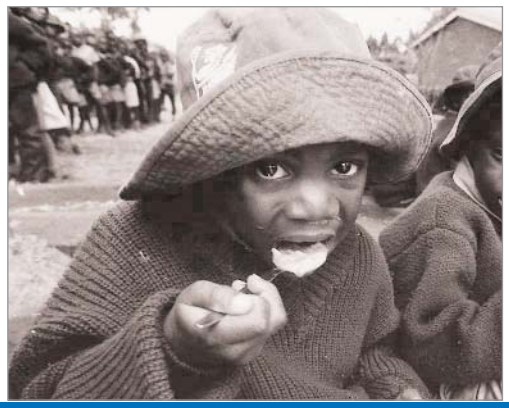




JULY 2008

Z I M B A B W E

Nutrition Sentinel Site Surveillance System

(Summary of Main Findings)

Introduction

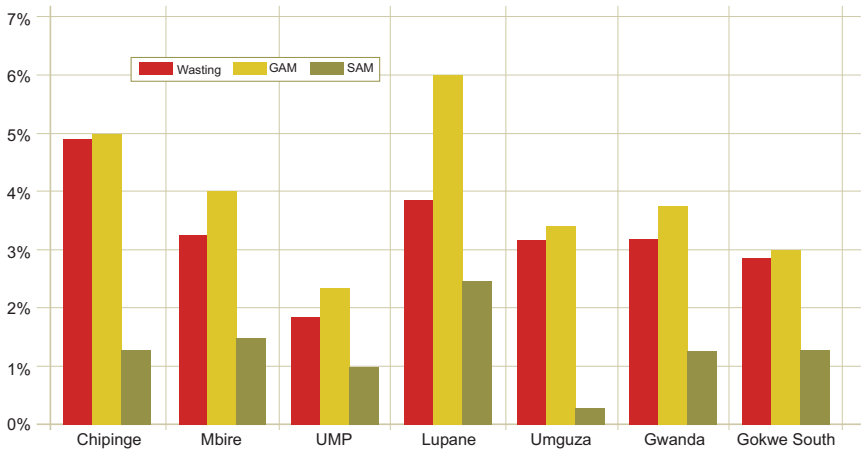
In July 2008, the Food and Nutrition Council revisited the 7 districts with the highest levels of acute malnutrition from the October 2007 Zimbabwe National Nutrition Surveillance Assessment (NaNSA). Its primary objective was to closely monitor the nutrition situation of Zimbabwe's most vulnerable areas for any indication that would suggest conditions were deteriorating in light of the prevailing economic and agricultural troubles.

Child Nutritional Status

Findings from the July 2008 surveillance exercise indicate that the acute malnutrition situation in the sentinel districts has not deteriorated to a level that would warrant immediate programmatic action such as supplementary feeding.

- The wasting prevalence was below 5% in all sentinel districts (see Figure 1).
- Children from Chipinge had the highest rate of wasting at 4.9%.
- Oedema was found in 0.7% (20[1] cases) of the children sampled.
- GAM and SAM levels for children 6-59 months old were 3.5% and 1.1%, respectively.
- The underweight prevalence for children 6-59 months old was 14.2%.
- Children from Lupane had the highest rate of underweight at 17.3%.
- The stunting prevalence for children 6-59 months old was 26.0%.
- Children from Chipinge also had the highest level of stunting at 33.0%.

Figure 1:
Acute Malnutrition by District (Zimbabwe, July 2008)



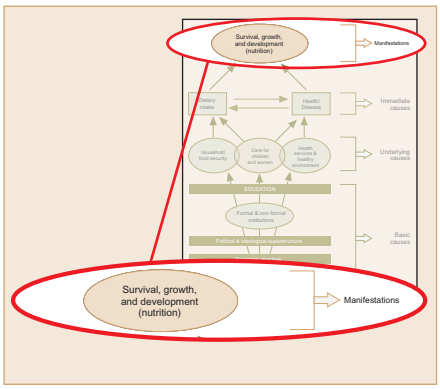
FOOTNOTE:[1]Nine cases of oedema were found in Lupane, most of which are likely the result of enumerator error in the field. An analysis of the data revealed that six of these cases were identified by just two enumerators, five of which occurred in the same EA (n=22 children). Subsequent GAM and SAM calculations for Lupane included this high oedema figure and should be interpreted with caution; total calculations of GAM and SAM do no include the Lupane cases because of their outlier status.

Acknowledgements

The exercise was aided by the generous support of various Government Ministries, including:

- Ministry of Health and Child Welfare
- Scientific and Industrial Research Development Center (SIRDC)
- Ministry of Public Service, Labor and Social Welfare
- Ministry of Agriculture
- Ministry of Local Government, Public Works and Urban Development
- Central Statistical Office (CSO)

The Food and Nutrition Council wish to gratefully acknowledge the technical support provided by the United Nations Children's Fund (UNICEF) and the financial support provided by the Department for International Development (DFID) and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Finally, FNC thank those in the communities who we serve - without their participation, this would not have been possible.



Background on NSSSS

The Nutrition Sentinel Site Surveillance System (NSSSS) was established in November 2004 by the Government of Zimbabwe as part of its commitment to monitor Millennium Development Goal 1: Eradicate extreme poverty and hunger. The NSSSS's purpose is to collect accurate and up-to-date nutrition and food security information to facilitate effective planning and programming of food and nutrition interventions.

Child Malnutrition by Age

During their first 6 months of life, children typically have limited exposure to contaminated foods and liquids and have residual antibody protection from infections conferred from their mothers' breast milk. These conditions translate into low levels of malnutrition for this age group.

However, beginning at 6 months, and continuing up to 24 months, their nutritional status deteriorates due to a combination of factors: contaminated foods and liquids are introduced into their diet, these diets are often not complemented with the appropriate quality and quantity of foods, and they lose the maternal antibody protection.

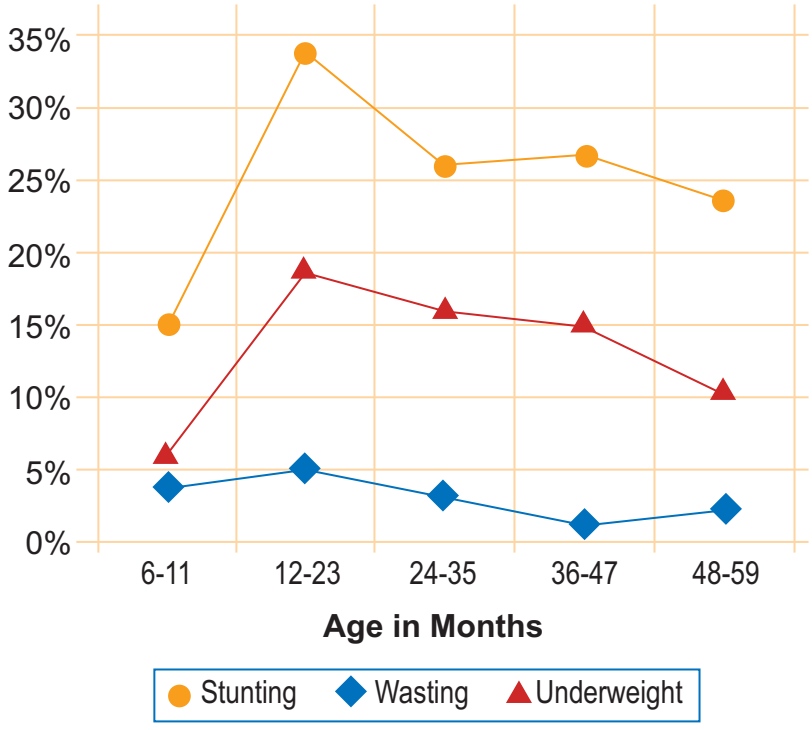
As Figure 2 shows, many children in Zimbabwe fail to completely recover from this decline, making them vulnerable to the numerous long-term effects associated with child malnutrition.

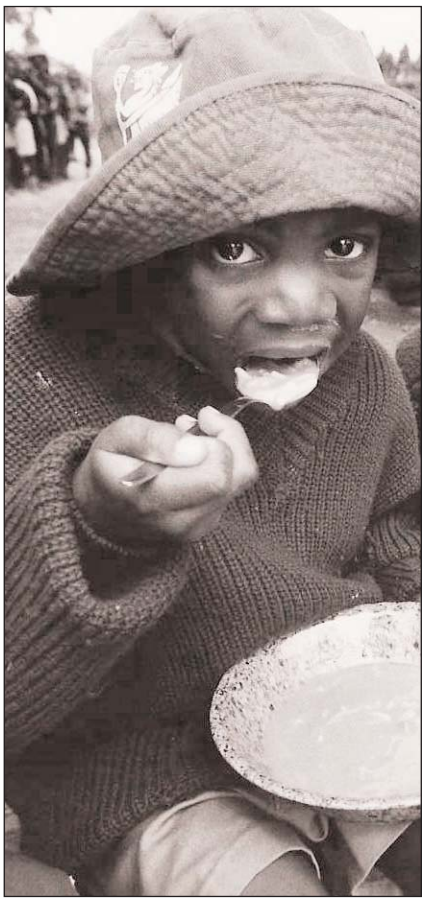
- Children aged 12-23 months had a wasting rate of 5.0%, an underweight rate of 18.3%, and a stunting rate of 32.7%, all higher than the other age cohorts (see Figure 2).

Surveillance Methodology

- Nutrition and food security information collected in the 7 rural districts with the most elevated levels of acute malnutrition from the October 2007 NaNSA between 25 - 31 July.
- 21 Enumeration Areas (EAs) sampled from each district using probability-proportional-to-estimated-size from the 2002 Census Master Frame.
- Sample sizes calculated for each district using acute malnutrition estimates from October 2007.
- EPI random-walk method used for sampling a fixed number of households within EAs.
- Information collected on 4,155 households and 3,043 children 6- to 59-months-old.

Figure 2:
Child Malnutrition by Age (Zimbabwe, July 2008)

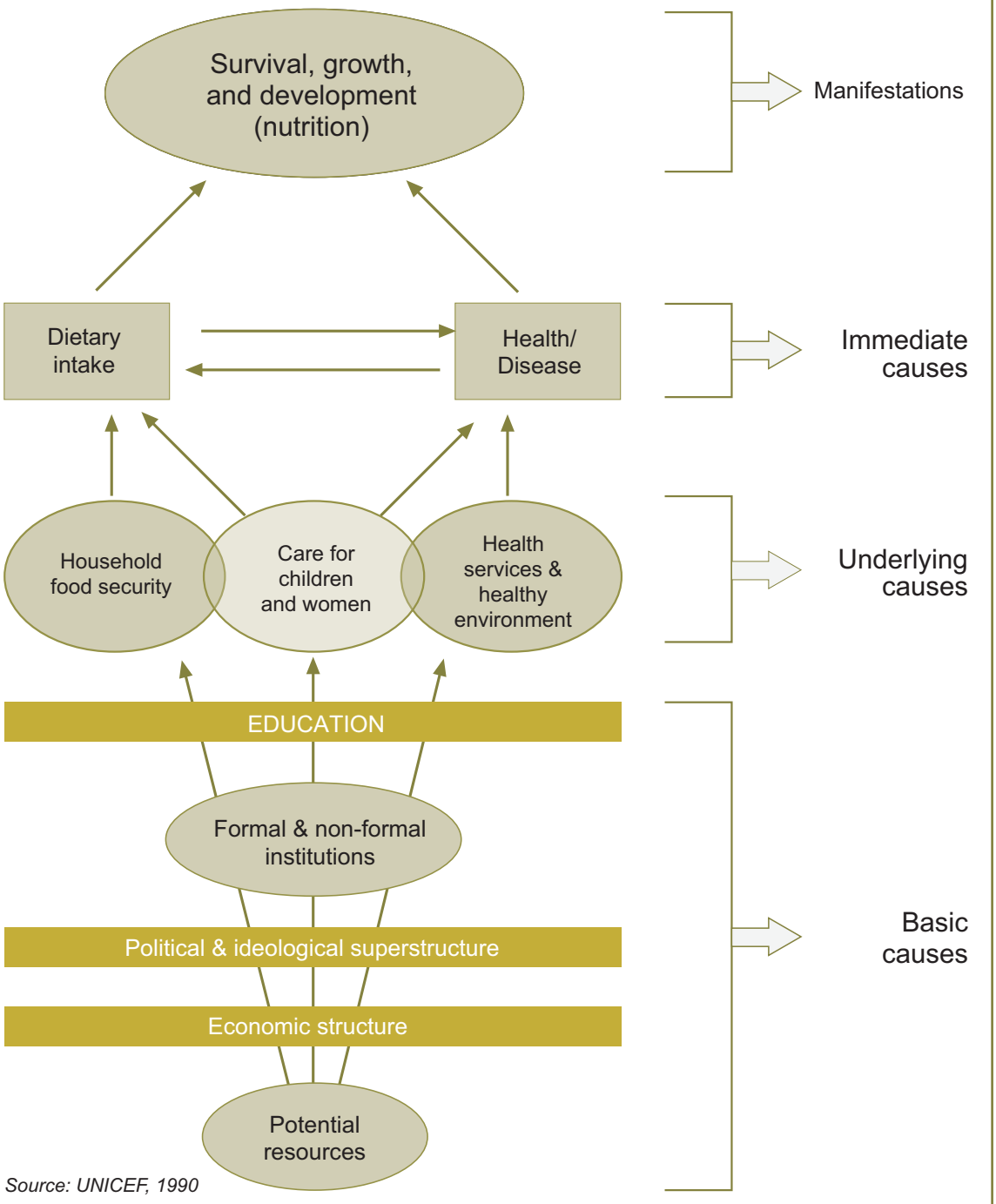




Nutrition Conceptual Framework

The Nutrition Conceptual Framework provides an appropriate lens for viewing the complex nature of child malnutrition. A child's nutritional status is the immediate result of his or her dietary intake and health status. These two immediate causes are the product of three underlying causes, namely household food security, care for women and children, and access to health services and a healthy environment. The main findings from the July 2008 NSSSS contained hereafter have been organized to follow this framework in order to facilitate a more comprehensive understanding of the current child malnutrition situation in Zimbabwe.

Figure 3:
Conceptual Framework:
Determinants of Nutritional Status and Child Survival



Source: UNICEF, 1990

Immediate Causes

Dietary Intake

When children do not consume enough macro- and micronutrients in their diet, their growth falters, or even deteriorates, because of the high demand their rapidly growing bodies place on these inputs.

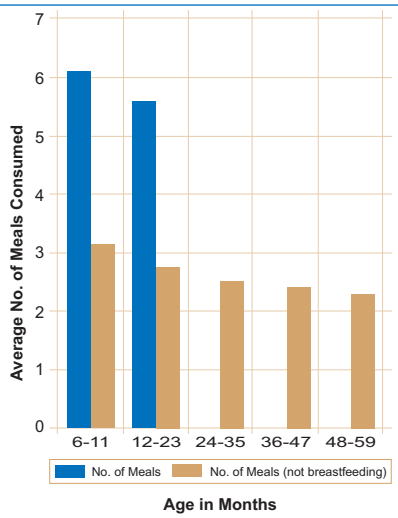


Figure 4:
Meals Consumed by Age (Zimbabwe, July 2008)

- Children under 5 were consuming slightly more than three (3.2) meals per day.
- Children living in High Vulnerability[2] households were eating significantly fewer meals (2.9) than children living in Moderate (3.2) and Low (3.4) Vulnerability households (p=.004).
- Children 6-11 months old were consuming nearly 6 (5.8) meals a day, while those 12-23 months old were consuming 4.1 meals a day (see Figure 4).
- Children aged 2 years and older were consuming just over 2 meals each day.
- Children 6-11 months old who were no longer being breastfed were significantly more likely to be wasted (p=.001) than those children of the same age who were being breastfed.

Disease

Children afflicted by disease (e.g. diarrhoea) are at risk of becoming malnourished due to their bodies' increased nutrient requirements to fight the disease and a reduced ability to absorb these nutrients from their diet during the disease. Furthermore, malnourished children are more susceptible to diseases than their well-nourished peers, often creating a cycle of sickness and malnutrition from which the child is unable to completely recuperate, thereby permanently reducing his or her growth potential.

- 19% of children 6-59 months old reportedly had diarrhoea during the two weeks prior to the surveillance exercise.
- This represents a dramatic increase compared to the October 2007 NaNSA, where the mean diarrhoea prevalence for the same 7 districts was 9.1%.
- More than 1 in 4 children aged 6-59 months reportedly had diarrhoea in Gokwe South (29%) and Mbire (27%).
- Diarrhoea prevalence decreased with age, with 38 % of 6- to 11-month-olds having diarrhoea in the two weeks prior to the exercise, compared to just 7% of 48- to 59-month-olds over the same period (see Figure 5).
- Children reported to have diarrhoea in the two weeks prior to the survey were significantly more likely to be wasted than those children who did not have diarrhoea (p=.017).

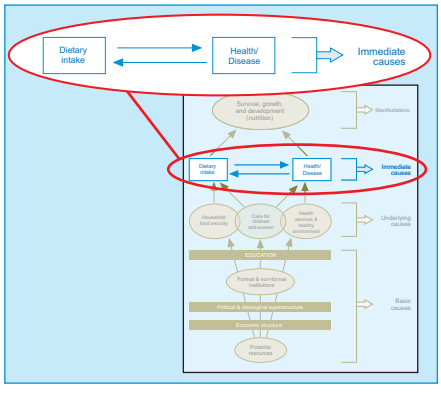
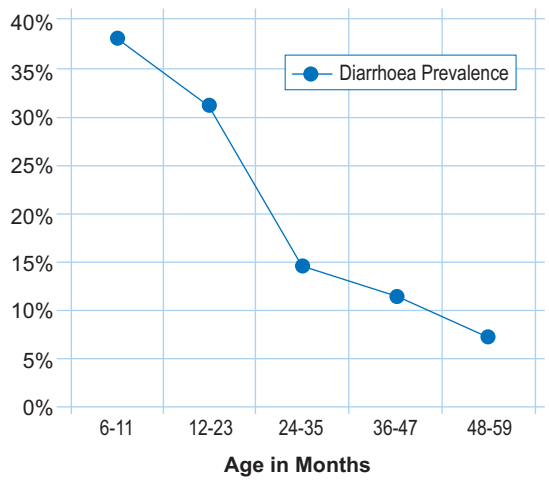


Figure 5:
Diarrhoea Prevalence by Age (Zimbabwe, July 2008)



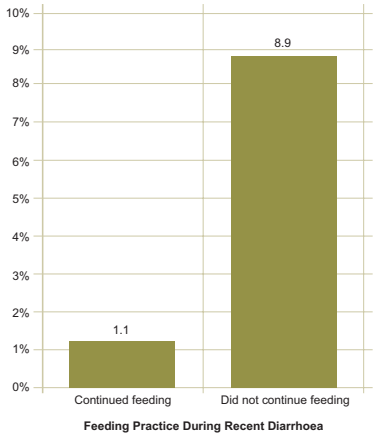
FOOTNOTE:[2]See Household Vulnerability Section, page 10, for definition.

Care for children & women

The effective promotion of healthy caring practices for women and their children plays an essential role in ensuring that children are free to grow to their highest potential.

These practices include adherence to Infant and Young Child Feeding (IYCF) guidelines, accessing antenatal care during pregnancy, and seeking or providing appropriate treatment when a child is sick.

Figure 6: Wasting Among 6- to 11-month-olds with Recent Diarrhoea (Zimbabwe, July 2008)



Breastfeeding

IYCF guidelines recommend exclusive breastfeeding for the first six months of a child's life because a mother's breast milk contains all the nutrients and calories growing children need for this stage of their development. IYCF guidelines further advise the continuation of breastfeeding, with complementary feeding, up to 24 months of age.

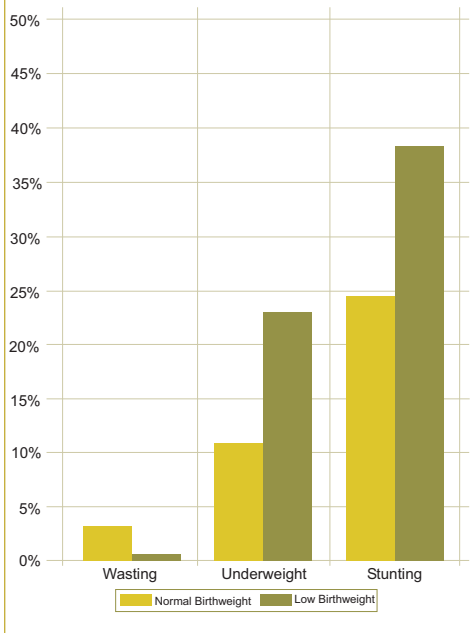
- The median age at which children 6-59 months old had received soft foods or other liquids was 3 months.
- 23% of children received these foods or liquids within their first month of life.
- Breastfeeding was nearly universal for the 12-15 month cohort at 80%.
- Only 20% of children aged 20-23 months were still being breastfed.

Diarrhoea Management

The appropriate management of childhood infections often determines whether a child who does become sick will recover quickly and completely. WHO guidelines recommend that children with diarrhoea receive ORT (oral rehydration therapy) or increased liquids, plus continued feeding and/or increased breastfeeding, to properly manage the episode.

- Among children 6- to 59-months-old, less than half (47%) had their recent episode of diarrhoea managed properly.
- Three in five (61%) children with diarrhoea were given some form of ORS during the episode (either ORS sachets or homemade sugar-salt-water solutions).
- 73% of children with diarrhoea continued to be fed during the episode, while only 39% received more liquids.
- These components are particularly important for young children: those aged 6-11 months with diarrhoea and who continued feeding during the episode were significantly less likely to be wasted compared to those who did not continue feeding (p=.023) (see Figure 6).

Figure 7: Child Malnutrion by Birthweight (Zimbabwe,July 2008)



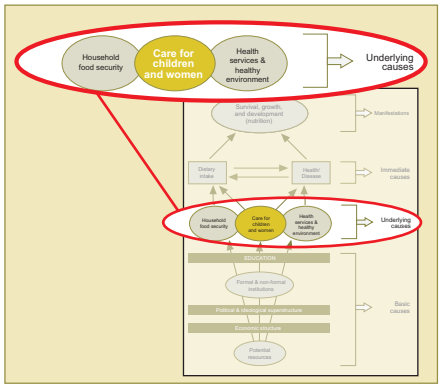
Low Birth Weight

Low birth weight (< 2500 grams) among children serves as a useful proxy for the nutritional status of their mother during pregnancy and at birth. Small mothers have an increased risk of having low-birth-weight babies. Furthermore, mothers who do not access proper antenatal care increase the risk that their baby will not grow properly in utero or carry to full term.

- Among the 6- to 59-month-olds sampled, 1 in 10 (9.2%) were born with low birth weight.
- Low-birth-weight babies were significantly more likely to be underweight and stunted (p=.000 and .000, respectively) than those born weighing more than 2500 grams (see Figure 7).

Mother's were also asked to qualitatively describe the size of their baby at birth.

- Overall, 11.3% reported their baby was smaller than average, while 4.7% described their baby as very small at birth.



Household Food Security

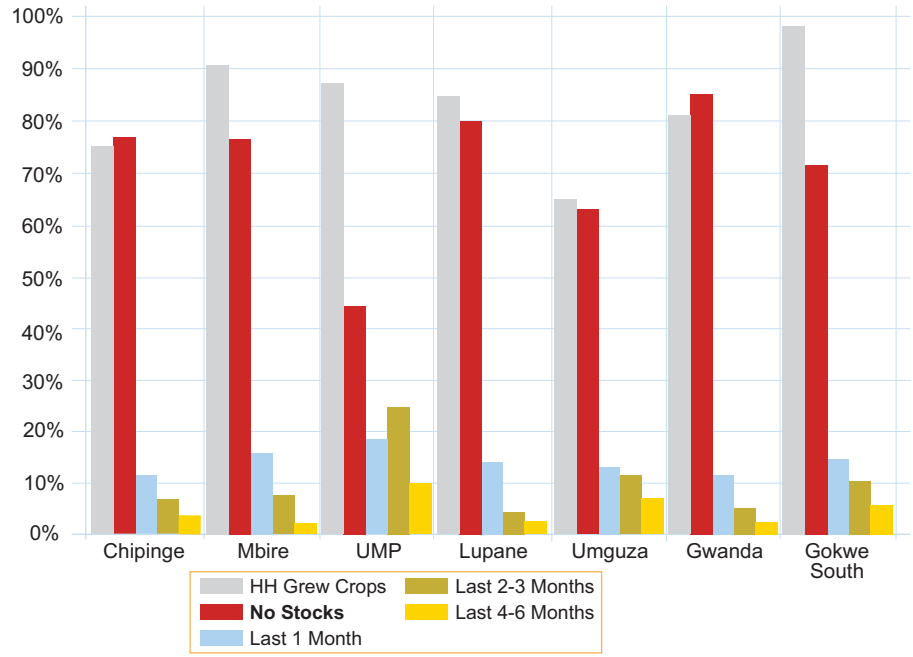
Food security refers to access by all people at all times to sufficient, safe and nutritious food for a healthy and active life.

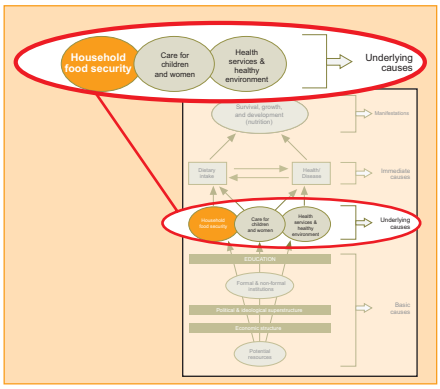
There are three components to food security: availability (sufficient quantities of appropriate food are available); access (adequate income or other resources to access appropriate food) and utilization (food is properly used through appropriate knowledge)

Availability[3]

National production of maize in 2008 is estimated at 575 000 tonnes, which is 28 percent lower than the production in 2007. Estimates of the total domestic cereal availability for 2008/09 marketing year are 848 000 tonnes, about 40 percent below last year's domestic supply. Rainfall through December and January led to water logging of crops and flooding of land. The second half of the season experienced extremely dry weather. Other factors responsible for this year's decline, in addition to poor weather conditions, were untimely delivery of seeds and shortages of fertilizer, infrastructure, and unprofitable prices for most of the GMB-controlled crops.

Figure 8:
Current Household Stocks (Cereal/Staple) from Own Production (Zimbabwe, July 2008)





Current Household Stocks (Cereal/Staple) from Own Production

- The majority of households in the sentinel districts grew crops during the September 2007 to April 2008 season (see Figure 8). Few households, however, will have stocks to carry them to the next harvest; 70% of households had no current stocks at time of survey and 15% of households reported their stocks would last one month.
- Gwanda has the highest percent (85%) of households with no stocks.
- More households in UMP than any other district had remaining stocks: 24% had 2-3 months left, while 8.7% had 4-6 months of cereals/staples still in stock.

Livestock ownership

- 21% of all households sampled did not have any livestock; 42% of the households in Umguza did not have any livestock, 40% in Chipinge and 26% in Mbire.

FOOTNOTE: [3]FAO/WFP Crop and Food Supply Assessment Mission to Zimbabwe, 2008

Access[4]

Economic decline has continued with increasing levels of poverty. There has been a decline in employment opportunities with unemployment levels estimated to be upwards of 70 percent. Food price inflation has exceeded that of non-food inflation. In addition, salary increases are not keeping up with prices, reducing the purchasing power of incomes.

Primary Source of Main Cereal Currently Used

- UMP is showing that the source of cereals for the majority of households (64%) is from their own production (see Figure 9).
- Gwanda has the highest percentage (48.5%) of households reporting that the main source for cereals is the formal market (GMB).
- Mbire, Chipinge and Gokwe South are relying on the informal market for current cereal more so than their own production and formal markets.

Main Source of Income

- The main sources of income (see Figure 10) for all sentinel districts (30 days prior to survey) are vegetable sales (26.4%), casual labor (25.6%), crop sales (13.3%), petty trade (9.6%), livestock sales (8.1%) and formal income (6.8%).
- Mbire and Gokwe South have a higher percentage of households engaging in crop sales, 42% and 30% respectively, than other sentinel districts.

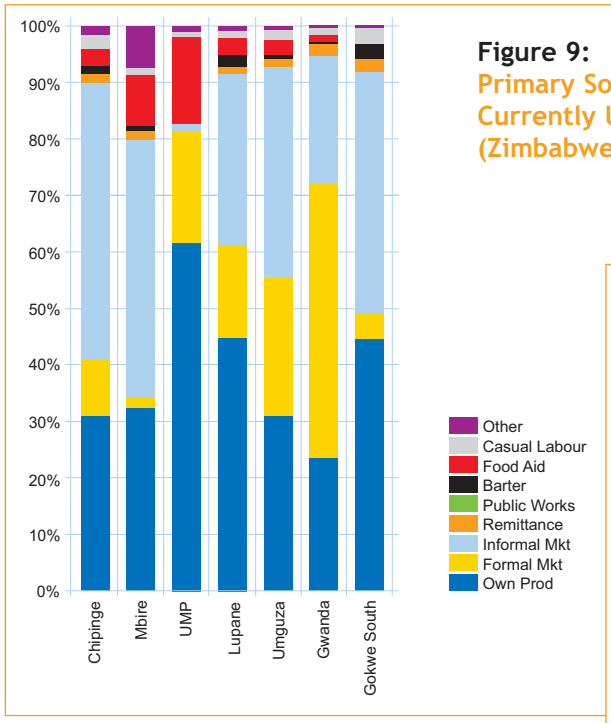


Figure 9:
Primary Source of Main Cereal Currently Used (Zimbabwe, July 2008)

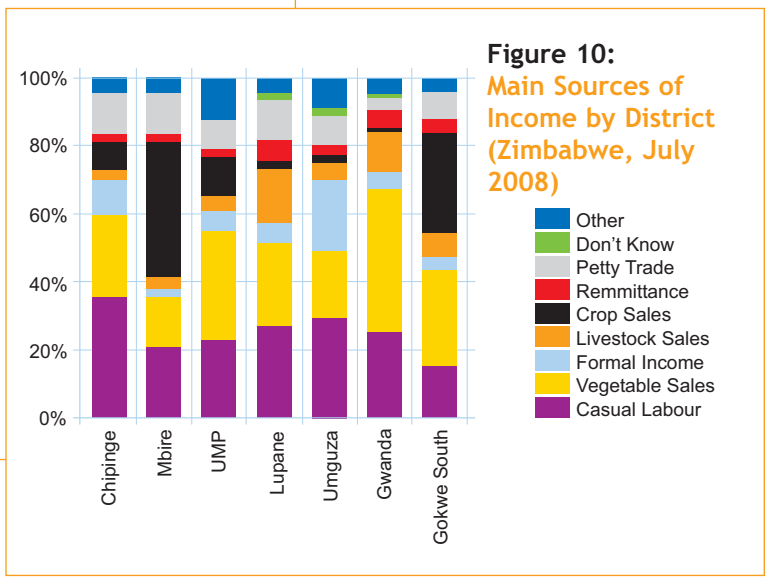


Figure 10:
Main Sources of Income by District (Zimbabwe, July 2008)

Acquired Cereals or Staples from Sources other than Own Production

- 35% of households reported not having any other source of food other than their own production.
- Purchasing food was reported by 52% of households as a source other than own production.

Sold or Bartered Assets for Food

- About 30% of households reported having to sell or barter an asset to buy food. Figure 11 shows that, of assets disposed, 65% were poultry and livestock.
- Among the households who had remaining cereal stocks, 30% sold assets to buy food.

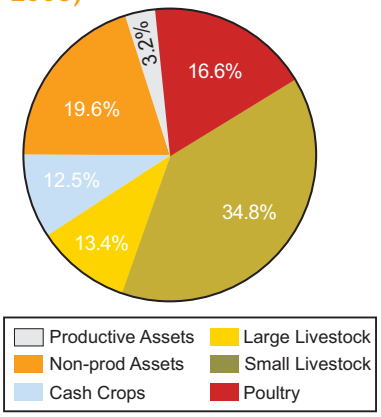
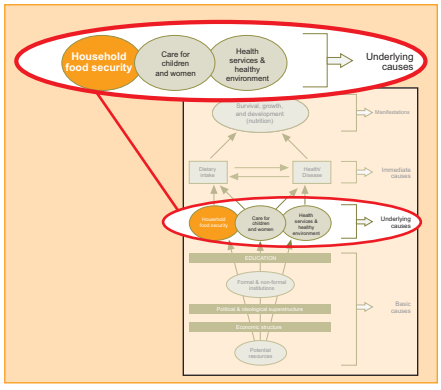


Figure 11:
Percentage of Households that Sold or Bartered Assets for Food (Zimbabwe, July 2008)



FOOTNOTE:[4]FAO/WFP Crop and Food Supply Assessment Mission to Zimbabwe, 2008

Utilization

Number of Meals Adults in the Household had Eaten the Previous Day

- The average number of meals eaten by adults the previous day was 1.8 meals.
- Approximately one third (34%) of all households had only one or less meals the previous day.
- The percentage of households with adults having one or less meals a day was higher in every Vulnerability[5] category (see Table 1).
- 40% of elderly headed households ate one or less meals a day as compared to female headed (32.6%) and male headed (30.7%) households.
- Among households with a High Vulnerability score, 67% had eaten one or less meals, among Moderate Vulnerability 29.7% of households, and Low Vulnerability only 3.8%.

Dietary Diversity Classification

Households were asked how many times they consumed 14 types of foods in the last seven days. The frequencies of these were then summed and also weighted based on the nutritional value of the food. Households were then categorized into "Poor", "Borderline" and "Adequate". A score of poor is equivalent to only having eaten cereals and vegetables on a daily basis (in the last 7 days). This is considered to be the minimum consumption and a sign of household food insecurity[6].

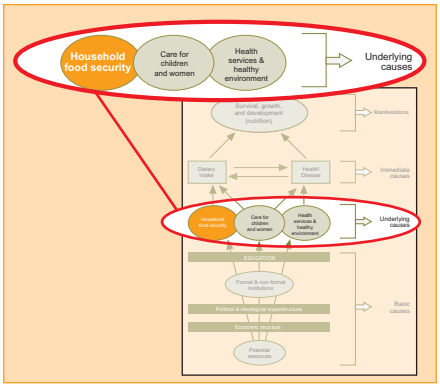


Table 1: Percentage of Households with Adults Eating One or Less Meals the Previous Day by Vulnerability Characteristics

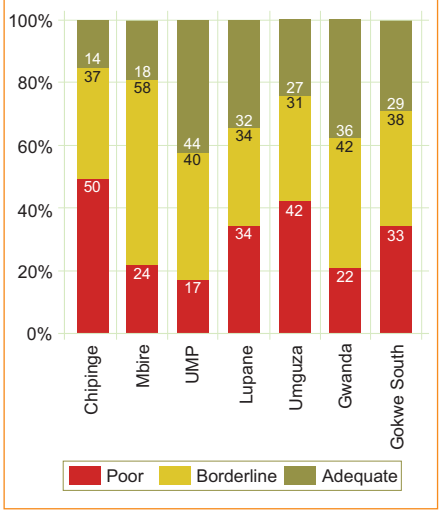
Vulnerability Characteristic	(Yes)	(No)
High Dependency Ratio	44.4	31.5
Disabled Person in HH	40.4	32.8
Orphan in HH	38.9	30.3
Chronically Ill Person in HH	40.7	32.3
Low HH Vulnerability	3.8	--
Moderate HH Vulnerability	29.7	--
High HH Vulnerability	66.9	--
Male Headed (18-59)	30.7	--
Female Headed (18-59)	32.6	--
Elderly Headed (60+)	40.7	--
Adequate Dietary Diversity	18.4	--
Borderline Dietary Diversity	32.8	--
Poor Dietary Diversity	47.2	--
Total % of HH Eating One or Less Meals	**33.5**	

**HH=Household*
*** All correlations significant*

Household Dietary Diversity

- Half of the households in Chipinge had poor dietary diversity, meaning they were only eating the equivalent of a meal with cereals and vegetables daily (See Figure 12).
- Gwanda (42%), Lupane (38%) and Umguza (35%) all had over a third of the households with poor dietary diversity.
- Almost half of the households in UMP reported adequate diversity, which is an indication that they are consuming more high quality foods other than cereals and vegetables.

Figure 12:
Dietary Diversity by District (Zimbabwe, July 2008)



FOOTNOTE:[5]See Household Vulnerability Section, page 10, for definition.
[6]Community Household Surveillance (CHS), World Food Program. May, 2008.

Health Services & Healthy Environment

Health services and healthy environments are pre-conditions for well-nourished children primarily because in their absence, children are more likely to be affected by childhood diseases.

The availability of and a household's access to health services are often measured using outcome indicators, such as immunization status and place of delivery.

The degree to which a household has a healthy environment is traditionally measured by input indicators, such as having an improved drinking water source and improved sanitation facility.

Health and Immunization

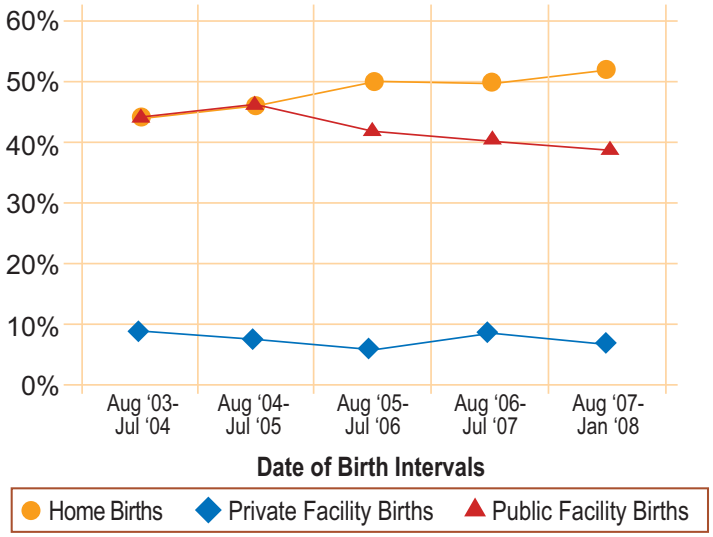
- 90% of children 6-59 months old possessed a Child Health Card (93% of children 12-23 months old possessed a Child Health Card).
- 66% of children 12-23 months old attended the previous round of Child Health Days in December 2007.
- Of children 12-23 months old, 97.7% had received BCG, 71.8% had received DPT3, 87.3% had received measles and 69.3% had received a Vitamin A capsule.
- 68 % of children 12-23 months old were fully vaccinated (BCG, DPT3, and measles).
- Children 12-23 months old who attended the last round of Child Health Days were significantly more likely to have received BCG vaccination, DPT3, measles, be fully immunized, and have received Vitamin A supplementation than those who did not (p=.000).

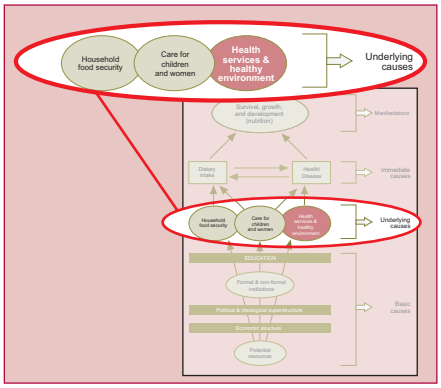
Place of Delivery

Mothers were asked where each child aged 6-59 months was born.

- Nearly half (48%) of children 6-59 months old were reportedly born at home.
- A further 43% were born in a public facility, with 9% born in a private facility.
- Children born recently (6-11 months old) were significantly more likely to be born at home rather than a public facility, compared to older (48-59 months old) children (p=.029) (see Figure 13).

Figure 13:
Birth Location by Age Cohort (July 2008)



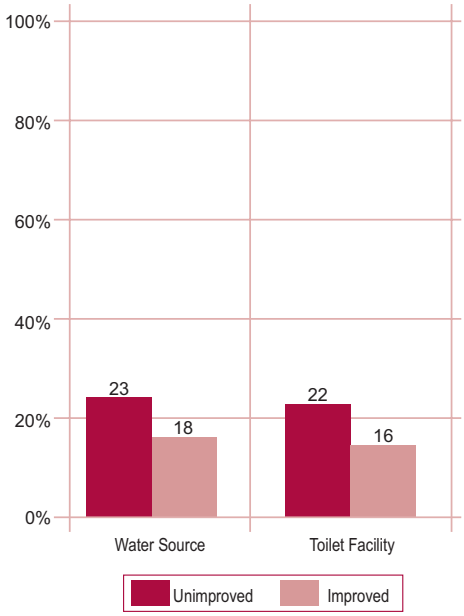


Underlying Causes

Access to Improved Water Source and Improved Toilet Facility

- 63% of households reported they had access to an improved source[7] of water for drinking.
- 1 in 3 households (35%) reported they had access to an improved toilet source[8].
- Children 6-59 months old living in households with improved sources of water and sanitation had significantly fewer reports of diarrhoea than those who did not (p=.000 and p=.000, respectively) (see Figure 14).

Figure 14: Diarrhoea Prevalence by Water and Sanitation Source (Zimbabwe, July 2008)

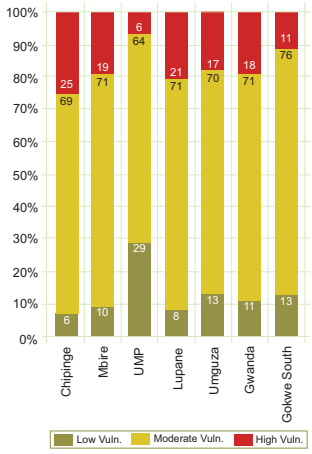


Household Vulnerability

Household vulnerability was calculated using 13 different variables/ indicators that include the areas of household demographics/headship, food access and utilization, wealth, negative coping and health. For each household, the number of different characteristics was summed (1 for "Yes" and 0 for "No") and then they were classified as having Low Vulnerablity (0-1 characteristics), Moderate (2-5 characteristics) or High (6 or more characteristics) Vulnerability[9].

- Chipinge had the highest percentage (25%) of households that were classified as being Highly Vulnerable. Lupane and Mbire followed with 21% and 19% respectively.
- All districts have high percentages of households that are Moderately Vulnerable, indicating slight changes in any of the characteristics could shift the household into High Vulnerability.

Figure 15: Household Vulnerability by District (Zimbabwe, July 2008)



July 2008 NSSSS Sample Characteristics

Table 2: District Sample Sizes

	No. of HHs	% of Sample
Chipinge	587	14.1
Mbire	565	13.6
UMP	536	12.9
Lupane	650	15.6
Umguza	577	13.9
Gwanda	714	17.2
Gokwe South	526	12.7
Total	**4155**	**100.0**

Table 3: Household Demographic Profile

Household (HH) Sample Demographic Characteristics	
Mean HH Size	5.7
Male Headed HH (18-59)	44.3%
Female Headed HH (18-59)	34.4%
Elderly Headed HH (60+)	20.8%
Child Headed HH (0-17)	0.5%
80% or more dependents	15%
Adult Death in HH (18-59)	8.7%
Chronically Ill Adult in HH(18+)	15.1%
Disabled person in HH (0-59)	8.9%
Presence of Orphan in HH (0-17)	37.9%

FOOTNOTE:[7]Improved water source defined as: piped (treated), borehole, protected well/spring, and rainwater harvester; unimproved water source defined as: piped (untreated), surface water (river, lake, dam), unprotected well/spring.
[8]Improved toilet source defined as: flush toilet, pit latrine, Blair toilet, EcoSan AND household did not share the toilet with any other households; unimproved toilet facility defined as: bush/none OR household shared toilet source with at least one other household.
[9]Indicators for vulnerability: Child/Female/Elderly Headed HH, High Dependency Ratio (80%+), Disabled Person in HH, Chronically Ill Person in HH, Adult Death in HH in past 12 months, Orphan in HH, HH has no cereal stocks, Poor dietary diversity, HH owns no livestock, HH sold assets for food in past 30 days, HH has unimproved water/sanitation, HH is asset poor, HH adults ate one or less meals previous day.