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Mortality, malnutrition and the humanitarian response to the food crises in Lesotho

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Abstract

Background: At the height of the food crisis in southern Africa, the Government of Lesotho declared a state of famine and emergency in April 2002 and launched a Famine Relief Appeal for over \$137 million. World Vision, in partnership with the World Food Program, became involved in December 2002 providing food aid to affected communities.

Objective: to document mortality rates, causes of death, malnutrition prevalence, and the proportion of lost pregnancies after almost three years of humanitarian response to the food crisis in Lesotho and to propose a way forward.

Design: A two-stage, 30 cluster household survey was undertaken in three districts from the 16th to the 26th of May 2005, with a sample size of 3610 people.

Results: The crude mortality rate (CMR) of 0.8/10,000/day (95%CI: 0.7-0.9). The reported CMR was significantly lower than the CMR emergency threshold (<1/10,000/day). Using 2000 as a pre-drought baseline, 38528 excess deaths occurred between 2000 and 2005. The under-five mortality rate (U5MR) of 3.2 deaths/10,000/day (95%CI: 2.8-3.6/10,000/day) was 4 times the reported CMR and 1.4 times higher the U5MR emergency threshold for sub-Saharan Africa (2.3/10,000/day). CMR was lower among food aid beneficiaries (0.68; 95%CI: 0.57-0.79) than non-beneficiaries (1.42; 95%CI: 1.13-1.70). This was also true for U5MR (2.94; 95%CI: 2.39-3.50 versus 6.44; 95%CI: 5.21-7.68). The prevalence of wasting increased from 5.4% to 12% while that of stunting declined from 45.4% to 36.2% between 2000 and 2005, but the nutritional status did not vary by beneficiary status.

Conclusion: Despite the alarming U5MR, findings suggest that the food aid program ensured survival mainly among adults. The situation could have been catastrophic in the absence of humanitarian assistance.

Keywords: drought; food aid; Lesotho; malnutrition; mortality

Background

Over the last six years, the Southern African region has experienced severe acute food crises resulting from erratic weather conditions, endemic soil erosion and the impact of HIV/AIDS. Drought and floods with the shortage of seeds and fertilisers have affected cereal production, leading to the decline in cereal production, especially maize, the region's main staple food (Table 1).¹ During the 2002-2003 period, it was estimated that the food shortage affected approximately 15 million people in six countries of southern Africa (Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe).^{2,3} Food shortage has been exacerbated by the impact of HIV/AIDS. With an HIV/AIDS prevalence among adults varying between 13-34%,⁴ the negative side effects have included the depletion of human capital, loss of labour, diversion of resources from agriculture, erosion of the asset base to cover increased cost of health care, and diminished capacity to care for the future generation (i.e. children).⁵⁻⁷ While the response to the crisis has been comprehensive, the impact of humanitarian relief programs on the wellbeing of the affected populations remained unexplored. This paper presents data from the mid-term evaluation of the food aid programs in Lesotho.

Table 1a. Cereal production in selected countries in southern Africa (Metric tonnes).

Country	Cereal	Year			
		1999	2000	2001	2002
Lesotho	Maize	124,500	97,100	103,000	82,000
Malawi	Maize	2,479,400	2,501,300	1,696,000	1,600,000
Mozambique	Maize	1,246,100	1,019,000	1,143,000	1,240,000
	Sorghum	326,300	252,500	263,000	364,000
Swaziland	Maize	113,000	84,500	73,000	70,000
Zambia	Maize	855,900	881,600	802,000	602,000
Zimbabwe	Maize	1,519,600	2,108,100	1,480,000	509,000
	Sorghum	85,600	103,300	60,700	37,000
	Wheat	320,000	250,000	280,000	213,000

Source: ¹

Lesotho: a historical perspective

Lesotho, a landlocked mountain kingdom of 2.2 million people, has faced severe and erratic weather patterns since November 2001. During the 2001/2002 cropping season, Lesotho experienced unseasonably heavy rainfalls countrywide, hailstorms in the southern districts and severe and early frost. The following cropping season (2002/2003) was very dry, which prevented timely planting of food crops. The winter of 2003 saw neither rain nor snow throughout the season. This meant that winter crops could not be planted. The drought continued through the summer of 2003 delaying planting of crops for that season. With 80% of the population depending on agriculture for subsistence,⁸ communities have experienced not only food insecurity, but also severe water shortages. In 2003 it was estimated that cereal production was 60 percent lower than in normal years and the production of legumes such as beans and peas was also extremely low.⁹ Trend analysis of agricultural outputs indicates that on average maize and sorghum yields have declined from 1400 kg/hectare in 1970's to 450-550 kg/ha 2000's.¹⁰ With livestock providing a vital source of cash to buy food when agricultural production is low, and commonly used for ploughing, the significant theft of livestock within villages and across borders to South Africa has taken its toll.⁹ Food insecurity has further been exacerbated by increased levels of poverty, unemployment, environmental degradation, economic instability and high level of dependency on external aids and import of goods.^{8,10} Taken together with the HIV/AIDS prevalence of 31%⁴, the aggregate of these factors has resulted in the poor being severely affected.

The Government of Lesotho declared a state of famine and emergency in April 2002 and launched a Famine Relief Appeal for over \$137 million.¹¹ The government requested the UN agencies and other local and international communities to join in the fight against food insecurity in the country. An UN consolidated appeal to the international community also followed in July 2002.¹² It was estimated then that 444,800 people, 14% of whom were children, required humanitarian assistance, including food aid. It was expected that emergency operations in Lesotho could end in December 2004, but the World Food program (WFP) extended its Emergency Operation Plan (EMOP) to September 2005 due to the continuing food insecurity. It was predicted that up to 948,000 people (nearly half the population) would experience a food shortage over the six months leading up to June 2005. Early June 2005 the FAO/WFP Crop and Food Supply Assessment Mission were reporting that 548,800 people would have significant food deficit between June 2005 and March 2006.¹³

World Vision (WV) in partnership with WFP became involved in December 2002 providing food aid to affected communities. The key responsibility was to oversee the distribution of WFP supplied food to the target population, while the government of Lesotho was responsible for logistics (warehousing and transport to final distribution points). From December 2002 to May 2005, there had been eight field level agreement (FLA) phases/extensions negotiated with WFP each of varying durations. Between December 2002 and June 03, the project target districts were Mohale's Hoek, and Quthing in the south, with a target population of 123,300. In October 2003 two new districts were added, Berea and Leribe in the North and North West, taking the total target population to 129,000. By May 2004 the target population had increased under FLA to 240,000, which by October 2004 had decreased, to 115,940. In January 2005 at WFP's request, WV took over the operations in Mafeteng district reaching around 270 distribution points in each district.

In the initial phases the project targeted the food insecure under a general distribution. The following programs were established in response to the crisis: the Maternal and Child Health; the Chronically Ill (predominantly those believed or known to be suffering with HIV/AIDS and Tuberculosis including those receiving home-based care); vulnerable group feeding, being the disabled and the aged without adequate means of support; orphans and vulnerable children through school take home rations; and Food For Work (Table 1a). However, each FLA extension was not always accompanied with accurate baseline data nor was the decision to start or close a program informed by population-based epidemiological data on mortality and malnutrition. The purpose of this study was to document mortality rates, causes of death, malnutrition prevalence, and the proportion of lost pregnancies after almost three years of humanitarian response to the crisis and to propose a way forward.

Table 1b: World Vision Programs in response to the food Crisis in Lesotho by period

PERIOD	DISTRICT	TARGET GROUP	COMMODITIES
Oct 02 – Jun 03	Mohales Hoek Quithing	Maternal and Child Health (a) Chronic illness: HIV/AIDS/TB (b) Orphan and Vulnerable Children (c)	Maize meal Pulses, Veg oil
Oct 03 – Apr 04	Mohales Hoek Quithing Berea Leribe	Vulnerable Group Feeding (d) Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children Food For Work School feeding (e)	Maize meal, Pulses Veg oil, and CSB*
May 04 – Aug 04	Mohales Hoek Quithing Berea Leribe	Vulnerable Group Feeding Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children Food For Work	Maize meal, Pulses Veg oil, and CSB
Sep 04	Mohales Hoek Quithing Berea Leribe	Vulnerable Group Feeding Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children Food For Work	Maize meal, Pulses, Veg oil, and CSB
Oct 04 to Dec 04	Mohales Hoek Quithing Berea Leribe	Vulnerable Group Feeding Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children Food For Work	Maize meal, Pulses Veg oil, and CSB
Jan 05 – Mar 05	Mohales Hoek Mafeteng	Vulnerable Group Feeding Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children Food For Work	Maize meal, Pulses Veg oil, and CSB
Apr – Jun 05	Mohales Hoek Mafeteng	Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children	Maize meal, Pulses Veg oil, and CSB
Jul 05 – Sep 05	Mohales Hoek Mafeteng	Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children	Maize meal, Pulses Veg oil, and CSB
Apr 06 – Jun 06	Mohales Hoek Mafeteng	Maternal and Child Health Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children	Maize meal, Pulses Veg oil, and CSB
Jul 06 – Sept 06	Mohales Hoek Mafeteng	Chronic illness: HIV/AIDS/TB Orphan and Vulnerable Children	Maize meal, Pulses Veg oil, and CSB

a)A feeding program for pregnant and lactating mothers and children under five years of age, b) Home-based care feeding for people with a chronic disease, c) Orphan and Vulnerable Children included orphans of one parent (where the breadwinner died) or both parents and were identified by school advisory committees and village chiefs; d) Those without enough food/no food at all; e) Feeding programs for school children in grades 5 to 7 as an incentive to attend school instead of dropping out.

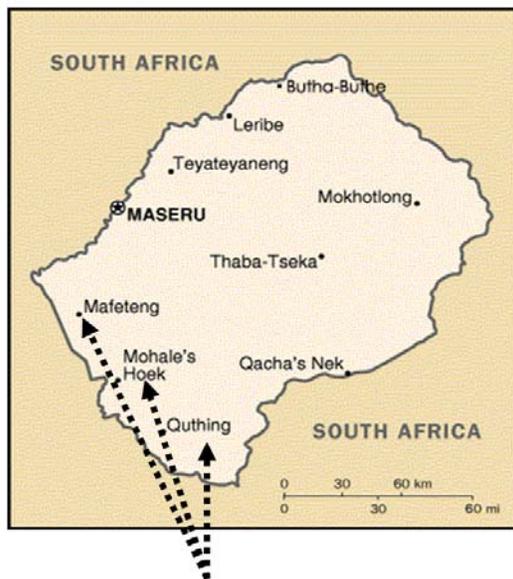
* Corn Soya Blend

Methods

Study design, sample and procedure

The current study used a two-stage sampling design comprising 30 clusters¹⁴⁻¹⁶ in three districts: Quthing, Mafeteng, and Mohale's Hoek. At the inception of the relief programs, no population-based data on mortality or nutritional status were established and existing data have been collected on ad hoc basis by the World Food Program. Available data on mortality reported a national crude mortality rate (CMR) of 0.41/10,000/day in 2000.¹⁷ The studied districts were rural and the most severely affected by drought and HIV/AIDS.⁸ Hence, it was assumed that the CMR would be higher in these districts, and a CMR of 1/10,000/day was considered for the sample size calculation. Moshoeshe Day was used as a reference for the recall period. Moshoeshe was the founder of the Basotho nation and his legacy is celebrated on March 11 each year. On this basis the recall period for assessing mortality rate was from March 11, 2004 to the survey dates (i.e. from May 16th to Friday 26th 2005). The survey dates corresponded to 9 days excluding Saturdays and Sundays, and the median survey date¹⁸ (i.e. May 20, 2005) was considered to be the end of the recall period thus corresponding to a 435-day period. Using this recall period with a 95% confidence interval of $\pm 0.5/10,000/\text{day}$ and a design effect of 2,^{16,19} the required sample size was 3,655 persons or 703 households (estimating a mean household size of 5.2).⁸ It was further estimated that 731 children were required for anthropometric assessment assuming the proportion of children under the age of 5 years represents 20% of the total population²⁰, an acute malnutrition prevalence of 20%, a design effect of 2, a 3% precision and a 5% adjustment of the sample size to account for contingencies such as non-response or recording error. Given the logistical and budgetary constraints, this was a credible sample size and a precision of the estimate was adequate.

Map 1: Map of Lesotho



Study areas Source:²¹

In the first stage, the smallest population unit within each district was determined (villages) and its population size determined using the 2001 Lesotho demographic survey data.⁸ Thirty clusters were assigned proportionally to village population size in each district. The second stage involved selecting a minimum of 23 households in each cluster using the standard Expanded Program on Immunization methods. Enumerators went to centre of the village and

chose a direction by random (e.g. by spinning a bottle). They then counted the total number of households (t) in the chosen direction from the centre to the edge of the village. The first number to be surveyed was randomly selected by choosing a number between 1 and t using a table of random numbers. After the first household was identified, the rest of households were chosen by proximity from left to right until the required number of household per cluster was obtained. All selected households were surveyed regardless of whether they contained children who were eligible for anthropometric assessment. If the selected household had more than one child eligible for anthropometric assessment, all eligible children were measured and weighed. Trained enumerators administered the questionnaire.

Measurement

The questionnaire collected anthropometric and mortality data. Anthropometric data were obtained on children aged 6-59 months and followed the World Health Organisation's protocol for anthropometric surveys.²² Three types of malnutrition were considered and included underweight measured by weight-for-age (W/A), stunting measured by height-for-age (H/A) and wasting measured by weight-for-height (W/H). Z-scores as indicators of the nutritional status in children were used and wasting was defined as a W/H < -2 Z-score, stunting was defined as a H/A < -2 Z-score and underweight was defined as a W/A < -2 Z-score. Weight was measured by Salter-type spring hanging scales, with a capacity of 25kg and 100 grams increments (UNICEF, DK-2100 Copenhagen, Denmark). Height was measured to the nearest millimetre with a measuring board (Shorr Productions; Maryland). We used the immunisation card (given the adequate Maternal and Child Health-MCH observed in the region) to ascertain the age of the child, and in case of death to determine the last date the child attended the MCH centre prior to death to validate the reported date of birth if the age was not known. For adults, calendar of events were used to determine the age at death if this was not known. The beneficiary status of each surveyed household (i.e. whether the household has been a beneficiary of the food aid program or not) was recorded.

Questions on mortality were modelled on the questionnaire by the International Rescue Committee used in the yearly mortality surveys in the Democratic Republic of Congo¹⁸ and consisted of three questions. The first question sought to establish the number of all people that slept in the house the night preceding the survey. The second question sought to establish all pregnancies and their outcomes during the recall period. The last question sought to establish the number of all people who died during the recall period. Thus, mortality rates were computed as follows:²³

$$\text{CMR} = \frac{(\text{No. of deaths in the sample}) \times 10,000}{(\text{No. living in the sample} + 1/2 \text{ deaths in the sample} - 1/2 \text{ live births in the sample}) \times \text{recall period}}$$

$$\text{U5MR} = \frac{(\text{No. of deaths among those} < 5 \text{ years of age in the sample}) \times 10,000}{(\text{No. living} < 5 \text{ years of age} + 1/2 \text{ deaths among those} < 5 \text{ years}) \times \text{recall period}}$$

The proportion of lost pregnancies was computed as follows¹⁸:

$$\text{Proportion of lost pregnancies} = \frac{\{(\text{abortion} + \text{stillbirths} + \text{miscarriage}) / (\text{Abortion} + \text{stillbirths} + \text{miscarriage} + \text{live-births})\} \times 100$$

In addition, in the absence of an epidemiological surveillance system, the author relied on verbal reports on morbidity and causes of death. The risk of misclassification was reduced by developing focus-tested traditional terms used to describe causes of death and by asking respondents to validate their answer by providing 1-3 symptoms the person experienced in the last week preceding death.¹⁸

Data analysis

Data were entered using SPSS for Windows, version 13.0 (SPSS Inc. Chicago, III, USA) and analysed using Stata version 7.0 (Stata Corporation, Texas, USA). Mortality data were expressed per 10,000 per day. The proportion of lost pregnancies and the prevalence of malnutrition and their 95%CI were computed and stratified by age and gender. Differences in household size by district were assessed using one-way ANOVA with a Scheffé multiple comparison post-hoc with the level of statistical significance set at $p < 0.05$. The “svyset command” in Stata was used to specify clustering within the household, stratification, and weighting prior to analysis

Results

Demographic

All the interviewed heads of households consented to participate. The survey included 710 households, comprising 3610 individuals with a median age of 19 years (range: 0-91 years). Of the surveyed households, 34.8% (or 1165 individuals) were in Mafeteng, 32.4% (or 1258 individuals) were in Quthing and 32.8% (or 1187 individuals) were in Mofale's Hoek. The household size did not vary significantly across the districts ($p=0.094$), averaging 4.7 people per household for Mafeteng, 5.5 people per household for Quthing and 5.1 people per household for Mofale's Hoek. There were more female than men across the three districts and this pattern was more pronounced in Quthing (female:male ratio: 1.29 for Mafeteng; 1.40 for Quthing and 1.28 for Mofale's Hoek).

Mortality

A total of 168 pregnancies was reported during the recall period. Of these, 118 (70.2%) were live births, 10 (6.0%) were stillbirths, miscarriage or abortions and 40 (23.8%) were women still pregnant. Thus, the proportion of lost pregnancies was estimated at 7.8% (95%CI: 3.1%-12.5%). In total, 130 deaths occurred in the sample population between March 11, 2004 and May 20, 2005, with 80 (62%) deaths occurring among children younger than 5 years. This translated into a crude mortality rate (CMR) of 0.8 (0.7-0.9)/10,000/day and an under five mortality rate (U5MR) of 3.2 (2.8-3.6) (Table 2). Of the reported deaths, 24.6% occurred in Mafeteng, 30% occurred in Quthing and 45.4% occurred in Mofale's Hoek. Mofale's Hoek recorded a significantly higher CMR and U5MR than Mafeteng and Quthing (Table 2). Beneficiaries of food aid programs displayed lower mortality rates than non-beneficiaries both for CMR (0.68; 95%CI: 0.57-0.79 versus 1.42; 95%CI: 1.13-1.70) and U5MR (2.94; 95%CI: 2.39-3.50 versus 6.44; 95%CI: 5.21-7.68). Tuberculosis, cardiac failure, HIV/AIDS and diarrhoea resulted in higher proportions of deaths both in adults and among children under 5 years of age. (Figures 1a and 1b)

Table 2: Mortality rates expressed as deaths/10,000/day (95%CI) across the districts

	Quthing	Mafeteng	Mofale's Hoek	Total
Crude (CMR)	0.7 (0.6 to 0.8)	0.6 (0.4 to 0.8)	1.2 (1.0 to 1.4)	0.8 (0.7 to 0.9)
Children under five years (U5MR)	2.7 (2.2 to 3.2)	3.2 (2.6 to 3.8)	3.7 (3.1 to 4.3)	3.2 (2.8 to 3.6)

Figure 1a: Proportionate cause specific mortality for all ages

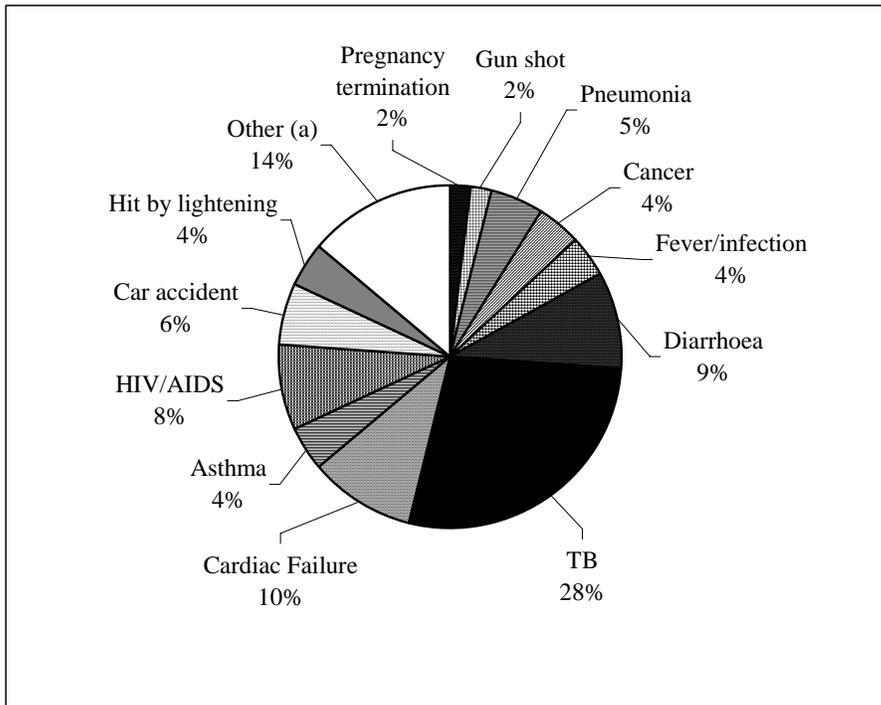
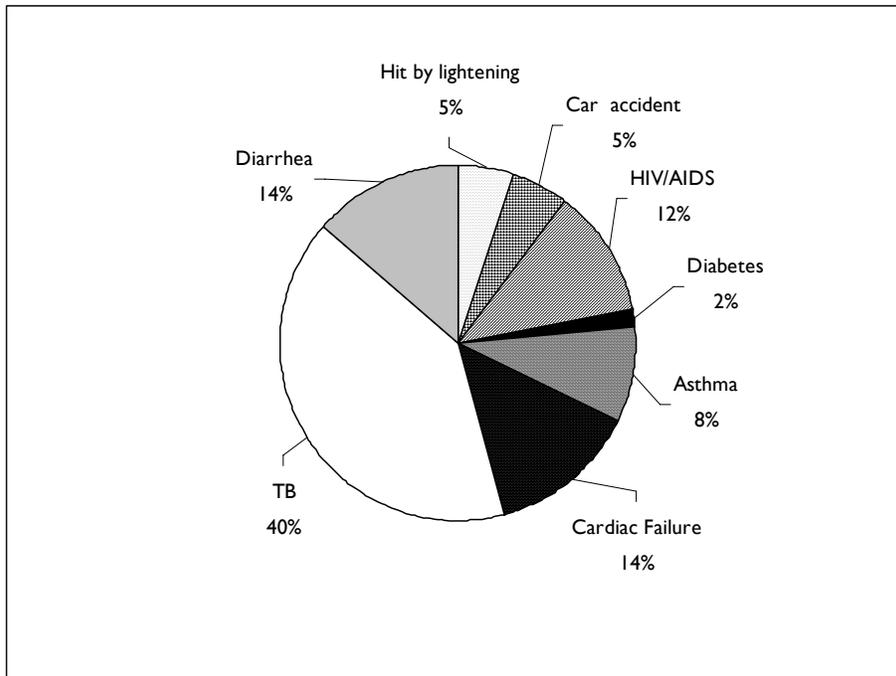


Figure 1b: Proportionate cause specific mortality for under-five year



Malnutrition

Anthropometric data were obtained on 738 children aged 6-59 months. The prevalence of underweight, stunting, and wasting was respectively 15.6% (95%CI: 8.8%-22.3%), 33.7%

(95%CI: 25.7%- 41.7%) and 10.9% (95%CI: 6.5%-15.3%) among girls and 22.9% (95%CI: 15.1%-30.7%), 38.5% (95%CI: 29.6%- 47.4%) and 13.1% (95%CI: 7.4%-18.8%) among boys. Despite the overlapping 95% confidence interval from a statistical point of view, the nutritional status of girls was better than that of boys in absolute terms across all districts (Table 3). No statistical significance was found between beneficiaries and non-beneficiaries in terms of wasting (13.5%; 95%CI: 0.3-16.8% versus 12.5%; 95%CI: 6.6-18.4%), underweight (18.4%; 95%CI: 15.4-21.4% versus 18.2%; 95%CI: 12.3-24.1%) and stunting (36.2%; 95%CI: 31.9-40.4% versus 41.0%; 95%CI: 33.0-49.0%)

Table 3: Summary of means of anthropometric variables and malnutrition prevalence and their 95% confidence intervals among children aged 6-59 months.

	Girls			
	<i>Mafeteng</i> N=154	<i>Mohales Hoek</i> N=116	<i>Quthing</i> N=123	<i>Total</i> N= 393
Mean age in months (95%CI)	30.6(24.6 36.7)	23.6(18.5 28.7)	22.4(17.3 27.4)	25.5(20.1 30.9)
Mean weight in Kg (95%CI)	11.4(10.3 12.5)	9.9 (8.9 10.8)	9.8 (8.9 10.7)	10.4(9.4 11.3)
Mean height in cm (95%CI)	87.5(84.8 90.1)	86.6(84.0 89.3)	86.6(84.0 89.2)	86.9(84.3 89.5)
Mean W/A Z-score (95%CI)	-0.2(-0.6 0.2)	-0.3(-1.0 0.4)	-0.1(-0.6 0.4)	-0.2(-0.7 0.3)
Mean H/A Z-score (95%CI)	-1.2(-1.6 -0.8)	-1.1(-1.6 -0.6)	-0.8(-1.2 -0.3)	-1.0(-1.5 -0.5)
Mean W/H Z-score (95%CI)	0.2 (-0.5 0.9)	-1.0(-1.7 -0.3)	-1.1(-1.6 -0.5)	-0.6(-1.2 0.0)
Underweight (%; 95%CI)	10.2(3.9 16.5)	19.8(12.5 27.1)	16.7(10.0 23.4)	15.6(8.8 22.3)
Stunting (%; 95%CI)	36.4(30.5 41.9)	24.8(16.6 33.0)	39.9(31.8 48.0)	33.7(25.7 41.7)
Wasting (%; 95%CI)	6.5 (2.6 10.4)	15.8(10.9 20.7)	10.5(6.1 14.9)	10.9(6.5 15.3)
	Boys			
	<i>Mafeteng</i> N=140	<i>Mohales Hoek</i> N=93	<i>Quthing</i> N=112	<i>Total</i> N= 345
Mean age in months (95%CI)	25.4(20.2 30.6)	19.3(13.6 25.1)	24.2(19.0 29.4)	23.0(17.6 28.4)
Mean weight in Kg (95%CI)	10.4(9.4 11.4)	9.6 (8.4 10.8)	10.0(9.0 11.0)	10.0(8.9 11.1)
Mean height in cm (95%CI)	85.8(83.3 88.2)	86.1(83.0 89.3)	87.2(84.3 90.2)	86.4(83.5 89.2)
Mean W/A Z-score (95%CI)	-0.3(-0.7 0.1)	-0.6(-1.0 -0.2)	-0.8(-1.2 -0.3)	-0.6(-1.0 -0.1)
Mean H/A Z-score (95%CI)	-1.7(-2.2 -1.3)	-1.2(-1.7 -0.8)	-1.3(-1.9 -0.7)	-1.4(-1.9 -0.9)
Mean W/H Z-score (95%CI)	-0.1(-0.9 0.6)	-1.2(-1.9 -0.5)	-1.0(-1.6 -0.4)	-0.8(-1.5 -0.1)
Underweight (%; 95%CI)	13.4(6.5 20.3)	26.0(17.6 34.4)	29.3(23.5 35.1)	22.9(15.1 30.7)
Stunting (%; 95%CI)	44.0(35.8 52.2)	28.4(19.2 37.6)	43.1(33.9 52.3)	38.5(29.6 47.4)
Wasting (%; 95%CI)	9.9 (4.5 15.3)	17.6(11.0 24.2)	11.7(6.6 16.8)	13.1(7.4 18.8)

Discussion

The study found a proportion of lost pregnancies that is comparable to that reported in countries experiencing chronic emergencies.¹⁸ Although poverty and hunger-induced sex trade as a survival strategy resulted in 2% of unwanted pregnancy termination (Figure 1a), other factors such as the mother's age, pregnancy order, pregnancy history, and the mother's social characteristics and environment played their role.²⁴ It is well documented that an environment characterised by famine and malnutrition increases significantly the risk of

miscarriage and stillbirths.^{24,25} However, the public health challenge relates to the high proportion of women continuing to have unprotected sex as evidenced by the rate of termination of unwanted pregnancies, despite a HIV/AIDS prevalence of 31%.⁴ This is important as HIV/AIDS awareness was not part of the food aid program. With 8% of deaths reported to be due to HIV/AIDS (Figure 1a), the number of orphans and vulnerable children and economically-deprived households will continue to grow, creating dependency on food aid for generations to come.

The reported CMR was significantly lower than the CMR emergency threshold (<1/10,000/day)²⁶ indicating that the food aid program together with other initiatives in place may have prevented a catastrophe. However, when we considered the 2000 CMR of 0.4/10,000/day¹⁷ as the pre-drought baseline the data highlights a disturbing trend, with the overall CMR found to have doubled over a 5-year period, that is, from 0.4/10,000/day in 2000 to 0.76/10,000/day in 2005. Using a total population of 586,429 in the three surveyed districts,⁸ we estimated that about 38,500 excess deaths occurred between 2000 and 2005. This could have been a result of the severe drought that has characterised the districts since 2000, exacerbated by increasing HIV/AIDS clinical progression rates and the deterioration in health services. What is disturbing is the fact children were more affected than adults despite the WV/WFP food aid program having 3 schemes specifically targeting children directly or indirectly (e.g. maternal and child health programs catering for pregnant and lactating women, programs for orphans and vulnerable children). Indeed, the reported U5MR was 4 times the CMR and 1.4 times higher than the U5MR emergency threshold for sub-Saharan Africa (2.3/10,000/day).²⁶ Such a trend is similar to that reported in other countries across Africa experiencing chronic emergencies such as the Democratic republic of Congo,²³ Sudan¹⁹ or Ethiopia.¹⁴

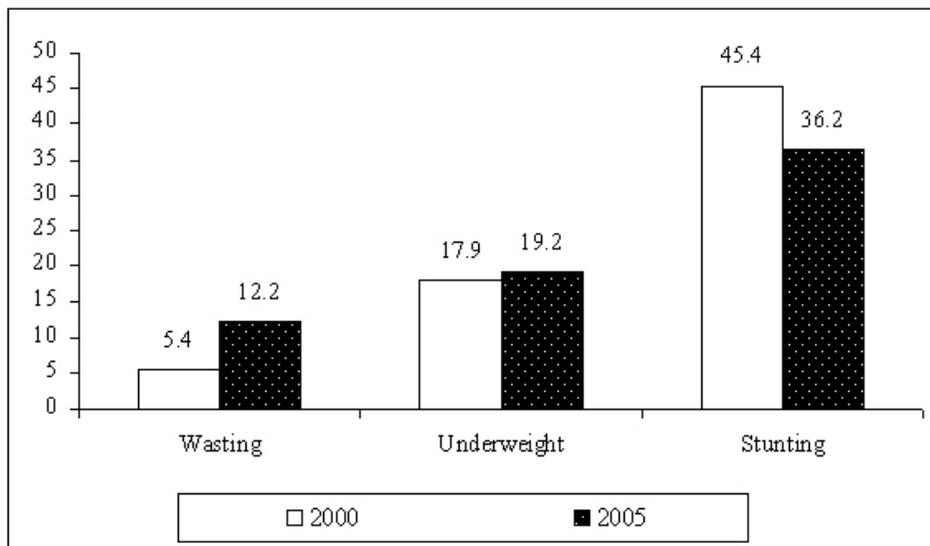
Deaths related to diarrhoeal diseases and TB could have been due to HIV/AIDS but people were more likely to provide secondary symptoms as cause of death due to the stigma associate with the HIV/AIDS status. However, although malnutrition was not stated among the major causes of death, there is no doubt that the consequences of the drought, have been far-reaching. The drought has limited people's access to water and sanitation facilities and has impacted negatively on the economy and household purchasing power limiting access to health care. Given the synergism between malnutrition and infection, it can be inferred that the impact of malnutrition on mortality may have been underestimated. Available data over the last four decades suggest that, in food deprived environments, case fatality rates for severe malnutrition range from 3.3% to 53%, averaging 23.5%.²⁷ Data on the effect of malnutrition on child mortality from 53 countries indicate that 56% of all deaths among children were attributable to acute malnutrition, but 83% of all malnutrition-related deaths were attributable to mild-to-moderate malnutrition.²⁸ These findings suggest that, even though the relative risk of dying from malnutrition is greater in children with severe malnutrition, the proportion of deaths due to mild-to-moderate malnutrition is greater than that due to severe malnutrition. Further research is required to assess mortality attributable to malnutrition in Lesotho.

The higher than expected U5MR and wasting prevalence indicate that there is an urgent need to revisit the maternal and health program strategy in terms of targeting and the adequacy of the food basket. There is also need to document and re-examine the determinant of feeding practices of infant in Lesotho from a cultural and socio-economic perspective. In a recent study into coping strategies when food becomes scarce Renzaho²⁹ reported that, in the case of Lesotho, the feeding is culturally constructed, highly hierarchical and founded on the role each family member plays in the household. In case of food scarcity the feeding prioritises men at the expense of children. When reporting data from focus group discussions with

women, the author notes: "...women reiterated that if a man becomes skinny he can no longer satisfy the wife and this could be a cause for divorce. In the Lesotho culture, it is within the woman's interest to feed the husband as the most significant thing in a relationship is to satisfy a woman". At household level beneficiary children were not aware of their right and entitlements and were not involved in the decision making regarding food utilisation. In Lesotho culture when the men want the food, the women are obliged to serve it to them. The expression 'Nthoangoan'- meaning 'the father wants the food of the child' has been in existence since the 1970's, well before the instigation of the food aid program.

Using the pre-drought (2000) data as baseline,³⁰ the trend indicates that the prevalence of underweight has remained static, but the prevalence of stunting has declined by 9.2 percentage points while the prevalence of wasting has more than doubled for the same period (Figure 2). Considering that wasting is a result of a sudden interruption in the food supply chain,²² the increase in the prevalence of wasting could be associated with the inadequacies of the WFP food pipeline. Firstly, for beneficiaries households daily food rations were provided on the basis of 5 persons per household. However, considerable proportion of households had a family size varying between 6-10 people thus affecting the quantity of food available to family members.

Figure 2: Trend in malnutrition prevalence: 2000³⁰ versus 2005



Secondly, comparing the planned tonnages with food distributed as per WV Lesotho Commodity Tracking System Report (Table 4), the realisation rate over 27 months of operation (December 2002 and March 2005) was only 64%. The lowest realisation rate of 49.1% was recorded against a FLA which was terminated prematurely, lasting seven out of the original nine months from October to April 2004. Thus, food pipeline issues lead to poor targeting and inadequate coverage rate. Poor targeting meant regular verification of beneficiaries' lists and significant delay in food distribution. In Quthing, for example, the project target in 2003 was 15,246 households but due to shortage of food only 3375 households were served in May 2003, representing a mere 22.1% coverage rate. In other cases, beneficiaries received maize meal infested with insects and worms to the point that they either had to throw it out or to sieve it.

Table 4: WFP Pipeline Dec 2002 – March 2005^a

FLA Period	MT Planned	MT Distributed	% realisation
Dec 02 – March 03	7,693.72	4,712.58	61.6%
April 03 - June 03	5,958.37	4,084.26	68.6%
No FLA	0.0	0.0	0.0 %
Oct 03 -April 04	13,218.0	6,493.38	49.1%
May 04 –Sept 04	11,176.80	7,672.78	68.7%
Oct 04 - Dec 04	4,055.90	3,471.57	85.6%
Jan 05 - March 05	3,137.23	2,521.97	80.4%
TOTAL	45,240.05	28,956.5	64.0%

^a Summarised from WV Commodity Tracking System

Thirdly, power and politicisation of the food aid affected negatively the efficiency of food distribution. Politicians interfering with food distribution for political pursuits was common, with candidates of different constituencies exploiting the food aid scheme by telling the community that the food is from the government of Lesotho and not WFP. The extent to which the community understood the source of food aid and their representatives varied. Despite efforts to address this, social and political hurdles were experienced in most districts, compromising efficiency of delivery. Furthermore, there were a significant number of stakeholders engaged with degrees of responsibility for programming WFP food aid across Lesotho.

The government's Food Management Unit and Disaster Management Authority (DMA) developed guidelines to address structural issues such as the hierarchy to follow when implementing food aid programs. However, the DMA operated at three levels and final decision-making was at the central level meaning that guidelines were not necessarily reflective of the situation at village level. For instance, village distribution committees were allowed to store commodity which by the end of the day had not been distributed in the community. Reasons why commodities were left over included: recipients had left Lesotho for South Africa in search for a job especially mine workers; recipients were not aware or did not get sufficient warning of the distribution dates; recipients were too unwell to travel, beneficiaries had died or were attending a funeral; or beneficiary lists were inaccurate. In these instances, food was to be retained for a period of time to ensure beneficiaries could collect their ration at a later stage. If rations were not collected, village disaster management committee members were allowed to take the commodities as an unofficial incentive. Clearly, this guideline disadvantaged the most vulnerable in the community mainly children and elderly.

Finally, dependency on food aid played its role and diminished the effectiveness of the program. There was the issue of intentional starving whereby children in the program were starved by their guardians or parents in order to remain in the program. For example, in the maternal and child health scheme it was reported that lactating mothers would ask village health workers to register the weight of the child that was below what appeared on the scale. Lactating mothers wanted the weight of their children reduced to a weight that would be able to grant their children the chance either to remain in the program or to be eligible for the food aid scheme. In most cases, lactating women only came to the clinic to weigh their children because they wanted the food aid and not because they were necessarily concerned about the

health of the children. Consequently, most lactating mothers discontinued to go to the clinic because of village health workers' refusal to write a weight that was below what appeared on the scale.

Limitations

Due to data collectors' low educational level and lack of skill to detect bilateral oedema the reported wasting prevalence did not include oedema (indicating severe malnutrition irrespective of W/H). Thus the prevalence of wasting may have been underestimated in this study. In addition, the 435-day recall period used for mortality was a long period and may have affected the accuracy of the estimates. However, calendar of events and immunisation cards were used to check the last date the child attended the maternal and child health clinic prior to death to validate the reported date of birth.

Conclusion

Despite the alarming U5MR, the current study suggests that food aid program ensured survival as evidenced by mortality data by beneficiary status. The situation could have been worse in the absence of humanitarian assistance. Food pipeline resulting from unreliable international donations to WFP, the governance vacuum in Lesotho along with bureaucratic processes all affected the efficiency and effectiveness of the food aid programming. With the number of HIV/AIDS-related orphans growing at increased rate, high level advocacy-oriented programming and lobbying are required to attract donor and institutional support to address structural problems and the use of available resources. An end to food aid programs in Lesotho and the southern Africa in the short term whilst representing an ideal, would be premature. Food aid programs need to have a clear exit strategy to instil a sense of urgency for the host governments to meet their obligations toward their people and to prevent chronic dependency on food aid, especially for children orphaned by HIV/AIDS.

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