

AWDAL NUTRITION SURVEY REPORT

LUGHAYA AND ZEILA DISTRICTS

January 2002

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1 Executive Summary

UNICEF in collaboration with the Regional Health Office for Awdal and SRCS conducted a nutrition survey in parts of Awdal in November, 2001. The survey covered Lughaya and Zeila districts. The main objective of the survey was to determine the nutritional status of children aged 6 – 59 months in these two districts. The study also aimed at understanding the main factors influencing the nutritional status of children in these areas.

Using the two-stage random cluster sampling methodology, a total of 904 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 26.8 per cent and a severe malnutrition rate of 3.2 per cent.

Immunization

Information collected on immunization during the survey indicated that about only 25.5 per cent of the children had been immunized against measles, out of which 1.7 per cent had been vaccinated during the six months prior to the survey and 23.8 per cent before the past six months. Vitamin A supplementation during the past six months stood at almost 84 per cent.

Child diseases

Slightly less than 19 per cent of the children had diarrhoea while more than 35 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, 84 per cent of the study households replied in the affirmative. The majority of these (42.6 per cent) reported that they seek assistance from private clinics and pharmacies, while 37.6 per cent go to public health facilities and 18.3 per cent go to a traditional healer.

Household characteristics

It appears that of the households interviewed only 4.8 per cent were female headed. Sale of animal and animal products was reported as the main income source by 43.3 per cent of the households, while purchases was the main food source for nearly 71 per cent.

Water and environmental sanitation

The majority by far (89.1 per cent) reported not having a sanitation facility. The source of drinking water for most of these households was open wells (59.5 per cent), followed by bore wells for 17.7 per cent and 13.3 per cent for tanker/truck vendor.

2 Summary of findings

| Indicator | Percentage |
|---|------------|
| Number of boys in the sample | 50.6 |
| Number of girls in the sample | 49.4 |
| | |
| Global acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema | 26.8 |
| Severe acute malnutrition according to Weight For Height Index in Z-Score or presence of oedema | 3.2 |
| Proportion of children with diarrhoea in two weeks prior to the survey | 18.6 |
| Proportion of children with ARI in two weeks prior to the survey | 35.7 |
| Proportion of children supplemented with Vitamin A in six months prior to the survey | 83.8 |
| Proportion of children immunised against Measles | 25.5 |
| | |
| Proportion of female-headed households | 4.8 |
| Proportion of households with open wells as the main source of drinking water | 59.5 |
| Proportion of households with purchases as main food source | 70.8 |
| Proportion of households seeking assistance when child is sick | 84.0 |
| Proportion of households seeking assistance from private clinic/pharmacy when child is sick | 42.6 |
| Proportion of households with no sanitation facility | 89.1 |

3 Background Information

Zeila and Lughaya, the coastal districts of Awdal region constitute the coastal plain called 'Banka Geeriyaaad' or 'the plain of death'. The survey areas come under the Guban ecosystem which is famous for its consistently harsh climate and it is this ecosystem that constitutes the "death plain". The two districts are always grouped together due to their geographical similarities.

The permanent population of the two districts is estimated to be around 30,000 inhabitants. The majority is thought to be nomads who move frequently due to climatic changes. During the Heiz rainfall (December-March), both human and livestock populations of the two districts increase dramatically as Heiz is received only in the coastal plain of Zeila and Lughaya districts. This livestock rush causes a lot of over grazing and contributes to re-current droughts. During the years 2000 and 2001, the Somaliland Administration appealed to international agencies and donors to assist with the famine in these coastal areas of Awdal.

Economically the two districts are more linked to Djibouti than Somaliland.

3.1 Health context

Seven mother and child health centers (MCHs) and five health posts (HPs) deliver basic health services in the two districts. Geographically the area is vast and difficult to access, therefore, public health services in the two districts are limited. The nearest referral hospital is located in Borama. Apart from the distance between Borama and the area, the terrain is either mountainous or very sandy and only four wheel drive vehicles can get through. Population groups in areas bordering Djibouti normally use health facilities in the Djibouti side of the border as referral facilities.

Since the introduction of the cost recovery approach in 2000, MOHL reported on several occasions that the approach itself is hindering the utilization of health services, as people are not able to pay fees due to drought emergencies.

No consistent and reliable nutrition surveillance data was obtained from the health facilities in the area due to poor performance of the health facilities and low attendance.

3.2 Water and Sanitation characteristics

Most of the communities in the two districts get their water from uncovered shallow wells, with the exception of those in the two district capitals who receive water from public kiosks established under mini urban water project systems supported by UNICEF and UNHCR. There are three major bore hole water systems in the middle of the coastal plain, which provide water to both human and livestock. Most of the households in nomadic settlements spend several hours a day in fetching water.

The use of latrines is very uncommon in the area. Apart from a few latrines in Zeila and Lughaya towns, the majority of the villagers defecate in the bushes. Travelers crossing the area often find no sanitation facilities at major overnight stops such as Lowyado.

3.3 Food Security characteristics

The main income sources of the communities in the two districts are livestock sales, petty trade with transit passengers and remittances from relatives in Djibouti. Salt production is another important income source for particular groups, such as those at Tokhoshi.

However, a combination of food security factors put the populations of Zeila and Lughaya districts in a precarious economic situation. Firstly, the major source of income for these peoples was hit by the livestock ban. This was followed by the closure of the Djibouti/Somaliland border causing all transaction, including the petty trading which was mainly dependent on transiting passengers to halt. Also deaths of considerable numbers of livestock due to diseases and famine in the past two years were reported from the area.

In response to an emergency appeal of the Somaliland Administration both at the end of 2000 and in 2001, WFP Hargeisa organized general food distribution to the communities of Zeila and Lughaya districts to mitigate the famine problem in the area.

As in many parts of Somaliland, the Zeila and Lughaya communities do not usually benefit from the emergency food distribution in Zone Five of Ethiopia.

4 Survey Objectives

The survey had as its objectives the following:

- To determine the nutritional status of children aged 6–59 months in the coastal areas of Awdal region;
- To determine the incidence of diarrhoea, measles and ARI among children in these areas;
- To determine factors associated with the nutritional status of children aged less than five in these areas;
- 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. A list of villages with population estimates for all villages along the two districts was obtained from the NIDs Secretariat in NWZ. A table of cumulative population and attributed numbers was developed, and clusters selected based on population proportional to size. The sampling interval was determined by dividing the total population by 30. The calculated cluster interval 406. A random number selected within the cluster interval was used to determine the location of the first cluster. The next and subsequent clusters were determined by adding the cluster interval to the preceding random number selected (cf. Annex 1).

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, 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 direction of 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 904 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 procedure, accurate ways of collecting anthropometric data and interviewing procedures. Pre-testing of the questionnaires was also carried out in parts of Hargeisa town to test the clarity of the study tool and corrections made accordingly.

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 are provided in the table below. Of the total households surveyed almost 5 per cent are female

headed. The majority of households (slightly more than 43 per cent) reported sale of animal and animal products as their income source; while almost 71 per cent reported purchasing as their food source. Slightly more than 89 per cent of the households that were surveyed reported having no sanitation facility. The main source of drinking water reported was open wells (a bit more than 59 per cent), followed by bore wells at more than 17 per cent.

Table 1: Demographic and socio-economic characteristics of study households

| Characteristic | Percent | n |
|---|----------------|----------|
| Household Head's Sex | | |
| ➤ Female | 4.8 | 23 |
| ➤ Male | 95.2 | 453 |
| Income Sources | | |
| ➤ Small business | 15.3 | 73 |
| ➤ Casual work | 11.6 | 55 |
| ➤ Salaried employment | 10.5 | 50 |
| ➤ Sale of crops | 8.8 | 42 |
| ➤ Sales of animals and animal products | 43.3 | 206 |
| ➤ Remittances/Gifts | 6.9 | 33 |
| ➤ Others (specify) | 3.6 | 17 |
| Food sources | | |
| ➤ Animal products from own production | 12.6 | 60 |
| ➤ Household crop production | 8.8 | 42 |
| ➤ Purchases | 70.8 | 337 |
| ➤ Remittances/Gifts | 5.3 | 25 |
| ➤ Begging | 2.3 | 11 |
| ➤ Wild foods collection | | |
| ➤ Others (specify) | 0.2 | 1 |
| Coping strategies during food shortages | | |
| ➤ Remittances/Gifts | 6.9 | 33 |
| ➤ Sale of more livestock | 26.7 | 127 |
| ➤ Splitting of family | 2.5 | 12 |
| ➤ Begging | 4.6 | 22 |
| ➤ Borrowing | 45.5 | 216 |
| ➤ Food aid | 0.2 | 1 |
| ➤ Purchases | 9.7 | 46 |
| ➤ Wild foods collection | 3.8 | 18 |
| ➤ Others (specify) | 0.2 | 1 |
| Sanitation facility | | |
| ➤ Pit latrine | 10.9 | 52 |
| ➤ Flush toilet | | |
| ➤ Bush/open ground | 89.1 | 424 |
| Source of drinking water | | |
| ➤ Bore hole | 17.5 | 83 |
| ➤ Open wells | 59.5 | 283 |
| ➤ Protected wells | 4.6 | 22 |
| ➤ Berkads | | |
| ➤ Catchment/pond | 0.4 | 2 |
| ➤ Stream/river | | |

| | | |
|---|------|-----|
| ➤ Muscid | 0.2 | 1 |
| ➤ Tap/piped water | 4.6 | 22 |
| ➤ Tanker/truck vendor | 13.3 | 63 |
| ➤ Others (specify) | | |
| Do you seek assistance when child is sick | | |
| ➤ Yes | 84.0 | 400 |
| ➤ No | 16.0 | 76 |
| If yes, where | | |
| ➤ Traditional healer | 18.3 | 73 |
| ➤ Private clinic/pharmacy | 42.6 | 170 |
| ➤ Public health facility | 37.6 | 151 |
| ➤ Others (specify) | 1.5 | 6 |

6.2 Distribution of children by age and sex

The analysis shows that 454 (50.6 per cent) of the study children were boys and 444 (49.4 per cent) were girls.

Table 2: Distribution according to age and sex

| Age in months | Boys | | Girls | | Total | |
|---------------|------|------|-------|------|-------|------|
| | n | % | n | % | n | % |
| 6 – 11 | 47 | 53.4 | 41 | 46.6 | 88 | 9.8 |
| 12 – 23 | 94 | 51.9 | 87 | 48.1 | 181 | 20.2 |
| 24 – 35 | 86 | 49.4 | 88 | 50.6 | 174 | 19.4 |
| 36 – 47 | 94 | 47.0 | 106 | 53.0 | 200 | 22.3 |
| 48 – 59 | 133 | 52.2 | 122 | 47.8 | 255 | 28.4 |
| Total | 454 | 50.6 | 444 | 49.4 | 898 | |

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

Table 3: Distribution according to weight/height index in Z-scores or oedema

| Age in months | <-3 Z-Scores | | ≥-3 and < -2 | | ≥-2 Z-Scores | | Oedema | |
|---------------|--------------|-----|--------------|------|--------------|------|--------|-----|
| | n | % | n | % | n | % | N | % |
| 6 – 11 | 7 | 8.0 | 14 | 15.9 | 67 | 76.1 | 0 | 0.0 |
| 12 – 23 | 4 | 2.2 | 40 | 22.1 | 137 | 75.7 | 4 | 2.2 |
| 24 – 35 | 4 | 2.3 | 42 | 24.1 | 128 | 73.6 | 3 | 1.7 |
| 36 – 47 | 8 | 4.0 | 40 | 20.0 | 152 | 76.0 | 0 | 0.0 |
| 48 – 59 | 6 | 2.4 | 73 | 28.6 | 176 | 69.0 | 3 | 1.2 |
| Total | 29 | 3.2 | 209 | 23.3 | 660 | 73.5 | 10 | 1.1 |

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

Table 4: Distribution by sex according to weight/height index in Z-scores or oedema

| Child sex | <-3 Z-Scores | | ≥ -3 and < -2 | | ≥ -2 Z-Scores | | Total | | Oedema | |
|-----------|--------------|-----|--------------------|------|--------------------|------|-------|------|--------|------|
| | n | % | n | % | n | % | n | % | n | % |
| Male | 12 | 2.6 | 115 | 25.3 | 327 | 72.0 | 454 | 50.6 | 5 | 10.0 |
| Female | 17 | 3.8 | 94 | 21.4 | 333 | 75.0 | 444 | 49.4 | 5 | 10.0 |
| Total | 29 | 3.2 | 209 | 23.3 | 660 | 73.5 | 898 | 100 | 10 | 1.1 |

6.5 Indicators

Table 5: Indicators

| | Proportion (%) | 95% Confidence Interval (%) |
|---------------------------|----------------|-----------------------------|
| Oedema | 1.1 | |
| Global acute malnutrition | 26.8 | 23.9.5-29.8 |
| Severe acute malnutirion | 3.2 | 2.2-4.6 |

6.6 Interpretive analysis

Distribution according to age and nutritional status

Table 6: Global acute malnutrition

| Age in months | Proportion (%) | 95% Confidence Interval (%) |
|------------------------------|----------------|-----------------------------|
| 6-23 months (<2 yrs) | 24.2 | 19.2-29.7 |
| 24-59 months (≥ 2 yrs) | 27.5 | 24.1-31.2 |

Table 7: Severe acute malnutrition

| Age in months | Proportion (%) | 95% Confidence Interval (%) |
|------------------------------|----------------|-----------------------------|
| 6-23 months (<2 yrs) | 4.1 | 2.1-7.2 |
| 24-59 months (≥ 2 yrs) | 2.9 | 1.8-4.6 |

6.7 Analysis of risk factors

Morbidity prevalence and measles vaccination and Vitamin A coverage rates

Table 8: Morbidity prevalence, measles vaccination and Vitamin A coverage

| Diseases | n | % |
|-------------------|-----|------|
| Diarrhoea (n=904) | 113 | 18.6 |
| ARI (n=904) | 404 | 35.7 |
| Measles (n=904) | 546 | 25.5 |
| Vitamin A (n=904) | 580 | 83.8 |

The overall incidence of diarrhoea (during the two weeks prior to the study) among the study children was less than 19 per cent. ARI incidence, again during the two weeks prior to the study was just under 36 per cent. Measles vaccination coverage was reported at only 25.5 per cent. Out of this only 1.7 per cent had been immunized during the six months prior to the study. About 84 per cent of the study children received Vitamin A supplementation.

7 Analysis of findings

The malnutrition rate identified by the survey is the highest ever reported in Somaliland. No previous nutrition data is available for these districts to compare with the data obtained and assess whether the situation has improved or deteriorated. However, such a high rate of malnutrition is probable given the situation in the area over the past three years. A combination of recurrent droughts, the livestock ban and the closure of the Somaliland/Djibouti border all have taken their toll on the populations of these areas.

The greater majority of households reported purchases as their food source but with the livestock ban still in place after more than a year, purchasing power is expected to have dropped significantly. Moreover, the main reported coping mechanism during food shortages is borrowing and since people's credit worthiness is obviously poor because of the livestock ban the closure of the border, it is most likely that this strategy has failed too.

The high prevalence rate of infectious diseases reported during the survey could either contribute to the malnutrition rate revealed or the diseases are a result of the malnutrition itself. Probably the malnutrition contributed to the high prevalence of diarrhoea and acute respiratory infections as food shortages were persistent in the area for several seasons.

The immunization of measles was also found to be very low and this might have caused reduced immunity against measles and other infectious diseases and contributed to the malnutrition. One of the reasons as to why measles immunization is low could be the recent revision to the EPI strategy for Somaliland. Since the beginning of 2001 EPI acceleration activities have been confined to major urban settlements.

The results also show a slightly higher rate of severe malnutrition in girls as compared to boys, while for moderate malnutrition more boys than girls are affected. It is believed that that in the Somali society, as far as young children are concerned, there is no preference given to any sex when it comes to feeding practices.

The findings in the demographic and socio-economic characteristics indicate that there is a sanitation problem with the majority by far reporting that they have no sanitation facility at all. There is also lack of access of safe water for populations outside the two district capitals as open wells are reported to be the biggest source of drinking water.

Finally, although statistically the results of the 30 clusters surveyed cannot be desegregated into population groups, the nomadic and malaria borne locations reported most of the malnourished cases.

8 Recommendations

There is a high prevalence of acute malnutrition in the districts of Zeila and Lughaya and there is anecdotal evidence to support these findings from staff of international organizations who have visited these areas recently. In light of the survey findings the following measures are recommended:

- Immediate visit to the area, particularly the most affected locations to obtain qualitative information to support the malnutrition rate revealed and determining the actual underlying causes;
- WFP to continue general food distribution in the two districts;
- To organize mobile health teams to provide basic health services and immunization;
- To distribute high protein/energy biscuits to all under five children in the area on monthly basis for six months in order to increase the dietary intake of the children;
- To establish a task force consisting of health/nutrition stakeholders in the area such as MOHL, Governors Office, UNICEF, SRCS, COOPI, FSAU and Ministry of Livestock to organize and coordinate necessary interventions and monitor the situation;
- Veterinary teams should assess the situation of livestock in the area and provide necessary recommendations for interventions.

ANNEX 1: POPULATION ESTIMATES FOR THE AREAS SURVEYED

| Areas | Estimated population | Cumulative population | Assigned clusters |
|---------------|----------------------|-----------------------|-------------------|
| Lughaya | 1000 | 1000 | 1,2,3 |
| Sabo Wanaag | 500 | 1500 | 4 |
| Ido Caddeys | 500 | 2000 | 5 |
| Kalowle | 500 | 2500 | 6 |
| Karuure | 500 | 3000 | 7 |
| Beeyo garaaca | 400 | 3400 | 8 |
| Geerisa | 500 | 3900 | 9,10 |
| Fardhoxidh | 500 | 4400 | 11 |
| Sheed dheer | 400 | 4800 | 12 |
| Garbodadar | 600 | 5400 | 13 |
| Tuurta | 200 | 5600 | 14 |
| Baleyga | 300 | 5900 | 15 |
| Gargaara | 400 | 6300 | 16 |
| Ceel lahelay | 100 | 6400 | |
| Laan cawaale | 500 | 6900 | 17 |
| Ceel Sheikh | 300 | 7200 | 18 |
| Abdulgaad | 100 | 7300 | |
| Osoli | 300 | 7600 | 19 |
| Lowyado | 500 | 8100 | 20 |
| Bariisle | 300 | 8400 | 21 |
| Tokoshi | 400 | 8800 | 22 |
| Zeila | 200 | 9000 | |
| Ashacado | 300 | 9300 | 23 |
| Ceel gaal | 300 | 9600 | 24 |
| Jidhi | 300 | 9900 | |
| Abdulkaadir | 200 | 10100 | 25 |
| Sh. Adawe | 100 | 10200 | |
| Geel ka Gooji | 100 | 10300 | |
| Hariirad | 500 | 10800 | 26,27 |
| Fiqi Aden | 400 | 11200 | 28 |
| Heemaal | 200 | 11400 | |
| Sh Aware | 200 | 11600 | 29 |
| Arroweyn | 200 | 11800 | |
| Fadhihun | 300 | 12100 | 30 |
| Warqa dhigta | 100 | 12200 | |

Sampling interval: 406

Random number: 187