

# Nutrition Information in Crisis Situations

United Nations System  
Standing Committee on Nutrition



DECEMBER 2009 . REPORT NUMBER XX

## GREATER HORN OF AFRICA

ETHIOPIA 3  
KENYA 6  
SOMALIA 7  
SUDAN 7

## WEST AFRICA

MALI 10  
SIERRA LEONE 11

## CENTRAL AFRICA

CENTRAL AFRICAN REPUBLIC 13  
DEMOCRATIC REPUBLIC OF CONGO 14  
CHAD 14

## ASIA

BANGLADESH 15  
TAJIKISTAN 16  
CAMBODIA 17  
NEPAL 18

## CARIBBEAN

HAITI 19

RESULTS OF SURVEYS 21  
SURVEY METHODOLOGY 39  
REFERENCES 46  
ABBREVIATIONS AND ACRONYMS 48  
INDICATORS AND RISK CATEGORIES 49



# Highlights

## IMPACT OF FOOD PRICE RISES ON MALNUTRITION AND FOOD SECURITY

– International food and oil prices soared until further in 2008 and translated in varying degrees into higher domestic food prices causing food riots in over 30 countries. Even though food prices are falling on the global markets, surveillance showed that local prices have continued to increase or have remained at their inflated level in a number of vulnerable countries. ACF conducted country studies in Ethiopia, Sierra Leone, Central African Republic and Liberia (ref NICS 17) to investigate the impact on child malnutrition and food security. UNICEF/WFP/IPHN investigated the impact in Bangladesh, UNICEF/WHO in Cambodia and WFP/WHO/DID in Tajikistan.

For the majority of small-scale farmers and urban poor who are net food buyers, the price increases, were an additional threat to their survival. Despite no clear increase in acute malnutrition, high prices consistently forced families to adopt damaging coping strategies to maintain staple food consumption, by reducing the quality and, later, the quantity of food consumed. The reduced dietary diversity is expected to negatively affect the micronutrient status of vulnerable population groups. The study results underline that high and volatile food price rises are only one single factor affecting malnutrition and poverty, besides other factors like drought and conflict, such as in the case of Ethiopia. However, not fully understanding the complicated relation between these multiple causal factors does not release the international community from its responsibility to respond effectively to the needs of those most affected and most vulnerable.

**HAITI** - The 2009 hurricane season was considered near normal - with 11 tropical storms, six minor and two major hurricanes. Meanwhile the rehabilitation activities in the aftermath of the 2008 hurricane season continue. In August and September 2008 the hurricanes Fay, Gustav and Ike and Hanna had devastated large parts of Haiti leaving about 800.000 Haitians in need of humanitarian and rehabilitation assistance. Nutrition surveys revealed a worrying level of severe malnutrition rates in 7 out of 11 departments.

**GREATER HORN OF AFRICA** - Food and nutrition insecurity deepens - After the failure of four consecutive rainy seasons, drought, hunger and disease are negatively affecting livelihoods. Across the region, some 24 million people in Djibouti, Ethiopia, Eritrea, Kenya, Somalia and parts of Uganda are now in need of humanitarian assistance. Among them nearly five million are children under five years of age.

**SOMALIA** – Faces its worst humanitarian crisis in eighteen years – An estimated 3.64 million people are in need of emergency livelihood and life saving assistance at least until December 2009. Most of these are concentrated in south and central Somalia, where escalating fighting and conflict is occurring in the same areas that are reporting the greatest problem of food access and malnutrition.

**KENYA** – Global acute malnutrition rates rose above 30% in selected areas in North Eastern Province- Food insecurity increased due to increased livestock mortality as grazing resources, especially water availability, have markedly declined following drought. Conflict remains a major factor that worsens the impacts of the drought while limiting recovery in areas that received fair long rains, in particular the north-western pastoral areas.

**ASIA** - The Asia-Pacific region has recently been hit by a series of natural disasters: typhoons, floods and earthquakes with a resulting tsunami. In total, some 9.8 million people are affected. More than 3.8 million of the affected populations are children.

**CAMBODIA** - Typhoon "Ketsana" hit north-western Cambodia and has left around 48,000 families short of food. The infrastructure in the country has been severely damaged and will require extensive support in rebuilding. In late 2008 the Cambodian government saw an opportunity in the global rise in food prices that could help turn the fortunes of its agrarian economy. The food price crisis of 2008 had a varying impact on the nutrition and food security situation in Cambodia.

## Risk Factors affecting Nutrition in Selected Situations

Situations in the table below are classed into five categories relating to prevalence and or risk of malnutrition (I—very high risk/prevalence, II—high risk/prevalence, III—moderate risk/prevalence, IV—not at elevated risk/prevalence, V—unknown risk/prevalence; for further explanation see section "Indicators and classification" at the end of the report).

The prevalence/risk is indirectly affected by

both the underlying causes of malnutrition, relating to food security, public health environment and social environment, and the constraints limiting humanitarian response. These categories are summations of the causes of malnutrition and the humanitarian response, but should not be used in isolation to prescribe the necessary response.

	<b>SOMALIA</b> Bay & Bakool Regions	<b>SOMALIA</b> Juba Regions	<b>SUDAN</b> Aweil East County	<b>ETHIOPIA</b> Boke Woreda, West Hararghe Zone, Oromiya Region	<b>HAITI</b> Departement South East
Nutritional risk category	I	II	I	II	III
<b>FOOD SECURITY</b>					
Households' livelihoods	☹	☹	☹	☹	☹
External assistance	☺	☺	☺	☺	☺
<b>PUBLIC HEALTH ENVIRONMENT</b>					
Availability of water and access to potable drinking water	☹	☹	☹	☹	?
Health care	☹	☺	☹	☹	☹
Sanitation	☹	☹	☹	?	?
<b>SOCIAL AND CARE ENVIRONMENT</b>					
Social environment	?	?	☹	?	?
Child feeding practices	☹	☹	?	☹	☹
<b>DELIVERY OF ASSISTANCE</b>					
Accessibility to population	?	?	☺	☺	☹
Resources for humanitarian Intervention	☺	☺	?	☺	?
Availability of information	☺	☺	☹	☺	☺

☺ ADEQUATE

☹ MIXED

☹ INADEQUATE

# Greater Horn of Africa



## Ethiopia

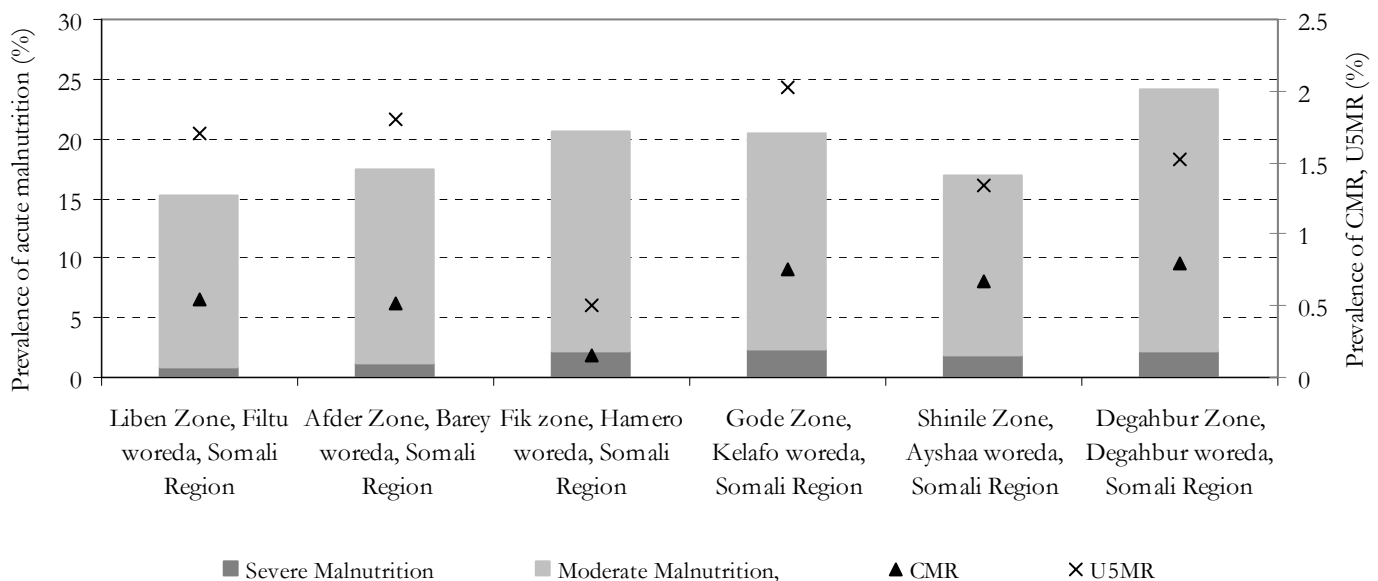
According to the Famine Early Warning Systems Network (FEWS, 10/09), 6.2 million people will require emergency food assistance between October and December 2009. Performance of the kiremt rains (June to September) has been below normal, particularly in Gambella, the eastern half of the country, and the southern lowlands of SNNPR. As a result, the main season (meher) crop harvests were poor.

Food security in the southern zones of the Somali region, neighboring lowlands of Oromia and the South Omo Zone of SNNPR was expected to improve marginally following the onset of the deyr rains (October-December). However, the respite will likely be short-lived and households will continue to depend heavily on external assistance. The 2009 belg season in the southern and eastern parts of SNNPR and Oromia has been poor, and the hunger period has thus been extended.

Food security situation is likely to improve in some southern zones of the Somali region (Fik, Degehabur, Gode, Warder, Korahe, Afder and Liben) and the neighbouring lowlands of Oromia (Bale and Borena lowlands) with the progress of the *deyr* rains. Ongoing food aid distributions have also contributed significantly to the improvement of food security. The rains are expected to improve water and pasture availability and to increase livestock conception rates. Nevertheless, access to food will still be constrained by problems related to security and access to markets, unfavourable livestock/cereal terms of trade and low animal birth rates. Insufficient humanitarian assistance in the Afder and Liben Zones of Somali Region will not suppress distress livestock sales.

The nutrition situation in the Somali Region was critical according to surveys conducted in seven woredas between mid April and mid May 09 (Figure 1).

FIGURE 1: PREVALENCE OF ACUTE MALNUTRITION (WHO 2006 CHILD GROWTH STANDARDS), CMR AND U5MR IN SOMALI REGION (FEWS ETHIOPIA, 07/09)

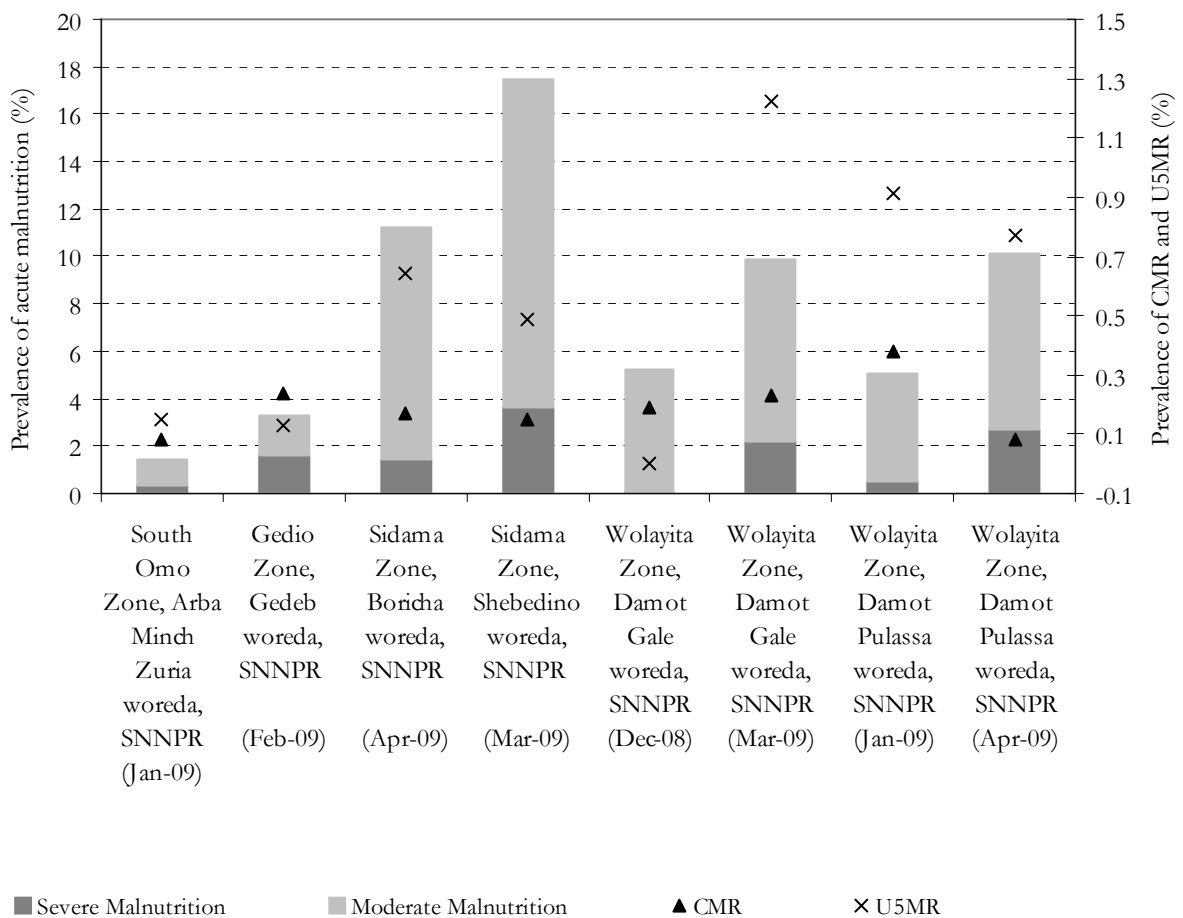


## Rates of malnutrition vary between the Regions

GOAL conducted 17 nutrition surveys in the Amahara, Oromia and SNNP Regions, two of them in the Sidama Zone between December

2008 and August 2009 (Figure 2). Compared to the Somali Region, the nutrition situation in the SNNP Region was less critical. The situation in the Wolayita Zone worsened between December 08/January 09 and March/April 09 with GAM rates doubling.

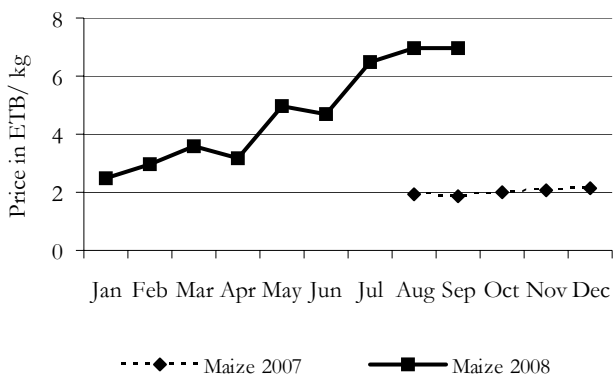
FIGURE 2: RESULTS OF NUTRITION AND MORTALITY SURVEYS IN THE SNNP REGION, ETHIOPIA (GOAL, 12/08 – 08/09)



## Impact of the food price crisis in Sidama Region

The Sidama zone is generally considered to be a fertile area. However, the area is chronically food insecure. Nutrition surveys in two woredas of the Sidama Zone revealed acute malnutrition rates between 11.2 % and 17.5%, in March/ April 09 (GOAL) (Figure 3). The population of the Sidama zone depends on agriculture for its livelihood. According to ACF this livelihood is extremely fragile and has exhausted many coping mechanisms. In addition the Sidama Zone has experienced a major rise in the price of everyday commodities and in particular of food items (Figure 3), following the worldwide trend in 2008.

FIGURE 3: DEVELOPMENT OF MAIZE PRICES AT ALETO WENDO MARKET, ETHIOPIA, AUG-2007 – SEPT-2008, (ACF, 10/08)



Measuring the impact of the food price crisis on the population in the Sidama zone was therefore the objective of a study completed by ACF in October 2008. According to this study, the prices of kocho remained stable until April 2008 but then began to rise dramatically and doubled in a few months, although kocho is a locally produced food and therefore does not follow the world trends. ACF has linked this increase to the general price increase of everyday commodities including food. The demand on kocho increased due to the more and more unaffordable cost of grains, and the failure of the Belg season (harvest in March-April). This chronic food insecurity, in which any shock constitutes a disaster for a majority of families, turned kocho into a valuable product. Many families harvest immature crops, or harvest out of season, thus reducing their potential production.

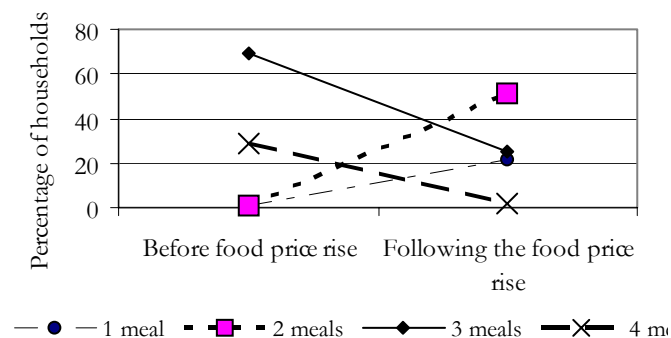
## Terms of trade of kocho decreased by more than 50%

In order to indicate the economic value of locally produced food items like kocho in the surveyed area, prices of different food items and terms of trade at different markets, were compared with the best available estimates of daily wages in October 2007 and 2008 respectively. The evolution of terms of trade from 2007 to 2008 showed that, for example, for one heifer the equivalent of kocho was reduced by 51% over this period. Overall the pastoralists and the coffee growers saw the value of their products and thus their income decrease by more than half compared to other livelihood groups in the Sidama zone. Eventually, many traders could not continue their business, as they were not able to obtain new stock. This introduced a new problem, as many basic commodities were then no longer available.

## Number of meals reduced

Before the food price rise about 70% of families ate three meals a day. After the rise most families had just two meals per day (Figure 4). Children under five years were especially affected. Before the rise, 55% of the families provided a separate meal for them. After the rise, 90% of the families could no longer afford the extra meal. Other coping strategies used included increased labour, work migration, and decreased quality of the food intake. Given the low level of food security support in the Sidama Zone, it is likely that food security and the nutrition situation would get worse in the months following the survey (ACF 10/08).

FIGURE 4: NUMBER OF MEALS (PER DAY AND PERSON) BEFORE AND FOLLOWING THE FOOD PRICE RISE, SIDAMA ZONE, ETHIOPIA (ACF, 10/08)



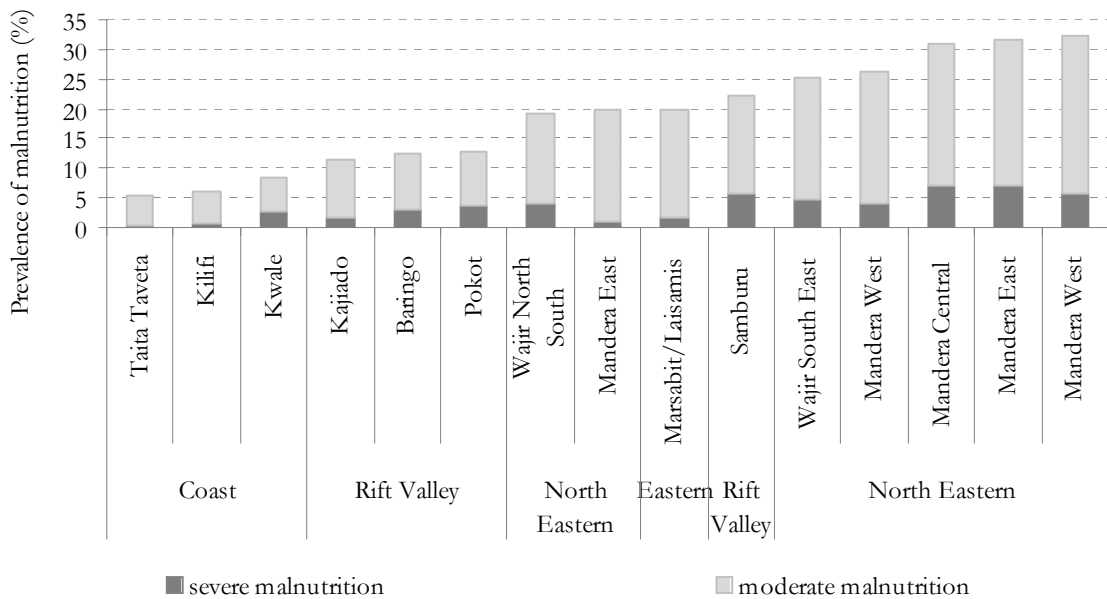
# Kenya

## Drought conditions persist

Food insecurity has increased in most areas classified as highly and extremely food insecure, as drought conditions persisted (FEWS, 09/09). Livestock mortality has increased as grazing resources, especially water availability, have markedly declined. Conflict remains a major factor that worsens the impacts of drought while limiting recovery in areas with fair rains, in the north-western pastoral areas in particular.

Overlooking July to December 2009, the food security situation remained highly precarious. The failure of the long rains in the south-eastern marginal agricultural lowlands and several parts of the pastoral and agro pastoral areas has caused substantial decline in both crop and livestock production. In addition high cereal prices, conflict, and limited implementation of planned interventions have accentuated food insecurity. According to nutrition survey results from various organizations (Figure 5) global acute malnutrition prevalence was between 5.4% in Taita Taveta in Coast Province and 32.3% in Mandera West in North Eastern Province, thus between worrying and very critical.

FIGURE 5: RESULTS OF NUTRITION SURVEYS, SELECTED PROVINCES, KENYA (UNICEF, 10/09)



## Somalia

### Deteriorating Humanitarian Emergency in the Central Regions

The country faces its worst humanitarian crisis in eighteen years, with half of the population in need of life saving and emergency livelihood assistance at least until December 2009. The epicentre of the humanitarian crisis is concentrated in the Mudug, Galgadug, Hiran and Bakool regions of south and central Somalia, where there is a two and a half year ongoing drought. The number of IDPs increased by about 25% in the first six months of 2009. They are concentrated in the Shabelle and Central regions. Children under 5 years of age showed global acute malnutrition rates of 20% and non IDP rates of 18% in the same regions (FSNAU, 09/09).

The 2009 deyr rains started in late September in most key pastoral areas in the north, north-east, and central regions, indicating an early onset of the much needed 2009 deyr rainy season. Well distributed rains continued into early October in most drought affected regions including Mudug, Togdheer, Nugaal, Sool, and Sanaag. Normal to above normal rains between October and December, due to the El Niño

event, could end the prolonged drought and improve water and pasture availability. Nonetheless, food insecurity and relief needs will persist, with more than 3.6 million people in need of urgent humanitarian assistance and livelihood support (FEWS, 10/09).

### Normal Crop Production in some areas of the South

In September, an alarming deterioration was observed in the nutrition situation of the pastoral and agro pastoral communities in the north, caused by 2-3 consecutive seasons of below normal rainfall. On the contrary, cereal production in southern Somalia was the second highest in the last seven years. Food access had improved for most farmers in the Bay, Lower Shabelle, and Juba regions due to increased local crop production as well as improved agriculture labour opportunities and higher wage rates.

FSNAU (09/09) in collaboration with FAO, EU, USAID, SIDA and UNICEF published a joint report including 34 nutrition surveys from 7 regions carried out between April and July 2009. It is estimated that 285,000 children are acutely malnourished, of which 70,000 are severely malnourished. This represents, respectively, one in five and one in twenty of all children under 5 years of age in Somalia.

## Sudan

### Southern Sudan

Of greatest concern are the persistence and increase of conflict during the period from October 2009 to March 2010. Whereas conflicts traditionally have tended to occur over grazing and water resources during the dry season, they have escalated this year and have become a mix of inter-ethnic/tribal tensions, historical hostilities, revenge attacks, and cattle raiding practices. The most severe conflicts were those between the Nuer tribe in the Eastern Flood Plains and the Murle tribe in the Pastoral Zone, and the attacks by Ugandan rebels (Lords Resistance Army (LRA) in the Greenbelt Zone. In 2009, conflict alone had displaced over 250,000 people, which is almost

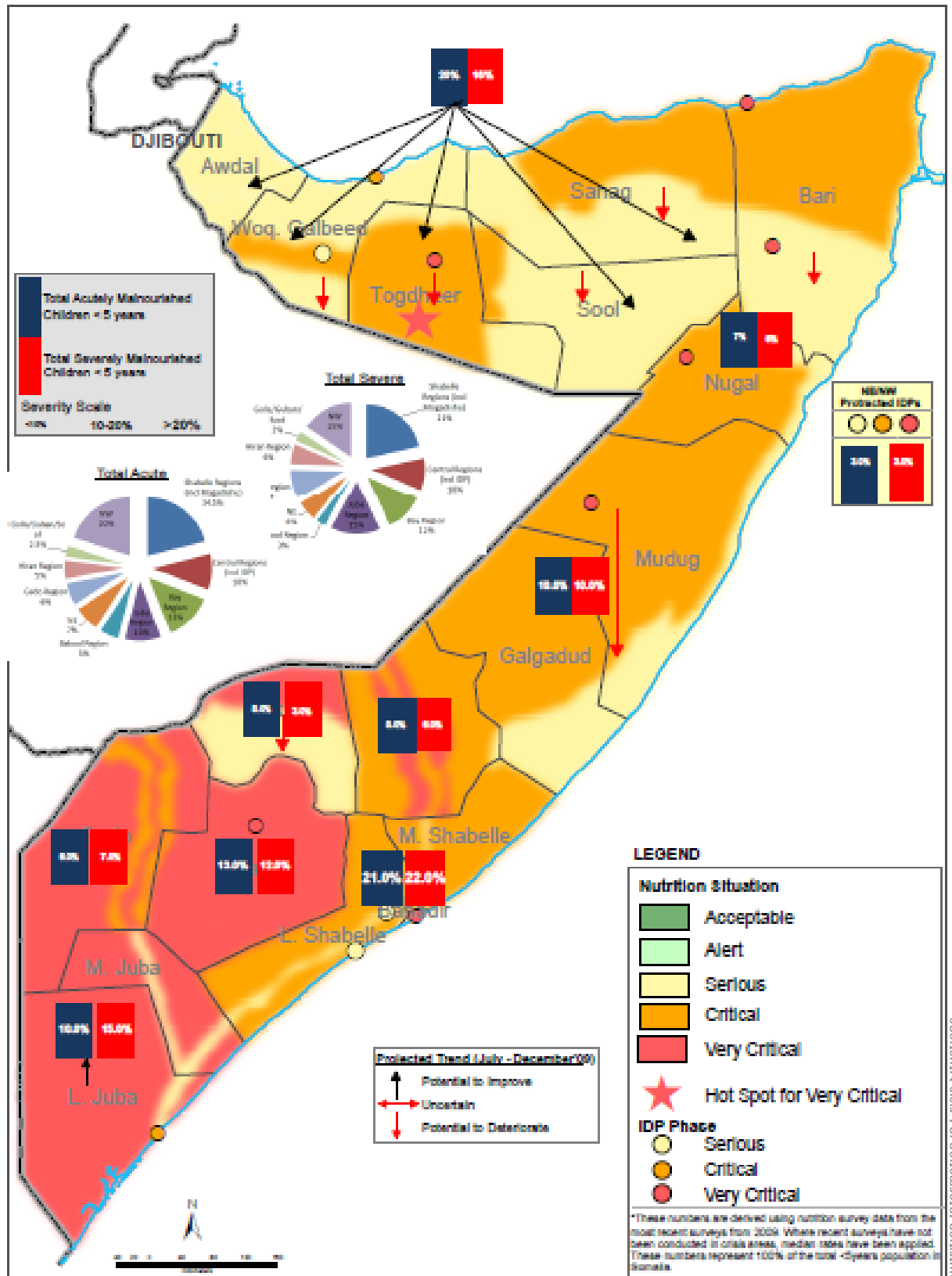
20 percent of the total food insecure population in Southern Sudan (FEWS, 10/09).

At the end of October, the United Nations began to parachute relief food into isolated areas of conflict-ridden southern Sudan with the aim of reaching more than 155,000 people affected by conflict, high food prices and poor harvests in three of the 10 states in southern Sudan – Jonglei, Upper Nile and Warrap. These cannot be reached by road due to heavy rainfall. The airdrops are to continue for another two-and-a-half months, providing some 4,000 tons of food to people (UN, 04/11/2009).

**Aweil East County** is one of five counties that make up the state of Northern Bahr el Ghazal. Aweil East lies in the western flood plain livelihood zone which is prone to seasonal flooding; especially in August and September. The



**SOMALIA INTEGRATED PHASE CLASSIFICATION MAP:  
DISTRIBUTION OF CASELOADS OF ACUTELY MALNOURISHED CHILDREN BY REGION  
(FSNAU, 09/09)**



NUTRITION INFORMATION IN CRISIS SITUATIONS

total population is estimated at 616,105. Northern Bahr el Ghazal is traditionally an agro-pastoralist region, and cattle ownership remains the primary determinant of wealth and status. However, 70% of the population in the area do not own cattle and 40% do not own any livestock at all, the majority being reliant on a more diversified livelihood base. The population of Aweil East County has seen a high influx of returnees in the previous year. Additionally, an estimated 56% of Northern Bahr El Ghazal's IDPs have settled in Aweil East. A rapid water and sanitation assessment in Aweil East County conducted in March 2009 by ACF-USA showed that only 24% of the population had access to clean water, and that sanitation coverage was almost negligible. The lack of access to clean water and sanitation was a key instigating factor in the reoccurring acute diarrhoea and Cholera outbreaks which have plagued Aweil East County since October 2008.

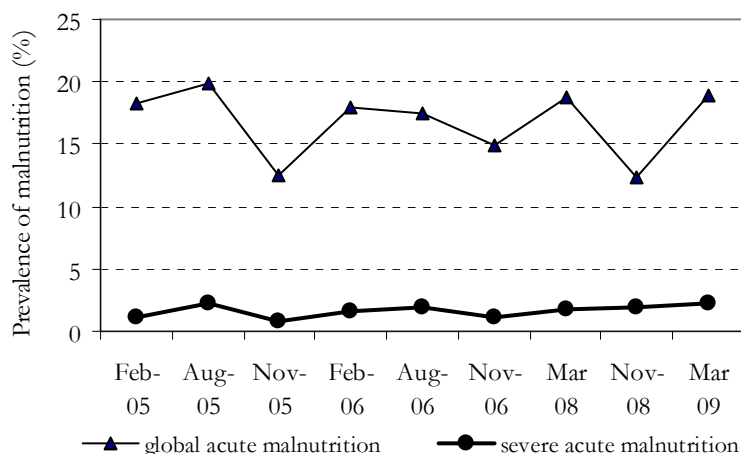
A nutrition survey conducted by ACF-USA in June 2009 (n=805 children) revealed a GAM Rate of 19.9% (CI 16.1-23.8) and a SAM rate of 3.8% (CI 1.9-5.6). Admission rates to ACF therapeutic feeding programs had nearly doubled from May 2008 (n=148) to May 2009 (n=285). Thus, the combination of food insecurity, lack of access to clean water and sanitation facilities, disease outbreaks, and population influx has had an impact on the nutrition

status of children aged 6-59 months, with key indicators pointing towards development of an acute nutritional emergency.

## Aweil West and North County

Since the signing of the comprehensive peace agreement in January 2005, active fighting was brought to an end in most parts of the region. However, poor infrastructure and extremely limited human resource capacity has contributed to a lack of provision of basic services including health, education, water and sanitation. In combination with seasonal food shortages this has translated into persistently high rates of acute malnutrition in the area. In May 09 Concern Worldwide conducted a nutrition survey in Aweil West and North County of Bahr al Ghazal state. According to the results, the nutritional status of children has deteriorated since the last assessment in November 2008. Global acute malnutrition (NCHS Reference Standards) has increased by 6.6% from 12.3% to 18.9%. This increase largely reflects the seasonal peak in malnutrition. Compared to the same period last year the GAM rate remained identical (18.8% vs 18.9%), whereas severe acute malnutrition rates remained at around 2%. The results suggest that underlying causes of SAM are relatively constant throughout the year (Figure 6).

FIGURE 6: RESULTS OF NUTRITION SURVEYS, AWEIL WEST AND NORTH COUNTY, SUDAN, 2005-2009 (CONCERN WORLDWIDE, 02/05-03/09)



The survey findings highlight several caring practices that may contribute to the high malnutrition rates. Complimentary foods were introduced to children before one month of age. Respondents of the focus group discussion reported that virtually all babies are given soft foods immediately after birth, as it is believed that mothers do not have enough milk during this period. Measles, BCG and DPT3 vaccination coverage dropped from more than 40% in November 2008 to 28.7%, 25.1% and 26.5% respectively in May 09.

### Abyei county

borders south Kordofan. It has one rainy season which stretches from April/May to November. The population practices agriculture and livestock production. Civil war and insecurity have marginalized the communities and has resulted in ongoing displacement. Constant and prolonged insecurity has discouraged humanitarian agencies from operating in the county and addressing the needs of the community. Goal conducted a multi indicator cluster survey in May 09. Compared with survey results from previous years, global acute malnutrition had slightly increased from 21% in November

2007 to 24.1% (NCHS-Reference standard). Severe acute malnutrition increased from 1.6% in November 2007 to 2.5%. No child reached the WHO minimum dietary diversity criteria which means eating food from at least four food groups everyday. The average number of food groups consumed by children aged 6-24 months was only 1.4 (95% CI= 1.3-1.5) and the number of meals the day before the interview was low. One in five children reported, that they did not have a meal the day before the interview.

### Baliet & Ulang Counties Sobat Corridor

In May 09 Goal conducted the third multi indicator cluster survey in a row since 2007 in Baliet County based on the SMART methodology. According to the results, the mortality and malnutrition rates have slightly improved. Global acute malnutrition (NCHS-Reference Standard) has dropped from 29.1 in May 2008 to 21.1%. Severe acute malnutrition has decreased from 4.3% to 3.4%. Nevertheless, 29% of the mothers/caretakers thought the health situation in their family had deteriorated in the past year. Only 17% of them considered that the health situation had improved.

## West Africa

### MALI

**Cereal prices still well above the levels of before the food price crisis** - In Mali cereal prices have remained well above the levels of two years ago, before the food price crisis. Most recent wholesale prices of millet in markets of Bamako were still 35% respectively higher than in the corresponding period 2007. The situation is not better for imported rice with the price being 22 percent higher than two years ago (FAO 11/09).

**Inadequate and poorly distributed rainfall in some areas**—The rainfall situation in north-eastern Mali (Gourma and Gao) was character-

ised by pronounced deficits in June and July, particularly in Bourem, Ansongo, and Menaka. The slow regrowth of grasses following this insufficient rainfall resulted in unusual loss of livestock and a prolongation of the hunger season for pastoralists into August instead of June/July. Food security conditions in these areas remained precarious but clearly improved due to the return of rains in mid-August and support to pastoralists in the form of animal feed, subsidized cereal sales and the reinforcement of community food banks.

The return of the rains in August and September made up for the initial shortages with



above normal precipitation in Timbuktu, Gao and Menaka. Overall, the 2009/10 growing season is likely to become an average one for rice and a poor one for dune grown crops like millet. Rainfall continues to be inadequate and poorly distributed, disrupting the normal progression of activities, especially in the Ménaka and Bourem areas. On the whole, areas planted with crops are smaller or much smaller than last season (FEWS, 09/09).

ACF conducted a nutrition and mortality survey in Ansongo, Bara and Bourra in June 09.

Indicators measured included crude and under-5 mortality rates and coverage of measles vaccination. Global acute malnutrition with 16,2 % (CI 12.8 - 19.6) was above the WHO emergency threshold. No oedema were reported. Children age 6-17 months were most affected. This was attributed among others to inadequate feeding practices. According to ACF, nutrition counselling and monitoring should be reinforced, mainly against the backdrop of the impact of climate changes on the local nutritional practices.

## Sierra Leone

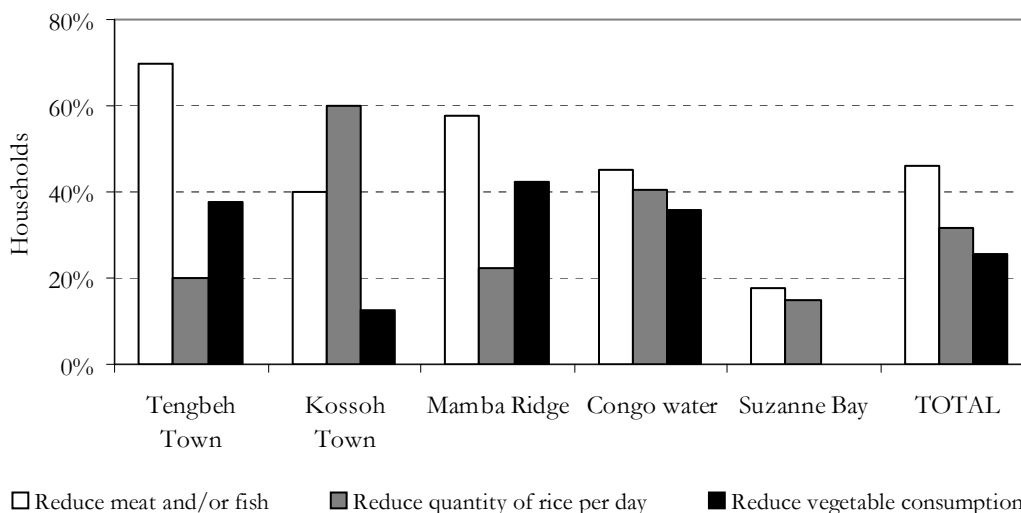
**Food prices remained high**—in the period from March to June 2009 compared to the same quarter of the previous year, and mainly prices for local rice have continued to rise (WFP, 07/09). Ranked at the bottom of the Human Development Index scale, the country is known for its endemic poverty. High unemployment rates, little investment in employment-generating industries, and low incomes

associated with work in the informal sector have created conditions of gross economic hardship. Education was truncated by the decade-long civil war and former combatants lack the skills necessary to effectively participate in a competitive labour market (OSAC, 01/09).

### Freetown

In Freetown, few people have the possibility to farm and citizens are dependent on markets. In the wake of price increases of staple food from

FIGURE 7: REPORTED CHANGES IN HOUSEHOLD FOOD CONSUMPTION PATTERNS, FREETOWN, SIERRA LEONE (ACF, 11/09)



March to April 2008, ACF conducted a study to analyze the impact of the food price crisis on the nutrition situation and the potential coping capacities of the urban population (ACF, 11/08).

### Reduced food diversity and portion size to cope with food price rises

At the time of the survey rice was consumed daily in nearly all households. Compared to the previous year, rice prices had increased on average by 40%, with up to 60% in Congo Water. According to the discussion the rice price increase had been highest in April and May 2008, and started to decrease in October 2008, the time of the survey.

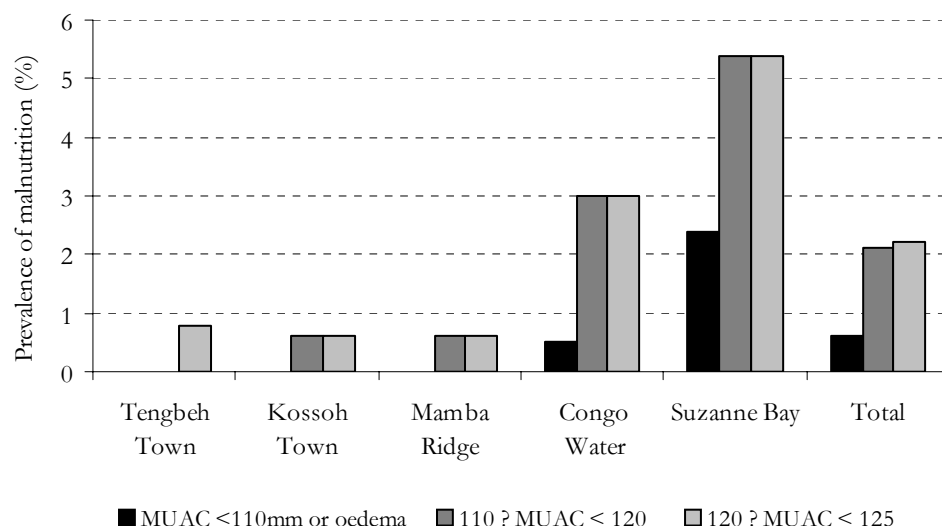
No major changes were observed in terms of the number of meals consumed per day compared with the previous year. However, in all surveyed town sections, daily quantities of rice per person consumed had decreased. The daily portion size of on average 260g per person was about 10% lower than in the previous year (290g). Meat consumption had been reduced by 46% of the households, and vegetable consumption by about 26% (Figure 7).

### Acceptable overall malnutrition rate

These changes in terms of quality of food intake did not show a measurable impact on the nutritional status of children under 5 years of age. On the other site, intervention activities which were concentrated in these areas, might have mitigated a possible impact.

According to the study results, the overall malnutrition rate of 2.7% with 0.6% of children severely malnourished (MUAC < 11cm) was considered acceptable. Another 2.2% were at risk of malnutrition (12cm ≤ MUAC < 12.5 cm). Malnutrition rates varied according to location (Figure 8). Severe cases of malnutrition were identified in Congo Water and Suzanne Bay which also showed the highest prevalence rates of moderate malnutrition. There is no access to health facilities and a low level of education in Congo Water. In Suzanne Bay living conditions are the poorest within the surveyed locations with overcrowding and lack of privacy being dominant.

FIGURE 8: RESULTS OF NUTRITION SURVEY, FREETOWN, SIERRA LEONE (ACF, 11/09)



# Central Africa

## Central African Republic

### Deterioration of humanitarian situation

The Central African Republic (CAR) has witnessed increased insecurity in 2009, which has restricted the access to populations and has generally led to a deterioration of the humanitarian situation. Clashes between rebel groups, CAR's armed forces (FACA) and self-defence groups undermine the implementation of the December 08 inclusive political dialogue creating new waves of displacement. Humanitarian access is hampered by very poor road conditions and government's limited capacities on humanitarian activities.

In the Berbérati region, more than 37% of children under five years of age are underweight. Mining and commercial activities in Berbérati have experienced a sudden slowdown over the last several months, resulting in a significant socio-economic decline. Despite conditions that favour agriculture, the region's economy revolves around the mining industry and the population imports most of its food from other areas of the country. This lack of local agricultural production, combined with the recent loss of income and a spike in international food prices, has led to a severe food shortage in the area. According to ACF (10/09), 50% of the people only eat once a day, and their diet is almost exclusively composed of manioc.

### Bangui City

ACF (09/08) conducted a nutrition survey in Bangui City to evaluate the impact of the international food price rises on the already precarious situation of the urban population. According to the survey results, malnutrition and food insecurity occurred mainly due to financial problems and not because of food shortages. Ineffective health services, increased service prices and higher prices in general together with insufficient supply with safe water contributed to childhood malnutrition.



The survey revealed that three quarters of households spent 60% or more of their monthly income on food. The average number of meals per day declined from a traditional 1.7 even further to only 1.4 meals per day. Insufficient financial means of households led to limited access to food, both in quantity and quality. Food prices had increased as a result of rising gasoline prices and transport problems during rainy season.

TABLE 1: RESULTS OF NUTRITION SURVEYS, BANGUI CITY, CAR (ACF, 2009)

Survey Year	Acute Malnutrition (%) (95% CI)	Severe Acute Malnutrition (%) (95% CI)	Under 5 Mortality (/10,000/day) (95% CI)
Jan 2006	4.7 (2.9- 7.2)	0.7 (0.1-2.1)	0.98 (0.98- 0.99)
Jan 2007	5.8 (4.2-7.4)	0.6 (0-1.1)	0.36 (0.19-0.92)
Sept 2008	6.2 (4.5-7.8)	0.6 (0.2-1.1)	0.85 (0.13-0.97)

Despite a reduction in meal frequency and dietary diversity, a large proportion of Bangui's population (66.4%) felt that their situation had not changed and 24% said it had deteriorated. The survey did not show an increase in malnutrition rates in children under five years of age (Table 1). According to ACF the rising food prices represent a relatively minor element of poverty and vulnerability in Bangui City and in the country as a whole. This is partly due to its isolation from global markets, poor infrastructure and reasonably adequate domestic food production, but also because deeply entrenched poverty, poor macroeconomic management and ongoing conflict remain more pressing concerns (ACF, 2009).

---

## Democratic Republic of Congo

Despite the gradual return of peace, the humanitarian situation in the East of the country remains precarious. With 1.5 million displaced people, the significant shortfall in harvest due to prevailing problems of insecurity and restricted access to the fields is an additional challenge on the way of restoring stability. Sexual violence is a widespread phenomenon. The reintegration of refugees coming from Tanzania and Zambia creates additional problems. Despite the recent return of approximately 61,500 individuals from seven IDP camps in North Kivu Province, targeted attacks against relief workers hinder access to populations in need of humanitarian assistance in the province (USAID,10/09).

The economy of the southern part of the country was devastated during the global financial downturn when the price of minerals plummeted and mining companies closed. Many workers lost their job and livelihood and re-

turned to their villages. They shifted to agricultural production to eke out a living but struggled without the appropriate skills and access to farming inputs like seeds and tools. ACF reports that a high number of children suffering from severe acute malnutrition especially in the Kasai provinces are in need of appropriate care (ACF-USA 10/09).

### Zone de Santé de Kalonge

ACF (06/09) assessed the humanitarian situation in Kalonge region. The population is composed by three quarters of residents or returnees (75%), 14% IDPs and 11% refugees. The global acute malnutrition rate was at 7.1% (CI 5.1-9.1) and showed no improvement compared to the same season in the previous year. The nutrition situation is at risk to further deteriorate, due to the army's presence and the influx of new refugees in the region. Measles vaccination coverage was found to be insufficient, whereas vitamin A supplementation and deworming showed very good coverage rates.

---

## Chad

The second half of the year has seen some success in dialogue between the Government and armed opposition groups, with some groups actually joining the Government. While armed opposition to the Government might be in a state of decline, the threat from banditry has increased. Difficulties in ensuring a full deployment of MINURCAT, the UN Mission in Central African Republic and Chad, continue.

Humanitarian access to the population has been particularly problematic due to attacks by the armed opposition and acts of banditry and violence. The situation in Eastern Chad and in Darfur makes a return of Sudanese refugees very unlikely. In the southern part of the country, the arrival of new refugees from Central African Republic has worsened the humanitarian situation. The risk of food insecurity has increased, particularly in the East and South. In addition, the risk of floods and epidemics remains high.

A severe shortage of rain has affected most agricultural areas of Chad. Therefore, harvest particularly of grain, is lower than in previous years. The current situation contributes to food insecurity among tribal and peasant parts of the population.

### N'Djamena City

In mid-September 2009, two heavy torrential rains led to flooding in the capital N'Djamena and thus aggravated an already precarious situation. The most affected areas were Walia, Kamda, Toukra, Habena, Chagoua, and Moural. It is estimated that over 545 houses were destroyed leaving almost 997 families homeless (IFRC, 10/09).

In N'Djamena's outlying farming and herding zone, households classified as poor or with an average income and with exhausted food reserves, had to turn to the market to supple-

ment their food needs despite high consumer prices. However, the August rains improved the outlook for off season crops. Early harvest crops like maize, fresh groundnuts, sweet potatoes, and okra, were arriving on the market and thus reduced the pressure on cereals. The market reacted with a slight decline in prices of the main food cereals maize, pearl millet and rice (FEWS, 09/09).

According to the nutrition survey conducted by ACF in May 2009 in N'Djamena City, the

prevalence of global acute malnutrition varied between 7.7% and 10.2% in children under five years of age. It is recommended that special attention should be paid to services that detect, and take care of, young children suffering from malnutrition including the development of social services that should be secured. In order to address the underlying causes, food security needs to be assured for urban households by developing means to generate income.

## Asia

The Asia-Pacific region has recently been affected by a series of natural disasters. Typhoons and floods hit the Philippines (26th September and 3rd October 2009); Vietnam, Cambodia and Laos (29th September 2009). Earthquakes struck Bhutan (21st September 2009) and the Pacific Islands (26th September 2009) with a resulting tsunami which in turn caused damage in Indonesia (30th September 2009). In total, some 9.8 million people are affected,



more than 1,600 are confirmed dead, and over 3,000 people are still missing. More than 3.8 million of the affected population are children (UNICEF, 10/09).

## Bangladesh

On 25 May 2009 Cyclone Aila hit 11 coastal districts of Bangladesh affecting 3.9 million people. Many families were left without shelter, safe drinking water, food or medicine. Some were forced to live on embankments, the only places above water level. Sea water continued to flood villages during high tide because of breaches in the dikes and embankments. Salty sea water spoiled water points, causing a severe shortage of drinking water and an outbreak of diarrhoea affecting thousands of people (DMB, 06/09). According to government officials, Bangladesh will need to relocate about 20 million people by 2050 due to climate change.

A downward trend with regards to local food prices was observed in July 2009 (WFP, 07/09). Between November 2008 and January 2009 WFP, UNICEF and IPHN conducted a household food security and nutrition assessment to understand the impact of the food

price shock on household food security.

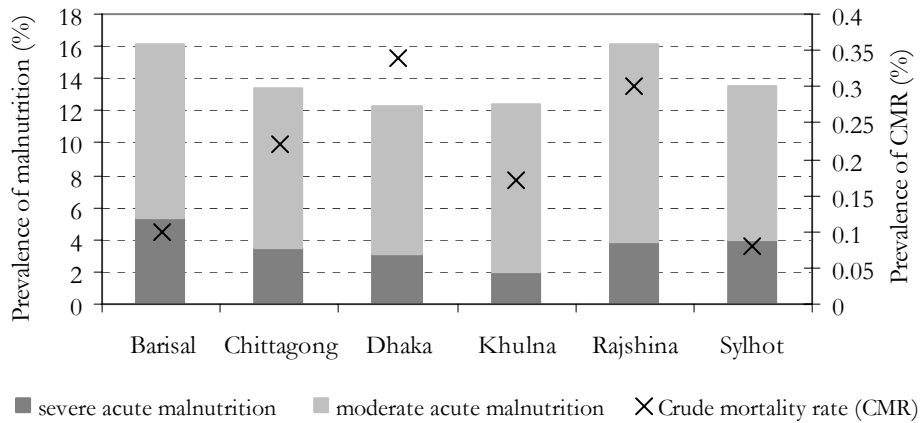
Due to rising food prices, the purchasing power of the urban population fell by about 30% from lean season 2007 to lean season 2008. Household food expenditures as percentage of total expenditure increased to 62% in 2008 compared to 52% in 2005, leaving less money for other basic needs.

According to survey results, 43% of traders had experienced more requests for credit. Consumers had taken on debts by borrowing money from family or commercial microcredit banks. Reported coping strategies included also a reduction in health expenditures and a higher percentage of income spent on food.

The survey estimated a global acute malnutrition prevalence of 13.5% (CI 12.1-15.0) with 3.4% severe acute malnutrition for the country. This is of particular concern since the survey was conducted during the best period of the year. Compared to the results of the



FIGURE 9: RESULTS OF NUTRITION SURVEY, BANGLADESH  
(WFP, UNICEF, IPHN, 01/09)



Bangladesh Demographic and Health Survey 2007, these GAM rates are 3.9 % lower. They were highest in the most food insecure divisions of Barisal and Rajshahi, with rates above the WHO emergency threshold (Figure 9).

The prevalence of global acute malnutrition was highest among children aged 6-23 months. This was attributed among others to inadequate feeding practices in terms of qual-

ity of the diet and meal frequency. Households with a high percentage share on food expenditure and a high coping strategy index score were more likely to have malnourished children.

Maternal malnutrition was measured with mid upper arm circumference (MUAC) and 18.2% of women fall below 22.1cm. No previous studies for comparison are available.

## Tajikistan

Despite national and international efforts, the humanitarian situation in Tajikistan remains severe. Multiple negative effects of the global economic and financial crises on the Tajik economy, combined with considerable damage caused by natural disasters over the past years, have undermined ongoing efforts to improve the humanitarian situation. It is assumed that the global economic crisis will further increase vulnerability to external shocks (OCHA 2009).

The impact on nutrition and health in Tajikistan has been assessed thoroughly by the Food Security Monitoring System (FSMS) established in November 2008, based on the WFP assessment in Tajikistan in April 2008 and the FNSAU in Somalia. The FSMS is designed to produce quarterly reports on food security and

biannual reports on nutrition. Currently four FSMS reports are available out of which two include nutritional information, FSMS January 2009 and FSMS September 2009.

In January 2009, half of the households had taken new debts primarily to buy food and stock feed, and one third of them would not be able to reimburse these before 2 months.

Poor water quality has caused multiple outbreaks of waterborne disease inflicting on nutritional status. In the report September 2009 a significant increase in acute malnutrition was partly explained by a solid increase in diarrhoea. GAM rates were 10.3% (CI 6.9-14.8) with SAM of 4.3%. GAM rates were particularly high in children under 24 months of age, which is also likely to be associated with poor infant feeding practices.

## Cambodia

Northwestern Cambodia was hit by Typhoon Ketsana in October 2009. 43 people are reported dead and 67 injured. Furthermore, the typhoon caused property and infrastructure damages washing away or damaging about 1,000 houses, 57,000 hectares of farmland and livestock, and destroying roads (ReliefWeb, 11/09). The infrastructure in the country has been severely affected and will require extensive support in rebuilding. The community Choeu tial in Sandan district was most affected, with schools, health centers and other infrastructures flooded. All rice fields in the district have been completely destroyed. People and cattle moved to higher ground/safe areas along the main road and into some pagodas (UNICEF, 10/09).

National food supplies are barely adequate not only due to natural disasters but also due to inadequate agricultural policies. The country faces huge problems in the distribution of food and in access to food for a growing part of the population. Malnutrition, especially in rural areas, is widespread, particularly among children under five years and among expectant and nursing women.

### Food price crisis, an opportunity for Cambodia?

Coming only months after Asia's food price rises, the economic crisis of 2009 has renewed food insecurity especially affecting women and children as household incomes dip, even though food prices have fallen. Cambodia is one of the hardest hit countries in Southeast Asia (IRIN Asia, 07/05/09). In late 2008, the Cambodian government saw an opportunity in the global rise in food prices that could help turn the fortunes of its agrarian economy. Cambodia has been experiencing soaring prices of essential goods, mainly oil and food. The price for all varieties of the staple food rice nearly doubled between May 2007 and May 2008. The Cambodian Development Resource Institute (08/08) carried out a study to analyse the impact of rising food prices on both producers and consumers, with focus on vulnerable population groups.

### Households with poor food consumption mainly in rural areas



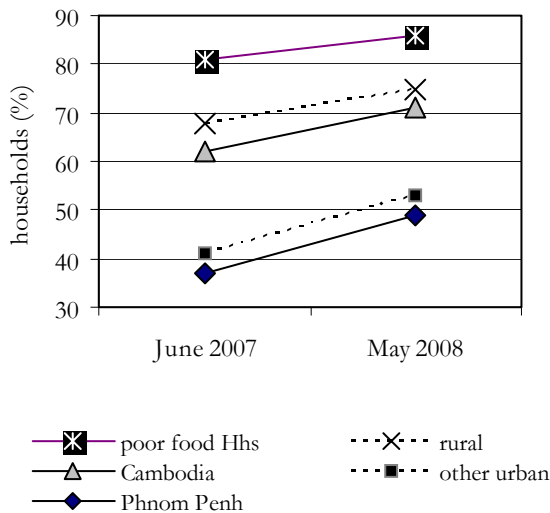
Almost all interviewed households accessed food either through market purchase or their own agricultural production. Rice was the main staple food consumed by all households; the second most frequently consumed food group were vegetables. The food intake of rural households showed less variety of food than that of urban households. Analysis showed that overall 4.3% of households had a poor food consumption score (poor food households), 7.4% a borderline and 88.3% an acceptable one. While 69% of the survey households responded that they did not have sufficient money to buy food or to cover essential living expenditures, this problem was much more consistent and severe amongst the poor food households. The latter were mainly rural households with more children and more elderly family members to be take care of. Figure 10 shows the increase in the percentage of households responding that they did not have enough money to buy food or cover essential expenditures in 2008 compared to 2007. To cope with this situation, the food poor households relied mainly on less preferred and less expense food items, made debts for purchasing food and/or reduced the daily quantity of food eaten.

The authors expected that the proportion of food insecure households would increase significantly during the peak of the lean season (August-November 2008). In a projection the proportion of food poor households grew from 4.3% to 7.0% and the borderline food consumption households from 7.4% to 12.1%. In this scenario more than half a million households would be food insecure.

### Farmers benefited from the increase in food prices

Dry season farmers and cassava farmers have benefited from the increase in food prices,

FIGURE 10: RESULTS OF NUTRITION SURVEYS, HOUSEHOLDS WITH INSUFFICIENT MONEY TO BUY FOOD, CAMBODIA (CDRI, 08/08)



while wet season farmers and other farmers that harvested their crops 6 months after the study would only benefit if prices remained high. Although production costs have increased by about 50% from 2007 to 2008, the gross margins have accelerated by 38% to 176% due to an increase of farm gate prices. The authors concluded that poverty reduction could be much faster than before the food price crises, if prices for agricultural commodities remain as high as during the time of assessment. Nevertheless, special attention should be given to fishing communities who are among

the most affected. Although the price of their produce was rising, the margin was less compared to agricultural products as they had rising costs and lower fish catches.

### Net food consumers are losers

However, net food consumers are losers in this process, unless they have access to jobs with rising wages to compensate for high inflation. Fortunately, due to market based wage adjustment the landless and land poor groups, who depend on daily labour, have been kept in the status quo and were not falling into severe poverty as one would have expected. The very poor, both urban and rural, tend to settle in the poorest areas with little potential for agricultural production and income generation. Constituting 20% of the population, these households faced major problems to obtain sufficient food. About 50% of them reported that they had to reduce food consumption as a coping strategy.

The nutritional situation has been evaluated by the Cambodia Anthropometric Survey (CAS, 2008). Acute malnutrition in children under 5 years of age had not changed significantly since 2005, disrupting the positive trend since the year 2000. However, acute malnutrition among the urban poor had increased significantly from 9.6% in 2005 to 15.9% in 2008.

## Nepal

Significant humanitarian needs remain in Nepal due to a combination of national and global factors. Food insecurity in Nepal is widespread and pervasive, and the number of people facing hunger has increased as a result of frequent and severe natural disasters combined with the effects of the food, fuel and financial crisis. In its current fragile post-conflict situation, Nepal's problems would need to be addressed through a more development oriented approach (OCHA, 05/09).

ECHO continues to finance food aid for the

90,000 Bhutanese refugees living in camps, whilst encouraging a comprehensive solution for them (ECHO, 11/09). The Bhutanese refugees are highly dependent upon relief food. In recent years, several surveys had assessed the nutrition status of the refugee children. Due to high levels of anaemia identified in 2007, WFP and UNHCR initiated a comprehensive micronutrient supplementation program which is implemented by the Association of Medical Doctors of Asia (AMDA). The programme distributes a customized micronutrient supplement powder, called Vita-Mix-It (VMX), to all refugee children aged 6-59 months. In March 2008, AMDA started with monthly distributions.

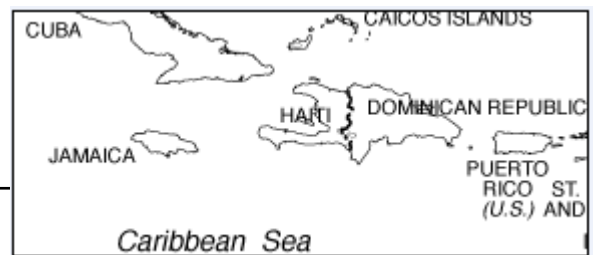
In May 2009, the Centre of Disease Control and Prevention (CDC) conducted a nutrition and micronutrient survey in the seven Bhutanese refugee camps in south eastern Nepal in order to evaluate the effectiveness of this micronutrient supplementation program. With regard to the VMX, 98.1% of the respondents had received the most recent distributed— and among those, only two respondents had claimed to not be giving VMX to their child.

The most common food with which VMX is prepared was rice (66.2%). The overall prevalence of anaemia in children was still high with 35.9%. The prevalence of GAM was 7.2% with 1.4% of SAM. The survey report recommends among others to closely monitor the distribution and use of VMX sachets also at household level and to continue with strengthening the community based nutrition education programme with focus on appropriate infant and young child feeding practices.

## Caribbean

### Haiti

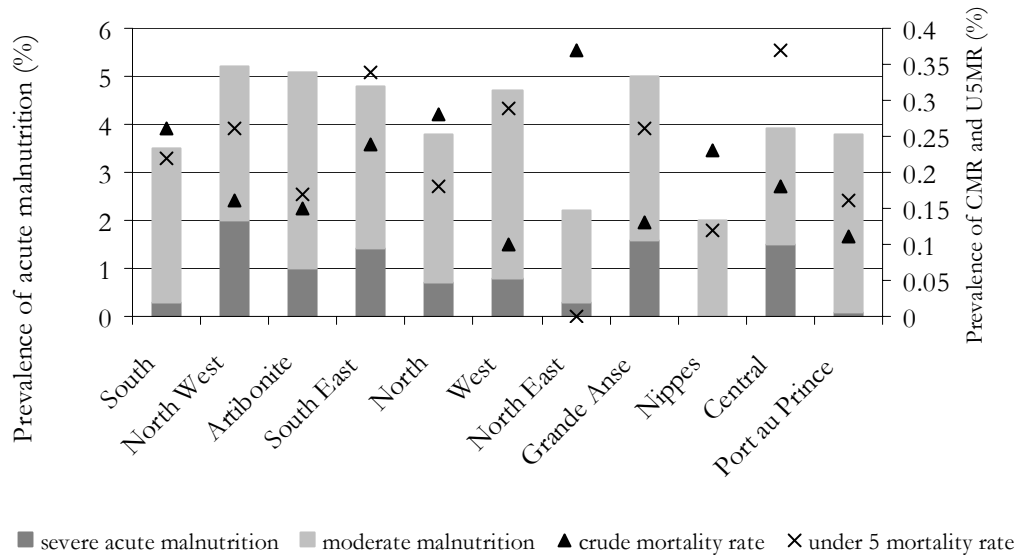
Repair work continued on the Gonaïves plain, which was heavily damaged by hurricanes in August and September 2008. Income generating activities and stable prices for most staple food products were facilitating relatively good access to food in the country. The generous rainfall during the first growing season (April-June 2009) favoured good agricultural production and the situation was favourable in most of the departments, as more food was available than in 2008. However, some areas experienced difficulties and the estimated number of food - insecure persons remained unchanged from July 2009 to September 2009 at around 1.9 million. As a large majority of the population is vulnerable to the risks of hurricanes and flooding, and because the weather conditions deteriorated in the far West, it is expected that the number of food - insecure persons will increase throughout the country (Fews, 09/09), a problem which will be aggravated by the outbreak of Teschen disease among swine. The 2009 hurricane season was considered near normal with 11 tropical storms, six minor and two major hurricanes in the region (FEWS, 08/09).



Following the devastating hurricanes in 2008, Action Contre la Faim France (ACF-F) conducted eleven mortality and nutrition surveys throughout the country, covering the 11 departments, based on the SMART methodology, in late 2008 and early 2009. In August and September 2008 the hurricanes Fay, Gustav, Ike and Hanna had devastated large parts of Haiti causing 793 deaths, 310 people missing and 548 injured. 10,000 homes were destroyed and another 44,000 were damaged, and many crops were destroyed. It was estimated that 800,000 Haitians were in need of humanitarian and rehabilitation assistance.

The survey results found global acute malnutrition rates ranging from an acceptable 2% in the Department of Nippes to a poor 5.2% in the Department of the North West and Artibonite (Figure 11). Severe acute malnutrition rates are worrying in 7 out of the 11 Departments with rates higher than 0.5%.

FIGURE 11: RESULTS OF NUTRITION SURVEYS, 11 DEPARTMENTS, HAITI ,  
(ACF, 12/08 - 03/09)



HURRICANE SEASON 2008 , HAITI ,  
(MAPACTION, 2008)



# Results of surveys

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oe-dema (%)	MUAC <sup>#</sup> (%)
<b>GREATER HORN OF AFRICA</b>										
<b>ETHIOPIA</b>										
<b>AMHARA REGION</b>										
Mekidella Woreda	Dec-08	Residents	-	GOAL	13.5 <i>12.8<sup>†</sup></i>	9.7-17.2 <i>9.5-17.2</i>	1.6 <i>3.1<sup>†</sup></i>	0.5-2.7 <i>1.8-5.2</i>	0.5	MUAC < 11.0 cm: 1.9 MUAC < 12.5 cm: 17.4
Mekidella Woreda	Jun-08	Residents	-	GOAL	10.8 <i>13.2<sup>†</sup></i>	7.8-13.7 <i>10.9-16.0</i>	0.7 <i>2.1<sup>†</sup></i>	-0.1-1.5 <i>1.0-4.4</i>	0.5	MUAC < 11.0 cm: 0.9 MUAC < 12.5 cm: 4.9
<b>OROMIYA REGION</b>										
Boke Woreda	Aug-09	Residents	155,811	GOAL	16.4 <i>14.8<sup>†</sup></i>	13.4-19.4 <i>11.9-18.2</i>	1.4 <i>2.9<sup>†</sup></i>	0.6-2.3 <i>1.7-4.9</i>	0.4	MUAC < 11.0 cm: 1.2 MUAC < 12.5 cm: 12.2
Burka Dintu Woreda	Aug-09	Residents	73,896	GOAL	14.6 <i>14.4<sup>†</sup></i>	11.7-17.5 <i>12.0-17.2</i>	0.5 <i>1.8<sup>†</sup></i>	0-1.1 <i>1.0-3.3</i>	0	MUAC < 11.0 cm: 0.3 MUAC < 12.0 cm: 4.3
Hawigudina Woredas	Aug-09	Residents	141,104	GOAL	12.1 <i>12.3<sup>†</sup></i>	9.3-15.0 <i>9.6-15.6</i>	1.1 <i>2.4<sup>†</sup></i>	0.4-1.9 <i>1.4-4.2</i>	0.6	MUAC < 11.0 cm: 0.9 MUAC < 12.5 cm: 8.4
Kerssa Woreda	Jun-09	Residents	161,844	GOAL	12.8 <i>12.3<sup>†</sup></i>	9.2-16.4 <i>9.7-15.6</i>	2.2 <i>2.7<sup>†</sup></i>	1.1-3.4 <i>1.5-4.7</i>	0.6	MUAC < 11.0 cm: 2.0 MUAC < 12.5 cm: 16.0
Kombolcha Woreda	Mar-09	Residents	140,769	GOAL	10.8 <i>10.5<sup>†</sup></i>	8.3-13.3 <i>8.2-13.4</i>	1.0 <i>1.8<sup>†</sup></i>	0-2.0 <i>0.9-3.4</i>	0.6	MUAC < 11.0 cm: 1.0 MUAC < 12.5 cm: 10.1
Kuni Woreda	Mar-09	Residents	159,067	GOAL	11.2 <i>9.6<sup>†</sup></i>	8.2-14.3 <i>7.1-12.8</i>	1.6 <i>1.3<sup>†</sup></i>	0.6-2.4 <i>0.6-2.8</i>	0.2	MUAC < 11.0 cm: 1.1 MUAC < 12.5 cm: 10.9
<b>SNNP Region</b>										
Arbaminch Zuria Woreda	Jan-09	Residents	174,361	GOAL	2.7 <i>1.4<sup>†</sup></i>	1.5-3.9 <i>0.7-3.0</i>	0.3 <i>0.3<sup>†</sup></i>	-0.1-0.7 <i>0.1-1.2</i>	0	MUAC < 11cm: 0.1 MUAC < 12.5 cm: 7.9
Boricha Woreda	Apr-09	Residents	236,341	GOAL	11.0 <i>11.2<sup>†</sup></i>	8.6-13.5 <i>8.9-14.2</i>	0.6 <i>1.4<sup>†</sup></i>	0-1.2 <i>0.8-2.5</i>	0.2	MUAC < 11cm: 0.9 MUAC < 12 cm: 3.2
Bule Woreda	Mar-09	Residents	105,921	GOAL	7.1	4.9-9.2	0.3	0-0.7	-	MUAC < 11cm: 0.6 MUAC < 12.5cm: 11.2
Damot Gale Woreda	Dec-08	Residents	153,200	GOAL	4.9 <i>5.2<sup>†</sup></i>	3.2-6.5 <i>3.7-7.2</i>	0.2 <i>0.1<sup>†</sup></i>	0.0-0.4 <i>0-1.1</i>	0	MUAC < 11cm: 0.3 MUAC < 12.5cm: 7.8

Continued...

	Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
	Proved by card	Card + history							
	13.8	83.9	-	83.8	-	0.2	0.07-0.37	0.2	0-0.49
	8.6	76.1	-	84.7	-	0.1	-0.1-0.19	0.4	-3.73-4.52
	1.4	32.6	-	36.9	-	0.4	0.15-0.66	1.01	0.17-1.85
	-	18.5	-	26.1	-	0.39	0.20-0.59	1.1	0.34-1.87
	5.1	24.4	-	80	-	0.19	0.03-0.35	0.29	-0.18-0.75
	10.7	61.8	-	85.5	-	0.36	0.11-0.61	0.8	0.06-1.53
	7.7	72.2	-	60.2	-	0.15	-0.02-0.33	0.59	-0.2-1.39
	6.0	59.3	-	54	-	0.24	0.06-0.42	0.47	-0.15-1.09
	51.8	92.8	-	93.4	-	0.08	-0.006-0.21	0.15	-0.06-0.36
	10.4	68.1	-	74.6	-	0.17	0.05-0.3	0.64	0.05-1.23
	5.0	62.1	-	76.9	-	0.22	0.12-0.58	0.23	0.09-0.35
	14.2	85.9	-	92.2	-	0.19	0-0.37	0	-

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
<b>SNNP REGION</b>										
Damot Gale Woreda	Mar-09	Residents	154,610	GOAL	9.6 <i>9.9<sup>2</sup></i>	6.9-12.3 <i>7.2-13.4</i>	0.7 <i>2.2<sup>2</sup></i>	0.2-1.3 <i>1.2-3.9</i>	0.1	MUAC < 11cm: 1.7 MUAC < 12.5 cm: 13.9
Damot Pulkassa Woreda	Jan-09	Residents	103,610	GOAL	16.7 <i>5.1<sup>2</sup></i>	13.3-20.1 <i>3.3-7.7</i>	2.9 <i>0.5<sup>2</sup></i>	1.3-4.5 <i>0.2-1.7</i>	0	MUAC < 11cm: 2.1 MUAC < 12.5 cm: 19.0
Damot Pulkassa Woreda	Apr-09	Residents	108,083	GOAL	11.0 <i>10.1<sup>2</sup></i>	8.5-13.5 <i>7.8-13.0</i>	2.1 <i>2.7<sup>2</sup></i>	0.8-3.3 <i>1.6-4.3</i>	0.9	MUAC < 11cm: 1.8 MUAC < 12.5 cm: 15.0
Gedeb Woreda	Feb-09	Residents	146,732	GOAL	10.5 <i>9.5<sup>2</sup></i>	7.8-13.2 <i>7.1-12.1</i>	2.1 <i>1.6<sup>2</sup></i>	1.1-3.1 <i>1.0-2.5</i>	0.3	MUAC < 11cm: 1.4 MUAC < 12.5 cm: 10.3
Shebedino Woreda	Mar-09	Residents	189,835	GOAL	16.4 <i>17.5<sup>2</sup></i>	12.5-20.2 <i>13.9-21.8</i>	1.6 <i>3.6<sup>2</sup></i>	0.7-2.4 <i>2.2-5.8</i>	0.3	MUAC < 11cm: 0.8 MUAC < 12.5 cm: 18.1
<b>KENYA</b>										
<b>COAST PROVINCE</b>										
Kilifi	Jun-09	Residents	-	World Vision	5.9 <sup>2</sup>	4.3-7.5	0.6 <sup>2</sup>	0.2-1.1	-	-
Kwale	Jun-09	Residents	-	World Vision	8.4 <sup>2</sup>	6.4-10.4	2.6 <sup>2</sup>	1.2-4.0	-	-
Taita Taveta	Jun-09	Residents	-	World Vision	5.4 <sup>2</sup>	1.0-7.0	0.3 <sup>2</sup>	0.1-1.0	-	-
<b>RIFT VALLEY</b>										
Kajiado	Jun-09	Residents	-	Concern Worldwide	11.1 <i>11.5<sup>2</sup></i>	8.4-14.5 <i>8.5-15.4</i>	1.5 <i>1.8<sup>2</sup></i>	0.8-2.7 <i>1.0-3.1</i>	-	-
Baringo	Jun-09	Residents	-	World Vision	11.0 <i>12.4<sup>2</sup></i>	8.4-14.1 <i>9.8-15.1</i>	0.8 <i>3.1<sup>2</sup></i>	0.3-2.5 <i>1.9-4.3</i>	-	-
Pokot	Jul-09	Residents	-	Samaritan Purse	11.0 <i>12.7<sup>2</sup></i>	8.5-13.5 <i>9.9-15.6</i>	2.7 <i>3.7<sup>2</sup></i>	1.2-4.3 <i>2.1-5.4</i>	-	-
Samburu	Jun-09	Residents	-	World Vision	22.0 <i>22.2<sup>2</sup></i>	19.0- 25 <i>18.8-25.1</i>	1.8 <i>5.6<sup>2</sup></i>	1.1-3.0 <i>4.2-7.1</i>	-	-



Continued...

	Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
	Proved by card	Card + history							
	14.8	64.8	-	92	-	0.23	0.05-0.41	1.22	0.26-2.18
	18.1	81	-	81.8	-	0.38	0.22-0.54	0.91	0.22-1.59
	12.4	87.8	-	93.9	-	0.08	-0.01-0.18	0.77	0.06-1.47
	6.0	31.9	-	60.2	-	0.24	0.01-0.46	0.13	-0.09-0.35
	7.1	68.9	-	68.6	-	0.15	0-0.29	0.49	0.01-0.99
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
EASTERN PROVINCE										
Marsabit/Laisamis	Jun-09	Residents	-	World Vision	20.0 <i>20.0<sup>2</sup></i>	17.4-22.7 <i>17.4-27.2</i>	1.7 <i>1.7<sup>2</sup></i>	1.0-2.9 <i>1.1-2.9</i>	-	-
NORTH EASTERN PROVINCE										
Wajir North South	Jun-09	Residents	-	SC UK	20.1 <i>19.1<sup>2</sup></i>	17.0-23.2 <i>16.1-22.5</i>	2.5 <i>4.0<sup>2</sup></i>	1.2-3.8 <i>3-5.6</i>	-	-
Wajir South East	Jun-09	Residents	-	SC UK	25.6 <i>25.3<sup>2</sup></i>	21.9-29.3 <i>21.3-29.8</i>	2.5 <i>4.6<sup>2</sup></i>	1.5-3.5 <i>3.2-6.8</i>	-	-
Mandera West Mal-kamari	Feb-09	Residents	-	ACF	26.1 <i>26.2<sup>2</sup></i>	21.7-30.3 <i>21.5-30.8</i>	1.2 <i>4.2<sup>2</sup></i>	0.3-2.1 <i>2.6-5.8</i>	-	-
Mandera West - Takaba, Dandu	Feb-09	Residents	-	ACF	31.0 <i>32.3<sup>2</sup></i>	27.0-35.9 <i>28.2-36.4</i>	2.6 <i>5.7<sup>2</sup></i>	1.3-3.9 <i>3.5-7.8</i>	-	-
Mandera East Cal, Kahalio, libehia	Feb-09	Residents	-	ACF	20.5 <i>19.8<sup>2</sup></i>	16.6-24.4 <i>16.2-23.4</i>	3.0 <i>1.0<sup>2</sup></i>	1.4-4.1 <i>0.4-1.9</i>	-	-
Mandera Central	Mar-09	Residents	-	SC UK	30.3 <i>30.9<sup>2</sup></i>	25.8-35.2 <i>26.9-35.3</i>	3.0 <i>7.0<sup>2</sup></i>	2.2-5.1 <i>5.1-9.7</i>	-	-
Mandera-East- Lafey, Fino, Hareri, Libehia, Rhamu, Ashabito and Warankara	Mar-09	Residents	-	IR	30.6 <i>31.8<sup>2</sup></i>	24.9-36.3 <i>26.5-37.1</i>	3.3 <i>7.22</i>	2.0-4.7 <i>5.3-9.2</i>	-	-
TURKANA										
Turkana North West	Apr-09	Residents	-	Merlin, World Vision, Oxfam	>20 <sup>3</sup>	-	-	-	-	-
Turkana East	Apr-09	Residents	-	Merlin, World Vision, Oxfam	> 20 <sup>3</sup>	-	-	-	-	-
Turkana South	Apr-09	Residents	-	Merlin, World Vision, Oxfam	>20 <sup>3</sup>	-	-	-	-	-
Turkana Central	Apr-09	Residents	-	Merlin, World Vision, Oxfam	>20 <sup>3</sup>	-	-	-	-	-

Continued...

	Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
	Proved by card	Card + history							
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
<b>SOMALIA<sup>5</sup></b>										
<b>BAY AND BAKOOL REGIONS</b>										
Bakool Agro pastoral	Jun-09	Residents	310,627 <sup>4</sup>	FSNAU/joint <sup>5</sup>	14.6 14.9 <sup>2</sup>	11.7-18.1 12.1-18.3	2.3 3.4 <sup>2</sup>	1.4-3.6 2.1-5.4	0.2	MUAC <12.5cm: 6.5
Bakool Pastoral	Jun-09	Residents	310,627 <sup>4</sup>	FSNAU/joint	25.2 15.1 <sup>2</sup>	19.0-32.7 18.6-32.8	1.3 1.2 <sup>2</sup>	0.6-2.9 0.5-2.6	0	MUAC <12.5cm: 19.6
Bay Agro pastoral	Jun-09	Residents	620,562 <sup>4</sup>	FSNAU/joint	22.7 23.9 <sup>2</sup>	18.7-27.3 19.2-29.4	3.4 5.2 <sup>2</sup>	2.1-5.4 3.9-6.9	0.1	MUAC <12.5cm: 16.3
<b>CENTRAL REGION</b>										
Addun Pastoral	May-09	Residents	680,156 <sup>4</sup>	FSNAU/joint <sup>5</sup>	15.6 17.3 <sup>2</sup>	11.7-19.6 13.8-21.5	1.7 2.6 <sup>2</sup>	0.5-2.9 1.6-4.4	0.2	MUAC <12.5cm: 4.9
Agropastoral Cowpea Belt	May-09	Residents	680,156 <sup>4</sup>	FSNAU/joint	14.7 14.9 <sup>2</sup>	11.3-20.6 12.4-18.7	2.2 3.3 <sup>2</sup>	1.1-6.7 2.6-5.4	0.4	MUAC <12.5cm: 4.3
Coastal Deeh	May-09	Residents	680,156 <sup>4</sup>	FSNAU/joint	>6.6 <sup>3</sup> >12.6 <sup>23</sup>	Pr=0.9 Pr=0.9	>0.1 <sup>3</sup> >2.0 <sup>23</sup>	Pr=0.91 Pr=0.91	0.5	MUAC <12.5cm: 8.4
Galgadug	May-09	Residents	680,156 <sup>4</sup>	FSNAU/joint	13.3 14.3 <sup>2</sup>	9.2-7.5 10.3-19.3	2.2 3.3 <sup>2</sup>	0.8-3.5 1.9-5.3	-	-
Hawd Pastoral	May-09	Residents and IDPs	680,156 <sup>4</sup>	FSNAU/joint	16.9 18.0 <sup>2</sup>	12.5-21.4 13.8-23.1	3.7 5.5 <sup>2</sup>	2.0-5.5 3.7-7.9	0.1	MUAC <12.5cm: 7.3
Mudug	May-09	Residents	680,156 <sup>4</sup>	FSNAU/joint	18.6 18.3 <sup>2</sup>	15.3-21.8 15.4-21.6	2.5 4.9 <sup>2</sup>	1.1-3.9 3.7-6.6	-	-
<b>GEDO REGION</b>										
Agro pastoral Gedo Region	Jul-09	Residents	328,378 <sup>4</sup>	FSNAU/joint <sup>5</sup>	19.3 19.9 <sup>2</sup>	16.5-22.3 17.3-22.8	2.0 4.4 <sup>2</sup>	1.2-3.3 2.9-6.6	0.4	MUAC <12.5cm: 13.4
Pastoral Gedo Region	Jul-09	Residents	328,378 <sup>4</sup>	FSNAU/joint	23 22.6 <sup>2</sup>	18.6-28.1 18.3-27.5	2.7 5.4 <sup>2</sup>	1.8-3.9 3.9-7.5	0.1	MUAC <12.5cm: 6.6
Riverine Gedo Region	Jul-09	Residents	328,378 <sup>4</sup>	FSNAU/joint	23.4 22.9 <sup>2</sup>	19.0-28.4 18.7-27.7	2.7 5.6 <sup>2</sup>	1.6-4.5 3.9-8.1	0.1	MUAC <12.5cm: 13.8

Continued...

Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
Proved by card	Card + history							
-	75.7	-	59	MUAC (non pregnant) ≤18.5cm: 0.6 MUAC (pregnant) < 23.0cm: 8.8	0.53	0.34-0.82	0.98	0.4-2.37
-	68.4	-	74.5	MUAC (non pregnant) ≤18.5cm: 2.4 MUAC (pregnant) < 23.0cm: 32	0.61	0.37-0.99	0.77	0.31-1.93
-	43.2	-	50.1	non pregnant MUAC ≤18.5cm: 0.7 MUAC (pregnant) < 23.0cm: 33.3	0.68	0.48-0.96	1.18	0.62-2.16
-	31.5	-	41.3	MUAC (non pregnant) ≤18.5cm: 0.5 MUAC (pregnant) < 23.0cm: 19.7	0.55	0.31-0.98	1.36	0.67-2.78
-	68.1	-	68.8	MUAC (non pregnant) ≤18.5cm: 0.7 MUAC (pregnant) < 23.0cm: 14.3	0.2	0.08-0.48	0.28	0.07-1.16
-	46.8	-	35.6	MUAC (non pregnant) ≤18.5cm: 1.2 MUAC (pregnant) < 23.0cm: 24.0	-	-	-	-
-	-	-	-	-	0.39	0.19-0.79	0.54	0.13-0.93
-	52.9	-	47.9	MUAC (non pregnant) ≤18.5cm: 0.3 MUAC (pregnant) < 23.0cm: 17.1	0.71	0.4-1.25	0.92	0.48-1.77
-	-	-	-	-	0.66	0.23-1.88	1.3	0.74-2.27
-	66	-	69.6	MUAC (non pregnant) ≤18.5cm: 0.7 MUAC (pregnant) < 23.0cm: 36.2	1.17	0.75-1.81	3.82	2.2-6.58
-	91.1	-	88.2	MUAC (non pregnant) ≤18.5cm: 1.6 MUAC (pregnant) < 23.0cm: 26.2	0.77	0.45-1.3	1.34	0.68-2.64
-	84.2	-	82.7	MUAC (non pregnant) ≤18.5cm: 2.4 MUAC (pregnant) < 23.0cm: 26.1	0.81	0.44-1.51	2.9	1.67-5.0

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
<b>HIRAN REGION</b>										
Agro pastoral	Apr-09	Residents-	329,811 <sup>4</sup>	FSNAU/ joint	24.5 25.5 <sup>2</sup>	18.3-30.8 19.7-31.2	3.7 8.1 <sup>2</sup>	1.4-5.9 5.6-10.6	0.6	MUAC <12.5cm: 8.7
Beletweyne	Apr-09	Residents	144,345	FSNAU/ joint	21 21.2 <sup>2</sup>	16.1-25.9 16.3-26.0	2.9 6.2 <sup>2</sup>	1.4-4.5 3.7-8.7	0.3	MUAC <12.5cm: 9.3
Pastoral	Apr-09	Residents-	329,811 <sup>4</sup>	FSNAU/ joint	≥15 ≥15 <sup>2</sup>	Pr=0.98- Pr=0.95	2.5 4.5 <sup>2</sup>	0.4-4.7 1.5-7.6	0.5	MUAC <12.5cm: 6.1
Riverine	Apr-09	Residents-	329,811 <sup>4</sup>	FSNAU/ joint	15.9 16.9 <sup>2</sup>	11.3-20.6 11.5-22.2	2.0 4.6 <sup>2</sup>	0.7-3.3 2.7-6.5	0.7	MUAC <12.5cm: 10.7
<b>JUBA REGION</b>										
Agro pastoral Juba-Region	Jul-09	Residents	624,667 <sup>4</sup>	FSNAU/ joint	19.9 21.7 <sup>2</sup>	17.3-22.8 19.0-24.7	3.2 7.4 <sup>2</sup>	2.2-4.7 4.8-11.2	0.9	MUAC <12.5cm: 19.6
Pastoral- Juba-Region	Jul-09	Residents	624,667 <sup>4</sup>	FSNAU/ joint	20.2 20.6 <sup>2</sup>	15.5-25.8 16.1-26.1	2.2 6.8 <sup>2</sup>	0.9-5.0 4.2-10.8	0.3	MUAC <12.5cm: 13.1
Riverine- Juba-Region	Jul-09	Residents	624,667 <sup>4</sup>	FSNAU/ joint	11.3 12.5 <sup>2</sup>	8.7-14.6 10.1-15.4	2.8 3.6 <sup>2</sup>	1.6-4.8 2.2-5.9	1.7	MUAC <12.5cm: 14.6

Continued...

Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
Proved by card	Card + history							
-	18.8	-	19.3	MUAC (non pregnant) ≤18.5cm: 0 MUAC (pregnant) <23.0cm: 26.1	0.64	0.45-0.9	1.41	0.76-2.61
-	24.2	-	23.8	MUAC (pregnant) <23.0cm: 16.0	0.64	0.4-1.93	0.97	0.48-1.93
-	10.2	-	12.6	MUAC (non pregnant) ≤18.5cm: 1.3 MUAC (pregnant) <23.0cm: 22.7	-	-	-	-
-	29.1	-	27.4	MUAC (non pregnant) ≤18.5cm: 0.4 MUAC (pregnant) <23.0cm: 16.9	0.36	0.14-0.95	1.61	0.58-4.45
-	61.2	-	73.2	MUAC (non pregnant) ≤18.5cm: 0.3 MUAC (pregnant) <23.0cm: 52.4	9.17	0.06-0.48	0.37	0.08-1.59
-	66.7	-	55	MUAC (non pregnant) ≤18.5cm: 2.0 MUAC (pregnant) <23.0cm: 34.7	0.8	0.45-1.43	2.19	0.99-4.81
-	66	-	69.6	MUAC (non pregnant) ≤18.5cm: 0.4 MUAC (pregnant) <23.0cm: 29.6	1.19	0.87-1.63	2.26	1.71-4.0

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
NORTH WEST & NORTH EAST REGIONS										
Berbera	Apr-09	Displaced	-	FSNAU/ joint	17.9 18.5 <sup>2</sup>	Exhaustive	1.7 3.3 <sup>2</sup>	Exhaustive	-	MUAC <12.5cm: 13.1
Bossaso-urban	Jul-09	Residents/ Displaced	-	FSNAU/ joint	>16.8 <sup>3</sup> 15.2 <sup>23</sup>	Pr=0.9 Pr=0.9	>1.0 <sup>3</sup> >2.6 <sup>23</sup>	Pr=0.93- Pr=0.9	0.1	MUAC <12.5cm: 10.5
Bossaso	Jul-09	Displaced	-	FSNAU/ joint	20.7 21.4 <sup>2</sup>	17.8-23.6 18.8-24.1	1.8 4.8 <sup>2</sup>	0.8-2.8 3.0-6.5	0	MUAC <12.5cm: 16.3
Burao	Apr-09	Displaced	-	FSNAU/ joint	18.8 20.5 <sup>2</sup>	Exhaustive	3.0 4.9 <sup>2</sup>	1.2-3.2	-	-
Galkayo	Jul-09	Displaced	-	FSNAU/ joint	17.8 20 <sup>2</sup>	Exhaustive	2.1 4.6 <sup>2</sup>	Exhaustive	0.2	MUAC <12.5cm: 11.7
Garowe	Jul-09	Displaced	-	FSNAU/ joint	23.5 24.5 <sup>2</sup>	Exhaustive	1.7 6.5 <sup>2</sup>	Exhaustive	-	MUAC <12.5cm: 14.8
Gebbi Valley	Jun-09	Residents	270,367 <sup>4</sup>	FSNAU/ joint	14.8 15 <sup>2</sup>	11.0-19.8 11.4-19.5	1.5 3.3 <sup>2</sup>	0.7-3.2 1.9-5.7	-	-
Golis/ Gagaab	Jun-09	Residents/ Displaced	-	FSNAU/ joint	19.1 17.9 <sup>2</sup>	15.6-23.1 14.4-22.0	2 3.3 <sup>2</sup>	1.2-3.2 1.9-5.8	0.5	MUAC <12.5cm: 1.7
East Goli	Jun-09	Residents	270,367 <sup>4</sup>	FSNAU/ joint	19.1 17.9 <sup>2</sup>	15.6-23.1 14.4-22.0	2 3.3 <sup>2</sup>	1.2-3.2 1.9-5.8	-	-
Guban/ West Golis	Jun-09	Residents	270,367 <sup>4</sup>	FSNAU/ joint	13.5 13.3 <sup>2</sup>	11.2-16.1 10.4-16.9	1.4 2.5 <sup>2</sup>	0.8-2.6 1.5-3.9	-	-
Hargeisa	Apr-09	Displaced	-	FSNAU/ joint	12.5 <sup>3</sup> 12.5 <sup>23</sup>	Pr=0.96 Pr=0.96	1.5 1.5 <sup>2</sup>	Pr=0.77 Pr=0.77	-	-
Karkaar	Jun-09	Residents/ Displaced	-	FSNAU/ joint	14.8 15 <sup>2</sup>	11.0-19.8 11.4-19.5	1.5 3.3 <sup>2</sup>	0.7-3.2 1.9-5.7	0.1	MUAC <12.5cm: 4.9
Qardho	Jul-08	Displaced	-	FSNAU/ joint	18.4 20.1 <sup>2</sup>	Exhaustive	2.7 5.2 <sup>2</sup>	Exhaustive	0.4	MUAC <12.5cm: 13.6



Continued...

Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
Proved by card	Card + history							
-	48.7	-	83.1	MUAC (non pregnant) ≤18.5cm: 0.4 MUAC (pregnant) <23.0cm: 14.8	0.58	0.33-1.02	0.99	0.42-2.29
-	76.4	-	73.7	MUAC (non pregnant) ≤18.5cm: 0 MUAC (pregnant) <23.0cm: 29.4	-	-	-	-
-	85.9	-	81	MUAC (non pregnant) ≤18.5cm: 0.4 MUAC (pregnant) <3.0cm: 31.5	0.39	0.23-0.65	0.9	0.7-1.7
-	73.5	-	59.9	MUAC (non pregnant) ≤18.5cm: 2.1 MUAC (pregnant) <23.0cm: 25	0.29	0.14-0.59	0.55	0.19-1.6
-	85.7	-	85.1	MUAC (non pregnant) ≤18.5cm: 0.7 MUAC (pregnant) <23.0cm: 24.0	0.58	-	0.4	-
-	68	-	67	MUAC (non pregnant) ≤18.5cm: 1.7 MUAC (pregnant) <23.0cm: 23.3	0.52	-	1.33	-
-	66.9	-	69.7	MUAC (non pregnant) ≤18.5cm: 0.3 MUAC (pregnant) <23.0cm: 22.4	0.23	0.1-0.56	0.82	0.28-2.39
-	65	-	55.9	MUAC (non pregnant) ≤18.5cm: 6.5 MUAC (pregnant) <23.0cm: 0	0.35	-	1.06	-
-	65	-	59.9	MUAC (non pregnant) ≤18.5cm: 6.5 MUAC (pregnant) <23.0cm: 0	0.30	0.10-1.18	1.06	0.36-3.08
-	84.6	-	92.2	MUAC (non pregnant) ≤18.5cm: 4.9 MUAC (pregnant) <23.0cm: 0	0.46	0.27-0.79	0.82	0.34-1.99
-	69.3	-	67.7	MUAC (non pregnant) ≤18.5cm: 1.5 MUAC (pregnant) <23.0cm: 7.1	-	-	-	-
-	66.9	-	69.7	MUAC (non pregnant) ≤18.5cm: 0.3 MUAC (pregnant) <23.0cm: 22.4	0.23	-	0.82	-
-	56.2	-	52.3	MUAC (non pregnant) ≤18.5cm: 0.5 MUAC (pregnant) <23.0cm: 12.0	0.27	-	0.21	-

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
<b>SHABELLE REGION</b>										
Adale District	May-09	Residents	1365,552 <sup>4</sup>	FSNAU/ joint	16 <i>16.5<sup>2</sup></i>	12.7-19.3 <i>13.5-20.0</i>	2.7 <i>5.1<sup>2</sup></i>	1.2-4.2 <i>3.5-7.4</i>	-	-
Afgoye Merka Corridor	May-09	Displaced	1365,552 <sup>4</sup>	FSNAU/ joint	9.2 <i>11.7<sup>2</sup></i>	6.2-12.2 <i>8.8-14.7</i>	1.5 <i>3.5<sup>2</sup></i>	0.4-2.6 <i>2.0-5.1</i>	0.2	MUAC <12.5cm: 6.3
Agro pastoral Shabelle	May-09	Residents	1365,552 <sup>4</sup>	FSNAU/ joint	20 <i>19.6<sup>2</sup></i>	15.1-25.4 <i>14.6-29.9</i>	3.5 <i>8.2<sup>2</sup></i>	2.4-4.7 <i>5.7-11.6</i>	0.9	MUAC <12.5cm: 7.1
Riverine Shabelle	May-09	Residents	1365,552 <sup>4</sup>	FSNAU/ joint	10.3 <i>10.3<sup>2</sup></i>	5.8-14.9 <i>5.4-15.3</i>	1 <i>2.0<sup>2</sup></i>	0.1-3.9	0.1	MUAC <12.5cm: 13.8
<b>SUDAN</b>										
<b>BAHR AL GHAZAL STATE</b>										
Aweil West & North Counties	May-09	Residents/ Returnees/ IDPs	300,000	Concern	18.9 <i>19.7<sup>2</sup></i>	15.6-22.8 <i>16.2-23.8</i>	2.2 <i>5.0<sup>2</sup></i>	1.2-4.0 <i>3.6-7.0</i>	0.2	-
<b>NORTHERN BAHR EL GHAZAL STATE</b>										
Aweil East County	Jun-09	Residents/ Returnees/ IDPs	616,105	ACF	29.1 <i>29.8<sup>2</sup></i>	24.5-34.1 <i>25.0-35.2</i>	3.1 <i>7.8<sup>2</sup></i>	1.9-5.1 <i>5.5-11.1</i>	-	MUAC < 11cm: 2.9 MUAC < 12cm: 10.9
<b>SOUTH KORDOFAN</b>										
Abyei County	May-09	Residents/ Returnees	75,745	GOAL	24.1	19.3-29.7	2.5	1.4-4.7	0.0	MUAC < 11.5cm: 1.2 MUAC <12.5cm: 6.1
<b>UPPER NILE STATE</b>										
Baliet & Ulang Counties	May-09	Residents/ Returnees/ IDPs	28,586	GOAL	21.2 <i>22.8<sup>2</sup></i>	17.8-25.1 <i>19.4-26.6</i>	3.4 <i>5.4<sup>2</sup></i>	2.1-5.4 <i>3.8-7.6</i>	0.3	MUAC < 11.5cm: 0.6 MUAC < 12.5cm: 4.2
<b>WEST AFRICA</b>										
<b>MALI</b>										
Zone of Asongo, with communities Bara, Bourra and Asongo	Jul-09	Residents	45,053	ACF	15.9 <i>16.2<sup>2</sup></i>	12.7-19.1 <i>12.8-19.6</i>	0.8 <i>3.0<sup>2</sup></i>	0.1-1.5 <i>1.4-4.5</i>	0	MUAC <11cm: 0,6 MUAC <11,5m: 1,0
<b>SIERRA LEONE</b>										
Freetown	Nov-08	Residents	825,634	ACF	-	-	-	-	-	MUAC < 11cm: 0.6 MUAC < 12.5cm: 4.9

Continued...

Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
Proved by card	Card + history							
-	-	-	-	-	0.48	0.30-0.78	1.09	0.57-2.05
-	57.2	-	41.3	MUAC (non pregnant) ≤18.5cm: 0 MUAC (pregnant) <23.0cm: 1.4	0.5	0.28-0.88	1	0.46-2.19
-	26.1	-	34.7	MUAC (non pregnant) ≤18.5cm: 9.7 MUAC (pregnant) <23.0cm: 0	1.02	0.71-1.46	2.43	1.48-3.98
-	35.1	-	31	MUAC (non pregnant) ≤18.5cm: 10 MUAC (pregnant) <23.0cm: 0	-	-	-	-
-	28.7	-	67.6	Lactating and/or pregnant: MUAC < 21.0 cm: 2.2; MUAC < 23.0 cm: 11.9	0.73	0.52-1.01	1.24	0.75-2.03
12.7	23.1	-	-	-	0.2	0.05-0.35	0.35	-0.07-0.75
10.2	48.3	-	83.4	-	0.6	0.3-1.1	1.10	-0.46-2.46
30.7	42.7	-	48.8	-	0.55	0.33-0.91	0.26	0.06-1.08
24.6	46.9	-	-	-	0.32	0.12-0.52	0.72	0.03-1.47
-	-	-	-	-	-	-	-	-

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
<b>CENTRAL AFRICA</b>										
<b>CENTRAL AFRICAN REPUBLIC</b>										
Bangui City	Sept-08	Residents	622,780	ACF	6.2	4.5-7.8	0.6	0.2-1.1	0.3	Height >= 65cm: MUAC <11cm: 0.1 MUAC <12cm: 0.8
<b>DEMOCRATIC REPUBLIC OF CONGO</b>										
<b>SOUTH KIVU PROVINCE</b>										
Zone de Santé de Kalonge	May-09	Residents/ recently Returnees/ IDPs and Refugees	119,464	ACF	7.7 7.1 <sup>2</sup>	5.7-9.6 5.1-9.1	2.0 1.5 <sup>2</sup>	1.0-3.0 0.7-2.3	-	MUAC < 11cm: 0.1 MUAC < 12.5cm: 8.5
<b>CHAD</b>										
N'Djamena Zone 1	Dec-08	Residents	163,232	ACF	7 7.7 <sup>2</sup>	4.2-9.9 4.9-10.6	0.2 1.6 <sup>2</sup>	0.2-0.6 0.4-2.8	0.2	MUAC <11cm: 0.2 MUAC <12cm: 1.7
N'Djamena Zone 2	Dec-08	Residents	474,697	ACF	9.8 10.2 <sup>2</sup>	6.4-13.0 6.8-13.5	1.2 2.8 <sup>2</sup>	0.1-2.2 1.3-4.3	0	MUAC <11cm: 1.6 MUAC <12cm: 1.9
N'Djamena Zone 3	Dec-08	Residents	545,475	ACF	7.7 8.1 <sup>2</sup>	4.9-10.5 5.1-11.2	0.5 1.6 <sup>2</sup>	-0.2 -1.1 0.3-2.9	0	MUAC <11cm: 0.5 MUAC <12cm: 2.1
<b>ASIA</b>										
<b>BANGLADESH</b>										
Bangladesh	Jan-09	Residents	-	WFP, UNICEF, IPHN	13.5 <sup>2</sup>	12.1-15.0	3.4 <sup>2</sup>	2.8-4.2	-	-
<b>NEPAL</b>										
South-Eastern-Nepal	May-09	Bhutanese-Refugees	95,000	ACF	8.5 7.5 <sup>2</sup>	6.4-11.0 5.4-9.6	0.4 1.4 <sup>2</sup>	0.1-1.3 0.7-2.8	0	-

Continued...

Measles immunisation coverage (%) <sup>a</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>b</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>b</sup>	
Proved by card	Card + history							
-	-	-	-	-	0.69	0.41-0.96	0.85	-0.13-0.97
8.7	68.6	-	82.0	-	0.44	0.21-0.67	1.26	-0.48-2.05
-	-	-	-	-	0.67	0.36-1.26	2.25	1.05-4.76
-	-	-	-	-	0.34	0.17-0.70	0.99	0.35-2.76
-	-	-	-	-	0.3	0.13-0.66	0.21	-0.03-1.59
-	-	-	-	MUAC < 21.4 cm: 8.9 MUAC < 22.1 cm: 18.2	0.66	0.64-0.68	0.22	0.21-0.23
-	-	Anemia Hemoglobin <11g/dl: 35.9	98.9	Anemia non pregnant hgb <12g/dl: 14.2; Anemia pregnant hgb <11g/dl: 20.0	-	-	-	-

Survey Area	Date	Population	Estimated Population Number	Survey Conducted by	Acute Malnutrition* (%) (95% CI) <sup>§</sup>		Severe Acute Malnutrition** (%) (95% CI) <sup>§</sup>		Oedema (%)	MUAC <sup>#</sup> (%)
<b>CARIBBEAN</b>										
<b>HAITI</b>										
Department of l'Artibonite	Dec-08	Residents	567427	ACF	4.3 5.1 <sup>2</sup>	2.5-6.1 3.2-6.9	0.4 1.0 <sup>2</sup>	0-0.8 0.3-1.8	0.3	MUAC < 11cm: 0.5 MUAC < 12.5cm: 2.7
Central Department	Jan-09	Residents	735,123	ACF	4.7 3.9 <sup>2</sup>	2.8-6.5 2.2-5.5	2.2 1.5 <sup>2</sup>	1.0-3.4 0.4-2.6	1.5	MUAC < 11cm: 0.1 MUAC < 12.5 cm: 4.2
Department North West	Mar-09	Residents	556206	ACF	6.2 5.2 <sup>2</sup>	3.9-8.6 3.3-7.1	2.2 2.0 <sup>2</sup>	0.8-3.6 0.7-3.4	1.9	MUAC < 11cm: 0.6 MUAC < 12.5cm: 5.9
Department of Grande Anse	Dec-08	Residents	459,371	ACF	5.7 5.0 <sup>2</sup>	4.0-7.3 3.3-6.8	1.9 1.6 <sup>2</sup>	12.2-3.8 0.7-2.5	1.6	MUAC < 11cm: 0.7 MUAC < 12.5 cm: 4.2
Department of Nippes	Jan-09	Residents	571,529	ACF	3.1 2.0 <sup>2</sup>	1.7-4.6 1.0-2.9	0.4 0 <sup>2</sup>	0-0.8	0	MUAC < 11cm: 0.3 MUAC < 12.5 cm: 3.1
Department West	Mar-09	Residents	305,618	ACF	4 4.7 <sup>2</sup>	2.3-5.6 2.8-6.6	0.3 0.8 <sup>2</sup>	-0.1-0.7 0.1-1.4	0.2	MUAC < 11cm: 0.1 MUAC < 12.5 cm: 2.9
Department North	Jan-09	Residents	1,040,469	ACF	4 3.8 <sup>2</sup>	2.5-5.5 2.4-5.3	0.3 0.7 <sup>2</sup>	-0.1-0.6 0-1.3	-	MUAC < 11cm: 0.6 MUAC < 12.5cm: 3.2
Department North East	Feb-09	Residents	389,852	ACF	2.8 2.2 <sup>2</sup>	1.4-4.1 1.1-3.3	0.3 0.3 <sup>2</sup>	-0.1-0.7 -0.1-0.7	0.3	MUAC < 11cm: 0 MUAC < 12.5 cm: 1.9
Department South	Jan-09	Residents	785,874	ACF	4.3 3.5 <sup>2</sup>	2.9-5.7 2.1-4.9	0 0.3 <sup>2</sup>	0 -0.1-0.6	0	MUAC < 11cm: 0 MUAC < 12.5cm: 2.0
Department South East	Dec-09	Residents	613,701	ACF	5 4.8 <sup>2</sup>	2.9-7.2 2.9-6.7	1.1 1.4 <sup>2</sup>	0.3-1.9 0.5-2.2	1	MUAC < 11cm: 0.5 MUAC < 12.5cm: 5.6
Port au Prince	Mar-09	Residents	2,425,835	ACF	3.9 3.8 <sup>2</sup>	2.6-5.1 2.6-5.0	0.2 0.1 <sup>2</sup>	-0.1-0.5 -0.1-0.3	0	MUAC < 11cm: 0.5 MUAC < 12.5cm: 2.3

\*) Acute malnutrition (children aged 6-59 months): weight-height < - 2 Z-scores and/or oedema, (NCHS Reference Standard / WHO Growth Standard)

\*\*) Severe acute malnutrition (children aged 6-59 months): weight-height < - 3 Z-scores and/or oedema, (NCHS Reference Standard / WHO Growth Standard)

§) 95% Confidence Interval; not mentioned if not available from the survey report

#) Mid Upper Arm Circumference

2) According to WHO 2006 Child Growth Standards (<http://www.who.int/childgrowth/en/>)

3) According to Lot Quality Assurance (LQAs) survey methodology

4) Population data refers to the entire region

5) From FSNAU- Somalia Nutrition Update

Continued...

Measles immunisation coverage (%) <sup>#</sup>		Assessment of micro-nutrient deficiencies	Vitamin A distribution coverage, within the past 6 months	Women's anthropometric status (%)	Crude Mortality (/10,000/day) (95% CI) <sup>§</sup>		Under 5 Mortality (/10,000/day) (95% CI) <sup>§</sup>	
Proved by card	Card + history							
41.0	63.3	-	80.2	-	0.15	0.08-0.23	0.17	0.02-0.32
44.8	68	-	59.1	-	0.18	0.07-0.28	0.37	-0.01-0.76
40.7	56.8	-	40.3	-	0.16	0.06-0.26	0.26	0.06-0.45
59.0	72.8	-	66.1	-	0.13	0-0.27	0.26	0.09-0.44
39.2	76	-	43.6	-	0.23	0.14-0.4	0.12	0.02-0.82
32.2	62.7	-	37.2	-	0.1	0.02-0.18	0.29	0.08-0.66
42.8	60.6	-	62.8	-	0.28	0.13-0.43	0.18	0-0.35
53.1	75.5	-	55.7	-	0.37	0.21-0.65	-	-
51.5	74.8	-	79.3	-	0.26	0.16-0.45	0.22	0.05-0.89
40.9	68.6	-	50.7	-	0.24	0.17-0.32	0.34	0.1-0.57
38.9	61.7	-	48.5	-	0.11	0.05-0.26	0.16	0.03-0.88

#) Measles vaccination coverage for children aged 9-59 months

§) 95% Confidence Interval; not mentioned if not available from the survey report

# Survey methodology

## The Greater Horn region

### Ethiopia

#### **MEKIDELLA WOREDA, SOUTH WOLLO ZONE, AMHARA REGION**

A nutrition survey was conducted by GOAL in June 2009. A two stage 21-by-36 cluster sampling was used to measure 567 children aged 6-59 months. Water and sanitation, caring practices, morbidity, BCG by scar and ongoing interventions in the survey region were also investigated.

#### **MEKIDELLA WOREDA, SOUTH WOLLO ZONE, AMHARA REGION**

A nutrition survey was conducted by GOAL in December 2008. A two stage 19-by-36 cluster sampling was used to measure 690 children aged 6-59 months. Water and sanitation, caring practices, morbidity, BCG by scar and ongoing interventions in the survey area were also investigated.

#### **ARBAMINCH ZURIA WOREDA, GAMGOFA ZONE, SNNP REGION**

A nutrition survey was conducted by GOAL in January 2009. A two stage 15-by-34 cluster sampling was used to measure 702 children aged 6-59 months. Water and sanitation, health care system, morbidity, BCG by scar and Meher production performance were also assessed.

#### **BORICHA WOREDA, SIDAMA ZONE, SNNP**

A nutrition survey was conducted by GOAL in April 2009. A two stage 34-by-20 cluster sampling was used and 661 children aged 6-59 months were measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **DAMOT PULASSA WOREDA, WOLAYITA ZONE, SNNP**

A nutrition survey was conducted by GOAL in April 2009. A two stage 19-by-35 cluster sampling was used and 680 children aged 6-59 months were measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **BULE WOREDA, GEDEO ZONE, SNNP**

A nutrition survey was conducted by GOAL in March 2009. A two stage 21-by-40 cluster sampling was used and 878 children aged 6-59 months were measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **DAMOT GALE WOREDA, WOLAYITA ZONE, SNNP**

A nutrition survey was conducted by GOAL in March 2009. A two stage 18-by-37 cluster sampling was used and 688 children aged 6-59 months were measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **KERSSA WOREDA, EAST HARERGE ZONE, OROMIYA REGION**

A nutrition survey was conducted by GOAL in June 2009. A two stage 15-by-35 cluster sampling was used and 539 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **GEDEB WOREDA, GEDIO ZONE, SNNP**

A nutrition survey was conducted by GOAL in February 2009. A two stage 20-by-35 cluster sampling was used and 772 children aged 6-59 months were measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **KUNI WOREDA, WEST HARARGHE ZONE, OROMIYA REGION**

A nutrition survey was conducted by GOAL in March 2009. A two stage 19-by-36 cluster sampling was used and 641 children aged 6-59 months were measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **KOMBOLCHA WOREDA, EAST HARARGHE ZONE, OROMIYA REGION**

A nutrition survey was conducted by GOAL in March 2009. A two stage 20-by-34 cluster sampling was used and 685 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **HAWIGUDINA WOREDAS, WEST HARARGHE ZONE, OROMIYA REGION**

A nutrition survey was conducted by GOAL in August 2009. A two stage 17-by-39 cluster sampling was used and 709 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **BOKE WOREDA, WEST HARARGHE ZONE, OROMIYA REGION**

A nutrition survey was conducted by GOAL in August 2009. A two stage 19-by-35 cluster sampling was used and 694 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

#### **BURKA DINTU WOREDA, WEST HARARGHE ZONE, OROMIYA REGION**

A nutrition survey was conducted by GOAL in August 2009. A two stage 39-by-17 cluster sampling was used and 731 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.



**SHEBEDINO WOREDA, SIDAMA ZONE, SNNP**

A nutrition survey was conducted by GOAL in March 2009. A two stage 19-by-36 cluster sampling was used and 637 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

**DAMOT GALE WOREDA, WOLAYITA ZONE, SNNP**

A nutrition survey was conducted by GOAL in December 2008. A two stage 17-by-30 cluster sampling was used and 696 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

**DAMOT PULASSA WOREDA, WOLAYITA ZONE, SNNP**

A nutrition survey was conducted by GOAL in January 2009. A two stage 18-by-36 cluster sampling was used and 685 children aged 6-59 months measured. Water and sanitation, health care system, morbidity, BCG by scar and food security situation were also assessed.

**SIDAMA ZONE, SNNP REGION**

In October 2008, ACF finalised a household survey on the impact of the food price crisis on small scale farmer livelihoods among 333 households covering three different food economy zones. Starting in July 2008, the ACF Food Security team collected a wide range of information regarding the impact of the food price rise on the livelihoods of farmers, as well as on market stakeholders. In addition, 24 traders were interviewed, 39 Focus Group Discussions were organized and a rapid Food Security assessment was carried out in the area covered by the ACF nutritional team. The aims were: 1) to document the causality of malnutrition and food insecurity in the area, 2) to make predictions for the future development of food insecurity and malnutrition in the area and 3) to give concrete recommendations for future food security activities in the area. Information was collected through a wide range of documents, other INGOs implementing Food Security and/or Nutrition activities in the area, national administrations and experts as well as Health Centre workers. For their analysis ACF identified four major livelihood zones: "coffee livelihood zone" (midland and coffee producing area), "urban livelihood zone" (Aleta Wondo and Awassa urban areas), "Enset and Barley livelihood zone" (highland) and "coffee/enset" (used to be classified as 'enset', but is today characterized by its coffee production).

**Kenya****BARINGO, SAMBURU, RIFT VALLEY**

The survey was conducted by World Vision in June 09 according to the SMART method and included children aged 6-59 months.

**KAJIADO, RIFT VALLEY**

The survey was conducted by Concern Worldwide in June 09, applying the SMART method and including children aged 6-59 months.

**POKOT, RIFT VALLEY**

The survey was conducted by Samaritan Purse in July 09. The SMART method was used and children aged 6-59 months were included.

**MANDERA WEST, MANDERA EAST, NORTH EASTERN PROVINCE**

The survey was conducted by ACF in February 2009. The SMART method was used and children aged 6-59 months were included.

**MANDERA CENTRAL, NORTH EASTERN PROVINCE**

The survey was conducted by SCUUK in March 2009. The SMART method was used to measure children aged 6-59 months.

**MANDERA EAST, NORTH EASTERN PROVINCE**

The survey was conducted by IR in March 2009. The SMART method was used and children aged 6-59 months were included.

**TURKANA, RIFT VALLEY**

The survey was conducted by Merlin, World Vision, Oxfam in April 2009. The LQAS method was used and children aged 6-59 months were included.

**WAJIR NORTH SOUTH, WAJIR SOUTH EAST, NORTH EASTERN PROVINCE**

The survey was conducted by Save the children - UK in June 2009. The SMART method was used and children aged 6-59 months were included.

**KILIFI, COAST**

The survey was conducted by World Vision in June 2009. The SMART method was used to measure children aged 6-59 months.

**KWALE, COAST**

The survey was conducted by World Vision in June 2009. The SMART method was used and children aged 6-59 months were included.

**MARSABIT/LAISAMIS, EASTERN PROVINCE**

The survey was conducted by World Vision in June 2009. The SMART method was used and children aged 6-59 months were included.

**TAITA TAVETA, COAST**

The survey was conducted by World Vision in June 2009. The SMART method was used and children aged 6-59 months were included.

**Somalia****BAY AND BAKOOL REGIONS**

**BAY AGROPASTORAL, BAY AND BAKOOL REGIONS, SOUTH WEST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, jointly with UNICEF, WFP, SRCS, GREENHOPE, DEGARES, GAREDO in June 2009. A probability proportional to size sampling method was used and 882 children aged 6-59 months were measured. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**BAKOOL AGRO-PASTORAL, BAY AND BAKOOL REGIONS, SOUTH WEST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, jointly with UNICEF, WFP, SRCS, GREENHOPE, DEGARES, GAREDO in June 2009. A probability proportional to size sampling method was used to measure 617 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**BAKOOL PASTORAL, BAY AND BAKOOL REGIONS, SOUTH WEST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, jointly with UNICEF, WFP, SRCS, GREENHOPE, DEGARES, GAREDO in June 2009. A probability proportional to size sampling method was used to measure 686 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**CENTRAL REGION**

**ADDUN PASTORAL, GALGADUD AND SOUTH MUDUG, CENTRAL REGION**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS and MOH in May 09. A probability proportional to size sampling method was used to measure 831 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**AGROPASTORAL COWPEA BELT, GALGADUD AND SOUTH MUDUG, CENTRAL REGION**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS and MOH in May 09. A probability proportional to size sampling method was used to measure 693 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**COASTAL DEEH, GALGADUD AND SOUTH MUDUG, CENTRAL REGION**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS and MOH in May 09. A small sam-

ple cluster survey sampling method was used to measure 202 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**GALGADUG, GALGADUD AND SOUTH MUDUG, CENTRAL REGION**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS, MOH and WFP in May 09. A probability proportional to size sampling method was used to measure 916 children aged 6-59 months.

**HAWD PASTORAL, GALGADUD AND SOUTH MUDUG, CENTRAL REGION**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS and MOH in May 09. A probability proportional to size sampling method was used to measure 751 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**MUDUG, GALGADUD AND SOUTH MUDUG, CENTRAL REGION**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS, MOH and WFP in May 09. A probability proportional to size sampling method was used to measure 749 children aged 6-59 months.

**HIRAN REGION**

**AGROPASTORAL, HIRAN REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS, IMC, SCUK and Concern Worldwide in April 09. A probability proportional to size sampling method was used to measure 518 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**BELETWEYNE, HIRAN REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS, IMC, SCUK, Concern Worldwide in April 09. A probability proportional to size sampling method was used to measure 680 children aged 6-59 months.

**PASTORAL, HIRAN REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS, IMC, SCUK, Concern Worldwide in April 09. A small sample cluster survey sampling method was used to measure 198 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**RIVERINE, HIRAN REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, SRCS, IMC, SCUUK, Concern Worldwide in April 09. A probability proportional to size sampling method was used to measure 540 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**JUBA REGION****AGROPASTORAL JUBA REGION, LOWER AND MIDDLE JUBA REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, jointly with UNICEF AFREC, WVI, MERCY USA, SRCS, SAF, EIRG, APD, JUBA FOUNDATION, WRRS, JCC, MVDO, PCDDO, ICDA, AMA-UK in July 09. A probability proportional to size sampling method was used to measure 753 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**PASTORAL JUBA REGION, LOWER AND MIDDLE JUBA REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, jointly with UNICEF AFREC, WVI, MERCY USA, SRCS, SAF, EIRG, APD, JUBA FOUNDATION, WRRS, JCC, MVDO, PCDDO, ICDA, AMA-UK in July 09. A probability proportional to size sampling method was used to measure 754 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**RIVERINE JUBA REGION, LOWER AND MIDDLE JUBA REGION, SOUTH SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, jointly with UNICEF AFREC, WVI, MERCY USA, SRCS, SAF, EIRG, APD, JUBA FOUNDATION, WRRS, JCC, MVDO, PCDDO, ICDA, AMA-UK in July 09. A probability proportional to size sampling method was used to measure 676 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**NORTH WEST & NORTH EAST REGIONS****BERBERA, , NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNI Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in April 09. An exhaustive survey sampling method was used to measure 520 children aged 6-59 months. Women's immunization status, Public Health and

Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**BOSSASO URBAN, BARI, NUGAL AND NORTH MUDUG, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOH, SRCS and SDRA Aid Organization in July 09. A probability proportional to size sampling method was used to measure 199 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**BOSSASO, BARI, NUGAL AND NORTH MUDUG, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOH, SRCS and SDRA Aid Organization in July 09. A probability proportional to size sampling method was used to measure 924 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**BURAO, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNI Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in April 09. An exhaustive survey sampling method was used to measure 431 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**GALKAYO, BARI, NUGAL AND NORTH MUDUG, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOH, SRCS and SDRA Aid Organization in July 09. An exhaustive survey sampling method was used to measure 3114 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**GAROWE, BARI, NUGAL AND NORTH MUDUG, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOH, SRCS and SDRA Aid Organization in July 09. An exhaustive survey sampling method was used to measure 460 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**GEBBI VALLEY, SANAAG REGION, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNI Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in June 09. A probability proportional to size sampling method was used to measure 674 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**GOLIS/GAGAAB, BARI, NUGAL AND NORTH MUDUG, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in June 09. A probability proportional to size sampling method was used to measure 772 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**EAST GOLIS, SANAAG REGION, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNI Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in June 09. A probability proportional to size sampling method was used to measure 603 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**GUBAN/ WEST GOLIS, SANAAG REGION, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNI Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in June 09. A probability proportional to size sampling method was used to measure 772 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**HARGEISA, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNI Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in April 09. A small sample cluster survey sampling method was used to measure 300 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**KARKAAR, BARI, NUGAL AND NORTH MUDUG,****NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in June 09. A probability proportional to size sampling method was used to measure 603 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**QARDHO, BARI, NUGAL AND NORTH MUDUG, NORTH WEST & NORTH EAST REGIONS**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, MOHL, SRCS and SDRA Aid Organization in July 08. An exhaustive survey sampling method was used to measure 478 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**SHABELLE REGIONS****ADALE DISTRICT, LOWER AND MIDDLE SHABELLE REGIONS, SOUTH EAST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, COSV, MERCY USA, INTERSOS, SRCS, ZAMZAM and MUSLIM Aid in May 09. A probability proportional to size sampling method was used to measure 667 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**AFGOYE-MERKA CORRIDOR, LOWER AND MIDDLE SHABELLE REGIONS, SOUTH EAST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, COSV, MERCY USA, INTERSOS, SRCS, ZAMZAM and MUSLIM Aid in May 09. A probability proportional to size sampling method was used to measure 597 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**AGRO-PASTORAL SHABELLE, LOWER AND MIDDLE SHABELLE REGIONS, SOUTH EAST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, COSV, MERCY USA, INTERSOS, SRCS, ZAMZAM, MUSLIM Aid in May 09. A probability proportional to size sampling method was used to measure 536 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

**RIVERINE SHABELLE, LOWER AND MIDDLE SHABELLE REGIONS, SOUTH EAST SOMALIA**

The survey was conducted by FSNAU UNIT Somalia, UNICEF, COSV, MERCY USA, INTERSOS, SRCS, ZAMZAM and MUSLIM Aid in May 09. A probability proportional to size sampling method was used to measure 203 children aged 6-59 months. Women's immunization status, Public Health and Food Security Indicators were also assessed. Results were categorized following a nutrition situation categorisation framework and visualized geographically.

## **Sudan**

### **ABYEI COUNTY, SOUTH KURDUFAN, SOUTH SUDAN**

A multi indicator cluster survey was conducted by GOAL in May 09. A 18-by-30 cluster sampling was used to measure 559 children aged 6-59 months. Children's morbidity, caring practices, food security, health system, chronic malnutrition and change of acute malnutrition rates over the past three years were also assessed.

### **BALLET & ULANG COUNTIES, UPPER NILE STATE, SOUTH SUDAN**

A multi indicator survey was conducted by GOAL in May 09. A two stage 26-by-30 cluster sampling was used to measure 807 children aged 6-59 months. Livelihood characteristics, education, HIV awareness, health, hygiene, reproductive health, malaria prevalence, infant and young child feeding practices and vaccination status were assessed.

### **AWEIL WEST & NORTH COUNTIES, BAHR AL GHAZAL STATE, SOUTH SUDAN**

A nutrition survey was conducted by Concern Worldwide in May 09. A two stage 30-by-32 cluster sampling was used to measure 956 children aged 6-59 months. Nutritional indicators and health indicators were compared with the levels of the past 4 years. Water and sanitation facilities and food security situation were also investigated.

### **AWEIL EAST COUNTY, NORTHERN BAHR EL GHAZAL STATE, SOUTH SUDAN**

An anthropometric and mortality survey was conducted by ACF-USA in June 2009. A 20-by-42 cluster sampling was used to measure 844 children aged 6-59 months. Underlying causes and factors of malnutrition were also investigated.

## **West Africa**

### **Mali**

#### **ZONE OF ASONGO**

A 27-by-37 cluster sampling methodology was used to monitor 713 children. The survey was conducted by ACF in June 2009. Crude and under-5 mortality, measles vaccination coverage and nutritional status were assessed.

### **Sierra Leone**

#### **FREETOWN**

A survey was conducted by ACF to identify possible

links between food prices and acute malnutrition in November 2008. A 20-by-35 cluster sampling was used to measure MUAC and oedema of 822 children aged 6-59 months. MUAC was linked with food prices and coping strategies. A total of 202 households were interviewed based on an adapted Household Dietary Diversity Score Questionnaire to assess coping strategies.

## **Central Africa**

### **Central African Republic**

#### **BANGUI CITY,**

The survey was conducted by ACF in September 2008. A 29-by-32 cluster sampling was used to measure 943 children aged 6-59 months. The survey included an impact analysis of the global food price crisis on household food and nutrition security in Bangui City.

### **Democratic Republic of Congo**

#### **KALONGE HEALTH ZONE, SUD, KIVU**

A random-sampled nutrition survey of 954 children 6-59 months was completed by Action contra la Faim (ACF) in Mai 2009. A two-stage 30-by-32 cluster design was employed. The survey also estimated measles vaccination and vitamin A supplementation coverage and deworming rates.

## **Chad**

### **VILLE DE N'DJAMENA**

A 30-by-14 cluster sampling methodology was used to monitor children in three different zones in N'Djamena, Chad. The survey was conducted by ACF. Crude, under-5 mortality rates and nutritional status of children below five of age were measured along Socio economic parameters. Dietary diversity and mechanism to cope with food insecurity were assessed.

## **Asia**

### **Bangladesh**

A household food security and nutrition assessment was conducted by WFP, UNICEF and IPHN between November 2008 and January 2009. A two stage stratified sample procedure was used to assess the impact of the food price crisis in 361 randomly selected clusters, about 10,378 households. The survey included a market and household survey, as well as a nutrition component that was led by UNICEF (anthropometric measurements of children age 6-59 years and their mothers as well as nutrition behaviour, health and hygiene indicators).

### **Cambodia**

A national study was conducted by Cambodia Development Resource Institute (CDRI), WFP, NGO Forum on Cambodia, OXFAM America, UNDP, World Bank and FAO to assess the impact of the food price crisis on the nutrition security situation in August 2008. A random, probability proportional to size

method and a purposive sampling method was used to measure 991 households in 149 villages. The survey included focus group discussions (FGD), trend assessment of food prices and food consumption patterns. Standard scores developed by WFP were applied to determine the level of food poverty. In order to assess food insecure households, information on the different food items eaten were categorised into specific food groups and used to obtain a food consumption score. The standard thresholds identified by WFP were adjusted to Cambodia and were used to distinguish different food consumption levels: poor food consumption, borderline food consumption and acceptable food consumption.

## Nepal

### SOUTH EASTERN NEPAL

The cross sectional nutritional survey was conducted by CDC in seven Bhutanese refugee camps in May 2009. A random sample of children aged 6-59 months was drawn using the updated census data provided by UNHCR. The final survey sample included 568 children. The primary goal was to evaluate the impact of a comprehensive micronutrient supplementation program for children.

## Caribbean

### Haiti

#### DEPARTMENT OF NORTH-EAST

The survey was conducted by ACF-F in January 2009. A two-stage 47-by-14 children cluster sampling was used to measure 688 children aged 6-59 months. The survey also monitored crude and under-5 mortality rates, vitamin A distribution coverage, and vaccination coverage along with feeding patterns of children below five years.

#### DEPARTMENT OF NORTH-WEST

The survey was conducted by ACF-F in February/March 2009. A two-stage 46-by-14 children cluster sampling was used to measure 688 children aged 6-59 months. The survey also monitored crude and under-5 mortality rates, measles and DTP immunization coverage, vitamin A supplementation coverage and feeding patterns of children below five years.

#### DEPARTMENT WEST

The survey was conducted by ACF-F in February/March 2009. A two-stage 47-by-14 children cluster sampling was used to measure 659 children aged 6-59 months. The survey measured crude and under-5 mortality rates, measles, DTP immunization and vitamin A supplementation coverage along with feeding patterns of children below five years.

#### PORT AU PRINCE

The survey was conducted by ACF-F in March 2009. A two-stage 50-by-20 children cluster sampling was used to measure 982 children aged 6-59 months. The survey also monitored crude and under-5 mortality

rates, measles and DTP immunization as well as vitamin A supplementation coverage along with feeding patterns of children below five years.

#### DEPARTMENT SOUTH

The survey was conducted by ACF-F in January 2009. A two-stage 53-by-14 children cluster sampling was used to measure 749 children aged 6-59 months. The survey also monitored crude and under-5 mortality rates, measles and DTP immunization as well as vitamin A supplementation coverage along with feeding patterns of children below five years.

#### DEPARTMENT SOUTH-EAST

A 59-by-14 cluster sampling methodology was conducted by ACF-F in December 2008 to monitor nutritional status of 826 children. Crude and under-5 mortality rates, measles and DTP immunization as well as vitamin A supplementation coverage along with child feeding patterns were assessed.

#### DEPARTMENT OF L'ARTIBONITE

The survey was conducted by ACF-F in December 2008. A two-stage 56-by-14 children cluster sampling was used to measure the nutritional status of 772 children aged 6-59 months. Crude and under-5 mortality rates, measles and DTP immunization as well as vitamin A supplementation coverage along with child feeding patterns were assessed.

#### DEPARTMENT OF THE GRAND ANSE

The survey was conducted by ACF-F in December 2008. A two-stage 64-by-14 children cluster sampling was used to measure 842 children aged 6-59 months. The survey also monitored crude and under-5 mortality rates, measles and DTP immunisation and vitamin A supplementation coverage along with feeding patterns of children below five years.

#### DEPARTMENT OF NIPPES

A 55-by-14 cluster sampling methodology was used to monitor the nutritional status of 783 children. The survey was conducted by ACF-F in January 2009. Crude and under-5 mortality rates, measles and DTP immunisation and vitamin A supplementation coverage along with child feeding patterns were assessed.

#### DEPARTMENT NORTH

A 52-by-14 cluster sampling methodology was used to monitor the nutritional status of 738 children. The survey was conducted by ACF-F in January 2009. Crude, under-5 mortality rates were measured, as well as measles vaccination, vitamin A supplementation coverage and child feeding patterns .

#### CENTRAL DEPARTMENT

The survey was conducted by ACF-F in December 2008. 736 children aged 6-59 months were included in the study. The survey also assessed crude and under-5 mortality rates, vaccination and vitamin A supplementation coverage .

# References

## Greater Horn of Africa

### Ethiopia

ACF	10/09	Impact of the food price crisis on small farmers livelihoods. The case study of Sidama Zone, SNNP Region of Ethiopia.
ACF	01/09	Feeding Hunger and Insecurity. The global food price crisis. Briefing Paper.
FEWS/Joint GOAL	09/09 12/09	Ethiopia Food Security Outlook from July to December 2009 Full scale nutrition survey in Mekidella Woreda, South Wollo Zone of Amhara Region
GOAL	06/09	Standard nutrition survey Mekidella woreda of South Wollo Zone, Amhara Region
GOAL	01/09	Full scale nutrition survey in Arbaminch Zuria Woreda of Gamgofa Zone
GOAL	04/09	Full scale nutrition survey in Boricha Woreda, Sidama Zone, SNNP Region
GOAL	08/09	Full scale nutrition survey in Boke Woreda, West Hararghe Zone, Oromiya Region
GOAL	03/09	Full scale nutrition survey in Bule Woreda, Gedee Zone, SNNP Region
GOAL	08/09	Full scale nutrition survey in Burka Dintu Woreda, West Hararghe Zone, Oromiya Region
GOAL	12/08	Preliminary Report of Damot Gale Woreda, Wolayita Zone, SNNP Region
GOAL	04/09	Full scale nutrition survey in Damot Gale Woreda, Wolayita Zone, SNNP Region
GOAL	01/09	Preliminary Report of Damot Pulassa Woreda, Wolayita Zone, SNNP Region
GOAL	04/09	Full scale nutrition survey in Damot Pulassa Woreda, Wolayita Zone, SNNP Region
GOAL	02/09	Baseline nutrition survey in Gedeb Woreda of Gedio Zone, SNNP Region
GOAL	08/09	Standard nutrition survey, Hawigudina Woredas of West Hararghe Zone, Oromiya Region
GOAL	03/09	Full scale nutrition survey in Kombolcha Woreda of East Hararghe Zone, Oromiya Region
GOAL	03/09	Full scale nutrition survey in Kuni Woreda of West Hararghe Zone, Oromiya Region
GOAL	03/09	Full scale nutrition survey in Shebedino Woreda, Sidama Zone, SNNP Region

### Kenya

FEWS	09/09	Kenya Food Security Update September 2009-11-01
FEWS	09/09	Kenya Food Security Outlook from July to December 2009
UNICEF	10/09	Summary of Nutrition Survey Results (UNICEF Kenya)

### Somalia

FSNAU/ Joint	09/09	Technical Series Report No VI. 25 – Nutrition Situation Post <i>Gu</i> 2009
FSNAU/ Joint	09/09	Food Security & Nutrition – Special Brief – Post <i>Gu</i> '09 Analysis

### Sudan

ACF-USA	06/09	Anthropometric and retrospective mortality survey Aweil East County, Northern Bahr El Ghazal State
Concern	05/09	Report of KPC/Nutrition Survey, Aweil West and North Counties, Bahr al Ghazal State, South Sudan
FEWS	10/09	South Sudan Food Security Outlook, October 2009-March 2010
GOAL	05/09	Report of a multi indicator cluster survey in Abyei, South Sudan
GOAL	08/09	Findings of a multi indicator nutrition, health, wash and mortality cluster survey in Baliet & Ulang Counties, Sobat Corridor, Upper Nile State, South Sudan
UN	11/09	UN-Press Release: 04/11/2009. UN agency airdrops food aid to over 155,000 hungry people in southern Sudan.

## West Africa

### Mali

ACF	06/09	Rapport d'Enquête Nutritionnelle et de Mortalité Communes d'Ansongo, Bara, Bourra, Cercle d'Ansongo, République du Mali
FAO	11/09	Crop Prospects and Food Situation, No. 4.

FEWS	09/09	Mali Food Security Update Sep 2009 - Food Security Outlook through March 2010
------	-------	---

## Sierra Leone

ACF	11/08	Freetown nutrition assessment - Rising food prices and nutritional status of children
OCHA	10/09	West Africa - Flood Affected Population - June to September 2009
OSAC	01/09	Sierra Leone 2009 Crime & Safety Report
WFP	07/09	Changes in staple food prices in selected countries, issue 4.

## Central Africa

### Central African Republic

ACF/UNICEF	09/08	Evaluation de la situation nutritionnelle dans la ville de Bangui; Quel impact de la crise alimentaire mondiale dans la capitale centrafricaine?
ACF	01/09	Feeding hunger and insecurity. Briefing Paper.

### Democratic Republic of Congo

ACF	05/09	Rapport d'Enquête Nutritionnelle Anthropométrique – Zone de Santé de Kalonge, Province du Sud Kivu
ACF-USA	10/09	Thousands face starvation in the southern DRC

### Chad

ACF	12/98	Evaluation de la situation nutritionnelle dans la ville de N'Djamena Tchad – Etat des lieux & Impact de la crise alimentaire mondiale
FEWS	09/09	Food Security outlook through March 2010
IFRC	10/09	Information bulletin: N'Djamena: Floods.

## Asia

### Tajikistan

FSMS/WFP/ WHO/DFID	09/09	Food Security Bulletin September 2009,
OCHA	05/09	Tajikistan Food Security, Mid-Year Review, 2009 CA.

### Bangladesh

UNICEF	01/09	PowerPoint presentation published on UNICEF website (WFP/UNICEF/IPHN. Household food security and nutrition assessment in Bangladesh).
DMB	06/09	Disaster Management Information Centre: Summary of Cyclone Aila
ECHO	11/09	Operational Strategy 2010

### Cambodia

CDRI	05/08	Impact of high food prices in Cambodia.
UNICEF/WHO	11/08	Cambodia Anthropometric Survey (CAS) 2008.
ReliefWeb	11/09	Government of the Republic of Korea: Humanitarian emergency aid for typhoon victims in Cambodia, 3 November 2009.
UNICEF	10/09	UNICEF Humanitarian Action update, Asia-Pacific, 16 October 2009

### Nepal

CDC	05/09	Nutrition and micronutrient survey among Bhutanese Refugee Children, Damak, Nepal
ECHO	11/09	ECHO Operational Strategy 2010: Asia and the Pacific
OCHA	05/09	Nepal, Mid-Year Review, Humanitarian Transition Appeal.

## Caribbean

### Haiti

ACF-F	02/09	Enquête nutritionnelle et de mortalité rétrospective – Dép. du Nord-est
ACF-F	03/09	Enquête nutritionnelle et de mortalité rétrospective – Dép. du Nord-ouest
ACF-F	03/09	Enquête nutritionnelle et de mortalité rétrospective – Département de Ouest
ACF-F	03/09	Enquête nutritionnelle et de mortalité rétrospective – Port au Prince



ACF-F	01/09	Enquête nutritionnelle et de mortalité rétrospective – Département du Nord
ACF-F	01/09	Enquête nutritionnelle et de mortalité rétrospective – Département des Nippes
ACF-F	12/08	Enquête nutritionnelle et de mortalité rétrospective – Dép Grande Anse
ACF-F	01/09	Enquête nutritionnelle et de mortalité rétrospective – Département Centre
ACF-F	12/08	Enquête nutritionnelle et de mortalité rétrospective – Dép. de l'Artibonite
ACF-F	12/08	Enquête nutritionnelle et de mortalité rétrospective – Département du Sud-est
ACF-F	01/09	Enquête nutritionnelle et de mortalité rétrospective – Département de SUD
FEWS	08/09	FEWS Net executive overview about food security, August 26, 2009
FEWS	09/09	Haiti Food Security Update.

## Abbreviations and acronyms

ACF	Action Contre la Faim
ACF-F	Action Contre la Faim France
ACF-USA	Action Contre la Faim United States of America
AMDA	Association of Medical Doctors of Asia
CDC	Centre for Disease Control and Prevention
CDRI	Cambodia Development Resource Institute
CI	Confidence Interval
CMR	Crude Mortality Rate
DID	Department for International Development, Government of Tajikistan
DMB	Disaster Management Bureau, Bangladesh
ECHO	European Commission Humanitarian Aid
ETB	Ethiopian Birr
FAO	Food & Agricultural Organization of the United Nations
FGD	Focus Group Discussion
FEWS	Famine Early Warning System
FewsNet	Famine Early Warning System Network
FSMS	Food Security Monitoring System
FSNAU	Food security and nutrition analysis unit
GOAL	An international humanitarian organization
HH	Household
IDP	Internal Displaced Person
INGO	International nongovernmental organization
IPHN	Institute of Public Health Nutrition
LQA	Lot Quality Assurance
MOH	Ministry of Health
MUAC	Mid-upper arm circumference
NGO	Non-governmental organization
OCHA	Office for the coordination of Humanitarian Assistance
Pr	Probability
SCUK	Save the children – United Kingdom
SMART	Standardized Monitoring & Assessment of Relief and Transitions
SNNPR	Southern Nations, Nationalities, and People's Region (Ethiopia)
SRCS	Sudanese Red Crescent Society
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission on Refugees
UNICEF	United Nations International Children's Emergency Fund
USAID	US Agency for International Development
USD	US-Dollar
WFP	World Food Programme
WHO	World Health Organization
WVI	World Vision

# Indicators and risk categories

The methodology and analysis of nutrition and mortality surveys are checked for compliance with internationally agreed standards (SMART, 2002; MSF, 2002; ACF, 2002).

Most of the surveys included in the Reports on Nutrition Information in Crisis Situations are random sampled surveys, which are representative of the population of the targeted area. The Reports may also include results of rapid nutrition assessments, which are not representative of the target population but rather give a rough idea of the nutrition situation. In that case, the limitations of this type of assessments are mentioned. Most of the nutrition survey results included in the Reports target children between 6-59 months but may also include information on other age groups, if available.

Detailed information on the methodology of the surveys which have been reported on in each issue, is to be found at the end of the publication.

## Nutrition indicators in 6-59 month olds

Unless specified, the Reports on Nutrition Information in Crisis Situations use the following internationally agreed criteria:

- . **WASTING**, defined as weigh-for-height index (w-h) < -2 Z-scores of the NCHS reference.
- . **SEVERE WASTING**, defined as weigh-for-height index < -3 Z-scores of the NCHS reference.
- . **OEDEMATOUS MALNUTRITION OR KWASHIORKOR**, diagnosed as bilateral pitting oedema, usually on the upper surface of the feet. Oedematous malnutrition is always considered as severe malnutrition.
- . **ACUTE MALNUTRITION**, defined as the prevalence of wasting (w-h < -2 Z-scores) and/or oedema
- . **SEVERE ACUTE MALNUTRITION**, defined as the prevalence of severe wasting (w-h < -3 Z-scores) and/or oedema.
- . **STUNTING** is usually not reported, but when it is, these definitions are used: stunting is defined as < -2 Zscores height-for-age, severe stunting is defined < -3 Zscores height-for-age.
- . **MID-UPPER-ARM CIRCUMFERENCE (MUAC)** As there is no international agreement on MUAC cut-offs, the results are reported according to the cut-offs used in the survey.
- . **MICRO-NUTRIENT DEFICIENCIES**  
Micro-nutrient deficiencies are reported when data are available.

Since the release of the WHO Growth Standards in 2006, results calculated using these standards are also reported, when available.

## Nutrition indicators in adults

No international consensus on a definitive method or cut-off to assess adult under-nutrition has been reached (SCN, 2000). Different indicators, such as Body Mass Index (BMI, weight/height<sup>2</sup>), MUAC and oedema, as

well as different cut-offs are used. When reporting on adult malnutrition, the Reports always mention indicators and cut-offs used by the agency providing the survey.

## Mortality rates

In emergency situations, crude mortality rates and under-five mortality rates are usually expressed as number of deaths/10,000 people/day.

## Interpretation of indicators

Prevalence of malnutrition and mortality rates are late indicators of a crisis. Low levels of malnutrition or mortality will not indicate if there is an impending crisis. Contextual analysis of health, hygiene, water availability, food security, and access to the populations, is key to interpret prevalence of malnutrition and mortality rates.

Thresholds have been proposed to guide interpretation of anthropometric and mortality results.

A prevalence of acute malnutrition between 5-8% indicates a worrying nutritional situation, and a prevalence greater than 10% corresponds to a serious nutrition situation (SCN, 1995). The Crude Mortality Rate and under-five mortality rate trigger levels for alert are set at 1/10,000/day and 2/10,000/day respectively. CMR and under-five mortality levels of 2/10,000/day and 4/10,000/day respectively indicate a severe situation (SCN, 1995).

Those thresholds have to be used with caution and in relation to contextual analysis. Trend analysis is also recommended to follow a situation: if nutrition and/or mortality indicators are deteriorating over time, even if not above threshold, this indicates a worsening situation.

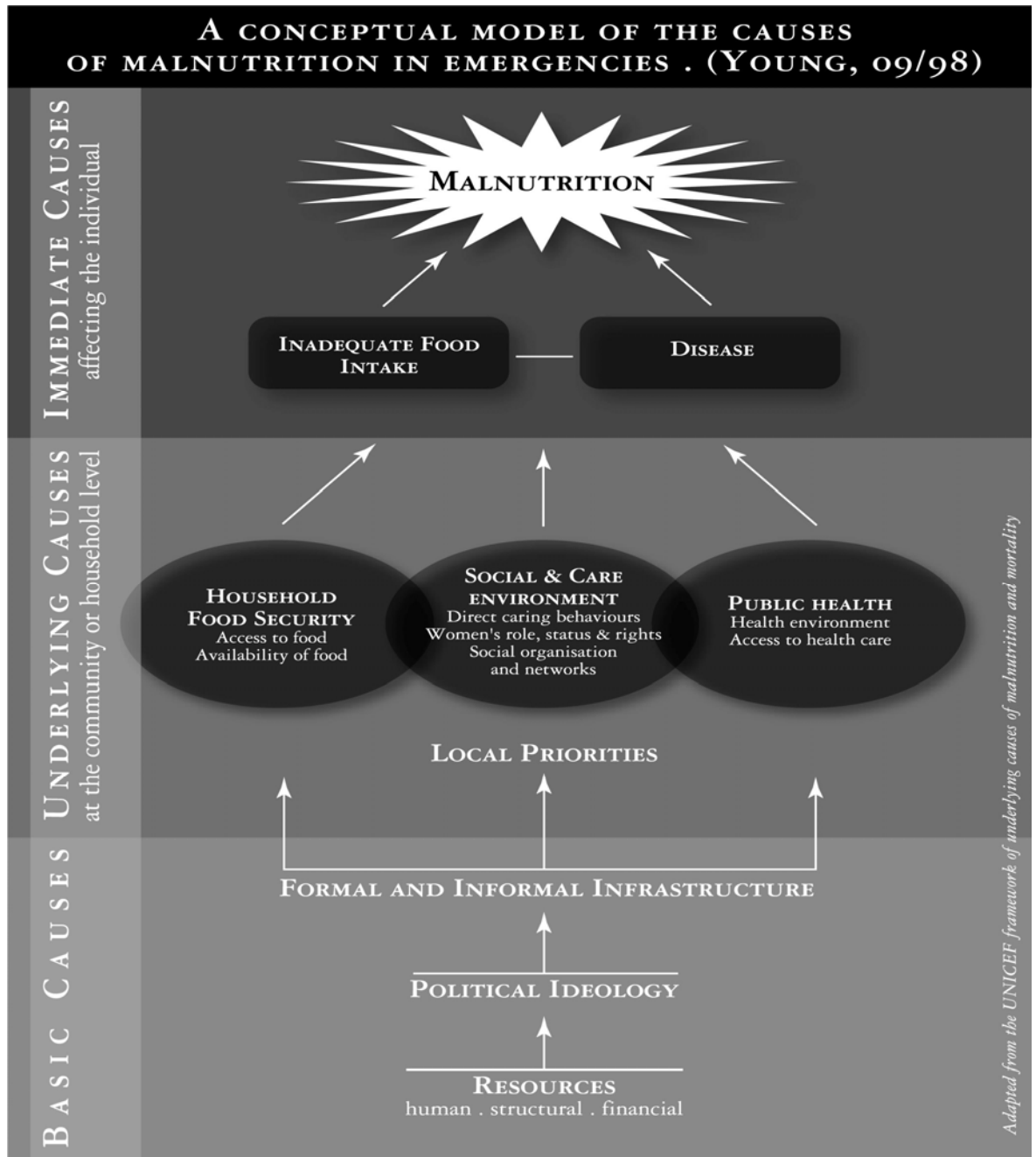
## Classification of situations

In the Reports, situations are classed into five categories relating to risk and/or prevalence of malnutrition. The prevalence/risk is indirectly affected by both the underlying causes of malnutrition, relating to food, health and care, and the constraints limiting humanitarian response. These categories are summations of the causes of malnutrition and the humanitarian response:

- Populations in *category I* – the population is currently in a critical situation; they either have a *very high risk* of malnutrition or surveys have reported a very high prevalence of malnutrition and/or elevated mortality rates.
- Populations in *category II* are currently at *high risk* of becoming malnourished or have a high prevalence of malnutrition.
- Populations in *category III* are at *moderate risk* of malnutrition or have a moderately high prevalence of malnutrition; there maybe pockets of high malnutrition in a given area.
- Populations in *category IV* are *not* at an elevated nutritional risk.
- The risk of malnutrition among populations in *category V* is *not known*.

## Nutrition causal analysis

The Reports on Nutrition Information in Crisis Situations have a strong public nutrition focus, which assumes that nutritional status is a result of a variety of inter-related physiological, socio-economic and public health factors (see figure). As far as possible, nutrition situations are interpreted in line with potential underlying determinants of malnutrition.



## References

- Action contre la Faim (2002) *Assessment and treatment of malnutrition in emergency situation*. Paris : Action contre la Faim.
- Médecins sans Frontières (2002) *Nutritional guidelines*.
- SCN (2000) *Adults, assessment of nutritional status in emergency affected population*. Geneva: SCN.
- University of Nairobi (1995) *Report of a workshop on the improvement of the nutrition of refugees and displaced people in Africa*. Geneva : SCN.
- SMART (2002) [www.smartindicators.org](http://www.smartindicators.org)
- Young (1998) Food security assessment in emergencies, theory and practice of a livelihoods approach.
- WHO 2006 Child Growth Standards (<http://www.who.int/childgrowth/en/>)

## NICS quarterly reports

The UN Standing Committee on Nutrition, which is the focal point for harmonizing nutrition policies in the UN system, issues these Reports on Nutrition Information in Crisis Situations with the intention of raising awareness and facilitating action. The Reports are designed to provide information over time on key outcome indicators from emergency-affected populations, play an advocacy role in bringing the plight of emergency affected populations to the attention of donors and humanitarian agencies, and to identify recurrent problems in international response capacity. The Reports on Nutrition Information in Crisis Situations are aimed to cover populations affected by a crisis, such as refugees, internally displaced populations and resident populations.

This system was started on the recommendation of the SCN's working group on Nutrition of Refugees and Displaced People, by the SCN in February 1993. Based on suggestions made by the working group and the results of a survey of the readers, the Reports on Nutrition Information in Crisis Situations are published every three months.

Information is obtained from a wide range of collaborating agencies, both UN and NGOs. The Reports on Nutrition Information in Crisis Situations are put together primarily from agency technical reports on nutrition, mortality rates, health and food security. The Reports provide a brief summary on the background of a given situation, including who is involved, and what the general situation is. This is followed by details of the humanitarian situation, with a focus on public nutrition and mortality rates. The key point of the Reports is to interpret anthropometric data and to judge the various risks and threats to nutrition in both the long and short term.

This report is issued on the general responsibility of the Secretariat of the UN System/Standing Committee on Nutrition; the material it contains should not be regarded as necessarily endorsed by, or reflecting the official positions of the UNS/SCN and its UN member agencies. The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the UNS/SCN or its UN member agencies, concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

---

This report was compiled with the assistance of Irmgard Jordan, by the UNS/SCN Secretariat  
Design concept: Marie Arnaud Snakkers

The chairman of the UNS/SCN is Alexander Müller

---

The SCN Secretariat and the NICS Coordinator extend most sincere thanks to all those individuals and agencies who have provided information and time for this issue, and hope to continue to develop the excellent collaboration which has been forged over the years.

---

If you have information to contribute to forthcoming reports, or would like to request back issues of the report, please contact:

Dr. Marzella Wüstefeld, NICS Coordinator,  
UNS/Standing Committee on Nutrition  
20, avenue Appia, 1211 Geneva 27, SWITZERLAND  
Tel: +(41-22) 791.04.56, Fax: +(41-22) 798.88.91,  
Email: [scn@who.int](mailto:scn@who.int)  
Web: <http://www.unsystem.org/scn>

---

Funding support is gratefully acknowledged from US Agency of International Development and UNHCR.

---

ISSN 1564-376X