

NUTRITION SURVEY REPORT

HARGEISA RETURNEES AND IDP SETTLEMENTS, SOMALILAND

**Food Security Analysis Unit (FSAU/ FAO) and
United Nations Children's Fund (UNICEF)**

In Collaboration with:

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Abbreviations and acronyms

ARI	Acute Respiratory Infections
CSI	Coping Strategy Index
FAO	Food and Agriculture Organisation
FEG	Food Economy Group
FSAU	Food Security Analysis Unit
GAM	Global Acute Malnutrition
GIT	Gastrointestinal Tract
HDDS	Household Dietary Diversity Score
HFA	Height for Age
IDA	Iron Deficiency Anaemia
IDP	Internally Displaced Person
KM	Kilo Metres
MCH	Maternal and Child Health
MT	Metric Tonnes
MUAC	Mid Upper Arm Circumference
NCHS	National Centre for Health Statistics
NGOs	Non-Governmental Organisations
NRC	Norwegian Refugee Council
LNGO	Local Non-Governmental Organisation
INGO	International Non-Governmental Organisation
MOHL	Ministry of Health & Labour
NIDs	National Immunisation Days
OR	Odds Ratio
RR	Relative Risk
SACB	Somalia Aid Coordination Body
SMART	Standardised Monitoring & Assessment of Relief and Transitions
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission of Refugees
VAD	Vitamin A Deficiency
UNICEF	United Nations Children's Fund
WFA	Weight for Age
WFH	Weight for Height
WFP	World Food Programme
WHO	World Health Organisation

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EXECUTIVE SUMMARY

The Republic of Somaliland comprises the ex-north-western regions of Somalia, formerly known as British Somaliland Protectorate. Hargeisa town is the biggest urban agglomeration in the Northwest and is the capital town (headquarter) of Somaliland. It concentrates public administration, private sector and international community interventions. It is the destination for a large number of refugees, returnees and IDPs hosting more than 72,500 of displaced populations, 60% of who were returnees. In addition a considerable number of refugees remaining in the Ethiopian camps are choosing Hargeisa as their zone of repatriation (IGAD/UNDP/UNHCR, June 2002). Many of these returnees/IDPs have been settled in permanent settlement areas in Sheikh Nur, and Mohammed Mooge. Most are still in temporary settlements in five different areas (State House, Ayaha, Stadium, Aw Aden and Daami) and a lot more are unaccounted for scattered in different sites within the municipality.

Two nutrition surveys have previously been conducted led by UNICEF in 2001 and 2003, revealing poor health, sanitation, dwelling, economic and food security conditions; and high malnutrition levels among the returnee/IDP populations. These periods of the surveys coincided with hard times of successive droughts, water & food shortages, and economic depression all over Somaliland, aggravated by a ban in livestock export. Since then, Somaliland has received above normal rains this year, the economy has improved with the local currency stabilizing against the US\$ and different agencies (UNHCR, UNICEF, WFP, WHO, DRC, etc) have been supporting the government to improve and sustain the livelihoods of the people in these formal and informal returnee/IDP settlements.

Between 4th and 13th June 2005 a nutrition survey was conducted by FSAU and UNICEF in collaboration with MOHL and WFP to determine nutritional status and establish the influencing factors in the seven formal and informal returnee/IDP settlements in Hargeisa. Using a two-stage (30x30) cluster sampling methodology, a total of 924 children, 50.8% boys and 49.2% girls aged 6-59 months from 467 randomly selected households were surveyed. A significant proportion (31.5%) of the households was female headed majority (68.5%) were male headed. A total of 902 households were surveyed for mortality. Micronutrient deficiency, coping strategy and dietary diversity were also assessed. Qualitative data on care and feeding practices, food security and health related issues were collected through focus group discussions, key informant interviews or direct observations.

Analysis of the results of Hargeisa returnee/IDPs survey and the previous findings showed significant changes in nutrition situation and livelihood factors over the last four years from a critical Global Acute Malnutrition (WHZ<-2 or oedema) of 16.3% (CI: 14.0 – 18.9%) in 2001 and 15.3% (CI: 12.9 – 17.6%) in 2003 to 7.6% (CI: 6.0 – 9.5%). Severe Acute Malnutrition (WHZ<-3 or oedema) also reduced from 6.4% (CI: 5.0 – 8.3) in 2001 and 3.8% (CI: 2.6 – 5.2) in 2003 to 1.3% (CI: 0.7 – 2.3) this year. One oedema case was reported during the survey. There was a significant decline in the incidences of measles from 5.3% in 2003 to 1.6% in October 2005. Similarly, access to sanitary facility (toilets) significantly improved from 54% in 2003 to 75% in 2005. The 2005 nutrition survey also noted significant positive changes in the provision of basic social services by local authorities and humanitarian agencies when compared to previous years (FSAU, September Nutrition Update). There was a significant increase in the proportion of returnee/IDP households accessing casual labour from 31% in 2001 and 47% in 2003 to 64% in 2005. Access to casual labour as the main source of income enhanced purchasing power for food procurements and thus access and diversity in diet among the households.

However, there were factors that may continue to negatively affect nutrition situation. Both previous and current surveys still indicate high mortality rates and poor morbidity patterns. CMR and U5MR were 0.79 and 2.13 deaths/10,000 persons/day. The incidences of ARI (33.2%) and diarrhoea (17.2%) within two weeks prior to the survey were high but no disease outbreak was reported during the period. Coverage of measles immunization also declined from 54-62% in 2001-3 to less than half (45%) in 2005 as was the case with vitamin A supplementation coverage that dropped over the last four years from 75% in 2001 to 54% in this year.

Households reported having employed one or more consumption coping strategies within one month prior to the survey. Borrowing of food from shops or neighbour, reducing portion size and number of meals; and switching from high quality to low quality foods were some of the most common coping strategies employed by more one half of the households. As expected CSI had a negative and significant ($p=0.0001$) relationship with dietary diversity (HDDS). The more diverse the diet, the lower was the CSI score and the more food-secure the household. HDDS was a predictor of CSI even after controlling for income level (wealth group) explaining about 11% of the variability in CSI. Households consumed an average of seven food groups, but the majority (53%) had consumed only 4 or less foods over 24 hours prior to the survey.

Only about one half (51.3%) of the children in breastfeeding age (6-24 months) were actually breastfeeding at the time of the survey. Of those who had been stopped from breastfeeding, about 7.6% had stopped breastfeeding before six months. A large proportion (54.7%) of the children aged 6-24 were introduced to foods other than breast milk early in life between the time of birth and the third month of life, much earlier before the recommended six months.

Most (85.9%) of the surveyed households drew their water from piped/tap water systems while some 11.3% of the households were relying on water from unprotected wells. Those who drew their water from unprotected sources (wells, river bed, dam) were more likely ($1.05 < RR = 1.36 < 1.76$; $p=0.01$) to experience diarrhoea episodes than those who drew their water from protected source (tap/pipe). More than three-quarters of the surveyed households were not accessing the recommended water quantity of 15 litres/ person/day (Sphere, 2004). Some 6.0% of the households were using only 20 litres of water per day and for an average household of about 6 persons. Sphere (2004) recommends a maximum distance of 500m from any household to water point, however, only 30.4% of the households accessed their water within 500m in the survey.

Overall, underlying relative peace in Somaliland, increased access to casual labour, availability of different foods in the market, resettlement and integration efforts by the government and the humanitarian community; and health interventions have improved the livelihood conditions of the inhabitants of the informal and formal settlements to a manageable coping level of food security and nutrition status even though the population remains vulnerable and malnutrition rates are still higher than the internationally acceptable levels ($GAM < 5\%$).

From the findings the following recommendations were made:

- a. Promote nutrition education through the MCH/outposts focusing on hygienic practices for caregivers, child feeding as well as dietary diversity.
- b. Creation of employment including cash-for-work activities for the physically healthy persons in targeted vulnerable temporary settlements to enhance their purchasing power.
- c. Continued school feeding programme and supplementary feeding programme and treatment for the severely malnourished children.
- d. Continued close monitoring (surveillance) of the food security and nutrition situation in the area.
- e. Intensify promotive and preventive health care interventions focusing on programme coverage (especially for measles immunization and Vitamin A supplementation), hygiene, and control of water related diseases.
- f. Settlement and integration of those in temporary settlements

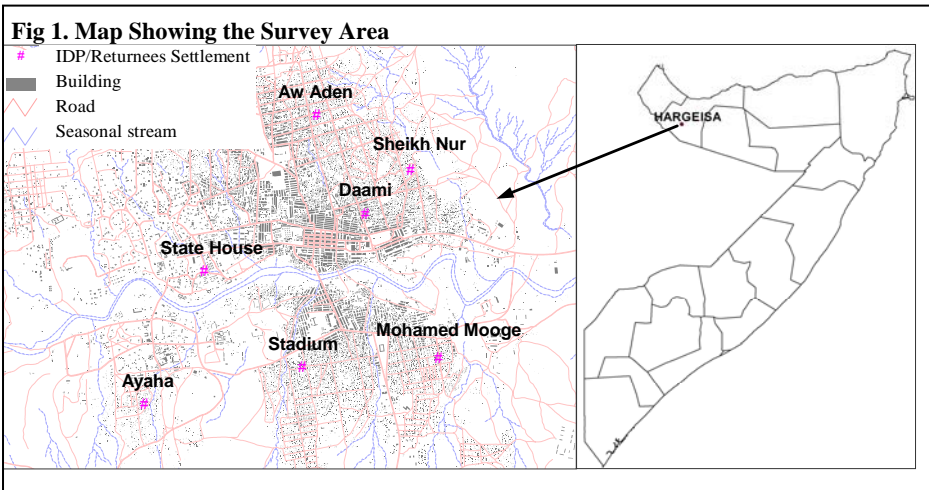
SUMMARY OF FINDINGS

Table 1: Summary of survey findings

Indicator	No	% (95% CI)
Children under five years screened during the survey	924	100
Global acute malnutrition – W/H <-2 Z score and/or oedema	70	7.6 (6.0 – 9.5)
Severe acute malnutrition – W/H <-3 Z score and/or oedema	12	1.3 (0.7 – 2.3)
Global acute malnutrition – W/H <- 80% of median and/or oedema	47	5.1 (3.8 – 6.8)
Severe acute malnutrition – W/H <- 70% of median and/or oedema	3	0.3 (0.1 – 1.0)
Oedema	1	0.1 (0.0 - 0.7)
Total chronic malnutrition – H/A < -2 Z score	181	19.6 (17.1 – 22.30)
Severe chronic malnutrition – H/A < -3 Z score	54	5.8 (4.5 – 7.6)
Proportion (children) with diarrhoea in two weeks prior to survey	159	17.2 (14.9 – 19.8)
Proportion with ARI in two weeks prior to survey	307	33.2 (30.2 – 36.4)
Proportion of children with malaria in two weeks prior to survey	4	0.4 (0.1 – 1.2)
Proportion of children with measles in one month prior to survey	14	1.6 (0.9 – 2.8)
Proportion of children supplemented with Vitamin A in the last six months prior to the survey	494	53.5 (50.2 – 56.7)
Proportion of children (9-59 months) immunised against measles (N=871)	389	44.7 (41.3 – 48.0)
Proportion who have ever received polio vaccine	865	93.6 (91.8 – 95.1)
Proportion of malnourished children (MUAC< 12.5 cm)	61	6.6 (5.1 – 8.4)
Under five death rate (deaths/10,000/day)		2.13 (1.07 – 3.19)
Crude death rate (deaths/10,000/day)		0.79 (0.51 – 1.07)

1 INTRODUCTION

Hargeisa town is the biggest urban setting in the Northwest and is the capital town (headquarter) of Somaliland. It concentrates public administration, private sector and international community interventions. It is the destination for a large number of refugees, returnees and IDPs hosting more than 72,500 of displaced populations, 60% of whom were returnees. In addition a considerable number of refugees remaining in the Ethiopian camps (Camoboker, Rabasso, Daror) are choosing Hargeisa as their zone of repatriation



more than 72,500 of displaced populations, 60% of whom were returnees. In addition a considerable number of refugees remaining in the Ethiopian camps (Camoboker, Rabasso, Daror) are choosing Hargeisa as their zone of repatriation (IGAD/UNDP/UNHCR, June 2002). It is perceived that the majority of IDPs are women and children, while some talked about

entire families (OCHA, June 2004).

Since 1997 more than 80,000 of UNHCR's "official" returnees to Somaliland from camps in Ethiopia have selected Hargeisa as their chosen destination. Several returnee settlement areas have sprung up on the outskirts of Hargeisa during the 1990s and have grown considerably since UNHCR began its voluntary repatriation programs in 1997. Many have been settled in permanent settlement areas in Sheikh Nur, and Mohammed Mooge. Most are still in temporary settlements in five different areas (State House, Ayaha, Stadium, Aw Aden and Daami) and a lot more are unaccounted for scattered in different sites within the municipality.

Two nutrition surveys by UNICEF/FSAU in 2001 and 2003 and one interagency assessment in 2002 conducted within these settlements showed poor health, sanitation, dwelling, economic and food security conditions leading to alarming levels of global acute malnutrition (over 15% WHZ<-2 or oedema) in both surveys.

1.1 Survey Justification

FSAU has undertaken nutrition surveillance activities in Somaliland including Hargeisa district over the past five years. The surveillance activities have been undertaken through health facilities and surveys. In Hargeisa, FSAU continue to undertake nutrition surveillance activities in four health facilities which serve most of the returnee/IDP settlements. The facilities have shown improving trend in nutrition situation over the last one year. Two nutrition surveys have previously been conducted led by UNICEF in 2001 and 2003, revealing high malnutrition levels among the returnee/IDP populations. These periods of the surveys coincided with hard times of successive droughts, water & food shortages, and economic depression all over Somaliland, aggravated by a ban in livestock export. Since then, Somaliland has received above normal rains this year, the economy has improved with the local currency stabilizing against the US\$ and different agencies (UNHCR, UNICEF, WFP, WHO, DRC, etc) have been supporting the government to improve and sustain the livelihoods of the people in these formal and informal returnee/IDP settlements.

This survey was thus conceived out of the need to provide information on the current magnitude of malnutrition and food insecurity among the returnees/IDPs; to validate the trends obtained from health facility- based surveillance system and to evaluate any change in the health and nutrition situation since the last nutrition survey in 2003.

1.2 Survey Objectives

1. To determine the levels of malnutrition in Hargeisa returnee/IDP settlements through anthropometric measurements using weight for height of children aged 6 - 59 months or 65 - 110 cm tall.
2. To describe factors influencing the nutrition status of children in Hargeisa returnee/IDP settlements in relation to care practices, dietary diversity, food security, health, water and sanitation conditions.
3. To determine the coverage of measles vaccination and Vitamin A supplementation in Hargeisa returnee/IDP settlements.
4. To determine the incidence of diarrhoea, measles and ARI two weeks prior to the survey in Hargeisa returnee/IDP settlements.
5. To estimate the levels of night blindness, anaemia and goitre (as proxies of micronutrient deficiencies) in the survey area
6. To determine the mortality rates (crude death rate and 0-5 death rate) among the population in Hargeisa returnee/IDP settlements

2 BACKGROUND INFORMATION

2.1 General background

2.1.1 Profile of Somaliland

The Republic of Somaliland comprises the ex-north-western regions of Somalia, formerly known as British Somaliland Protectorate. Somaliland gained its independence on June 26, 1960 from Great Britain and later entered into an unconditional union with the ex- Italian Somalia. The Somali Democratic Republic, as the world community knew it, collapsed on January 26, 1991 but after a prolonged strife with the then ruling regime of Siad Barre, Somaliland regained its independence on May 18, 1991. While the southern and central regions of Somalia have been plunged in civil war and lawlessness, the self-declared, internationally unrecognised Republic of Somaliland has established relative peace. Following a period of inter-clan conflict in Berbera, Burao and Hargeisa in the 1990s, the people of Somaliland have settled internal disputes using traditional peace- building methods, and have made significant efforts towards rehabilitation and reconstruction of their dilapidated country. Somaliland has reintegrated 800,000 returning refugees, rebuilt cities and established a government with minimal external support. A stable administration has been formed, with a smooth transition of leadership following the death of President Egal, in May 2002. Demobilization of former militia fighters into a national police force and army has created an environment of relative security within national boundaries.

The 1988 civil war in Somalia caused hundreds of thousands of people to seek asylum in neighboring countries and beyond, while further hundreds of thousands became internally displaced. In 1988 Somalia had a population of seven million people, of whom an estimated 500,000 sought asylum in the region of the Horn of Africa during the civil war. The population of the wider, global diaspora is estimated at 1.5 million (Returnee Settlement Area Assessment, June 2002) people and the number of people internally displaced within Somalia is approximated at 350,000 (UNDP, 2001).

People fled Somaliland in large numbers in 1988 as a response to the fighting between the Somali National Movement-led insurgency and Siad Barre's forces in major urban centers, such as Hargeisa and Burao. An estimated 400,000 people crossed the border into Ethiopia in a matter of months; UNHCR established eight refugee camps in Ethiopia and a further two camps in Djibouti. A further wave of refugees fled from Borama into Ethiopia in 1991 following Siad Barre's fall from power and at the peak of the exodus, the population in the refugee camps reached over 600,000 people.

The population of Somaliland is currently estimated at 3.5 million. About 55% of the population is recognised as pastoral nomads while the rest is urban or semi rural. The population growth rate is 3.1% with a crude death rate and birth rate of 1.3% and 4.4% respectively. The life expectancy in

Somaliland is 47 years (Norwegian Refugee Council, 2005).

2.1.2 Profile of Hargeisa

Hargeisa town is the biggest urban setting in the Northwest and is the capital town (headquarter) of Somaliland. It concentrates public administration, private sector and international community interventions. Hargeisa has undertaken significant reconstruction and rehabilitation activities. It is the destination for a large number of refugees, returnees and IDPs hosting an estimated number of over 72,500 of displaced populations, 60% of whom were returnees. In addition a considerable number of refugees remaining in the Ethiopian camps (Camoboker, Rabasso, Daror) are choosing Hargeisa as their zone of repatriation (IGAD/UNDP/UNHCR, June 2002). It is perceived that the majority of IDPs are women and children, while a good proportion are entire families (OCHA, June 2004).

During the early 1990s a spontaneous wave of repatriation occurred, estimated at 185,000 people. However, the civil war of 1994-1996 in the newly-founded, self-declared Republic of Somaliland resulted in a further 92,000 people fleeing primarily from Hargeisa and Burao to the camps in Ethiopia (UNDP, 2001). Since 1991, the people of what was formerly northwestern Somalia have been working hard to achieve and maintain peace and stability through a participatory consensus process. That process culminated in the election of the late president, Mohamed Ibrahim Egal, in 1992 and the establishment of an administrative body with judicial, legislative, and executive branches. Since 1996 there have been significant advances in ensuring high levels of peace and stability within the country, including a 1997 peace conference. It is in this context that Somalis have been returning from Ethiopia, either through spontaneous voluntary repatriation or through UNHCR assisted-voluntary repatriation. UNHCR's repatriation records indicate that more than 175,805 people have "officially" returned through UNHCR's voluntary repatriation program as of December 31, 2001 (UNHCR, 2002). Of these, 82,956 (47%) have indicated Hargeisa district as their chosen destination of return, even if it was not their place of origin before fleeing the wars. And as of December 31, 2001, UNHCR convoys had delivered 26,830 "actual" returnees to Hargeisa (UNHCR, 2002).

According to UNHCR (2001) the high concentration of returnees in Hargeisa can be attributed to four main factors:

1. Hargeisa was most severely hit by the war and produced the bulk of refugees in 1988 and 1994.
2. The majority of people who returned spontaneously in 1991 and 1997 had property to return to. On the other hand, a substantial portion of those remaining in the camps was made up of former urban poor who preferred to return to major towns with the assistance of the repatriation package.
3. The phenomenon of urban migration predates the war and contributes to the high concentration of returnees.
4. Refugees originally from rural areas became urbanized in the refugee camps and became used to the proximity of social services and urban amenities; they therefore chose to return to urban settings.

As a result of these influencing factors and the population movements described above, Hargeisa city has faced the enormous challenge of absorbing these people into its infrastructure and economy. Returnees live throughout Hargeisa, though there are areas where the population of returnees is notably more concentrated. These include four formally sanctioned settlement areas allocated by the Municipality of Hargeisa (Returnee Settlement Area Assessment, June 2002) to accommodate the returnee population, a number of residential areas within the city, and a number of temporary settlements where people have established residence on government land. Within this context, many international agencies are attempting to work and support the Somaliland authorities in addressing the needs of this absorption and reintegration process.

Hargeisa has therefore attracted the biggest number of returnees and IDPs after the civil wars. Such massive influx to Hargeisa continues to date as more returnees are coming back formally through UNHCR and spontaneously on their own as Somaliland continues to enjoy relative peace and stability. Many have been settled in permanent settlement areas in Sheikh Nur, and Mohammed

Mooge. Most are still in temporary settlements in five different areas and a lot more are unaccounted for scattered in different sites within the municipality.

2.2 Returnee/IDP Settlements in Hargeisa

The seven Returnee/IDP settlements covered during the survey are inhabited by people of different ethnic origins including Somalilanders (Somalis who lived in Somaliland before the wars), Southern Somalis (those families reporting they lived in Southern Somalia before the wars), Somali Ethiopians (those ethnic Somalis who resided in Ethiopia before the wars), and non-Somali Ethiopians (those originally from Ethiopia who are not Somalis; they are generally Oromo or Jarso). Categories of people include returned refugees, IDPs, and immigrants.

2.2.1 Ayaha

Ayaha, meaning “the locusts,” is the newest permanent returnee settlement area in Hargeisa. In December 2001, the municipality government allotted land to relocate residents of temporary informal settlements to permanent plots on the southeastern edge of town, south of the army base and near the location of the former Desert Locust Control Center. That site was damaged in air raids in 1988, and over 80,000 liters of toxic and obsolete pesticides were spilled at that time (Lambert, 1997). As of May 2002, plans were underway to assess the boundaries for human habitation with FAO expertise. The majority of the Ayaha population resides in the valley adjacent to the former Desert Locust Control Center site, rather than in the valley itself.

The current Ayaha residents all moved there from Stadium and the Technical School returnee settlement areas, though there were several families living on the land before the relocation in December 2001. Before moving to Hargeisa, residents had generally been in the Hartesheikh and Abokor refugee camps. Returnees from the former camp came to Hargeisa in 1999, while those from Abokor arrived in 2001. Most residents were originally from around Hargeisa, though approximately 1/5 used to be pastoralists, but settled in Hargeisa after spending time in the refugee camps. The clan make up in Ayaha is mixed, but the majority is Arab, while also including Sacad Musa, Gedo Biirsi, Haber Jeclo, Haber Younis, and Idegale. All of the families interviewed for the household survey were ethnic Somalis. Estimates by the survey team put Ayaha’s population at 6,000 people (Ayaha A – 3000 and Ayaha B- 3000).

2.2.2 Daami

Daami has the most heterogeneous population of the returnee settlement areas considered in this survey. It borders Sheikh Nur on its northeastern side, occupying the area to the south and west of the dam in that area. The neighborhood was in existence before the wars, so it is not new in the sense that other areas like Mohamed Mooge and Sheikh Nur are new areas, but most of the current residents arrived there during the early to mid-1990s.

The population of Daami encompasses Southern Somali IDPs and immigrants, Ethiopian immigrants, and minority clans, all in relatively large proportions. The Southern Somali IDPs and immigrants are primarily from Baidoa, Wajid, Beletweine, and Mogudishu, and settled in Daami in 1994 after fleeing the conflict in the South (Returnee Settlement Area Assessment, June 2002). This population is mostly of the Ajjuran subclan; most had their possessions in the south looted or stolen before moving north (Medani, 2000).

The Ethiopians living in the area are mostly Oromo or Jarso. The non-Ajjuran Somalis living in the area tend to be Issa Musa and Issa Haq; the minority clan is Gabooye, specifically Tumul and Yibir. These Somalis consider themselves returned refugees, while the Southern Somalis split between considering themselves immigrants and IDPs. The Ethiopians are primarily economic immigrants, arrived in Hargeisa in search of economic opportunities. The survey team estimated the population of Daami at 11,000 people.

2.2.3 Mohamed Mooge

Mohamed Mooge, east of the airport road on the southern side of Hargeisa, was officially allocated and settled in June 1999 by voluntary repatriates from refugee camps in Ethiopia (Medani, 2000), but some earlier arrivals had already settled on portions of the area by 1996. It is a city-planned

permanent returnee settlement area and families are given land tenure by the city once they have built structures on their plots.

Mohamed Mooge's residents are primarily returned refugees from the Ethiopian camps of Daror, Rabaso, Abokor, and Hartesheikh. Before the war, they were a mix of urban Hargeisa residents and pastoralists/agropastoralists from Galbeed, near the border regions. Like many Somaliland returnees, those in Mohamed Mooge have been displaced multiple times, both in 1988 and 1994. The clan composition is mostly Idegale with some Haber Younis; there are a small number of other subclans, including Arab and Haber Jeclo, and the non-Issaq Gadabursi, Issa, and Dolbahante (Medani, 2000).

A significant number of people have moved to the area from Hargeisa town because of the cheap land in the neighborhood. The survey team estimated the population of Mohamed Mooge at about 8,000 people, making it the fourth largest settlement, after State house, Sheikh Nur and Daami in that order.

2.2.4 Sheikh Nur

Sheikh Nur is the oldest planned returnee settlement area in Hargeisa, allotted for this purpose by the municipality in 1997 (Medani, 2000). The city demarcated land for residents, and the residents are given official land tenure from the city when structures are built on the plots. It is the largest area in terms of land and the second most populated with an estimated population of 18,000 people. It is located on the northeastern edge of town.

Many of the people living in Sheikh Nur first arrived in Hargeisa in the early 1990s after the fall of the Barre regime and during the relative peace that followed. Most then fled Hargeisa a second time during the intra-Issaq fighting of 1994-1996 (Medani, 2000). The first official settlement of the area began in mid-1997, and a second large group of residents arrived in 1999. The population in Sheikh Nur is varied, consisting of returnees from Hartesheikh and other refugee camps, ethnic Oromos and Jarsos arrived from Ethiopia (roughly 15% of the population), and a few Southern Somalis (under 10%).

The majority are originally from what is now Somaliland, and most of those were originally from Hargeisa town. The Issaq subclans in the area are primarily Sacad Musa, Issa Musa, and Issa Haq. Oromos and Jarsos did not receive plots of land, and have been pushed into dense neighborhoods at the eastern edge of the area. The Southern Somalis tend to be from the Ajjuran clan, while there is also a minority Gabooye population.

2.2.5 Aw Aden

Aw Aden is one of the four neighborhoods established by the city to accommodate the influx of returned refugees to Hargeisa. It is located to the northeast of Radio Hargeisa, and to the northwest of Sheikh Nur. The plots were allocated to returnees, who gain land tenure once they have built structures on their land. Residents in this area arrived in Hargeisa in 1999 from Hartesheikh refugee camp in Ethiopia. They are primarily of the Haber Awal subclan of Issaq, but there are a few minority subclans represented there, too, including Gabooye, specifically Tumal.

Most of the residents lived in Hargeisa before the wars and only around 10% of them were originally from rural areas of Somaliland. Around 6% of families there were originally from Southern Somalia; this group considers itself to be internally displaced. The estimated population for the settlement is 4,000 people.

2.2.6 State House

State House returnee settlement area, first settled by returning refugees in 1991 after the bombing of Hargeisa, is located on the grounds of the looted colonial governor general's house near the western edge of Hargeisa. The land, therefore, belongs to the government, which does not plan to make the area a permanent settlement.

Although the first wave of settlers in this area came in 1991, a second group arrived at State House in 1999. State House residents are primarily returned refugees from Hartesheikh refugee camp in

Ethiopia, though also from Rabaso and Abokor camps. The subclan make up is mostly Sacad Musa, and the residents report they are originally from around the Hargeisa area as well as from border areas. A significant minority of around 11% is from Ethiopia, and half of those are not ethnic Somalis (indicating they are most likely Oromo or Jarso). The area is small, but like Stadium, very densely populated. The population estimated from this assessment's satellite photograph is 700 families, comprising roughly 4,500 people.

2.2.7 Stadium

Stadium is the most central of the eight returnee settlement areas in this assessment, located on the south bank of the river next to the old Hargeisa football stadium. The land belongs to the government, which insists that the settlement there will not be a permanent one and is currently engaged in a strategy to relocate the population to permanent sites.

The Stadium area was first settled in 1997 as UNHCR voluntary repatriation efforts began; a later group arrived in 2001, again as voluntary repatriates. Many of the returning refugees had been in Hartesheikh refugee camp, though they also came from Daror, Rabaso, Aw Barre, and Dulcad camps. Stadium is a relatively homogeneous and residents are mostly from the Arab subclan, with few minorities. Most residents were originally from the Hargeisa area, though between 10% and 20% were from border areas or from Region 5, Ethiopia. About 1/5 of residents consider themselves IDPs even though they are primarily Somalis originally from Somaliland or Ethiopia.

Stadium is geographically quite small (approximately 17 hectares), but is very densely populated with an estimated 20,000 people.

2.3 Humanitarian operations in Hargeisa

The survey was conducted in seven returnee/IDP formal and informal settlements within Hargeisa town- namely Daami, State House, Stadium, Sheikh Nur, Aw Aden, Mohamed Moge, Ayaha,. The latter four areas are purely returnee/resettlement camps, while Daami is the traditional sector of town inhabited by minority groups. The State House area could be classified as an IDP camp though the inhabitants are more likely to describe themselves as residents. Stadium has pockets/clusters of poorer households that can also be called IDPs.

2.3.1 Health context

A number of international organizations such as UNICEF, ICD and CARE have been supporting the ministry of Health and Labour in its efforts to provide adequate health services to the returnee/IDPs/resettlement areas of Hargeisa town. Currently, there are five mother and child health centres functioning in these areas. All the five health centers also provide adult out patient clinics. Edna Maternity Hospital is also close to some of the settlements such as the Stadium. The availability of drugs and the working hours of the health facilities in the area have improved over the last year with a regular supply of drugs from the international organizations and improved supportive supervision, as well as coordination mechanism through the regional health office of Hargeisa.

Inadequate systematic outreach health services for the risk groups and lack of utilization of exemption policy within the cost recovery approach are the two major challenges for the health services in the returnees/IDP settlements. The poorest in those locations are constrained in paying service charges and for drugs as their resource base is limited and meager incomes are devoted to food. Health care is probably a secondary issue to them. The communities in Ayaha, Aw Aden and Sheikh Nur 2 can best be served through well organized out reach care systems.

2.3.2 Nutrition

Efforts to improve nutritional surveillance, infant/child feeding and caring practices have been ongoing in some of the settlements such as Mohamed Mooge, Ayaha, Stadium and Sheikh Nur for the past few years. FSAU conducts facility-based nutrition surveillance in four MCHs in Hargeisa that serves part of the returnee/IDP population. UNICEF and other organizations supported the regional health office of Hargeisa and local women groups in community based nutrition promotion activities. Over 60 traditional birth attendants have been trained on the promotion and management of

breastfeeding and about 30 community based nutrition promoters selected from the various population categories such as teachers, women groups, and sheiks have also trained on basic nutrition and basic communication skills to implement growth monitoring activities at household levels in their respective locations. Also around 1,000 mothers were provided orientation sessions and practical demonstrations on appropriate infant/child feeding.

WFP supports supplementary feeding programmes in Edna Maternity Hospital and Daami village/camp. WFP also supports feeding of school children in Ayaha and Mohamed Moge in which about 300 school children are provided two meals a day. Dealing with the severely malnourished cases remains a challenge for the nutrition interventions in the area. Mothers with severely malnourished children are often reluctant to be referred or admitted to the Hargeisa Hospital as their other children would be left unattended to if they admitted in hospital with one child .

2.3.3 Water and sanitation

Most of the returnee/IDP population is served piped water by Hargeisa Water System or by water truck vendors. Some settlements like Ayaha are still not connected and get water from vendors, the extension of the Hargeisa system to the area is yet to be completed. Others like Mohamed Mooge need extension of existing systems. Water prices in some of these areas are more than three times higher than the prices in other parts of the town and often long lines of 20 liters water containers are observed at water kiosks. Currently there are about 70 kiosks in these areas, sixty of them privately owned. Settlements like Daami, Staduim, Statehouse and Ayaha have significantly fewer latrines than the other more formal settlements. The Danish Refugee Council (DRC) supported the settlements in Sheikh Nur and Mohamed Mooge in the construction of latrines. DRC provided two bags of cement, 200 bricks and a slab when the household digs the pit, while UNICEF assisted in the provision of sanitation tools and establishing sanitation committees in some of the settlements such as Sheikh Nur

2.3.4 Food Security

Earlier studies in the settlement areas (UNICEF nutrition survey 2001; 2003, IRC led inter-agency assessment, 2002) revealed widespread lack of basic services, overcrowding and poverty especially in the informal settlements. Findings from an urban household economy assessment conducted by FEWS-NET (2003) revealed that poor households in Hargeisa have low income levels (less than two dollars a day). Expenditure on foods (meat, milk, vegetables etc) other than cereals was revealed minimal, low remittances amongst the group and vulnerability to seasonal fluctuations in employment at construction sites and fluctuations on exchange rates were also reported. With an average household size of about 7 people (FEWS-NET urban assessment, 2003), the poor households depend on less than two dollars a day (just about a third of a dollar per person per day) far below the global comparisons.

The essential food items normally include rice, wheat flour, maize, sorghum, sugar and vegetable oil. Small quantities of vegetables (e.g. tomatoes, potatoes, and onions), meat, and tea leaves are bought by these groups. The main non-food items are water, charcoal, kerosene, soaps, second-hand clothes, and schools. Other non-food items bought in small quantities include khat and health care services; however khat chewing is increasingly taking a significant portion of the household expenditure. The main sources of food are usually purchases from the market as well as gifts especially for the very poor households. At least 50% of purchases on food are on cereals and about 10% is expenditure on sugar. Expenditure on vegetables is often quite negligible.

The very poor and the poor residents of Hargeisa are mainly involved in small-scale petty trade (eg selling vegetables, tea, milk and prepared food), casual work mainly in the construction industry and housekeeping, unskilled labour, transportation business using donkey carts and wheelbarrows and also engaging children in some work like shoe-shining in town for income avenues. These residents are often vulnerable to shocks such as the exchange rate fluctuations that normally leads to increased imported food costs as has been witnessed in the previous years, the declining opportunities in the construction sector that resulted from the livestock ban, and recurrent restrictions on trade with Ethiopia e.g. when duties on "khat" trade was raised.

3 METHODOLOGY

3.1 Survey Design

The study was cross-sectional among the Hargeisa returnee/IDP population in which both qualitative and quantitative techniques were used. Quantitative data was collected through a standard household questionnaire for nutrition (see appendix 2). Retrospective mortality data for 96 days prior to the survey was also collected among the study households (see appendix 3). Qualitative data was collected by survey supervisors and coordinators through focus group discussions and key informant interviews to provide further understanding of the underlying causes of malnutrition.

3.2 The sampling procedure

Using a two-stage cluster sampling methodology, 30 clusters were randomly selected based on population proportion of the settlements. Initially a sampling frame was constructed from which a representative sample could be drawn. A list of all settlements within the municipality, with their respective populations was used to construct cumulative population figures for the survey area. With help of the survey team who comprised people from within Hargeisa, all settlements were listed in the sampling frame and their population estimates further verified for authenticity by the survey team. An estimated population of 72,500 from seven settlements was used from which 30 clusters were selected. Using the Nutrisurvey software a random number, 1127 was chosen to determine the first cluster. The subsequent clusters were determined systematically by adding the cluster interval (2,417) to the first randomly selected number (see appendix 1). From the 30 randomly selected clusters, a total of 945 children aged 6-59 months and/or height/length of 65-110 cm were randomly surveyed. However, insufficient information on some children and extreme measurements led to the dropping off of 21 children at analysis. Thus only 924 were included in the analysis of child data from 467 (471 less 4) households.

In each of the clusters, mortality questionnaires were administered to 30 randomly selected households. Same sampling frame used for nutrition assessment was employed in cluster selection for mortality survey. In total, mortality data was collected from 902 households irrespective of whether with an under-five or not.

3.2.1 Study population and sampling criteria

The study population consisted of people living in the seven informal and formal returnee/IDP settlements and comprised all the children aged 6-59 months or measuring 65-110 cm for height/length. Sampling procedure as outlined in the SMART Guidelines was followed in this survey. On the visit to each cluster, the centre was identified and a pen was spun to determine the direction to follow in moving to the edge of the cluster. On reaching the edge of a cluster, a pen was spun a second round, now until the pen pointed inward the cluster/village to determine the direction to go in the systematic selection of the households with children aged 6 to 59 months. The households in this direction were counted/established as the team crossed to the other edge and given numbers. A random number within the total number of households encountered was drawn to enable random selection of the first household with a child of the required age or height to be visited. From the first household with a child aged 6-59 months, the team always moved in right direction to the next household. This procedure was followed until the required 30 children were obtained in a cluster.

All sampled households were visited, the supervisor noting whether it is empty, has the required children in which case a household questionnaire administered, or has no under fives in which case only the mortality questionnaire is administered. If a cluster was

exhausted of children before the required 30 children had been reached, a neighbouring area was selected to top up the number. All eligible children in the households were measured and if a child or primary caregiver was absent, an appointment was booked for a later visit in the course of survey. If a child was in a relative or neighbour's house, the child was followed up and assessed.

With reference to mortality, the data was collected retrospectively with the first questionnaire being exercised on the first randomly selected household. The same direction, right as indicated above was followed but unlike the survey for children where only households with the required children were visited for interview, the mortality questionnaire was exercised in every household in the identified direction. All the mortality questionnaires administered in the same households where there were children under five years for household interviews were matched.

3.3 Data collection

3.3.1 Anthropometric measurements

The anthropometric data were collected using the procedure stipulated by the WHO (1995) for taking anthropometric measurements. Adherence to this procedure was ensured. The protocol used was as follows:

Weight: Salter Scale with calibrations of 100g-unit was used. This was adjusted before weighing every child by setting it to zero. The female children would be lightly dressed before having the weight taken while clothes for the male children were removed. Two readings were taken for each child, shouted loudly and the average recorded on the questionnaire.

Height: For height, a vertical or horizontal measuring board reading a maximum of 175cm and accurate to 0.1cm was used to take the height or length of a child. The child would stand on the measuring board barefooted; have hands hanging loosely with feet parallel to the body, and heels, buttocks, shoulders and back of the head touching the board. The head would be held comfortably erect with the lower border of the orbit of the eye being in the same horizontal plane as the external canal of the ear. The headpiece of the measuring board was then pushed gently, crushing the hair and making contact with the top of the head. Height/length was then read to the nearest 0.1cm. Two readings were recorded and the computed average used in the analysis.

Length: For children aged 6 to 24 months or between 65cm to 84.5cm length instead of height was taken. The child was made to lie flat on the length board. The sliding piece was placed at the edge of the bare feet as the head (with crushing of the hair) touched the other end of the measuring device. Then two readings were taken and the average computed.

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

3.3.2 Child age determination

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

3.3.3 Oedema

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

3.3.4 Morbidity

Morbidity pattern was assessed by asking any incidences of nutrition related common illnesses like diarrhoea, acute respiratory infections, malaria and measles in the previous two weeks following the survey.

Diarrhoea: Diarrhoea was defined for a child having three or more loose or watery stools per day.

Measles: A child with more than three signs of the following was considered having measles: fever, and skin rash, runny nose or red eyes, and/or mouth infection, or chest infection

Acute Respiratory Infection (ARI): Asked as *oof wareen or wareento*. The signs asked included cough, rapid breathing and fever.

Suspected malaria/acute febrile illness: The signs to be looked for are periodic chills, fever, sweating and sometimes a coma.

3.3.5 Mortality

A proxy indication of mortality was taken retrospectively to provide some idea on the health situation of the population. The mortality assessment was done concurrently with nutrition survey in which a 30 by 30 cluster sampling methodology was used. The survey methodology used for the nutrition survey was adopted with the exception that households were selected as the second sampling unit. At least 30 households were randomly selected in each cluster and the mortality questionnaire administered to a responsible member of that household. All households within the selected cluster were eligible for inclusion in the mortality survey, whether there was under-five or not. Households were systematically surveyed until the 30th household. Each household surveyed was asked the composition of their members in two parts- those members less than 5 years and the total number of household members. The household was then asked how many if any of the household members had died, left or arrived in the last three months (appendix 3). A total of 902 households were included in the survey.

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

$MR = n / \{[(n+N)+N]/2\}$, Where:

n=total number of persons reported dead in the households surveyed

N=total number of people living in those households at the time of survey

The mortality was calculated retrospectively for the past **3 months**, the recall period. Mortality rates per 10,000 persons per day were obtained by dividing the figure above by 96 days that was used as the recall period. Calculation of under-five mortality rates was done using the same formulae but with a denominator of under-five children in the surveyed households. In case a member had died, the household was asked to explain the signs and symptoms of the person before he/she died.

Mortality rates can be interpreted according to the following reference

- For under-five years old children
 - Under-five mortality rates ≥ 2 deaths/10,000/day indicate a situation of alert
 - Under five mortality rate ≥ 4 deaths/10,000 children/day indicate an emergency
- For the total population
 - Mortality rates ≥ 1 deaths/10,000 persons/day indicate an alert situation
 - Mortality rates ≥ 2 deaths/10,000 persons/day indicate an emergency.

3.3.6 Dietary Diversity

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

3.3.7 Micronutrient Deficiencies

During the survey, Vitamin A deficiency (VAD) prevalence was estimated by assessing if any member(s) of a household suffered from night blindness. Iron deficiency anaemia was estimated among pregnant women from self assessment of symptoms (frequent fatigue and listlessness) by the respondents and iodine deficiency was estimated by assessing if any member(s) of a household suffered from goitre.

3.3.8 Consumption Coping Strategies

Consumption coping strategy was determined and calculated as per The Coping Strategies Index Field methods manual by CARE and WFP. Respondents were asked to identify how many times a given coping strategy had been applied in the past 30 days prior to survey.

To weight the coping strategies, a set of 15 coping strategies were presented to members of focus groups and asked to rank the strategies into mild, medium, severe and very severe categories then assign a score to each strategy in a scale of 1 to 8. The frequency of coping strategies were scored as mid-points of the relative frequencies as follows:

Never (zero times)	= 0
Hardly at all (<1 times/week)	= 0.5
Once in a while (1-2 times/week)	= 1.5
Pretty often (3-6 times/week)	= 4.5
All the time (every day)	= 7.0

The coping strategy index (CSI) was then computed in SPSS for each household by the summation of frequency scores times severity weight for each strategy and for every household.

3.4 Description of survey activities

Table 1: Chronology of activities for the Hargeisa Returnee/IDP Settlements nutrition survey

Major Activity	Dates. 2004
Preparation of tools, methodology & review of secondary data (Nairobi)	11 th – 25 th Aug
Resource mobilization; Joint planning meetings with partners (Hargeisa)	22 nd – 3rd Sep
Training of enumerators and pre-testing	4 th – 7 th Sep
Cluster Identification	7 th Sep
Collection of data	8 th – 13 th Sep
Entry of data	14 th – 18 th Sep
Preliminary analysis	18 th – 20 th Sep
Presentation of preliminary results	20 th Sep
Further data cleaning and analysis	21 st – 30 th Sep
Report writing	4 th – 14 th Oct
Circulation of report	31 st Oct

Six teams each consisting of two enumerators, a team leader and one supervisor conducted the survey with each team handling 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; MOHL, UNICEF, WFP and FSAU. Overall support, supervision and co-ordination were done by one FSAU nutritionist, one UNICEF coordinator and one MOHL representative/coordinator who also assisted in the identification of the qualified enumerators selected on the basis of their experience with previous nutrition surveys and participation in growth monitoring and nutrition surveillance activities.

3.5 Quality control procedures

A comprehensive training of enumerators and supervisors was conducted covering interview techniques, sampling procedure, inclusion and exclusion criteria, sources and reduction of errors, taking of measurements, standardisation of questions in the questionnaire, levels of precision required in measurements, diagnosis of oedema and measles, verification of deaths within households, handling of equipment, and the general courtesy during the survey.

Rigorous standardisation of measurement and pre-testing of the questionnaire and equipment was carried out in Sheikh Nur 2, a village in the outskirts of Hargeisa town. Standardisation involved taking repeated measurements of pre-school children from a school in Hargeisa. Pre-testing also involved familiarising survey teams with village/cluster entry; administering the questionnaire, sampling procedure, correct taking of measurements and documentation. After the field exercise, views were exchanged to address the difficulties identified; appropriateness of the questions reviewed and necessary changes made.

Quality of data was also ensured through (i) monitoring of fieldwork by coordination team led by the FSAU and UNICEF nutrition survey coordinators, and national MOHL PHC coordinator, (ii) crosschecking of filled questionnaires on daily basis and recording of observations and confirmation of measles, severe malnutrition and death cases by supervisors. All households sampled were visited and recorded including empty ones (iii) daily review undertaken with the enumerators to address any difficulties encountered, (iv) progress evaluation was carried out according to the time schedule and progress reports shared with partners on regular basis, (v) continuous data cleaning after entry in the field that made it easy to detect any outliers/ mistakes and to replace or repeat households

depending on magnitude of error (vi) monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights and (vii) continuous reinforcement of good practices. All measurements were loudly shouted by both the enumerators reading and recording them to reduce errors during recording.

3.6 Data Processing & Analysis

3.6.1 Data entry, cleaning, processing and analysis

Data was entered and analysed using Nutrisurvey, SPSS and EPIINFO computer based packages. Running and tabulating all variable frequencies was carried out as part of data cleaning. The Nutrisurvey Anthropometry and EPINUT programmes were used to convert the measurements (weight and height) into nutritional indicators and comparison made with the National Centre for Health Statistics (NCHS) references as designed by WHO (1983). Analysis of certain variables e.g. total food groups consumed and the total losses in livestock ownership was undertaken in Microsoft Excel.

3.6.2 General characteristics of survey population

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

3.6.3 Creation of nutritional status indices

The anthropometric measurement of weight and height were used to compute the WFH nutritional status indicators of the studied children. Weight For Height (WFH) expressed the weight of the child as a percentage of the expected weight for the standard child of that height as given by NCHS. WFH measures acute malnutrition or wasting. Using EPINUT, Z-scores were generated and the anthropometric indicator, WFH, was used to classify children into categories of nutritional status as follows:

< -3 Z-Scores or oedema	= Severe acute malnutrition
-3 Z-Scores \leq WFH < -2 Z-Scores	= Moderate acute malnutrition
< -2 Z-score or oedema	= Global/total acute malnutrition
\geq -2Z-Scores	= Normal

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

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

For caregivers (women), the following categories were used:

a) For non pregnant women:

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

b) For pregnant women:

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

4 SURVEY RESULTS

4.1 Household Characteristics of Study Population

The nutrition survey covered a total of 467 households with a mean household size of 6.5 (SD= 2.4) persons. Male headed households comprised 68.5% while the rest (31.5%) were female-headed households. The mean number of the under fives per household was 2 (SD=0.8).

Table 2: Household Characteristics

	N	% (CI)
<i>Sex of Household Head:</i>		
Male	320	68.5 (64.1 – 72.7)
Female	147	31.5 (27.3 – 35.9)
<i>Household size (Mean):</i>		
		6.5 (SD=2.4)
<i>Household residence status (N=467)</i>		
Those in their residence for ≥2 years	429	91.9 (88.9 – 94.1)
Returnees (< 2 years)	18	3.9 (2.4 – 6.1)
Internal migrants	7	1.5 (0.7 – 3.2)
Destitute	7	1.5 (0.7 – 3.2)
Internally displaced	6	1.3 (0.5 – 2.9)
<i>Place of origin (n=38):</i>		
Refugee camp in Ethiopia	15	39.5 (24.0 – 56.6)
Within Somaliland	20	52.6 (35.8 – 69.0)
Other parts (Somalia)	3	7.9 (1.7 – 21.4)
<i>Length of Stay in months (Mean)</i>		
		9.5 (SD=6; range= 1-18)
<i>Reason for movement (n=38):</i>		
Search for job	5	13.2 (4.4 – 28.1)
Food shortage (hunger)	9	23.7 (11.4 – 40.2)
Camp closed	13	34.2 (19.6 – 51.4)
Pastoral drop-out	11	28.9 (15.4 – 45.9)

Most (91.9%) of the surveyed households were residents (had stayed in their residences for over two years). About 3.9% of the households were returnees who had stayed for less than two years. A few were internal migrants and destitute families both at 1.5% respectively. Only 1.3% of the households were internally displaced.

The non residents (those who came within the last two years) were mainly from within

Somaliland (52.6%) and from refugee camps in Ethiopia (39.5%). Some 7.9% originated from other regions of Somalia other than Somaliland. Overall the non residents had stayed in their current locations for between 1 and 18 months with most of them having arrived into the locations eleven or more months prior to the survey. The main reasons for movement were closure of refugee camps in Ethiopia (34.2%) and pastoral drop-outs (28.9%). Food shortage caused the immigration of 23.7% while the remaining households (13.2%) moved in search of employment opportunities.

4.2 Livelihood, Wealth Group and Source of Income

Almost all the surveyed households were poor urban dwellers in temporary or permanent settlements around Hargeisa town. A large majority of the households (84.4%) were very poor (daily household earning < US\$2.5) and another 15% were poor households (daily earning US\$2.5 – 4). Only 0.6% of the households were in the middle class wealth group (daily earning US\$4.1 - 13). The main source of income for majority of the households (64.0%) is casual labour. About 19.7% of the households mainly earn their income from salaried employment. The remaining households mainly derive their income from either petty trade (13.5%) or remittances/begging (2.8%).

Table 3: Distribution of households by means of livelihood, Assets Ownership and consumption coping strategies

Wealth Group (N=467)	N	%
Very poor (< SLSH 15,000/day)	394	84.4 (80.7 – 87.5)
Poor (SLSH 15,000 – 25,000/day)	70	15.0 (11.9 – 18.6)
Middle (SLSH >25,00 – 80,000/day)	3	0.6 (0.2 – 2.0)
Main Source of Income		
Casual labour	299	64.0 (59.5 – 68.4)
Salaried employment	92	19.7 (16.2 – 23.7)
Trade	63	13.5 (10.6 – 17.0)
Remittances/ gifts (begging)	13	2.8 (1.6 – 4.8)
Livestock Ownership		
Proportion who own shoats now (in 2005)	37	7.9 (5.7 – 10.9)
Proportion who owned shoats (in 2003)	24	5.1 (3.4 – 7.7)
Proportion who own donkeys now (in 2005)	14	3.0 (1.7 – 5.1)
Proportion who owned donkeys (in 2003)	13	2.8 (1.6 – 4.8)
Proportion who own camels now (in 2005)	4	0.9 (0.3 – 2.3)
Proportion who owned camels (in 2003)	3	0.6 (0.2 – 2.0)

An increasing trend was observed in the number of people who owned livestock among the few households that kept some animals. For instance, 7.9%, 3.0% and 0.9% households owned shoats, donkeys and camels respectively this year compared to some 5.1%, 2.8% and 0.6%

owned shoats, donkeys and camels respectively during the last survey (2003). However fewer livestock were owned this year than two years ago. The maximum size of livestock owned were 10 shoats, 2 donkeys and 2 camels down from 120 shoats, 2 donkeys and 10 camels in 2005 and 2003 respectively. Overall, livestock keeping among the returnees/IDPs is low and contribute little in the livelihood of these populations.

4.3 Water Access, Sanitation and Hygiene Practices

Most (85.9%) of the surveyed households drew water from piped/tap water systems while some 11.3% of the households relied on water from unprotected wells. The rest (2.8%) drew water from other sources like river bed, dam or tube well. There was an association between the source of water and incidences of diarrhoea- those who drew their water from unprotected sources (wells, river bed, dam) were more likely ($1.05 < RR = 1.36 < 1.76$; $p = 0.01$) to experience diarrhoea episodes than those who drew their water from protected source (tap/pipe). Majority (63.0%) were using between 20 and 60 litres/day while slightly over one quarter (28.3%) used 61-120 litres/day. Some 6.0% of the households were using only 20 litres of water per day while only 2.8% of the households were using more than 120 litres/day for an average household of about 6 persons. From the analysis it is apparent that more than three-quarters of the surveyed households were not accessing the recommended water quantity of 15 litres/ person/day (Sphere, 2004).

Only 30.4% of the households in the survey accessed their water within 500m - the recommended maximum distance from any household to a water point (Sphere guidelines, 2004). Majority (36.4%) got their water within 501-1000m while about one quarter (24.2%) got their water some 1-3 km away from their households while up to 9.0% of the households reported travelling over three kilometres in search of water.

While the majority (75.2%) of the surveyed households accessed sanitation facilities, sharing by many people was common. Majority (44.6%) of the households used shared or communal toilets and only 30.6% had their own toilets. About one quarter (24.8%) did not have access to toilets at all. Sphere guidelines recommend that no more than 20 people should use one communal toilet. However 13.7% of the toilets were shared by more than 20

people. Majority (43.6%) of the toilets were shared by 6-10 persons while 35.0% were shared by 11-20 people. Only 7.7% of the toilets were used by few (1-5) persons.

Table 4: Water access, sanitation and hygiene practices

Water access	N	(%)
Main source of drinking water (N=467):		
Piped/ tap water (including truck vendors)	401	85.9 (82.3 – 88.8)
Unprotected wells	53	11.3 (8.7 – 14.7)
Others (river beds, dams, tube wells, etc)	13	2.8 (1.6 – 4.8)
Average household water use/day (N=467):		
< 20 litres	28	6.0 (4.1 – 8.7)
20 – 60 litres	294	63.0 (58.4 – 67.3)
61 – 120 litres	132	28.3 (24.3 – 32.6)
> 120 litres	13	2.8 (1.6 – 4.8)
Distance to the nearest water point: (N=467)		
0 – 500 metres	142	30.4 (26.3 – 34.8)
501 – 1000 metres	170	36.4 (32.1 – 41.0)
1001 – 3000 metres	113	24.2 (20.4 – 28.4)
>3000 metres	42	9.0 (6.6 – 12.1)
Sanitation and hygiene		
Access to Sanitation facility (N=467):		
Use communal/ shared latrine	208	44.6 (40.0 – 49.2)
Use own latrine/ toilet	143	30.6 (26.5 – 31.1)
No latrine at all	116	24.8 (21.0 – 29.1)
Number using the same latrine/toilet (N=351)		
1 – 5 persons	27	7.7 (5.2 – 11.1)
6 – 10 persons	153	43.6 (38.4 – 49.0)
11 – 20 persons	123	35.0 (30.1 – 40.3)
> 20 persons	48	13.7 (10.3 – 17.8)
Wash hands after defecation (N=467)		
Always	295	63.2 (58.6 – 67.5)
Often	130	27.8 (23.9 – 32.2)
Sometimes	42	9.0 (6.6 – 12.1)
Wash hands before eating or food preparation:		
Always	279	59.7 (55.1 – 64.2)
Often	146	31.3 (27.1 – 35.7)
Sometimes	42	9.0 (6.6 – 12.1)

Hand washing always after defecation (63.2%) and before handling food (59.7%) was a practice by majority of the households. A significant proportion however, did not wash their hands always though the practice was still common after defecation (27.8%) or before handling food (31.3%). Some 9.0% washed their hands less often.

Hand washing practice by caregivers showed significant associations with incidences of diarrhoea and acute respiratory infections. Incidences of ARI were more likely to be observed among children whose caregivers did not always wash their hands after defecation

($1.01 < RR = 1.18 < 1.37$; $p = 0.04$) or before handling food ($1.07 < RR = 1.24 < 1.45$; $p = 0.004$). Similarly, more diarrhoea incidences were observed among children whose caregivers did not always wash their hands before handling food ($1.01 < RR = 1.10 < 1.21$; $p = 0.04$).

4.4 Health Seeking Behaviour

Table 5: Health seeking behaviour

	N	%
<i>Seek healthcare assistance when a member is sick (N=467):</i>		
Yes	439	94.0 (91.3 – 95.9)
No	28	6.0 (4.1 – 8.7)
<i>Where (n=439):</i>		
Public health facility	168	38.3 (33.7 – 43.0)
Pharmacy shops	144	32.8 (28.5 – 37.4)
Private clinic	83	18.9 (15.4 – 23.0)
Self medication	28	6.4 (4.4 – 9.2)
Traditional healer	16	3.6 (2.2 – 6.0)

A large Majority (94.0%) of the households seek health care assistance when the child is sick. Slightly over one-third (38.3%) and slightly less than one-third (32.8%) seek assistance from pharmacy shops/chemists.

About 19% of the households have access to private clinics. Some 6.4% practiced self-prescription and medication while the remaining 3.6% consult traditional healers.

4.5 Formal and informal support

Table 6: Formal and informal support

	N	% (CI)
<i>Informal support (N = 467)</i>		
Received:		
Yes	47	10.1 (7.6 – 13.2)
No:	420	89.9 (86.8 – 92.4)
Type of support (N=47)		
Zakat from better off households	17	36.2 (22.7 – 51.5)
Loans	11	23.4 (12.3 – 38.0)
Gifts	10	21.3 (10.7 – 35.7)
Remittances from abroad	6	12.8 (4.8 – 25.7)
Remittances within Somaliland	3	6.4 (1.3 – 17.5)
<i>Formal support (N = 467)</i>		
Received:		
Yes	71	15.2 (12.1 – 18.9)
No	396	84.8 (81.1 – 87.9)
Type of support (N=71)		
Cash for work	62	87.3 (77.3 – 94.0)
Food for work	6	8.5 (3.2 – 17.5)
Free cash	3	4.2 (0.9 – 11.9)

Even though social support networks are a major source and/or supplement of livelihood undertakings among the Somalis, informal support among the Hargeisa returnees/IDPs was low. At the time of survey only 10.1% of the households had received some informal (social) support, within three months prior to the survey mainly in the form of *zakat* (offerings) from the better off households (36.2%).

Other forms of informal support included loans (23.4%), gifts (21.3%) and remittances within (6.4%) and without (12.8%) Somaliland.

Formal support to the surveyed returnee/IDP population was equally minimal. Only 15.2% of the households had received some formal support with cash-for-work being the main one (87.3%). A few benefited from food-for-work (8.5%) or free cash (4.2%).

4.6 Characteristics of survey children

Table 7: Distribution of children according to age and sex

Age	Boys		Girls		Total	
	n	%	n	%	N	%
6-17 months	105	22.4	108	23.7	213	23.1
18-29 months	103	22.0	97	21.3	200	21.6
30-41 months	116	24.7	116	25.5	232	25.1
42-53 months	111	23.7	93	20.4	204	22.1
54-59 months	34	7.2	41	9.0	75	8.1
Total	469	50.8	455	49.2	924	100

A total of 924 children were surveyed from 467 households of whom 50.8% were boys and 49.2 % were girls. The ratio of boys to girls was 1.03:1.0.

4.7 Nutritional status of survey children using anthropometry

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

Malnutrition Rates	No	Proportion
Global Acute Malnutrition (<-2 Z score or oedema)	70	7.6 (6.0 – 9.5)
Severe Acute Malnutrition (<-3 Z score or oedema)	12	1.3 (0.7 – 2.3)

The global acute malnutrition using WFH Z score (<-2 z-scores or oedema) was 7.6% (CI: 6.0-9.5) while severe acute malnutrition (<-3 z-score or oedema) was 1.2 % (CI: 0.6-2.2). One oedema case was reported during the survey. Distribution of the weight-for-height scores (mean=-0.43; median=-0.45; SD=1.09) were skewed towards the left depicting a poorer nutrition situation according to international (WHO) standards.

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

Nutrition status categories	Males		Females		Total	
	No	% (CI)	No	% (CI)	No	% (CI)
Global acute malnutrition (WFH<-2 z score/oedema)	47	10.0 (7.5 – 13.2)	23	5.1 (3.3 – 7.6)	70	7.6 (6.0 – 9.5)
Severe acute malnutrition (WFH <-3 z score/oedema)	7	1.5 (0.7 – 3.2)	5	0.9 (0.3 – 2.4)	12	1.3 (0.7 – 2.3)
Oedema	0	0	1	0.2 (0.0 – 1.4)	1	0.1 (0.0 – 0.7)

A higher proportion (10.0%) of boys were malnourished than girls (5.1%) in the surveyed Hargeisa Returnee/IDP population using weight for height <-2 Z score or presence of oedema and boys were more likely than girls to be malnourished (RR=1.98; CI: 1.22 – 3.21; p=0.006).

When analysed according to age groups, children in the breastfeeding age (6-24 months) were found to be more malnourished (WHZ<-2 or oedema) than children aged above two years (RR=1.92; CI: 1.22 – 3.02; p=0.006).

Table 10: Distribution of Acute Malnutrition by Age

Age groups	Severe (WH<-3Z)	Moderate (WH>=-3Z<-2Z)	GAM (Total malnourished-WH<-2Z)	Normal (WH>=-2Z)	Total
6-17 months	1 (0.5%)	20 (9.4%)	21 (9.9%)	192 (90.1%)	213 (23.1%)
18-29 months	3 (1.5%)	16 (8.0%)	19 (9.5%)	181 (90.5%)	200 (21.6%)
30-41 months	3 (1.3%)	9 (3.9%)	12 (5.2%)	220 (94.8%)	232 (25.1%)
42-53 months	3 (1.5%)	9 (4.6%)	12 (6.2%)	182 (93.8%)	194 (21.0%)
54-59 months	1 (1.2%)	5 (5.9%)	6 (7.1%)	79 (92.9%)	85 (9.2%)
Total	11 (1.2%)	59 (6.4%)	70 (7.6%)	854 (92.4%)	924 (100%)

Table 11: Malnutrition prevalence using WFH percentage of median categories

Nutrition status categories	Males		Females		Total	
	No	Proportion (%)	No	Proportion (%)	No	Proportion (%)
Global acute malnutrition (WFH<80% or oedema)	32	6.8 (4.8 – 9.6)	15	3.3 (1.9 – 5.5)	47	5.1 (3.8 – 6.8)
Severe acute malnutrition (WFH<70% or oedema)	2	0.4 (0.1 – 1.7)	1	0.2 (0.0 – 1.4)	3	0.3 (0.1 – 1.0)

The global acute malnutrition among children aged 6 - 59 months using weight for height <80% of median or presence of oedema was 5.1% (CI: 3.8 - 6.8%), while the severe acute malnutrition <70% of median or presence of oedema was 0.3% (CI: 0.1% – 1.0%).

4.8 Morbidity, measles immunisation, polio vaccination and vitamin A supplementation

As indicated on Table 12, the incidences of ARI (33.2%) and diarrhoea (17.2%) within two weeks prior to the survey were high but no disease outbreak was reported during the period. Some 159 children (17.2%) had total diarrhoea duration of 975 days. The average duration of diarrhoea illness was 6 days with the number of sick days ranging from 1 to 60 days. The total sick days for ARI were higher (2428 days) among some 307 children (33.2), with a mean duration of illness of 8 days. The duration of illness with either diarrhoea or ARI did not however, significantly affect the nutrition status of the children ($p>0.05$). A few (0.4%) suspected malaria cases were reported within the same period. The incidence of measles among the under-five population one month prior to the survey was about 1.6%.

Measles vaccination coverage for eligible children (9-59 months old) was notably low (44.7%) unlike polio which had a high coverage of 93.6%. Most (87.5%) of the children aged 6-59 months had received three doses of polio vaccine while some 6.1% had received one or two doses. Only 6.4% had not received polio vaccine at all. Slightly more than half

(53.5%) of the surveyed children had received Vitamin A supplementation in previous 6 months or before prior to the survey.

4.9 Micronutrient Deficiencies

About 1.7% (0.8 – 3.5%) of the households reported cases of night blindness, which is a proxy indicator for vitamin A deficiency problem. The rate of night blindness among the surveyed population was 0.26% (N=3051). About 0.4% of the households reported suspected goitre among members of their households. More than one-third (34.8%) of the 69 women who were pregnant reported suspected anaemia

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

	No.	%(CI)
<i>Incidence of major child illnesses (N=924)</i>		
ARI within two weeks prior to survey	307	33.2 (30.2 – 36.4)
Diarrhoea within two weeks prior to survey	159	17.2 (14.9 – 19.8)
Malaria (suspected) within two weeks prior to survey	4	0.4 (0.1 – 1.2)
Measles within one month prior to the survey (N=871)	14	1.6 (0.9 – 2.8)
<i>Immunization Coverage (N=924)</i>		
Children (9-59 months) immunised against measles (N=871)	389	44.7 (41.3 – 48.0)
<i>Children who have ever received Polio dose (N= 924)</i>		
One to two times	56	6.1 (4.6 – 7.8)
Three times	809	87.6 (85.2 – 89.6)
None	59	6.4 (4.9 -8.2)
<i>Vitamin A supplementation (N= 924)</i>		
Children who received Vitamin A supplementation in past 6 months or before	494	53.5 (50.2 – 56.7)
<i>Micronutrients Deficiencies (N=467)</i>		
Rate of night blindness (N=3051)	8	0.26
Suspected Goitre cases	2	0.4 (0.1 – 1.7)
Suspected Anaemia among pregnant women (N=69)	24	34.8 (23.7 – 47.2)

4.10 Feeding practices

About one half (51.3%) of the children aged 6-24 months were breastfeeding at the time of the survey. Of those who had been stopped from breastfeeding, about 7.6% had stopped breastfeeding before six months, 40.1% before their first birthday and another 51.7% after their first year of life. One child (0.6%) was not breastfed at all.

A large proportion (54.7%) of the children aged 6-24 were introduced to foods other than breast milk early in life between the time of birth and the third month of life. About 39.1% were introduced to complementary feeding at 4-6 months and a few (6.2%) beyond the recommended six months.

Most children (69.0%) were fed at least thrice a day. Majority were fed 3-4 times (62.9%). Slightly more than one-quarter (28.8%) fed 2 times. Some (2.3%) of the children were fed only once while 6.1% were fed more than four times a day.

Table 13: Children feeding practices

	N	% (CI)
<i>Is Children aged 6-24 months breastfeeding? (N=353)</i>		
Yes	181	51.3 (45.9 – 56.6)
No	172	48.7 (43.4 – 54.1)
<i>Age when child stopped breastfeeding (N=172):</i>		
0 - 5 months	13	7.6 (4.1 – 12.6)
6 - 11 months	69	40.1 (32.7 – 47.9)
12 – 18 months	69	40.1 (32.7 -47.9)
More than 18 months	20	11.6 (7.2 – 17.4)
Never breastfed	1	0.6 (0.0 – 3.2)
<i>Introduction of Complementary feeding (N=353)</i>		
0 - 3 months	193	54.7 (49.3 – 59.9)
4 – 6 months	138	39.1 (34.0 – 44.4)
7 months or more	22	6.2 (4.0 – 9.4)
<i>Feeding frequency (N=924):</i>		
Once	21	2.3 (1.4 – 3.5)
2 times	266	28.8 (25.9 – 31.8)
3 – 4 times	581	62.9 (59.7 – 60.0)
5 or more times	56	6.1 (4.6 – 7.8)
<i>Change Feeding Practice during illness (N=924)</i>		
Yes	485	52.5 (49.2 – 55.7)
No	439	47.5 (44.3 – 50.8)
<i>What did you do if you changed feeding during illness?</i>		
Sweetened the food	251	51.8 (47.2 – 56.3)
Gave preferred foods only	99	20.4 (17.0 – 24.3)
Gave small frequent feeds	65	13.4 (10.6 – 16.8)
Forced feeding	53	10.9 (8.4 – 14.1)
Fed less frequently	17	3.5 (2.1 – 5.7)

More than half (52.8%) of the surveyed children changed their feeding practices during illness. Only 13.4% of the children who changed their feeding practice were given small and frequent meals as recommended. More than half (51.8%) were given sweetened food and about 20.4% were given foods that they preferred only. Some 10.9% of the children were forced fed while a few (3.5%) were fed less frequently during illness.

4.11 Dietary Diversity

As shown on table 14, more than half (53.0%) of the households had consumed four or less food groups within 24 hours prior to the survey. One-third (33.3%) had consumed 5-8 food groups and only 13.6% consumed more than eight food groups within the same period.

Table 14: Distribution of dietary diversity among children

<i>No of food groups consumed (N=467)</i>	<i>N</i>	<i>% (CI)</i>
1 – 4 food groups	490	53.0 (49.8 – 56.3)
5 - 8 food groups	308	33.3 (30.3 – 36.5)
9 – 12 food groups	126	13.6 (11.5 – 16.1)
Mean HDDS	7	SD=2
<i>Type of food groups eaten (N=467)</i>		
Cereal staples/products	462	98.9 (97.4 – 99.6)
Sugar and/or honey	456	97.4 (95.7 – 98.8)
Fats & Oils	431	92.3 (89.4 – 94.5)
Roots & tubers	375	80.3 (76.3 – 83.8)
Vegetable & vegetable products	356	76.2 (72.1 – 80.0)
Milk & milk products	355	76.0 (71.8 – 79.8)
Meat & meat products	218	46.7 (42.1 – 51.3)
Legumes/pulses	144	30.8 (26.7 – 35.3)
Fruits & fruit products	121	25.9 (22.0 – 30.2)
Eggs	52	11.1 (8.5 – 14.4)
Fish & fish products	31	6.6 (4.6 – 9.4)
Miscellaneous (e.g. beverages)	445	95.3 (92.8 – 97.0)
<i>Main source of food (N=467)</i>		
Purchasing	443	94.9 (92.3 – 96.6)
Borrowing	15	3.2 (1.9 – 5.4)
Begging	6	1.3 (0.5 – 2.9)
Remittance / gifts	3	0.6 (0.2 – 2.0)

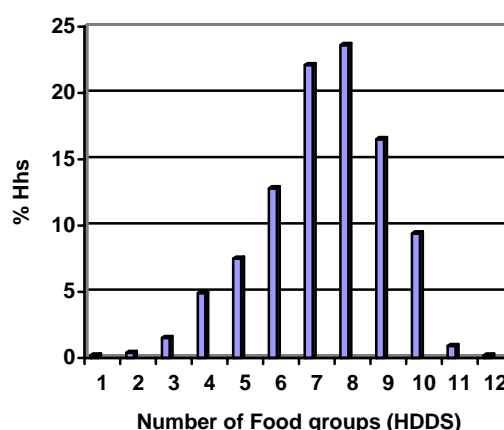
Households consumed an average of seven food groups with the number of foods consumed ranging from 1 – 12.

Cereal staples (98.9%), Sugar/honey (97.4%), and fats/oils (92.3%) were the most commonly consumed food groups while fish (6.6%) and eggs (11.1%) were the least consumed. Less than half of the households had consumed meat (46.7%), legumes (30.8%) or fruits (25.9%). Consumption of miscellaneous food items especially tea was widespread in the surveyed population

(95.3%).

The proportion of those who had consumed vegetables even though apparently high (76.2%) was restricted to vegetable spices (onions, tomatoes, etc) while consumption of leafy vegetables was minimal. The household dietary diversity score (HDDS) showed a strong positive association with household income and wealth group. The very poor households had less diversified diets than their poor or middle wealth group counterparts (RR=3.77; CI: 1.73 – 8.22; p=0.0001). Level of income similarly influenced consumption of certain foods with those in a higher wealth group having more access to meat (RR=2.12; CI: 1.45 – 3.11; p= 0.00003); fish (RR=1.08; CI: 0.98 – 1.18; p=0.04); roots and tubers (RR=2.25; CI: 1.09 – 4.66; p=0.03) and even milk (RR=2.41; CI: 1.23 – 4.73; p= 0.007) which is normally considered staple food among the Somalis.

Fig 2 : Distribution of households by number of Food groups consumed



4.12 Child Malnutrition by MUAC

When using mid upper arm circumference (MUAC) measurements, 5.2% (CI: 3.9 – 6.9) of the children were malnourished (MUAC<12.5 cm). About 1.4% (CI: 0.8 – 2.5) were severely malnourished (MUAC<11.0 cm or oedema) while 10.1% (CI: 8.2 – 12.2) were at risk (MUAC 12.5-<13.5 cm). Malnutrition rate from MUAC measurements overlapped and predicted

wasting estimation from WFH Z scores (7.6% CI: 6.0 – 9.5). Children with MUAC<12.5 were also more likely to have lower WHZ scores (RR=7.37; CI: 4.85 – 11.23; p=0.000001). The rate also corresponded with the percent of median WFH (WFH<80%) value of 5.1% (CI: 3.8 - 6.8).

Table 15. Nutrition status of Children by MUAC

Malnutrition	Males		Females		Total (N=924)	
	N	%	N	%	N	% (95% CI)
Severe (MUAC <11 cm)	6	1.3 (0.5–2.9)	7	1.5 (0.7–3.3)	13	1.4 (0.8–2.5)
Moderate (MUAC 11-<12.5 cm)	26	5.5 (3.7-8.1)	22	4.8 (3.1-7.3)	48	5.2 (3.9-6.9)
At risk (MUAC 12.5- <13.5 cm)	51	10.9 (8.3-14.1)	42	9.2 (6.8-12.4)	93	10.1 (8.2-12.2)
Normal (MUAC >=13.5 cm)	386	82.3 (78.5-85.6)	384	84.4 (80.7-87.5)	770	83.3 (80.7-85.6)
Total	469	50.8	455	49.2	924	

4.13 Caregivers Malnutrition by MUAC

Table 16. Nutrition status of caregivers (mothers) by MUAC

	n	%	95% CI
<i>Non Pregnant (N=398)</i>			
Severe acute malnutrition (MUAC<16.0 cm)	1	0.3	0.0 – 1.6
Global acute malnutrition (MUAC≤18.5)	6	1.5	0.6 – 3.4
Normal	392	98.5	96.6 – 99.4
<i>Pregnant women (N=69)</i>			
Severe Risk (MUAC≤20.7 cm)	2	2.9	0.4 – 10.1
Total at risk (MUAC≤23.0 cm)	8	11.6	5.1 – 21.6
Normal	61	88.4	78.4 – 94.9

One (0.3%; CI: 0.0–1.6) of the non pregnant women caregivers was severely malnourished (MUAC<16.0 cm) while a total of 1.5% (CI: 0.6 – 3.4) were acutely

malnourished (MUAC ≤18.5 cm).

About 14.8% of the surveyed caregivers were pregnant at the time of the survey, of which 2.9% (CI: 0.4 – 10.1) were severely at risk (MUAC≤20.7 cm) while a total of 11.6% (CI: 5.1 – 21.6) were at risk (MUAC≤23.0 cm).

4.14 Consumption Coping Strategies

Households responded to usage of 13 sets of consumption coping strategies at different frequencies over the previous one month.

Table 17: Coping Strategies

Strategy	CS Frequency Score					Severity Score
	0	0.5	1.5	4.5	7	
Shift to less preferred/ expensive foods	281 (60.2%)	102 (21.8%)	37 (7.9%)	40 (8.6%)	7 (1.5%)	5
Limit portion consumed in a meal	142 (30.4%)	142 (30.4%)	107 (22.9%)	56 (12.0%)	20 (4.3%)	3
Take fewer meals	155 (33.3%)	115 (24.7%)	129 (27.7%)	60 (12.9%)	7 (1.5%)	5
Borrow food in credit from shop	137 (29.3%)	98 (21.0%)	120 (25.7%)	85 (18.2%)	27 (5.8%)	7
Borrow food from neighbour	255 (54.6%)	67 (14.3%)	74 (15.8%)	50 (10.7%)	21 (4.5%)	3
Restrict adult consumption for children	230 (49.2%)	100 (21.4%)	85 (18.2%)	47 (10.1%)	5 (1.1%)	7
Rely on relatives for food	374 (80.1%)	60 (12.8%)	24 (5.1%)	6 (1.3%)	3 (0.6%)	2
Rely on food donations from clan	419 (89.7%)	27 (5.8%)	16 (3.4%)	2 (0.4%)	3 (0.6%)	2
Seek humanitarian food aid	448 (96.1%)	13 (2.8%)	2 (0.4%)	1 (0.2%)	3 (0.6%)	8
Send members to eat elsewhere	375 (80.3%)	49 (10.5%)	21 (4.5%)	13 (2.8%)	9 (1.9%)	3
Beg for food	422 (90.4%)	18 (3.9%)	17 (3.6%)	5 (1.1%)	5 (1.1%)	8
Skip entire days meal	285 (61.0%)	78 (16.8%)	56 (12.0%)	45 (9.7%)	3 (0.6%)	5
Consume left-over/ spoiled foods	421 (90.1)	21 (4.5%)	8 (1.7%)	12 (2.6%)	5 (1.1)	3

The mean household coping strategy index (CSI) was 43.89 (SD=40.96). As expected CSI

had a negative and significant ($p=0.0001$) relationship with dietary diversity (HDDS). The more diverse the diet, the lower the CSI score and the more food secure the household. HDDS was a predictor of CSI even after controlling for income level (wealth group) explaining for about 11% of the variability in CSI. For every 1% increase in CSI, there was a corresponding decrease of 0.3% in HDDS.

Fig 3. Distribution of CSI

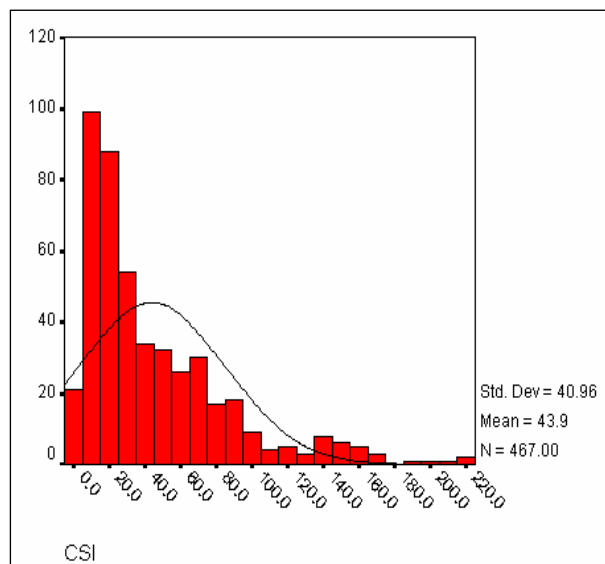
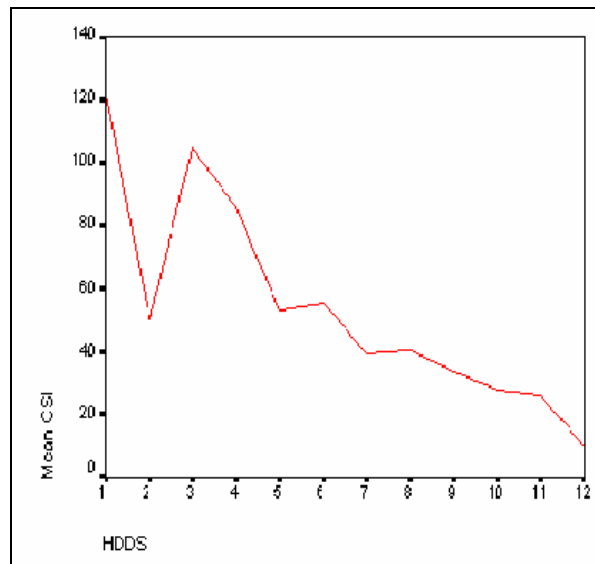


Fig 4. Correlation between CSI and HDDS



CSI also showed negative relationship with consumption of certain food groups like roots & tubers, vegetables, meat, legumes, eggs and milk. Those who consumed these foods were therefore relatively more food secure. Even after controlling for income levels, lower CSI were still associated with consumption of roots ($p=0.0001$), vegetables ($p=0.004$), meat ($p=0.001$) and fish ($p=0.024$).

4.15 Relationship between malnutrition and other factors

Table 18: Risk factors and relation to total malnutrition (WHZ<-2)

Exposure variable	N	(%)	Crude RR	95% CI	p-value
<i>Wealth Group:</i>					
Very poor	24	6.1	0.79	0.57-1.10	0.18
Poor/Middle	46	8.7			
<i>Child sex:</i>					
Male	47	10	1.98	1.22-3.21	0.006*
Female	23	5.1			
<i>Age group</i>					
6-24 months	38	10.8	1.92	1.22-3.02	0.006*
25-59 months	32	5.6			
<i>Hygiene</i>					
<i>Wash hands before handling food:</i>					
Always	19	6.8	0.89	0.6-1.33	0.66
Not always	51	7.9			
<i>Morbidity patterns</i>					
<i>ARI</i>					
Yes	23	7.5	1.01	0.85-1.19	0.95
No	47	7.6			
<i>Diarrhoea:</i>					
Yes	18	11.3	0.89	0.77-1.02	0.07
No	52	6.8			
<i>Health programmes</i>					
<i>Vitamin A:</i>					
Yes	28	5.7	1.32	1.08-1.62	0.026*
No	42	9.8			
<i>Measles vaccine</i>					
Yes	21	5.4	0.73	0.51-1.05	0.08
No	42	8.7			
<i>Dietary & feeding patterns</i>					
<i>Breastfeeding</i>					
Yes	20	11.0	0.97	0.68-1.38	0.99
No	18	10.5			
<i>Dietary diversity</i>					
≤ 6 food groups	50	9.3	1.14	0.97-1.33	0.18
≥ 7 food groups	20	5.9			

Boys were more likely (RR=1.98; CI: 1.22-3.21; p=0.006) to be malnourished than girls.

Malnutrition rates were also higher among children aged 24 months or less (p=0.006) than those aged above 2 years.

Hand washing practice by caregivers showed significant associations with incidences of diarrhoea (p=0.04) and acute respiratory infections (p=0.004). High incidences of child morbidity were also associated with source of water with households drawing water from unprotected sources more likely to report childhood

morbidity (p=0.01).

Those who had received vitamin A supplements were less likely to be malnourished (p=0.026). Higher HDDS were associated with high income levels (p=0.0001), and low CSI (p=0.01) but had no significant association with malnutrition rates (p>0.05).

Lower CSI values were also associated with consumption of roots & tubers (p=0.00001), vegetables (p=0.004) and meat (p=0.001).

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

4.16 Death rates

A total of 902 households were surveyed for mortality indicator with a recall period of 96 days prior to the survey being used. The results generated by the Nutrisurvey software were as presented below:

Death rates;

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

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

* Mid point population = (Population at present + Population at beginning of recall)/2
Population at beginning of recall = (population present + left + deaths) – (joined + births)

Under five population (mid point) in surveyed households	= 1,041
Number of under fives who joined the households	= 13
Number of under fives who left the households	= 4
Number of under five deaths	= 21

Under five death rate (deaths /10,000 children per day) = **2.13** (CI: 1.07 - 3.19)

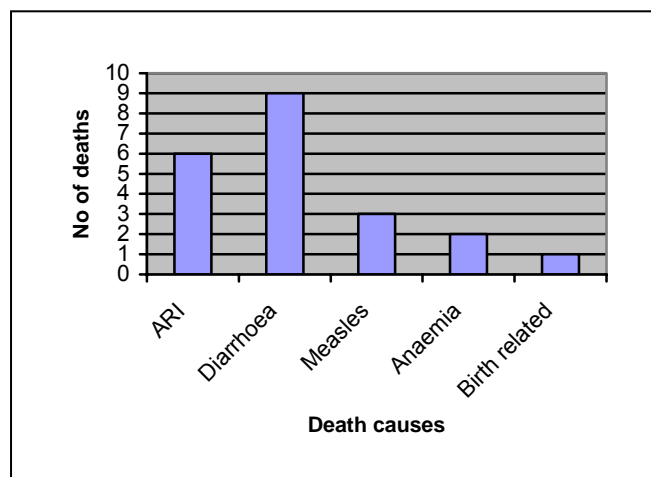
This under five death rate reflects an alert situation according to the international standards (WHO classification).

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

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

Total population in surveyed households	= 5240
Total people who joined the households	= 21
Total people who left the households	= 94
Total number of births	= 42
Total number of deaths in the households	= 40

CMR as deaths per 10,000 persons per day = **0.79** (CI: 0.51 - 1.07)

Figure 5: Causes of under five mortality

As shown on graph 5, diarrhoeal diseases and ARI were the main causes of under-five mortality. Other suspected causes of child deaths included measles, anaemia and poor birth outcome related complications.

ARI (including TB, pneumonia) and birth complications were the main causes of death among persons above five years of age. Anaemia, diarrhoea and cardiovascular diseases were also causes of death among adults and children over five years.

4.17 Comparison to the previous survey results

A comparative analysis of the results of Hargeisa returnees/IDPs survey and the previous findings shows significant changes in nutrition situation and livelihood factors. There has been a gradual decrease in acute malnutrition over the last four years from a critical global acute malnutrition (WHZ<-2 or oedema) of 16.3% (CI: 14.0 – 18.9%) in 2001 and 15.3% (CI: 12.9 – 17.6%) in 2003 to an alert level of 7.6% (CI: 6.0 – 9.5%). Severe acute malnutrition (WHZ<-3 or oedema) also reduced from 6.4% (CI: 5.0 – 8.3) in 2001 and 3.8% (CI: 2.6 – 5.2) in 2003 to 1.3% (CI: 0.7 – 2.3) this year.

Table 19: Comparison of survey results with previous survey findings among the returnees/IDPs in Hargeisa

	2001		2003		2005	
	N	% (95% CI)	N	% (95% CI)	N	% (95% CI)
Sample size (children)	901	100	913	100	924	100
SAM (WHZ<-3/ oedema)	58	6.4 (5.0 – 8.3)	35	3.8 (2.6 – 5.2)	12	1.3 (0.7 – 2.3)
GAM (WHZ<-2/oedema)	147	16.3 (14.0–18.9)	140	15.3 (12.9 - 17.6)	70	7.6 (6.0 – 9.5)
Oedema	11	1.2 (0.6 – 2.3)	8	0.9	1	0.1 (0.0 – 0.7)
Under five death rate (deaths/10000/d)	-		2.9		2.13 (1.07 – 3.19)	
Crude death rate (deaths/10000/d)	-		1.1		0.79 (0.51 – 1.07)	
ARI within two weeks prior to survey	327	36.3 (33.2-39.5)	192	21.0 (18.5-23.8)	307	33.2 (30.2-36.4)
Diarrhoea within two weeks prior to survey	202	22.4 (19.8-25.3)	248	27.2 (24.3-30.2)	159	17.2 (14.9-19.8)
Malaria within two weeks prior to survey	-	-	10	1.1 (0.6 – 2.1)	4	0.4 (0.1 - 1.2)
Measles one month prior to survey	-	-		5.3 (3.9 – 7.0)	14	1.6 (0.9 – 2.8)
Measles immunisation coverage (9-59 months)		54.3 (51.0-57.6)		61.5 (57.7– 65.3)	389	44.7 (41.3-48.0)
Vit A supplementation coverage		74.6 (71.6-77.4)	439	48.1 (44.7-52.9)	494	53.5 (50.2-56.7)
Female headed HHs		8.5 (6.8 – 10.6)		9.1 (7.1 – 12.3)	147	31.5 (27.3-35.9)
Access to toilet		56.8 (53.5-60.1)		53.9 (50.3-56.9)	351	75.2 (70.9-79.0)
Access to piped water		99.6 (98.8-99.9)		92.3 (90.3-94.9)	401	85.9 (82.3-88.8)
Access to casual labour		31.1 (28.1-34.2)		47.2 (43.7-49.9)	299	64.0 (59.5-68.4)
Purchasing food		97.4 (96.1-98.3)		94.1 (92.2-95.2)	443	94.9 (92.3-96.6)

One oedema case was reported during the survey. There was a significant decline in the incidences of measles from 5.3% in 2003 to 1.6% in October 2005. Similarly, access to sanitary facility (toilets) significantly improved from 54% in 2003 to 75% in 2005. The 2005 nutrition survey also reported significant positive changes in the provision of basic social services by local authorities and humanitarian agencies when compared to previous years (FSAU, September Nutrition Update). There was a significant increase in the proportion of returnee/IDP households accessing casual labour from 31% in 2001 and 47% in 2003 to 64% in 2005. Access to casual labour was the main source of income and enhanced purchasing power mainly for food procurements and thus access to more diversified diets among the households.

However, there were factors that may continue to negatively affect nutrition situation. Both previous and current surveys still indicate high mortality rates and poor morbidity patterns. CMR and U5MR were 0.79 and 2.13 deaths/10,000 persons/day respectively. There was only some marginal decrease in incidences of ARI (from 36.3% in 2001 to 33.2% in the October 2005). The same trend was witnessed on the diarrhoea incidences that also remained constant at about 17-24% between 2001 and 2005. The only exception was on incidences of measles that showed decline from 5.3% in 2003 to 1.6% in October 2005. Coverage of measles immunization also declined from 54-62% in 2001-3 to less than half (45%) in 2005 as was the case with vitamin A supplementation coverage that dropped over the last four years from 75% in 2001 to 54% in this year.

The number of female-headed households increased significantly from 8.5% (6.8 – 10.6) in 2001 to 31.5% (27.3 – 35.9) during this survey (2005) raising concerns for their vulnerability to food insecurity and malnutrition. There was a significant increase in the proportion of returnee/IDP households accessing casual labour from 31.1% (CI: 28.1 – 34.2) in 2001 and 47.2% (CI: 43.7 – 49.9) in 2003 to 64.0% (CI: 59.5-68.4). Similarly, access to sanitary facility (toilets) showed significant improvement from 53.9% (CI: 50.3 – 56.9) in 2003 to 75.2% (CI: 70.9 -79.0) in 2005 while access to piped/tap water, mainly for drinking slightly decreased from 92.3% (CI: 90.3 – 94.9) in 2003 to 85.9% (82.3 – 88.8%). Other factors did not show any significant changes over the four years, since the 2001 nutrition survey.

4.18 Qualitative information

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

4.18.1 Care and feeding practices

Breast feeding and complementary feeding was found to be sub-optimal in the settlements. Majority of the mothers give water and sugar (*fax*) within a few hours after delivery and start breastfeeding late, between 24 - 48 hours. The women claim that if they breastfeed immediately, the child may get diarrhoea or 'constipation'. Other claims for not starting breastfeeding immediately was that the mother has no milk, that the baby lacks strength to suckle, the mother has abdominal pains and that breastfeeding increases bleeding. In addition to the *fax* and breast feeding, the infants are introduced to goat or cow milk, but preferably camel milk if available after one week while other semi solid foods such as porridge are introduced at between 2 and 3 months. Solid foods are introduced at 6-7 months.

The most common foods fed to young children are light porridge made from sorghum or maize flour with sugar and milk added. Rice with milk, sugar and ghee, oil, white tea, spaghetti and *anjera* (Somali pancake) are among other foods fed to the children. Children are usually fed four or more times a day in normal times. This had not changed significantly

during the survey since majority (69%) of the children were fed 3 or more times in a day. It was noted that children were always given priority in feeding during normal and crisis times. It was also noted that many households had no access to milk, (milk is usually a key food for children). Camel milk, for instance was totally out of the market. Hence children from the very poor families were being fed mainly on wheat or maize porridge and occasionally rice or *caanjero*.

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

4.18.2 Food security

The households reported that different types of foods are available in the market and that those who had sufficient income were able to access diversified diets unlike the very poor households. Food purchases were the biggest proportion of the household's budget with very little left for other non food expenditure especially medical care, water and transport.

It was further indicated that many household level coping mechanisms have been applied to manageable levels including rationing of food available as well as obtaining food on credit. Some adults from poor households have resorted to acute coping mechanisms for example, destitution and sending their children to relatives for help. Remittances and social support, both from abroad and locally, are important sources of relief for destitute families and pastoral dropouts. Most households obtain food through purchases from the market and retail shops. Money for these food purchases is derived from casual labour and petty trade. Casual labour is mainly accessed in the construction industry. Most of those who venture into petty trade are women. The businesses include tea kiosks, groceries, charcoal selling and building stones as well as *khat* selling. Others collect garbage, used tins and bottles from dumping sites and sell. The security and homecare sectors also provide employment to many who are employed as guards, cleaners, cooks and caretakers for the better-offs in and around the town.

4.18.3 Health related issues

The most common diseases among children reported at the time of the survey were ARI and diarrhoea. There were also reports of some cases of measles. The area has insufficient access to public health facilities and where available, the community felt that the Health Workers were not readily available to provide quality health care. The public health facilities also engage the patients in cost-sharing for their medical services, the amount which many respondents said they did not have or could likewise use on comparatively efficient private pharmacies. A high proportion of the population use private pharmacies for medical care. These private pharmacies are open most of the time and provide prescriptions, drugs and treatment.

5 DISCUSSION

5.1 Food security situation: Livelihood means, and Coping mechanisms

In Hargeisa returnee/IDP settlements, casual labour (64%), waged employment (19.7%) and petty trade (13.5%) provide the main income sources, out of which households purchase food and non-food items. With these low income economic activities, the returnees/IDPs have continued to experience difficulties, but have made significant coping efforts in accessing food since the last survey in 2003. Because of their proximity to town, majority can physically access several food varieties which are readily available in the market. This explains why many households recorded high dietary diversity scores. However, many of the very poor households reported that food was not readily accessible due to their low purchasing power. Where income is insufficient to buy enough food varieties as is the case among some of the households in these settlements, diets are restricted primarily to the staple cereals and nutritionally less important foods like sugar, fats and miscellaneous foods (e.g. tea). The low income of these groups limits their access and consumption of milk, meat, fish, vegetables and fruits.

The forms of petty trade that the population engaged in especially by women include charcoal trade, tea shops and sale of firewood. Money generated from these activities provides the bulk of food expenditures by the households. Most households are able to obtain little income to spend primarily on their day to day food procurement but nothing or very little to spend on the non-food but essential items like fuel, water, health and education. Mothers reported restricting their own consumption in favour of providing at least a meal everyday for the young children when there was not enough for the whole household.

The level of income of the households influenced the diversity of the people's diets as well as the range of coping mechanisms employed by the returnees/IDPs. Those who had higher income, consumed more food groups (high HDDS) and employed less coping strategies (low CSI) hence more food secure. This means interventions aimed at improving the disposable income (and purchasing power) of these populations would ensure their food security and consumption of diversified diets and contribute in improving their nutritional and health status.

5.2 Interventions

Substantial interventions have been implemented in Hargeisa including in the returnee/IDP settlements since 2001. UN Habitat has in August 2005 initiated a shelter project of 340 units for returnees/IDPs in Ayaha B. The low cost housing project implemented in partnership with Hargeisa Municipality is based on self-help initiative and use of local material will provide training on construction skills and production of building materials. NRC has constructed school canteens in Hargeisa and in Burao and Sahil which have been handed over to Ministry of Education and Community Education Committees. WFP implements school feeding programmes in two of these schools in Hargeisa. WFP provides feeding to schools in four of the returnee/IDP settlements namely Sheikh Nur, Mohamed Mooge, Daami and Aw Aden. The school feeding programme has been instrumental in enhancing school enrolment and attendance in these settlements.

A market place built in Ayaha B by UNDP in 2004 became operational in August 2005 and has helped relieve residents and neighbours who used to get their food and non food items all the way from Hargeisa town, about 5 km away or at a higher price in Ayaha. UNHCR/UNDP also constructed an MCH in Ayaha in 2004. The MCH became operational on a cost-sharing basis in June 2005. Users are requested to pay a fee of SLS 1000. NRC and DRC are facilitating the provision of sanitary facilities in Ayaha by providing 100 latrine slabs to families willing to participate.

UNICEF in collaboration with MOHL has conducted EPI campaigns with resultant 94% coverage in the settlements. UNICEF also provided refresher training on management for MCH team leaders in Hargeisa region and training for community health workers on the control of micronutrient deficiencies, focussing on recognition of the common micronutrient deficiencies like Vitamin A Deficiency, Iodine Deficiency and Iron Deficiency Anaemia. FSAU/UNICEF plan to conduct a similar training for mid level managers in Somaliland in December, 2005. All in all, the concerted intervention efforts which intensified after the first nutrition survey in 2001, seem to have contributed significantly in improving and sustaining the livelihoods of the returnee/IDP populations in Hargeisa.

5.3 Health issues influencing nutritional status

The relationship between diseases and nutrition is well documented. Repeated attacks of diarrhoea for example are associated with poor nutrient absorption and considerable nutrient losses. The resulting nutritional deficiency causes impaired immunity and increased vulnerability to more infection resulting in a vicious cycle of infection and malnutrition.

At the time of the survey, incidences of common infections among children within two weeks prior to the survey were high with diarrhoea at 17.2% and ARI 33.2%. Incidences of ARI and diarrhoea did not show a significant relationship with malnutrition, but were associated with unhygienic caregiver's handwashing practices ($p=0.04$) and unprotected sources of drinking water ($p=0.01$). Diarrhoea (42.9%) and ARI (28.6%) respectively were the leading causes of mortality among underfives. Although the majority (94.0%) of households sought health care when a member was sick, mainly from public health facilities (38.3%) and pharmacies (32.8%), many households still cannot access adequate medical care. Availability of functional public health facilities is limited to MCHs in the respective settlements, which operate only in the mornings. Edna Maternity Hospital, private health facility, is accessible to only a few residents in the settlements and Hargeisa Group Hospital provides more specialised treatment. The focus group discussions further revealed that the residents sought medical care for children only when the child got worse and home remedies had failed. Late treatment of diseases prolongs disease progression and paves way for or aggravates malnutrition.

Although mass health campaigns have been undertaken by UNICEF-led interagency operations thereby improving polio immunization coverage (93.6%), vitamin A supplementation (53.5%) and measles (44.7%) immunisation coverage had actually declined. The results showed that a large percentage of the population has not been reached by these programmes. The role of vaccines in prevention of disease incidences and burden in children is well documented. Low immunization coverage therefore predisposes the non-immunized populations to high morbidity and aggravates their nutritional status.

High suspected anaemia amongst pregnant mothers, goitre seen, VAD observed in the survey indicate the existence of micronutrient deficiencies in the populations. A micronutrient screening or survey would quantify the extent of this problem. However, training of the health personnel on micronutrients is planned to sensitize and enhance early detection of some common micronutrient deficiency disorders (e.g. IDD, IDA, and VAD).

5.4 Water and Sanitation

Safe tap/piped water for drinking is available to most (85.9%) of the residents daily or at least every other two days. Water for other domestic uses is mainly drawn from unprotected sources like river bed and dams. Some residents (14.1%) use the same unsafe water for drinking as well resulting into high incidences of morbidity ($p=0.01$). Access to clean drinking water was less proximate and more expensive in certain settlements like Ayaha and Daami than others. For example, while a 20-litre jerrican was about SLS 800 in parts of

Ayaha, it was only SLS 400 in Mohamed Mooge and Daami. While Ayaha A has access to portable water connected to the main pipe serving Hargeisa town that also supplies from water kiosks distributed at the periphery of the settlement, connection to Ayaha B is not yet completed and residents buy water at high costs from truck tankers, donkey carts. Fewer latrines (<10%) are also observed or used in Ayaha and Daami. NRC and DRC are addressing this issue by providing 100 latrine slabs to families willing to participate and contribute labour.

In 2003, DRC and UNDP constructed around 100 latrines in Daami A but currently many of them are out of use. The dam used by some residents in Daami is a health hazard and call for a solution has come from different quarters including the permanent committee in the House of Elders (*Guurli*). According to WHO the dam is highly polluted. During the heavy flooding that hit Hargeisa in April 2005, there was great fear that the dam might overflow and affect about 20 households living nearby. *Guurli* recommended that the dam be demolished, but this is yet to happen.

More than three-quarters of the surveyed households were not accessing the recommended water quantity of 15 litres/ person/day (Sphere, 2004). And for an average household of about 6 persons, only 2.8% of the households were using 120 litres or more/ day. Only 30.4% of the households accessed their water within the recommended 500m (Sphere, 2004) in the survey. About one quarter (24.2%) got their water 1-5 km away.

Over crowding and limited number of latrines stretch the use of the facilities with majority of the households using shared or communal toilets. About 13.7% of the toilets were shared by more than 20 people against Sphere recommendation.

5.5 Childcare practices

WHO and UNICEF recommend that infants be exclusively breastfed at least for the first six months of life, and continue breastfeeding up to two years and beyond. Feeding children with foods and fluids other than breast milk during the first two years of life significantly reduces breast milk supply, and increases the risks of deaths from hygiene related diseases like diarrhoea.

Overall, child feeding practices were found to be sub-optimal among children aged 6-24 months. Almost all mothers gave sugar within hours after birth before breastfeeding. Among children of breast feeding age, only 51.3% were breastfeeding at the time of the survey. And of the 48.7% who had prematurely stopped breastfeeding about 7.6% did so before six months of age. This can be attributed to the high demand of women's time, leaving children for long hours as they engage in casual employment and petty trade in search for income to buy food. Additionally, mothers were opting not to breastfeed their children due to lack of knowledge in appropriate breastfeeding practices as was noted in the focus group discussions. In addition to inadequate food, the stress being experienced by mothers as they look for food may have also affected their milk production.

A large proportion (54.7%) of the children aged 6-24 were introduced to foods other than breast milk early in life between the time of birth and the third month of life. About 39.1% were introduced to complementary feeding at 4-6 months and a few (6.2%) beyond the recommended six months. Introduction of complementary foods early in life is potentially damaging to the baby's delicate gastrointestinal tract (GIT). Most children (69.0%) were fed at least thrice a day. Slightly more than one-quarter (28.8%) fed only 2 times while some (2.3%) of the children were fed only once.

More than half (52.8%) of the surveyed children had their feeding practices altered by their caregivers during illness. Only 13.4% of the children whose feeding practice was altered were given small and frequent meals as recommended. The rest were given sweetened food (51.8%), preferred foods only (20.4%), forced fed (10.9%) or fed less frequently during

illness (3.5%).

Low maternal nutrition knowledge, unstable resource base and inadequate care for both mothers and children remain underlying causes of malnutrition in the returnee/IDP settlements.

5.6 Nutrition Situation

The survey results indicate improved acute malnutrition levels which according to the WHO classification however, depict an alert nutrition situation. The global acute malnutrition rate (weight for height <-2 Z score or oedema) was 7.6% (CI: 6.0-9.5), a significant improvement from the >15 % reported in previous nutrition surveys (FASU/UNICEF, 2001; 2003) and severe acute malnutrition was 1.3% (CI: 0.7-2.3). The remarkable improvement could be attributed to a positive trend in the proxy indicators including reintegration efforts into the urban livelihood with better social amenities and improved access to food through purchases as a result of increased casual labour, waged employment and petty trade opportunities.

A higher proportion (10.0%) of boys were malnourished than girls (5.1%) in the surveyed Hargeisa Returnee/IDP population and boys were more likely than girls to be malnourished (RR=1.98; CI: 1.22 – 3.21; p=0.006). Children in the breastfeeding age (6-24 months) were found to be more malnourished (WHZ<-2 or oedema) than children aged above two years (RR=1.92; CI: 1.22 – 3.02; p=0.006). The 6-24 months age bracket constitute a period of critical child feeding stage in which the child is more susceptible to child illnesses and during which appropriate feeding practices should be enhanced. This is the stage in which the child is introduced, at the right age (6 months), to other complementary foods as breastfeeding is continued in order to provide adequate nourishment to the child. Suboptimal child-feeding practices during this period are likely to compromise the nutritional status of the child.

Households consumed an average (HDDS) of seven food groups with the number of foods consumed ranging from 1 – 12. This is a fairly diversified diet, but short of the number expected for an urban population where basically all the food groups are available in the market. The diet was also inadequate when viewed from the type of essential nutrients derived from them especially in proteins, minerals and vitamins. A typical diet of many returnee/IDP households includes a cereal staple (usually *canjero* or rice) with sauce or stew. Tea (with sugar and milk) is also consumed regularly in any typical day. The consumption of protein-rich (e.g. meat, fish, eggs, and legumes) and protective (e.g. fruits and vegetables) foods is low, with possible consequences of being vulnerable to infections and malnutrition.

Cereal staples (98.9%), sugar/honey (97.4%), and fats/oils (92.3%) were the most commonly consumed food groups while fish (6.6%) and eggs (11.1%) were the least consumed. Less than half of the households had consumed meat (46.7%), legumes (30.8%) or fruits (25.9%). Consumption of the less nutritious miscellaneous food items especially tea was widespread in the surveyed population (95.3%). Consumption of micronutrient-rich foods like fruits and vegetables was limited, partly explaining the high suspected cases of vitamin A deficiency, pregnancy anaemia and goitre. The proportion of those who had consumed vegetables even though apparently high (76.2%) was restricted to vegetable spices while consumption of leafy vegetables was minimal. Level of income influenced consumption of certain foods with those in a higher wealth group having more access to meat (RR=2.12; CI: 1.45 – 3.11; p= 0.00003); fish (RR=1.08; CI: 0.98 – 1.18; p=0.04); roots and tubers (RR=2.25; CI: 1.09 – 4.66; p=0.03) and milk (RR=2.41; CI: 1.23 – 4.73; p= 0.007).

6 CONCLUSIONS AND RECOMMENDATIONS

The findings represent a remarkable improvement in nutrition situation in the returnee/IDP settlements considering the alarming situation it was 2-4 years ago from previous findings. Increased access to milk and humanitarian food distributions attribute to this positive change. However, long period required for recovery after heavy asset losses during displacement and transition, poor care practices and disease tend to counter the effects of humanitarian efforts and coping expandability. Therefore concerted humanitarian efforts are still essential in the settlements especially those that aim at improving the purchasing power and asset base of the populations. This will prevent a deterioration or relapse of the nutrition situation.

From the findings the following recommendations were made:

1. Promote nutrition education through the MCH/outposts focusing on hygienic practices for caregivers, child feeding as well as dietary diversity.
2. Cash for work activities for the physically healthy persons in targeted vulnerable temporary settlements to enhance their purchasing power.
3. Continued school feeding programme and supplementary feeding programme and treatment for the severely malnourished children.
4. Continued close monitoring (surveillance) of the food security and nutrition situation in the area.
5. Intensify promotive and preventive health care interventions focusing on immunisation (especially measles vaccination and vitamin A supplementation), hygiene, and control of water related diseases.
6. Continued resettlement and integration of those in temporary settlements

7 APPENDICES

Appendix 1: Sampling Frame for the Hargeisa IDP Camp Survey, September 2005

VILLAGE/ SETTLEMENT	ESTIMATED POPULATION	CUMMULATIVE POPULATION	CLUSTERS
Ayaha A	3,000	3,000	1, 2,
Ayaha B	3,000	6,000	3,
Daami	11,000	17,000	4,5,6,7
Mohamed Mooge	8,000	25,000	8,9,10,11
Sheik Nuur 1	18,000	43,000	12,13,14,15,16,17,18
Sheik Nuur 2	500	43,500	
Aw Adam	4,000	47,500	19,20
State House	20,000	67,500	21,22,23,24,25,26,27,28
Stadium	5,000	72,500	29,30
	72,500		
Sampling Interval = 2,417			
Random Number = 1,127			

Appendix 2: Hargeisa Camp Nutrition Survey Questionnaire

Household Number _____ Date _____ Team Number _____ Cluster Number _____ Name of Enumerator _____

Q1-8 Characteristics of Household

- Q1** What is the sex of the household head? 1=M 2=F
- Q2** How many people live in this household (Household size)? _____
- Q3** How many children are below five years in this household (Number of < 5 years)? _____
- Q4** What is your present household residence status? 1= Residents (≥ 2 years in the area) 2=internally displaced 3= Returnees 4= Internal migrant 5= Destitute (**If RESIDENT, skip to question 8**)
- Q5** Where did you come from before settling in this current location (Place of origin)? 1= Refugee camp in Ethiopia 2= Other locations in Ethiopia 3= Within Somaliland 4= Other parts of Somalia
- Q6** How long have you lived in this current location? _____
- Q7** What was your reason for coming to this current location? (Can select more than one option if appropriate): 1= Insecurity 2=Lack of jobs 3= Food shortage 4=Water shortage
- Q8** What is your main source of Income? 1= Animal (and animal product) sales 2= Crop sales 3= Trade 4= Job 5= Casual labour 6= Remittance

Q9 – 10 Wealth Groups:

- Q9** What is the wealth group of the household? 1= Very poor (SLSH <15,000/day) 2= Poor (SLSH 15,000-25,000/d) 3= Middle (SLSH >25,000-80,000/d) 4= Better off (SLSH>80,000/d)

Q10 Livestock ownership:

Type of livestock	Number owned Now	Number owned in 2003 (2 yrs ago)
1. Shoats		
2. Camels		
3. Donkeys		

Q11 Twenty four-hour recall for food consumption in the households: The interviewers should establish whether the previous day was usual or normal for the households. If unusual- feasts, funerals or most members absent, then another day should be selected or alternatively choose on another household.

Beginning yesterday when household members woke up, did any members in your household consume any:	1=Yes	0=No
1. Cereal staples and cereal based products (e.g. caanjera, rice, sphaggetti, ugali, wheat or any of their products)?		
2. Roots & tubers (e.g. potatoes, cassava, yams, arrow roots, or any other foods made from them)?		
3. Vegetables (e.g. leafy vegetables, onions, tomatoes, pepper, carrots, etc)?		
4. Fruits (e.g. watermelons, oranges, dates, mangoes, bananas, pineapple, etc or any of their products)?		
5. Meat/poultry & meat products (e.g. meat, chicken, bird, or any of their products)?		
6. Eggs		
7. Fish & sea foods (e.g. any dried or fresh fish, or lobsters, shell fish, etc)?		
8. Legumes/pulses (e.g. beans, green grams, cowpeas, lentils, etc)?		
9. Milk and milk products (e.g. fresh, skimmed, cream milk; butter, ghee, cheese, etc)?		
10. Fats/Oil (any foods made with vegetable oil, fat or butter, margarine, etc)?		
11. Sugar/Honey?		
12. Others/Miscellaneous (e.g. spices, coffee, tea, beverages, jaggery, sweets, chocolate, etc)?		

Q12 Total number of food groups consumed? _____

- Q13** What is the main source of food in this household ?
- 1=Animal/Crop own production 2=Purchases 3=Gifts from friends/families 4=Food aid 5=Bartering
6=Borrowing 7=Gathering 8=Begging 9= other (specify) _____

Q14 Consumption Coping Strategies (Please use the codes provided)

	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:	1=Never (zero times/week) 2=Hardly at all (<1 times/ week) 3=Once in a while (1-2 times/ week) 4= Pretty often? (3-6 times/week) 5=All the time (Every day)
a. Shift to less preferred (low quality, less expensive) foods (from <i>osolo to obo</i>)?	
b. Limit the portion/quantity consumed in a meal (<i>Beekhaamis</i>)?	
c. Take fewer numbers of meals in a day?	
d. Borrow food on credit from the shop/market (<i>Deyn</i>)?	
e. Borrow food on credit from another household (<i>Aamah</i>)?	
f. Consume preserved seeds or meat?	
g. Restrict consumption of adults in order for small children to eat?	
h. Gather wild food or hunt?	
i. Rely on food donations from relatives (<i>Qaraabo</i>)?	
j. Rely on food donations from the clan/community (<i>Kaalmo</i>)?	
k. Seek or rely on food aid from humanitarian agencies?	
l. Send household members to eat elsewhere?	
m. Beg for food (<i>Tuugsi/dawarsi</i>)?	
n. Skip entire days without eating (<i>Qadoodi</i>)?	
o. Consume spoil or left-over foods	

Q15 – 16 Formal and Informal Support or Assistance in last three months (circle all options that apply)

Q15 Which informal support have you received in the last three months? 1=Zakat from better-off households 2=Remittances from Abroad 3=Remittances from within Somalia 4=Gifts 5=Loans 6=None

Q16 Which formal support have you received in the last three months? 1=Free cash 2=Free food 3=Cash for work 4=Food for work 4=Gifts 5=Water subsidy 6=Transportation of animals subsidy 7=Veterinary care 8=Other, Specify _____

Q17 – 24 Water & Sanitation

Q17 Main source of drinking water 1 = Tap/piped (including truck/tanker vendor) 2= Unprotected well or berkad 3 = Tube well/borehole 4= Rain water 5= River 6=) other _____

Q18 Average household water use per day for drinking, cooking and personal hygiene is 1= <20 litres 2 = 20 –60 litres 3 = 61-120 litres 4= More than 120 litres

Q19 Distance to the nearest water point 1= 0-500 metres 2 = 501 – 1000 metres 3= 1-5 km 4 = more than 5 km

Q20 Toilet usage and ownership: 1= Use own toilet/latrine 2=Use communal toilet/latrine 3=No toilet/latrine at all

Q21 Number of people who use the same toilet/latrine 1= 1-5 people 2= 6-10 people 3 = 11- 20 people 4= more than 20 people 6= Not applicable

Q22 Distance between toilet and water point 1 = 0 – 5 metres 2= 6 – 10 metres 3= 11- 20 metres 5= 21 - 29 metres 5= 30 metres or more

Q23 Household members wash their hands after using the toilet/latrine 1= always 2= often 3=sometimes 4= hardly/rarely

Q24 Household members wash their hands before eating or food preparation? 1= always 2= often 3=sometimes 4= hardly/rarely

CHILD INFORMATION**Q25-31 Morbidity and immunization status of children aged 6 – 59 months (or 65 – 110cm) in the household.**

SN _o	Name	Q25 Has child had Diarrhoea in last two weeks?		Q26 Has child had ARI in the last two weeks?		Q27 Has child had Malaria in the last two weeks?		Q28 (If ≥9 months old) Measles in last one month?		Q29 (If ≥9 months old) Vaccinated against measles <i>1=In past six months (by card) 2=In past six months (Recall) 3=Before six months (by card) 4=Before six months (Recall) 5= None</i>	Q30 How many times has the child ever been given polio vaccine orally <i>1=1-2 times 2=3 and above 3=Never</i>	Q31 Vit. A provided in the last 6 months (Show Vit. A capsule)? <i>1=Yes 0=No</i>
		<i>1= Yes 0= No</i>	Duration (days) if yes (sick)	<i>1= Yes 0= No</i>	Duration (days) if yes (sick)	<i>1= Yes 0= No</i>	Duration (days) if yes (sick)	<i>1= Yes 0= No</i>	Duration (days) if yes (sick)			
1												
2												
3												

Q 32-37: Feeding Practices

SN _o	Q32 (If 6-24 months old) Are you breastfeeding the child? <i>1=Yes 0=No</i>	Q33 (If 6-24 months old) If not breast feeding, how old was the child when you stopped breast-feeding? <i>1= Less than 6 months 2= 6 – 11 months 3=12 – 18 months 4=18 months or more 5= Never breastfed</i>	Q34 (If 6-24 months old) At what age (in months) was child given water/ foods other than breast milk?	Q35 How many times do you feed the child in a day (besides breast milk)? <i>1= Once 2= Twice 3= 3-4 times 4= 5 or more times</i>	Q36 During period of illness of your child, did you change the feeding practices? <i>1= Yes 0= No</i>	Q37 If Yes in Q36, What did you do? <i>1= Gave small frequent feeds/meals 2=Gave preferred foods only 3=Forced feeding 4=Sweetened the food 5=Fed less frequently 6= Other, specify</i>
1						
2						
3						

Q38 When your child is sick, where do you seek treatment? *1= Traditional healer 2= Private clinic 3=Pharmacy shops 4= Public health facility 5= Self medication 6= none*

Q39 Does any member (s) of this household have difficulty seeing at night or in the evening when other people do not? *1= 2- <6 year child 2 = 6 or more years old person 3= none*

Q40 - 48 Anthropometry for children aged 6 – 59 months (or 65 – 110cm) in the household (Use the same child serial numbers as in Q32-37)

SNo	First Name	Q40 Has child received any supplementary food? <i>1=Yes 0=No</i>	Q41 Sex <i>(1=M 2=F)</i>	Q42 Age in months	Q43 Oedema <i>(1=Yes 0=No)</i>	Q44 Weight (kg)	Q45 Height (cm)	Q46 MUAC of child (cm)	Q47 MUAC of caregiver (cm)	Q48 Physiological condition of caregiver
1										1=Pregnant 0=Not pregnant
2										
3										

Q49 If pregnant (in Q48), do you have complaints of feeling breathless, listless and/or fatigued so often? *1= Yes 0= No*

Q50 Does any member (s) of this household have goitre (showing as swollen neck)? *1= 6- 12 year child 2 = >12 years old person 3= none*

Appendix 4: Traditional Calendar of Events

Month	2000	2001	2002	2003	2004	2005
Jan	68	56	44	32	20	8 IIDDII ARAFO
Feb	67	55	43 IIDDII ARAFO/ XAJKII KAL AFRAAD	31 IDDI ARAFO IYO XAJKII KAL SADDEXAAD	19 IIDDII ARAFO/ XAJKII KAL HORE	7
March	66 IIDDII ARAFO XAJKII 6AAD	54 IIDDII ARAFO XAJKII 5AAD	42	30	18	6
April	65	53	41	29	17	5 MOWLIIDKII UDAMBEEYE E
May	64	52 U CODEYNTII DASTUURK A	40 MOWLIIDKII SADDEXAAD	28 MOWLIIDKII SADDEXAAD	16 MOWLIIDKII KAL HORE	4
June	63 MOWLIIDKI I SHANNAAD	51 MOWLIIDKII AFRAD	39	27	15	3
July	62	50	38	26	14	2
Aug	61	49	37	25	13	1
Sep	60	48 DUQEYNTA DAARAHA MAREYKAN AKA	36 RAJAB	24	12	
Oct	59	47 SHACBAAN	35 SHACBAAN	23	11 BILOWGII RAMAANT U DAMBEYSAY	
Nov	58 SHACBAAN	46 BILOWGII RAMADAAN TII 4AAD	34 BILOWGII RAMADAANT II 3AAD	22 IIDDIIISOONFU REE LABAAD	10 IIDDII SOON FUR EE U DAMBEYSAY	
Dec	57 BILOWGII RAMADAA NTI 5AAD	45 IIDDII RAMADAAN 4AAD	33 CIIDDII RAMADAAN 3AAD	21	9	

Jiilaal
IGU'
Xagaa
Deyr

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

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

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

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

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

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

Appendix 7: Survey Teams

Team No	Enumerators**	Team leader	Supervisor	Cluster No	Cluster Name
1	Liibaan Axmed Ali Maygag Koos Mohamed	Koos Mohamed	Fuad Hassan (FSAU)	1	Ayaha A
				2	Ayaha A
				3	Ayaha B
				29	Stadium
				30	Stadium
2	Mohammed Hassan Hassan Ali	Kaltun Hassan	Asha Abdi (WFP)	4	Daami
				5	Daami
				6	Daami
				7	Daami
				19	Aw Adam
3	Abdirisaaq Mohamed Amran Musse	Faisa Shuqri	Nura Gureh (FSAU)	8	M' Mooge
				9	M' Mooge
				10	M' Mooge
				11	M' Mooge
				20	Aw Adam
4	Zeynab Maxamed Nimo Ismail	Abdirahman Mohamed	Abdulqadir Ahmed (RHO, MOHL)	12	Sheik Nuur
				13	Sheik Nuur
				14	Sheik Nuur
				15	Sheik Nuur
				16	Sheik Nuur
5	Ahmed Shabeel Nuria Ismail	Sahra Ismail	Mohammed Sheikh (UNICEF)	17	Sheik Nuur
				18	Sheik Nuur
				21	State house
				22	State house
				23	State house
6	Asha Mahamed Nimo Jibril	Mohamed Farah	Ahmed Gole (MOHL)	24	State house
				25	State house
				26	State house
				27	State house
				28	State house
Coordinator			Tom Oguta FSAU/FAO		

** All enumerators are from MOHL working in Growth monitoring in MCHs or in Hospital Pediatric Department.

Appendix 8: Supervisor's Daily Record Form

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

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

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