are the main sources of income for the majority of households in Rabdure district.

With regard to food sources, purchases 85.2% and own household crop/animal productions 10.4% are the main food sources. Other sources of food used by less than 10% of the households include gift from friends, remittance, food aid, barter and small business. Qualitative information revealed that common business practised include sale of building materials, salt collect from the open ground after evaporation, water, and animal fodder. Given the unreliable source of income and the fact that main source of food is purchase explain the low dietary diversity.

On the aspects of sanitation the assessment revealed that majority of the population 94% of Rabdure district do not have access to toilet/latrine facilities and instead they use open bush. The data further showed that only 9% and 21% of the household were reported to be washing hands 'always' after defecation and before food handling respectively. From the 424 household assessed only 5 (1.2%) were reported to be having soaps and out of which two of them use soap to wash hands after defecation or before food handling.

Regarding seeking of health assistance, most of the sick children are either taken to public health facilities 64.4%, or to the traditional healers 26.7%.

Table 4.8 summarizes the findings of various social-economic characteristics of the assessed population.

Table 4.8: Social economic characteristics of the Rabdure population

Sex of Household Head	Total	Percentage
Female headed households	148	34.9
Male headed households	276	65.1
Total	424	100
Residential Status of households		
Indigenous residents	369	87.0
Returnees	11	2.6
Displaced	44	10.4
Total	424	100
Three main reason of displacement/returnee		
Insecurity	20	30.8
Food shortage	18	27.7
Water shortage	13	20.0
Two main source of food		
Purchases	362	85.2
Household crop production	44	10.4
Two main source of income		
Livestock/farming	126	29.8
Casual labour	125	29.6
Livestock	109	25.8
Two main coping strategies during food shortage		
Purchase of food on credit	305	72.0
Reduced number of meals	290	68.3
Two main source of drinking water		
Unprotected well/springs	331	78.1
Water catchments	91	21.5
Main practice of human excreta disposal		
Bush/Open ground	398	93.9
Proportion of households using soap	5	0.1
Main source of treatment when a child is sick		
Public facility	273	64.4
Traditional healer	113	26.7

4.8 Childcare aspects influencing nutritional status of children

A total of 198 (21.8%) children aged 6-24 months were still breastfeeding at the time of the assessment while a majority (70%) of those not breastfeeding had stopped breastfeeding after one year. The assessment revealed that about 4% of assessed children were breastfed less than 6 months, 21% were breastfed between 6-11 months; slightly more than 28% were breastfed between 12-18 months while the rest 47% were breastfed for more than 18 months. Almost 90% of the children were introduced to foods other than breast milk before 4 months of age, 8% at age of 4-6 months while slightly more than 2% were weaned after 6 months. The result further revealed that only 15.6% of the children were exclusively breastfed for the recommended six months. As shown in the table below majority of the children in Rabdure district were fed two times in a day. About 9% of the children were fed once in a

day, 50.4% were fed twice a day while the 33.3% were fed three four times a day respectively. Only 7.1% of the children were fed for the recommended five or more times in a day.

Table 4.9 Distribution of Malnutrition and the Feeding frequency of the children in Rabdure District in January 2006

Frequency of Feeding/day	<-2 Z score		≥-2 Z score		Total	
	No	%	No	%	No.	%
1	19	22.6	65	77.4	84	9.3
2	82	18.1	372	81.9	454	50.3
3	39	13.3	262	87.0	301	33.3
4	4	6.3	60	93.8	64	7.1
Total	144	15.9	759	84.1	903	100

The data shows that the majority of the malnourished 22.6%, and 18.1% were those fed one and two times in a day respectively while the proportion of the malnourished reduced with increase in the frequency of feeding. The data also showed that feeding frequency was significantly associated with malnutrition $p=0.0129$ with those fed few times being more likely to be malnourished.

Further, qualitative information on childcare indicated that most of mothers/caretakers do not have enough time to devote to their children due to their involvement in household income activities as well as household chores. Some mothers are the breadwinners of the households besides fetching water, fire wood and cooking food. It was reported that sometimes mothers are spending up-to six hours in search of water due to the long distance covered to or congestion at the water points. The mothers/ caretakers are sometimes fatigued leading to less attention to their children. Sometimes childcare is delegated to siblings in the absence of the caretaker/mother. It was reported also that there is tendency of holding back children before taking them to health facilities and seeking medical assistance when the children are in severe stages of illnesses or when other remedies have failed.

On intra household childcare aspects, there is no sex bias rather priority is given to the youngest children at the time of feeding and attention. As a coping strategy some families are reported to be restricting consumption of food among the adults for the small children to eat. However, it was also reported that in some families the supplementary food meant for the malnourished children is shared among the family members when in absence of alternative sources of food.

4.9 Food Security

The food security information was collected through focus group discussion (FGD), key informants interviews, and direct observation of the food security-related issues. The FGD were conducted in the in Rabdure town, Habow, Quracle, Wajir, and Lagalay villages.

The information collected indicated that the failure of Gu and Deyr 2005 rains has negatively affected the livelihoods of both the pastoralists and the agro-pastoralists in Rabdure district. The production of the cereals such as sorghum and other crops was adversely affected by the rain failure before reaching maturity. This resulted to massive crop failure in the district, with almost nothing being harvested. This means that the households relying on farm production as a source of food are left without reliable means of accessing food. The crop failures also affected the source of income for the households that sell part of the harvest to get income to buy other food items and household commodities. It should be noted that quantitative data shows that majority of the households in the district are currently relying on purchase as the main source of food. Cereals availability in the market is not only low but also the prices are high for the majority of the people in the district. Sorghum the main cereal in the market is reported to be from Baidoa in Bay Region. There is also a report of some families eating wild seeds such as Barde (shown in the photo) which is not consumed in normal situation.



Barde seed used as food in Quracle village Rabdure district

On the other hand, the rain failure also had negative impact on livestock production. The drought has resulted to wide scale drying of water points and total depletion/or drying of pastures. Consequently, pastoralists have migrated with their livestock to Tieglow and Bur Hakaba districts in search of water and pasture. The movement of livestock has left women and children who rely on them for food and income vulnerable to food insecurity. The consumption of milk, a major source of nutrients has drastically reduced in the district. Even for the livestock which are still in the district, owing to scarcity of water and pasture they are in very poor conditions leading to low milk production. The milk availability in the market is evidently low, prices are low yet the consumers are unable to buy because of lack of income. The emaciated livestock are either exchanged for staple foods or sold at through away prices and at the same time there are limited buyers of the livestock due to low purchasing power. The people also reported that consumption of meat from the emaciated/or those from animals about to die caused diarrhoea in children.

Further information reveals that cattle and shoats are the most affected animals by the drought and the carcass of animals are observed in the area (see photo). Some animals are reported to be too weak that they collapse after drinking water. Wild animals are said to be scrambling for water with livestock at the water points. Case of a weak cow being killed by hyena at a water point was reported. .



Photo of a dead cow in Rabdure district Habow area



Somali lady standing besides a dead cow in

4.10 Coping strategies

The commonly used coping strategies used by an average of over 60% of the households assessed include purchase on credit, limiting portion size at meal times, reduce number of meals eaten, borrowing of foods, and restrict consumption by adults for children to eat. The purchasing power in the district has gone low forcing the traders to mainly transact on sorghum and sugar which can be afforded by the local consumers. There are also reports of people in Quracle consuming wild seeds Barde (see photo), a seed type that is not consumed in normal period. Further qualitative information collected through the focus group discussion identified the following as the common coping strategies used in the district.

- Skip one or two meals
- Intensive sells of bush products (firewood, construction poles and other building material)
- Labour migration to bigger towns
- Young women migrating to towns in search of house help work (maid)
- Slaughtering of the weak animals before they die.
- Sale valuable assets like breeding animals
- Hunting of wild food such as Dik-dik
- Family splitting and
- Begging at night time

4.11 Water access

Many water points in the district have dried forcing people and livestock to cover long distance in search of water. Assessment showed that unprotected wells/springs and water catchments/ponds are the main sources of water in Rabdure for 78.1% and 21.5% of the households respectively. The distance to water source for most of the households, 58.5% is between is over 5000 meters. The maximum distance to the water point in emergency recommended by the Sphere Standard is 500 metres only 11.3% of the households have water points that are within the recommended distance. The data also revealed that majority of the households 69.3% owned 1-2 water containers of 10 to 20 litres and that most of the household 38.8% used an average of 20-60 litres of water per day per person for drinking, cooking and personal hygiene. Information collected through FGD indicated that some women spent up to seven hours to get water. Camels are mainly used in fetching water for domestic use, but donkeys are also used. For the households who do not own camels they get assistance from those who own camels or donkeys.



A shepherd who has walked for 23kms to get water from Eldhere well



Women in search of water Lagalay village east Rabdure

4.12 Mortality

The retrospective mortality assessment was done co-currently with nutrition assessment in which a 30 by 30 cluster sampling methodology was used. The selection of the clusters and households were the same as for the assessment. All households in the selected clusters were eligible for the administration of the mortality questionnaire irrespective of whether they had under-five or not. A total of 903 households with or without under-five children at the time of the assessment were included in the

assessment. The retrospective mortality rate was calculated on the basis of recall period of 80 days from October 21st 2005.

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

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

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

Number of deaths=34

Current Population=4692

Number of those arrived (Arrivals) =9

Number that left= 85

Number of Births=20

Time interval=80 days

CMR =0.90 deaths/10,000 persons/day (CI: 0.60 – 1.20).

Basing from the WHO categorization, the CMR of Rabdure district indicates a situation that is acceptable.

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

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

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

Number of death of under-five=15

Current population of under-five=1223

Number of under-five that left=6

Number of Births=20

Time interval= 80 days

Number of under-five that arrived=0

U5MR=1.53/10,000/day (CI: 0.76 – 2.30)

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

The causes of deaths varied with 1.4% of deaths attributed to malaria, 0.6% to ARI and anaemia each and 0.4% to diarrhoea diseases. Other causes of death reported included measles, birth complications and accidents.

4.13 Humanitarian Interventions

Different UN organization and international organization are currently carrying out humanitarian activities in the district. ICRC is distributing food aid and water provision mainly through water tracking in Bodan. WFP has been distributing family rations mainly to the supplementary feeding centres in the District, while UNICEF provides supermix to the malnourished children. IMC is the main organization that supports health related activities including management of the Rabdure MCH and four health posts MSF- Belgium supports an OPD.

5.0 DISCUSSION

5.1 Comparison of nutrition status finding with past assessments

The assessment results shows a critical nutrition in Rabdure district, which is consistent with past assessments as shown in the table, the recent past assessments in Rabdure District have shown levels of 19.3% (CI: 16.0-23.2) in October 2001 and 14.8% (CI: 11.9-18.4) in August 2002. Even though the past and the present assessments were not undertaken in same season, the results are not statistically different.

5.2 Nutrition status, social economic factors and food consumption

There was no significant relationship between acute malnutrition and most of the social factors with malnutrition. Dietary diversity or the number of food groups consumed as well as the frequency of feeding children are major factors that had significant association with malnutrition. The two major sources of food i.e. purchase and own production are affected both by the prevailing drought where animal and crop production has failed due to lack of rain; and income access through labour from working in the farms has also been lost. The drought has led to movement of livestock to Tieglow and Bur Hakaba district leaving the families without milk sources or income from the sale of animal products such as milk. This further reduces the types of food accessed directly. The crop prospects are poor leading to a rise in cereal prices available in the district. The social economic factors such as income influence purchase and consumption of food and ultimately on the nutrition status of the Rabdure population.

5.3 Morbidity aspects and the health seeking behaviour

Morbidity

Diseases usually lead to increased nutritional demands to make up for the tissue breakdown and at the same time interfering with the intake, digestion and absorption of the nutrients in the body. A total of 14.1%, 14.8%, 14% and 26.7 of the malnourished children had ARI, diarrhoea, malaria, and measles respectively. Although there was no statistical association ($p>0.05$) between these illnesses and malnutrition, the cumulative negative effects on nutrition and interaction with other factors influencing nutrition status may have contributed to the high malnutrition in the district.. Also poor childcare practices (introduction of weaning foods before 6 months of the child's age) have been identified to contribute to diseases and possibly to malnutrition. Although the prevalence of the diseases was relatively higher than other assessments, only ARI prevalence was significantly higher than the rates recorded in previous assessments. The prevalence of the other diseases was within the ranges recorded in the previous assessments.

A measles immunisation coverage of 81%, polio of 85% and Vitamin A supplementation (80.7%) may have given a boost to the Rabdure children's immunity. Nevertheless, it is acknowledged that measles vaccination coverage and vitamin A supplementation are below the Sphere recommended minimum standard of 95% and the on-going health interventions and the regular WHO anti-polio campaigns still encouraged. The coverage of measles vaccination and vitamin A supplementations were within the levels recorded in the previous assessments.

Health facilities

Public health facility and traditional healers seem to be major sources of health services when a child is sick in Rabdure district with 64.3% and 26% respectively. However, long distance to the health centres and limited number of the facilities is limiting access to the health services. The availability of only one MCH in Rabdure town and four health posts that are located in main villages calls for long distance trekking of health service seekers. In effect some people do not access the services and particularly in Horri village located 30km North of Rabdure town. In addition, the practice of reducing or denying food to sick children and the tendency to present sick children to the health facility when home remedies fail is likely to have negative effects on child's well being, further advancing possibility of deterioration of health and nutrition for mothers and children

Sanitation/water

Inadequate access to safe water and poor human excreta disposal remain a major concern in Rabdure district. About 69% and 23% of the visited households use open hand dug wells and water pond/catchments as the main water source respectively. There are no water protection systems, implying that water contamination is high and consequently water-related illnesses such as diarrhoea, affect the population. Besides contamination of water, drought has reduced access, quality and quantity of water in the district. Report from FGD further confirmed that some women are spending up to seven hours and covering up-to 23 km in search of water and they only manage to get little water. According to the Sphere standards, only 11.3% of the households are getting water from the maximum distance to the water point of 500 metres. This compromises the hygiene of the household members leading to more infections and malnutrition. There were reports of death of three people due to factors associated with drinking unclean water from a catchments and seven more people with diarrhoea after taking water from the same source were referred to IMC health facilities in Rabdure town.

5.4 Childcare practices influencing nutrition status of the Rabdure District.

Exclusive breastfeeding and sound complementary feeding practices are crucial for enhancing the nutritional and health status of infants and young children. The study revealed that majority of the assessed children 60% in Rabdure district were introduced to foods other than breast milk before four months and about 60% are fed one or twice in a day. In addition, 30% of the children were breastfed for less than a year. This not only contributes to failure to meet the nutrient requirements but it is also a major impediment to optimal growth for children in Rabdure. Furthermore, feeding young children less dense food and limited in diversity as evidenced by the consumption of 3 or less food groups by the majority of the households 91.5% reduces energy and other nutrients consumption. The unhygienic conditions under which the foods are sometimes prepared exposes food to contamination and may predispose children to risk of diarrhoea episodes and finally reduced resistance to other common infections. This explains the high incidences of diarrhoea after 11 months and particularly in the category aged 12-23 months where 6.5% children had diarrhoea two weeks before the assessment. Children less than one year are most likely relying on breast milk as major source of food and hence not exposed to contamination arising from human handling. Age of the children was significantly associated with malnutrition ($p=0.004$).

Some feeding habits among expectant mothers limit consumption thus increasing chances of delivery of low birth weights. Further more, the study revealed that majority (over 50%) of pregnant women are currently malnourished, implying that the babies they will deliver will most likely be underweight and exposed to high risks of malnutrition, morbidity and mortality.

6.0 CONCLUSION AND RECOMMENDATIONS

The global acute malnutrition rate, with WHZ <-3 z scores is (15.9 (CI 13.6-18.5)). This depicts a critical situation (WHO categorization) but is within the typical range of 15-20% for the area. The crude (about 0.9/10,000/day CI:0.60-1.20) and under five mortality rate of about 1.53/10,000/day (CI: 0.76 – 2.30) are within acceptable levels (WHO categorization).

The problems of low quantity and quality food consumption coupled with the high incidence of diseases, poor sanitary practices and limited access to safe water are factors contributing to the high malnutrition rates. The effects of these factors have nevertheless been mitigated through ongoing humanitarian interventions such as measles, polio immunization and vitamin A supplementation; limited food aid and health services. Given the prevailing drought conditions and limited humanitarian interventions, the compound negative impact of these factors on nutrition is likely to aggravate the already critical situation. These problems may need to be addressed urgently to prevent further deterioration in the nutrition condition of the population.

The assessment team proposes the following recommendations:

Short term Interventions

- Increasing the households' access to food is a priority. This may be achieved through the general and supplementary feeding programmes.
- Rehabilitation of the malnourished children through therapeutic feeding.
- To address the problem of high prevalence of illnesses, new health facilities as well as equipping the existing ones need to be given a priority. Mobile clinics may precede the establishment of the health facilities in the areas without such facilities. There is a need to build the human capacity of the existing MCH to manage severely malnourished children.
- To address the immediate problem of acute water shortage, there is an urgent need for provisions of water to the affected population through such interventions as water trucking.
- Given the fact there is a high proportion of female headed households intervention programmes such as food for work programme, income generating activities need to be tailored to meet needs for male and female headed households

Long term Interventions

- To address the issues of limited access to quantity and safe water, there is a need for rehabilitation of water systems including the well and water catchments. The community should be trained on maintenance of sanitation of the water systems
- Provision of large water containers for fetching and storage of water would contribute in easing water problems where people have to cover long distance to get water and yet they are unable to carry large volume of water. Provision of donkeys and donkey-carts to the households without camels or donkeys would also make transportation of water more efficient.
- Interventions that facilitate recovery of the livelihood system. These include increasing the community's purchasing power for example by initiating income generating activities; introducing small-scale credit system for small business catering for both the female and male headed households; cash/food for work.
- There is need for establishment of health facilities in the district especially in Northern side of Rabdure where there are none.
- Intensifying health and nutrition education activities at the household level to address care concerns, targeting mothers, fathers and other caregivers. The main areas of focus should include promoting exclusive breastfeeding, appropriate young child feeding, diet diversification, and improvements in household hygiene including health care practices.
- Given the low usage of soap, the food aid basket need to consider soap or alternative an item in the basket. This would boost the hygiene and sanitation in the district.

APPENDICES**ANNEX:1 Population Estimate for Wajid District**

Assignment of Clusters				
Geographical unit	Type of settlement	Population Sizes		Assigned cluster
		WHO Polio figures 2005	Revised Pop	
Rabdure town	Permanent	3585	4500	1,2,3
Quracle	Permanent	1000	1500	4
Maduuli	Temporary	350	300	
Wajir	Temporary	175	500	5
Owrleys	Temporary	450	300	
Ceellehelli	Temporary	400	800	
Kuncaani	Permanent	450	500	6
Harunley	Permanent	250	250	
Buurmegid	Temporary	250	270	
Dhuurey	Permanent	455	600	
Laasmacaan	Temporary	300	300	7
Alleeley	Permanent	300	250	
Raboodin	Temporary	300	400	
Dhanaawe	Temporary	300	300	
Washaaqi	Permanent	400	1200	8
Darmanjiid	Permanent	500	600	
Habow	Permanent	600	1700	9,10
Haradigli	Permanent	100	200	
Babile	Temporary	250	350	
Fooldiir	Temporary	550	180	
Edeedlialelay	Permanent	150	450	
Ceeldheeri	Permanent	300	800	11
Ceelhaawey	Temporary	200	450	
Dhabarduleel	Temporary	550	570	12
Waaqsheen	Permanent	450	1000	
Kulimey yare	Temporary	600	450	13
Balacade	Temporary	200	300	
Ceelmareer	Temporary	200	250	
Jinigaaban	Temporary	450	350	
Dhoobaali	Temporary	500	550	14
Lehelow	Permanent	750	800	
Biyicade	Permanent	100	150	
Sariri	Temporary	100	120	
Raxali	Temporary	350	380	15
Xasinsiyaad	Temporary	300	110	
Fadhixume	Temporary	150	300	
Ceel dhuub	Temporary	200	220	
Ceelcade	Permanent	600	700	
Bohologaduud	Permanent	800	750	16
Toolow	Temporary	550	480	
Beerlaamow	Temporary	550	540	17

Geographical unit	Type of settlement	Population Sizes		Assigned cluster
Boodaan	Permanent	850	1000	
Boholey	Temporary	450	500	18
Doonfuul	Temporary	300	300	
Waabgaraadi	Permanent	350	750	
Warhajiin	Temporary	500	400	19
Isdhoorti	Permanent	650	1900	20
Gubey	Permanent	500	1200	21
Buurbasli	Permanent	200	900	
Gomari	Temporary	425	320	22
Wargomor	Temporary	600	400	
Afgooye	Temporary		900	
Haarqoday	Temporary		1100	23
Laqalley	Temporary		1150	24
Cimilow	Permanent	1000	800	25
Ligaley	Permanent	400	400	
Wartiribiki	Temporary	300	200	
Warmaraadli	Temporary	200	250	
Warhinshili	Temporary	150	450	
Ceelbaxii	Temporary	150	200	26
Shimbirow	Permanent	900	0	
Ganaweyn	Temporary	700	150	
Balagaduud	Temporary	300	0	
Lowahaabley	Temporary	200	0	
Burkus	Temporary	300	0	
Warbilibi	Temporary	250	0	
Sadaxbuurood	Permanent	900	500	
Iskiri	Permanent	300	800	27
Booco	Temporary	700	400	
Guruboy	Temporary	650	700	
Cumurgenbi	Permanent	200	250	
Dhaxyaal	Temporary	270	0	
Banaaney	Temporary	230	250	28
Warbarbaari	Temporary	100	150	
Malmal	Temporary	300	120	
Bur'edi	Temporary	300	200	
Warjiri	Temporary	145	130	
Beertikeerow	Permanent	800	300	
Xawaaldheer	Temporary	500	300	
Hhuri (Humu)	Temporary	300	350	29
Dixirley	Temporary	200	350	
Wardhujiiley	Permanent		1500	30
Total		34585	44290	

TRADITIONAL CALENDAR FOR NUTRITION ASSESSMENT IN RABDURE DISTRICT
ANNEX:2

Month	Events	2001	2002	2003	2004	2005	2006
Jan.	Beginning of Jiilal		49 Sidtaal	37 Sidtaal	25 Sidtaal	13 Sidtaal	1 Sidtaal
Feb.	Mid of Jiilaal		48 Arafo/Dul-Xaj	36 Arafo/Dul-Xaj	24 Arafo/Dul-Xaj	12 Arafo/Dul-Xaj	
Mar.	End of Jiilaal	59 Sako	47 Sako	35 Sako	23 Sako	11 Sako	
Apr.	Beginning of Gu'	58 Safar	46 Safar	34 Safar	22 Safar	10 Safar	r
May	Mid of Gu'	57 Mawliid	45 S Mawliid	33 Mawliid	21 Mawliid	9 Mawliid	
Jun.	End of Gu'	56 Malmadoone	44 Malmadoone	32 Malmadoone	20 Malmadoone	8 Malmadoone	
Jul.	Beginning of Xagaa	55 Jamadul-Awal	43 Jamadul-Awal	31 Jamadul-Awal	19 Jamadul-Awal	7 Jamadul-Awal	
Aug.	Mid of Xagaa	54 Jamadul-Akhir	42 Jamadul-Akhir	30 Jamadul-Akhir	18 Jamadul-Akhir	6 Jamadul-Akhir	
Sep.	End of Xagaa	53 Rajab	41 Rajab	29 Rajab	17 Rajab	5 Rajab	
Oct.	Beginning of Deyr	52 Shacbaan	40 Shacbaan	28 Shacbaan	16 Shacbaan	4 Shacbaan	
Nov.	Mid of Deyr	51 Ramadan	39 Ramadan	27 Ramadan	15 Ramadan	3 Ramadan	
Dec.	End of Deyr	50 Soonfur	38 Soonfur	26 Soonfur	14 Soonfur	2 Soonfur	

Jiilaal

GU'

Xagaa

Deyr

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 noocee? 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 }	S 10-Tirade noocyada cuntada ?	S11 Tlirada kooxaha cuntada ?
	Nooca da Cuntada	Inta jeer (<5yrs)			
1.			1. Firaley (Bariis, Qamadi, Basto, Badar, Gelley, Canjero, Bur)		
2.			2. Digirta iyo qolofleyda kale		
3			3. Caano(milk)		
4			4. Kalluun/cunto badeed		
5			5. Hilib iyo ukun		
6			6. Sokorta Shaaha iyo tan kaleba		
7			7. Dufan/Saliid/Subag		
			8. Xididaley/buruqley(Bataati		
			9. Miro		
			10. Khudaar		

- S12.** Intabadan rashinka laga isticmaalay guriga intuu inka soo gallay?

1=Xoolaha/dhalaga beerta
2=So
3=Siis
4=Ra
5=ku
6=Am
7=Qar
8=ku
9=kale
10=caddee

S13-23 Cudurrada, Quudinta & xaaladda tallaal 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 leyahay/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 bilood (ama 65-110cm) ee qoyska ka mid ah

Tirsi	Magaca kowaad	S26 Jinsi 1= (L) 2=(Dh)	S27 Da'da oo' bilo ah	S28 Barar 1=Haa 0= Maya	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- Uurey 2- Uur Lahayn
2									
3									

S 34. Isticmaalka xeeladaha isdeberidda (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 kalmo 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 tallaabo 5= 30 tallaabo iyo ka badan

Appendix 4b: RABDHURE NUTRITION ASSESSMENT QUESTIONNAIRE-English version

Date _____ Team Number _____ Cluster Number _____ Name of supervisor _____ Name of District _____

Name of Village/Town _____ Name of section _____ Number of the household _____

1 Q1-8 Household background information

Q1. What is the sex of the household head 1=Male 2=Female

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

Q3. How many children are below 5 years in this household? _____

Q4. What is the present household residence status? 1=Residents 2= Internally displaced 3=Returnees 4=People from within the town 5=Others (specify) _____
If resident (1), then move to Question 8.

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

Q6. How long have you lived in this current location (in months)? _____

Q7.What was the reasons for coming to this current location? 1= Insecurity 2= Lack of jobs 3= Food shortage 4= Water shortage 5= Others (specify) _____

Q8. Households main income source 1=Livestock 2=Livestock/farming 3=Casual work 4=farm irrigation 5=Small business 6=Salaried employment 7=Sale of crops 8=Sales of animals and animal products 9=Remittances/Gifts 10=Others (specify)

Q9. Twenty four-hour recall for food consumption in the household. The interviewer should establish whether the previous day was usual or normal for the household. If unusual-feasts or most members absent, then another day should be selected or alternatively choose on another day.

<p>Food types consumed: What foods did members (<5 yrs and >5yrs) of the household consume in the past 24 hours (from morning when people woke up till evening)? Include any snacks consumed including breast milk.</p>		<p>How many times was each of these foods eaten by the household members (both adults and children)?</p> <p>Codes:: 0=none 1= once 2= twice 3=3 times 4=4 times 5=5 or more times</p>		<p>Total Number of Food types and Groups Consumed: (Q10 & 11 Filled by the Supervisor)</p> <p>Food Groups.</p> <p>1. Cereals: e.g. caanjera, rice, spaghetti, ugali, wheat 2. Meat, meat products (e.g. meat, chicken, bird, or any of their products)</p> <p>3. Roots and Tubers (e.g. potatoes, cassava, yams, arrow roots, or any other foods made from them)?</p> <p>4. Vegetables (e.g. leafy vegetables, onions, tomatoes, pepper, carrots, etc)?</p> <p>5. Fruits (e.g. watermelons, oranges, dates, mangoes, bananas, pineapple, etc or any of their products)?</p> <p>6. Beans/Pulses (e.g. beans, green grams, cowpeas, lentils, etc)?</p> <p>7. Dairy Products (e.g. fresh, skimmed, cream milk; butter, ghee, cheese, etc)?</p> <p>8. Fats and Oil (any foods made with vegetable oil, fat or butter, margarine,</p> <p>9. Sugars and Honey (any product made with sugar or honey)</p> <p>10. Fish and Sea foods (e.g. any dried or fresh fish, or lobsters, shell fish, etc)?</p>	
Type of food	Frequency <5years	Frequency adults > 5years			
1.					
2					
3					
4					
5					
6					
7					
8					
9					
			Q10. Number of Food Types	Q11. Number of Food Groups	

Q12. What is the main source of the food consumed? Codes: 1=Animal/Crop own production 2=Purchases 3=Gifts from friends/families 4=Food aid 5=Bartered 6=Borrowed 7=Gathering 8=Others (specify) _____

Q13-23 Morbidity, feeding and immunization status of children aged 6 – 59 months (or 65-110 cm) in the household.

Sno	Name	Q13. Diarrhoea in the last two weeks 1=Yes No=0	Q14. ARI in the last two weeks 1=Yes No=0	Q15. Malaria in the last two weeks 1= Yes 2= No	Q16. Measles in the last one month 1=Yes No=0	Q17. Vaccinated against measles (if 9-59 months) 1=Yes 0=No	Q18. Vitamin A provided in the last 6 months 1=Yes No=0	Q19. Are you breast feeding the child? 1=Yes No=0	Q20. If not breast feeding, how old was the child when you stopped breast-feeding? 1=less than 6 months 2= 6 – 11 months 3=12 – 18 months 4= 18 months or more 5=Never	Q21. At what age was the child given foods other than breast milk 1=Less than 3 months 2=4-6 months 3=7 months or more	Q22. How many times do you feed the child in a day? 1= Once 2=Twice 3=3-4 times 4=5 or more times	Q23 How many times has child received polio immunization 1==1-2 times 2=3 or more 3=Never
1												
2												
3												
4												

Q24. When your child is sick, where do you seek assistance? 1=Traditional healer 2=Private clinic/pharmacy 3=Public health facility 4=Others (specify 5=Not sick

Q25. Is there any member of the family who has difficult seeing at night (night blindness?) 1=Yes 2-6 years 2=Yes more than 6 years 3=None

Q26-33. Anthropometry for children aged 6 – 59 months (or 65 – 110cm) in the household.

Sno	Name	Q26. Sex 1=Male 2=Female	Q27. Age in months	Q28. Oedema 1=Yes No=0	Q29. Height (cm)	Q30. Weight (kg)	Q31. MUAC of child (cm)	Q32. MUAC of care giver (cm)	Q33. Physiological condition of the care giver
1									1=Pregnant 0=Not pregnant
2									
3									
4									

Q34. How the consumption coping strategies are used

	Relative Frequency
In the past 30 days, if there have been times when you did not have enough food or money to buy food, how often has your household had to:	0=Never (zero) 1=once in week 2=Sometimes (1-2 times in week) 3=Often (3-6 times in a week) 4=Always day)
a. Shift to less preferred (low quality, less expensive) foods (from <i>osolo</i> to <i>obo</i>)?	
b. Borrow food or rely on help from friends	
c. Purchase food on credit	
d. Gather wild food or hunt?	
e. Sell animals at through away price to buy staples?	
f. Send households members to eat else where?	
g. Send household members to as for Sadaka?	
h. Limit portion size at meal time?	
i. Restrict consumption of adults in order for small children to eat)?	
j. Ration the money you had and buy prepared food?	
k. Reduce numer of meals eaten in a day?	
l. Skip entire days without eating?	
m. Deplete assets to get food, i.e. sell livestock, land , jewelry etc.?	
n. Use assets as security to get food e.g. jewelry, berkads etc.?	

Q35-40 Access to water (quality and quantity)

Q35. What is the main source of drinking water 1 = piped 2 = public tap 3 = Borehole 4= protected well or spring

5= unprotect spring and well 7= river 8= other

Q36. What is the main source of water for cooking and personal hygiene? 1 = piped 2 = public tap 3 = Tube well/borehole 4= protected well or spring

5 = unprotect spring and well 7= river 8= other specify_____

Q37. What is the average household water use per day per person for drinking, cooking and personal hygiene is 1= <20litres 2 = 20-60 litres 3 =60-120 litres

4= >120 litres

Q38. What is the distance to the nearest water point?1= 0-500 metres 2 = 501-1000metres 3= 1001 – 5000 metres 4 =>5000 metres

Q39. Are the water and systems are maintained such that quantities of water are available ? 1 =Never 2 = sometimes 3 = Often 4= always

Q40. What is the number of clean water collecting containers of 10-20 litres? 1= 1-2 containers 2 = 3-4 containers 3 = 4-5 containers 4= more than 5 containers

Q41-47 Sanitation and Hygiene (access and quality)

Q41. What is the type of the toilet used by most members of the household? 1= Flush or sewage system 2= Traditional pit latrine 3=Improved pit latrine 4 = Outside/bush 5 =Others

Q42. What is the number of people who use the same toilet? 1= 1-5 people 2= 6-10 people 3 = 11-15 4= 16 – 20 people 5= more than 20 people

Q43. Do the household members wash their hands after defecation? 1= always 2= often 3=sometimes 4= Rarely

Q44. Do the household members wash their hands before eating or food preparation? 1= always 2= often 3=sometimes 4= hardly rarely

Q46 Does the household have soap? 0=No 1=Yes

Q47. Do the household members use soap when washing their hands after defecation/before eating or food preparation? 1=No 2=Yes

Q45. What is the distance between toilet and water source? 1 = 0 – 5 metres 2= 6 – 10 metres 3= 11- 20 metres 5= 21 - 29 metres 5= 30 metres or more

REFERENCES

UNICEF Somalia 2004 Nutrition Assessment Report Rabdure District Bakool Region Somalia

FSAU Monthly Food Security Report, 2002

UNICEF Somalia 2001 Nutrition Assessment Report Rabdure District Bakool Region Somalia

FSAU Monthly Nutrition Update November 2005

FSAU Monthly Nutrition Update June 2005

Measuring Mortality, Nutrition status and Food Security in Crisis Situations: SMART Methodology

SACB: Nutrition assessment guidelines for Somalia.

FSAU 2005/06 Post Deyr Analysis, February 2006