

# BURAO NUTRITION SURVEY REPORT

January 2002



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## **1 Executive Summary**

UNICEF in collaboration with the Regional Health Office for Togdheer and SRCS conducted a nutrition survey in Burao at the end of October 2001. Routine reports from Burao health centers over the few months prior to the study depicted a pattern of increasing malnutrition cases. The main objective of the survey was therefore, to determine the nutritional status of children aged 6 – 59 months in Burao town. Moreover, the study aimed at understanding the factors influencing the nutritional status of children in these areas.

Using the two-stage random cluster sampling methodology, a total of 900 children between ages 6-59 months were examined. Nutritional status assessments were based on weight and height measurements. Information relating to diarrhoea and ARI incidence two weeks prior to the survey, Vitamin A supplementation and measles vaccination status of the children were also collected.

### **Nutrition**

Data analysed in EPI Info for nutritional status suggests a global acute malnutrition rate of 13.6 per cent and a severe malnutrition rate of 3.1 per cent.

### **Immunization**

Information collected on immunization during the survey indicated that about 61 per cent of the children had been immunized against measles, out of which almost 19 per cent had been vaccinated within the six months prior to the survey and a bit more than 43 per cent before the past six months. 39 per cent of the study children were not immunized at all against measles. Vitamin A supplementation during the past six months stood at almost 65 per cent.

### **Child diseases**

About 13 per cent of the children had diarrhoea while 45 per cent suffered from acute respiratory infections during the two weeks prior to the survey. When asked if they seek assistance when a child is sick, almost all households (slightly more 99 per cent) replied in the affirmative. The majority of these (69 per cent) reported that they seek assistance from private clinics/pharmacies, while less than 29 per cent go to public health facilities.

### **Household characteristics**

It appears that of the households interviewed close to 17 per cent are female headed. About 81 per cent of these have been residents of Burao town for over five years.

### **Water and environmental sanitation**

The greater majority of households (slightly more than 85 per cent) that were surveyed reported the pit latrine as their sanitation facility, whereas slightly more than 14 per cent were reported as not having one. The main source of drinking water for these households was by tanker/truck vendor (almost 77 per cent). Less than 17 per cent of households reported the tap/piped water as their source of drinking water even though Burao is the second largest town in Somaliland.

## 2 Summary of findings

Indicator	Percentage
Number of boys in the sample	54.9
Number of girls in the sample	45.1
Global acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema	13.6
Severe acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema	3.1
Proportion of children with diarrhoea in two weeks prior to the survey	12.6
Proportion of children with ARI in two weeks prior to the survey	45.0
Proportion of children supplemented with Vitamin A in six months prior to the survey	64.7
Proportion of children immunised against Measles	61.0
Proportion of female-headed households	16.6
Proportion of households staying in Burao town for over 5 years	80.9
Proportion of households with tanker/trucker vendor as the main source of drinking water	76.6
Proportion of households with pit latrines as sanitation facility	85.2
Proportion of households seeking assistance when child is sick	99.4
Proportion of households seeking assistance from private clinic/pharmacy when child is sick	69.2

### **3 Background Information**

Burao, the regional capital of Togdheer region was subjected to a number of civil wars in the past decade alone. The last one was in 1995 and all inhabitants fled the town. These re-occurring conflicts destroyed all public service infrastructures, in particular health and education services were totally wiped out. The tribal reconciliation efforts of 1997 as well as de-mining initiatives by international organizations enabled many people to return to their homes in the last three years and over this relatively short period Burao has once again become a booming town and is on the way to recovery.

Currently the population of Buroa town is estimated to be around 120,000 persons. Large numbers of internally displaced people from the drought affected Hawd area and from Southern Somalia have chosen to settle in Burao. There are three settlements inside Buroa town alone that have been ear marked for the disadvantaged groups. The majority of the displaced groups from the South earn their living through begging in the streets.

#### **3.1 Health context**

Currently, three mother-child health centers and one regional hospital are functioning in Burao. In mid 2001 International Rescue Committee (USA) assumed responsibility for the running of two of these MCHs and the maternity ward of Buroa hospital, while IFRC/SRCS was supporting the most famous MCH in Buroa - Kenya MCH for the past three years. The three MCHs provide antenatal care, immunization, sick child clinic, growth monitoring and promotion as well as health education. Nutritional surveillance reports from Buroa MCHs, particularly Kenya MCH continued to show alarming malnutrition statistics for over the recent past.

Buroa hospital is the referral center for the whole of Togdheer region. The diaspora community and municipality of Buroa town contributed tremendously to the re-rehabilitation and revitalization of the Buroa hospital services. The hospital now has 120 beds and is staffed with seven doctors and more than 60 other health workers. The pediatric ward of the hospital mainly deals with diarrhoea, acute respiratory infections and malaria cases. No feeding programmes exist for the malnourished children admitted in the hospital.

Apart from the health services provided within the public facilities framework, UNICEF and WHO support mass immunization programmes and vitamin A distribution, usually delivered from house to house. Also there are about 50 private pharmacies and clinics, which contribute to health care delivery and dispensing of essential drugs in the town.

#### **3.2 Water and Sanitation characteristics**

The Burao population gets its drinking water from several shallow wells and two bore holes located along the 'tog'. HABITAT (UNCHS) also started to rehabilitate two extra bore holes for public use. The piped water system has been destroyed by the wars and is not yet fully rehabilitated. There are only few water kiosks, which are operational inside Burao. At the household level, vendors and tank trucks usually

deliver the water. The hygiene handling procedures of the water in the shallow wells and by the vendors is usually unsatisfactory. Water handling practice at household level is always another regular concern. Also water shortages is common in many households due to the cost and lack of adequate storage facilities.

Apart from the temporary settlements of the displaced communities and the urban poor households who have no proper sanitation facilities, the use of uncovered pit latrines are very common in the dwellings. UNICEF surveys in the past have also shown lack of awareness on general hygiene practices such as hand washing.

### **3.3 Food Security characteristics**

Economically the Burao population depends mainly on livestock trade and remittances from relatives in the Diaspora. Also in the past few years salaried employees of the Somaliland administration increased as many people were employed for security, public and municipality services.

In the recent past, both livestock trading and administration wages were affected negatively. The ban on livestock exportation to the Arabian Gulf reduced livestock trade activity tremendously. Many urban poor households who were dependent on livestock directly or indirectly suffered and lost their daily income source.

The ban on livestock exportation and the increased circulation of two currencies, both Somaliland and Somali Shillings contributed to the devaluation of the two currencies used in Burao. The purchasing power of both currencies was badly affected and this resulted in reduced purchasing power for many households.

Another flourishing economic activity in Burao is the construction business. But this too has been reduced due to a number of reasons. Firstly, there were a number of security problems in Burao caused by land ownership conflicts and therefore the municipality halted the whole process of land allocation. Secondly, the general economic recession might have contributed to the decline in the construction business. All this has negatively impacted on the urban poor who were earning their income from the construction business.

Ironically, the Qat market is still flourishing and several thousands of dollars are still used on Qat purchase.

## **4 Survey Objectives**

The survey had as its objectives the following:

- To determine the nutritional status of children aged 6–59 months in Burao town.
- To determine the incidence of diarrhoea, measles and ARI among study children.
- To determine factors associated with the nutritional status of children aged less than five in Burao town.
- To measure measles vaccination and vitamin A supplementation coverage in the study areas.

## **5 Methodology**

### **5.1 Sampling methodology**

A two-stage cluster sampling methodology was used. The town of Burao was divided into thirty equal parts. The UNDOS aerial map of Burao town was used for the division of the town. The map was very clear showing all the streets, roads and housing lines of the town.

The second stage of sampling was carried out in the cluster to select the first and subsequent households. Each team went to the middle of the assigned cluster location, guided by survey guides selected from the community, and determined a random direction by spinning a pencil. All households along the direction selected to the border of the cluster were counted and assigned numbers on a piece of paper. The survey guide randomly selected the first household to be visited from among those numbers. Subsequent households were selected on the basis of proximity following the nearest entrance. All eligible children in each household visited were measured and weighed. If a caregiver or child was absent an appointment was made and the household revisited until the child was examined.

A total of 900 children were examined for weight for height. Their caregivers were interviewed as to whether the children had received Vitamin A or Measles vaccination in the past 6 months, or had suffered from diarrhoea or ARI incidents two weeks prior to the survey.

### **5.2 Sample size**

The target population was children 6-59 months (or heights between 65 – 110 cm) as children in this age group are considered to be particularly vulnerable to malnutrition. In order to provide valid estimates of the prevalence of malnutrition in children with a 95% confidence, a minimum of 900 children were to be examined, 30 children to be randomly selected from each of 30 clusters.

### **5.3 Training of Enumerators and Pre-testing**

Enumerators were trained for three days on objectives of the survey; study population, sampling procedures, accurate ways of collecting anthropometric data and interviewing procedures. Pre-testing of the questionnaires was also carried out in parts of Hargeisa town to enable enumerators and supervisor refine interviewing techniques as well as measuring children.

### **5.4 Data Collection and analysis**

The trained enumerators administered the questionnaire to mothers or primary caregivers of selected households. If a mother or caregiver was absent an appointment was made and the household revisited until the interview was completed.

Six teams were used to collect the data. Each team consisted of two enumerators and one supervisor. Data collection lasted six days. During the data collection phase,

each questionnaire was thoroughly checked by the field supervisors for omissions and inappropriate responses.

Data entry and analysis was done in EPI INFO at UNICEF Hargeisa.

## 6 Presentation of the Survey Results

### 6.1 Demographic Characteristics of Study Households

The demographic characteristics of the households that were surveyed is provided in the table below. Of the total households surveyed 16.6 per cent are female headed. Slightly more than 52 per cent of the sample have stayed in Burao town for less than 12 months. The majority of households (36.3 per cent) reported having small business as their income source; while 92.1 per cent reported purchasing as their food source. Slightly more than 85 per cent of the households that were surveyed reported having the pit latrine as their sanitation facility, while over 14 per cent reported not having a sanitation facility at all. The main source of drinking water reported was tanker/truck vendor (76.6 per cent). Only 16.7 per cent of households had tap/piped water.

Characteristic	Percent	n
Household Head's Sex		
➤ Female	16.6	80
➤ Male	83.4	402
Period of stay in Burao		
➤ < 1 Year.	11.2	54
➤ 1 – 5 Years	7.9	38
➤ Over 5 years	80.9	390
Income Sources		
➤ Small business	36.3	175
➤ Casual work	21.8	105
➤ Salaried employment	16.4	79
➤ Sale of crops	1.0	5
➤ Sales of animals and animal products	2.7	13
➤ Remittances/Gifts	14.3	69
➤ Others (specify)	7.5	36
Food sources		
➤ Animal products from own production	1.2	6
➤ Household crop production		
➤ Purchases	92.1	444
➤ Remittances/Gifts	5.4	26
➤ Begging	0.8	4
➤ Wild foods collection	0.4	2
➤ Others (specify)		
Coping strategies during food shortages		
➤ Remittances/Gifts	27.2	131
➤ Sale of more livestock	6.7	32

➤ Splitting of family	0.4	2
➤ Begging	5.8	28
➤ Borrowing	31.4	151
➤ Food aid		
➤ Purchases	26.2	126
➤ Wild foods collection	2.1	10
➤ Others (specify)	0.2	1
<b>Sanitation facility</b>		
➤ Pit latrine	85.2	411
➤ Flush toilet	0.4	2
➤ Bush/open ground	14.4	69
<b>Source of drinking water</b>		
➤ Bore hole	0.2	1
➤ Open wells	0.4	2
➤ Protected wells		
➤ Berkads	0.6	3
➤ Catchment/pond		
➤ Stream/river	0.2	1
➤ Muscid		
➤ Tap/piped water	16.7	80
➤ Tanker/truck vendor	76.6	370
➤ Others (specify)	5.2	25
<b>Do you seek assistance when child is sick</b>		
➤ Yes	99.4	479
➤ No	0.6	3
<b>If yes, where:</b>		
➤ Traditional healer	1.7	8
➤ Private clinic/pharmacy	69.2	322
➤ Public health facility	28.5	136
➤ Others (specity)	0.6	3

## 6.2 Distribution of children by age and sex

The analysis shows that 491 (almost 55 per cent) of the study children were boys and 404 (45.1 per cent) were girls.

Age in months	Girls		Boys		Total	
	n	%	n	%	n	%
6 – 11	42	44.7	52	55.3	94	10.5
12 – 23	86	46.2	100	53.8	186	20.8
24 – 35	84	41.0	121	59.0	205	22.9
36 – 47	93	46.7	106	53.3	199	22.2
48 – 59	99	46.9	112	53.1	211	23.6
Total	404	45.1	491	54.9	895	100

### 6.3 Distribution according to weight/height index in z-score or oedema

Age in months	<-3 Z-Scores		$\geq$ -3 and < -2		$\geq$ -2 Z-Scores		Oedema	
	n	%	n	%	n	%	n	%
6 – 11	4	4.3	12	12.8	78	83.0	5	5.3
12 – 23	8	4.3	21	11.3	157	84.4	4	2.2
24 – 35	5	2.4	15	7.3	185	90.2	1	0.5
36 – 47	4	2.0	24	12.1	171	85.9	0	0.0
48 – 59	7	3.3	22	10.4	182	86.3	2	0.9
Total	28	3.1	94	10.5	773	86.4	12	1.3

### 6.4 Distribution by sex according to weight/height index in z-score or oedema

Child sex	<-3 Z-Scores		$\geq$ -3 and < -2		$\geq$ -2 Z-Scores		Total	
	n	%	n	%	n	%	n	%
Male	19	67.9	57	60.6	415	53.6	491	54.9
Female	9	32.1	37	39.3	358	46.3	404	45.1
Total	28	3.1	94	10.5	773	86.4	895	100

### 6.5 Indicators

	Proportion (%)	95% Confidence Interval (%)
Oedema	1.3	
Global acute malnutrition	13.6	11.5-16.1
Severe acute malnutrition	3.1	2.1-4.5

### 6.6 Interpretive analysis

Distribution according to age and nutritional status

Global acute malnutrition

Age in months	Proportion (%)	95% Confidence Interval (%)
6-23 months (<2 yrs)	16.1	12.0-20.9
24-59 months ( $\geq$ 2 yrs)	12.5	10.1-15.5

Severe acute malnutrition

Age in months	Proportion (%)	95% Confidence Interval (%)
6-23 months (<2 yrs)	4.3	2.2-7.4
24-59 months ( $\geq$ 2 yrs)	2.6	1.5-4.3

## 6.7 Analysis of Risk factors

Morbidity prevalence and measles vaccination and Vitamin coverage rates

Diseases	n	%
Diarrhoea (n=897)	113	12.6
ARI (n=897)	404	45.0
Measles (n=895)	546	61.0
Vitamin A (n=897)	580	64.7

The overall incidence of diarrhoea (during the two weeks prior to the study) among the study children was less than 13 per cent. ARI incidence again during the two weeks prior to the study was high at 45 per cent. Measles vaccination coverage was reported at about 61 per cent, while about 65 per cent of the study children received Vitamin A supplementation.

## 7 Analysis of findings

The malnutrition rate identified by the survey is relatively high for a major urban settlement in Somaliland. A number of factors, including the economic impact of the livestock exportation, the high prevalence of diseases like acute respiratory infections and shortage of milk production due to the prolonged dry season in the surrounding rural areas might have contributed to the identified malnutrition rate. But as the major income source for Burao population is livestock trade, the ban alone could have had adverse effects on household food security, which partly could contribute to the malnutrition rate in many urban poor households.

Generally, no previous nutrition data is available for Burao town to compare with the results obtained. The results show higher malnutrition rates among children of 6-23 months of age. This could be contributed by the inappropriate traditional weaning practices at this critical transitional stage. The reason for higher malnutrition in boys than girls is unclear because traditionally there is no discrimination in feeding practices, though the distribution of children by age and sex showed in the sample might have slightly affected the results.

The rest of the study findings vis-à-vis the demographic and socio-economic situation are more or less in line with general expectations. Therefore, it is no big surprise that less than 17 per cent of Burao's population today has piped water as their main source of drinking water considering the number of conflicts the town was caught up in over the last decade. In fact the only interesting finding in this part of the survey is that over 80 per cent of the town's population has been in Burao for over five years. This gives an indication that most of the residents have moved back before the reconciliation efforts of 1997 and also the de-mining initiatives of the same period.

## **8 Recommendations**

A longer-term plan to improve the nutritional status of the population needs to be developed and supported covering improvements in access to improved drinking water and making the outreach services fully functional with close supervision. The plan should also address the need for community based nutrition and health education activities. The main areas of focus should include promoting exclusive breastfeeding, appropriate young child feeding, diversification of diets, and improvements in household hygiene and health care practices with the active participation of pregnant mothers, fathers and other caregivers in order to sustain improvements in the nutrition situation in Burao.

Specifically:

- The on-going efforts to improve the water supply system of Burao need to be speeded up in order to minimize water related health hazards.
- Establishment of out-reach health services for the displaced and other disadvantaged population groups inside Burao should be looked at. The out-reach should emphasize the control of nutrition related diseases in the area and also provide sanitation, hygiene and nutrition education.
- Co-ordination mechanisms for food and nutrition stakeholders both at national and regional levels should be revitalized, in order to standardize interventions towards food and nutrition emergencies identified in various locations in Somaliland and to act as technical coordination body for all food and security related issues.
- Periodic monitoring of the nutrition status of children in Burao should be established in order to identify any deterioration at early stages.
- More analysis should be carried out in order to gain a better understanding of the higher malnutrition incidence among boys.