



Zambia Vulnerability Assessment Committee (VAC)

in

collaboration with the

SADC FANR Vulnerability Assessment Committee

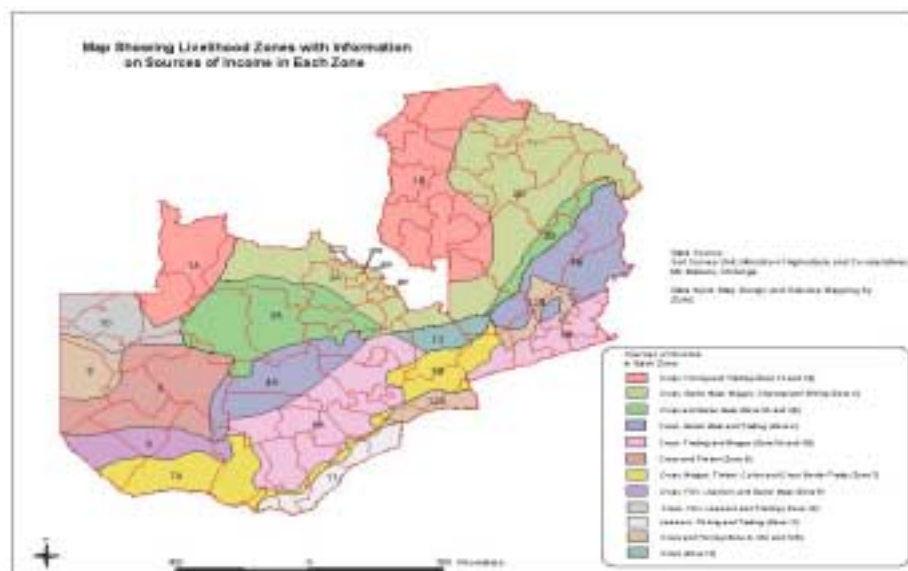
ZAMBIA VAC APRIL 2003 LIVELIHOOD AND VULNERABILITY ASSESSMENT

Final Report

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- The Meteorological Department,
- The Central Statistical Office
- The National Food and Nutrition Commission
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Acronyms

ACE	Agricultural Commodity Exchange
CFSAM	Crop and Food Supply Assessment Mission
CSO	Central Statistical Office
DMMU	Disaster Management and Mitigation Unit
DRC	Democratic Republic of Congo
EC	European Commission
EMOP	Emergency Operation
FAO	Food and Agricultural Organisation of the United Nations
FEWSNET	Famine Early Warning Systems Network (FEWSNET)
FHANIS	Food, Health, Agriculture and Nutrition Information System
FRA	Food Reserve Agency
GDP	Gross Domestic Product
GMO	Genetically Modified Organisms
GRZ	Government of the Republic of Zambia
HIPC	Highly Indebted Poor Country
MACO	Ministry of Agriculture and Cooperatives
MUAC	Mid Upper Arm Circumference
MT	Metric Tonnes
NEWU	National Early Warning Unit
NCZ	Nitrogen Chemicals of Zambia
NFNC	National Food and Nutrition Commission
NGO	Non Government Organisation
NRDC	Natural Resources development College (NRDC).
OVC	Orphans and vulnerable children
PAM	Programme Against Malnutrition
Pppd	Per person per day
SPHERE	Humanitarian Charter and Minimum Standards in Disaster Response
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WHO	World Health Organisation
WVI	World Vision International
VAC	Vulnerability Assessment Committee
VAM	Vulnerability Assessment and Mapping
ZNFU	Zambia National Farmers Union

Highlights

How People Survived between March 2002 and April 2003

- ❖ Between March 2002 and April 2003, most people in Zambia met their kilocalorie/energy requirements. For those under stress coping strategies focused mainly on changes to food consumption rather than strategies that impact on household assets.
- ❖ Food relief made some contribution to livelihoods in the southern frequently drought affected maize growing areas – providing upto 10-15% of annual kilocalorie requirements. However, targeting still remains a problem and weakened the impact of the food relief on most vulnerable households.

Current Food Security Situation and Scenario for 2004

- ❖ The Food Security situation in Zambia has improved and only 0.06% of the population (60,000) will require targeted relief of 1,369 MT of cereal over a 5 month period (October 2003 to February 2004). Any food aid must be distributed commensurate with the existing cereal gaps in each district.
- ❖ Six districts will require assistance while 4 will need monitoring. The districts affected are Chama, Itezi-Itezi, Kazungula, Luangwa, Monze and Sinazongwe. The districts that will require monitoring or contingency planning are Gwembe, Kalabo, Shangombo and Zambezi.
- ❖ Generally food availability and access across the country has improved.
- ❖ The situation is expected to remain as such in view of the increased cereal production for 2002/3 season and a good input subsidy programme for small-scale farmers.

Linkages between Food Security and other Cross-Cutting Issues

- ❖ Households directly affected by HIV/AIDS were more likely to cite lack of labour as reason for limiting cultivated land compared to households not affected by HIV/AIDS.
- ❖ There are many other factors that affect food production including economic position and characteristics of members of household and the inability to assess these may mask the specific impacts of HIV/AIDS at household level.
- ❖ There is also low prevalence of HIV/AIDS in the rural areas of Zambia (10%). The findings failed to provide hard evidence to support the notion of “the new variant famine” operating in the country.

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Executive Summary

In June 2002, two consecutive years of drought in the 2000-2001 and 2001-2002 cropping seasons that reduced the national cereal production particularly in the southern parts of the country, combined with high levels of poverty, HIV/AIDS and 47% chronic malnutrition (stunting) gave rise to serious concerns that unless an appropriate response was implemented there would be a serious food crises. The National Vulnerability Assessment Committee, a consortium of: government, NGO and UN agencies decided to conduct a series of food security assessments in August and December 2002 and in April 2003. This was part of a regional initiative coordinated by the Southern Africa Development Community (SADC) Food, Agriculture and Natural Resources (FANR) Vulnerability Assessment Committee. The purpose of these assessments was to identify needs, inform food aid distribution priorities within the country and guide/inform on-going food security monitoring.

The first two assessments focused on looking at the cereal deficit within the country and concluded that 2.4 million people required food assistance between September and November 2002 increasing to 2.9 million between December and March 2003. The cumulative cereal food aid requirement September – March was calculated to be 224,000 MT. However, after a limited donor response, linked to the GZR decision to turn down the offer of GM food assistance, less than 50% of the food aid requirement was distributed. However, nutrition status surveys collected post-harvest 2002 and pre-harvest 2003 show that nutritional status remained stable throughout 2002-2003, despite the reduced scale of the food relief intervention. With this in mind the VAC decided to focus the last assessment on looking at livelihoods, specifically how people lived last year and the contribution of food aid, in addition to identifying needs for the coming 12 months. To achieve this, the Zambia April 2003 Vulnerability Assessment used two investigative methods, namely the Household/Key Informants Survey and the Food Economy Approach. Information from both sources was triangulated together with information from other relevant secondary sources: MACO crop production and livestock data, data on imports, health, sanitation and population. The combination of approaches enabled a balance story about how households survived and met their food requirements in the light of last season's cereal shortage.

Findings - How rural households survived in 2002/3

Macro-level information highlights the fact that maize production has been following a downward trend since market liberalization was introduced in 1991. Whilst maize production has been on the decrease, there has been an increase in out-grower associations and contract farming arrangements. In addition, “informal” imports of maize (reported to range from 60-300,000MT by 2002) and are significantly impacting on the operations of the market, including cereal availability and prices.

In 2002/03, in all the assessed areas, even households considered as poor were able to access sufficient food to meet their basic annual calorific requirements of 2100kcal pppd. The contribution from food aid over a 12-month period was less than 5% in all districts except districts within the Gwembe valley (zone 11), Luangwa valley (zone 12 a) and parts of Kazungula/Sesheke where up to 10-15% of kilocalories came from food relief.

How people met their energy requirements varied slightly between different areas. However, options adopted were primarily a combination of crops grown on their farms (maize, cassava, pumpkins and

other vegetables), market purchase and exchange (both barter and labour) for food. Income to enable purchase came from sale of milk/livestock, casual labour, cross-border trade and other sources. A combination of these options has been utilised by rural households throughout the last decade and the use of new or unusual coping mechanisms in 2002/03 was limited.

Districts with low food crop production (covering 4 months consumption or less)

These are maize growing districts that are frequently affected by droughts/floods. Specifically districts within the following livelihood zones: Luangwa valley (12a), Gwembe valley (11), Shangombo (9), Kazungula/Sesheke (7a), and Mambwe (12b). Whilst these zones were able to meet their basic energy requirements, in most of these zones, own crop production (maize, pumpkin and other vegetables) provided less than 30% of energy requirements. However, other food options were available – particularly casual labour, sale of livestock, fishing and trade – all of which provided cash to buy food. In the Gwembe valley (11), there are a wide range of employment opportunities including gemstone and coal mining; working for commercial fishing, crocodile farming, sugar and vegetable companies; participating in cotton out grower schemes; and working for civil servants and NGOs. Kazungula/Sesheke (7a) has an unusually high reliance on forest foods particularly fruits and nuts (including the mungongo nut which is both oil rich and valuable). In this area, Namibia was both an important market in which to trade livestock, timber, forest products and handicrafts for a variety of groceries as well as a source of employment on commercial farms, herding, doing domestic work.

Districts with higher food crop production (covering 5 months consumption or more)

These can be grouped into three types: maize producing but not frequently affected by drought, cassava/maize producing and cassava producing. In these zones, own production makes a larger contribution to food intake and households were able to access 2100 kcals pppd or more. Other sources of food included fish, game meat, and vegetables. Income sources included cotton/tobacco production, sale of maize and cassava, casual labour on commercial farms and in some areas cross-border trade.

Impact of food relief

Food relief made some contribution to livelihoods in the southern frequently drought affected maize growing areas – providing upto 10-15% of annual kilocalorie requirements. In other districts, the contribution of food relief was lower (0-5%). However, the late distribution of much of the food relief means that its contribution to diets was slightly higher during a 3-6 month period and may have enabled households to focus on weeding their own plots rather than looking for work elsewhere. Food relief was generally not targeted in “worst affected” districts rather most households received 4-6 times over a period of up to 6-9 months. Limited targeting further weakened the impact of the food relief on most vulnerable households.

Coping strategies

Most zones reported strategies that focused on changes in food consumption. This included: getting food from other sources, changing from preferred foods to less expensive foods, reducing the number of nshima meals per day and sometimes not eating nshima, and eating other foods and vegetables or

eating only vegetables. The fact that expenditure, income and migration coping strategies were adopted by a limited number of households highlights the value of the various economic activities that have been developed over recent years in many parts of the country.

Changes expected in 2003/04 – Projections

The present harvest is reported to be a “bumper harvest”¹, however late and erratic rains in some areas and floods in other areas of Southern and Western provinces, may lead to pockets where maize production is worse than last year or destroyed through flooding. Unless imports are regulated – the increase in production combined with imports may have a negative impact on pricing structures.

In areas of the south where maize production is expected to be patchy, most households will meet their requirements through their usual livelihood strategies – a combination of labour exchange, sale of other crops and livestock. The most vulnerable (very poor) in zones in which last years production (cereal/cassava) together with food relief exceeded this years production of cereal/cassava may struggle. The most vulnerable households were households which had less livestock, cultivated less land, and had annual incomes in the range of ZMK100, 000 - 500,000/year (1 US\$ = ZMK5,000 approximately). Two types of very poor households were identified: labour poor households and households with labour, households with labour could participate in FFW programmes.

The Food Security situation in Zambia has improved and only 0.06% of the population (60,000) will require targeted relief of 1,369 MT of cereal which must be distributed commensurate with the existing cereal gaps in each district. Six districts will require assistance while 4 will need monitoring. The districts affected are Chama, Itezi Itezi, Kazungula, Lwangwa, Monze and Sinazongwe. The districts that will require monitoring are Gwembe, Kalabo, Shangombo and Zambezi.

Conclusions

The assessed areas particularly in the frequently drought affected areas have been moving away from a dependency on maize production over several years and have diversified both their sources of food and income. Economic connections within and between food economy zones are strong. Cross-border trade was important for several of the districts visited. Looking beyond agricultural production at the wider local economy shows that the majority of households are not experiencing a food gap. Therefore, food aid interventions are not recommended this year except within limited targeted areas and populations.

However, certain of the practices pursued in different zones may produce longer-term problems. Certain income generating activities will have a negative impact on the environment unless appropriate controls are put in place e.g. crop production using the slash and burn farming systems (*chitemene*), charcoal production (Northern Province), timber logging and wild product collection e.g. grass, reeds (Kazungula/Sesheke), and fishing (Luapula Region and the Gwembe Valley. In most parts of the country, programmes in the coming year should focus on reducing chronic vulnerability, through supporting/strengthening some of the economic activities that households have developed in recent years (e.g. support to marketing of crops and livestock).

¹ Times of Zambia. 24 May 2003

Households who were directly affected by HIV/AIDS² were more likely to cite labour shortages within the household as an important issue compared to households not affected by HIV/AIDS. The same applies to a variety of coping strategies. These responses were signs of households under stress. However, in terms of a reduction in the amount of food produced or differences in food production, the data of the Zambian VAC survey on the whole showed no real differences between households categorized by the presence of one of the proxy variables and households not affected by HIV/AIDS. Efforts should be made that will mitigate the impact of HIV/AIDS in rural areas by assisting households affected by HIV/AIDS to become more food secure.

The findings of the Zambian VAC failed to provide hard evidence to support the notion of “the new variant famine” operating in the country. It would appear if climatic conditions, food pricing policies, the lack of agricultural support and extension services, environmental degradation, a lack of infrastructure and poverty play a larger role in inadequate harvests than HIV/AIDS. Whether the same can be said of countries with significantly higher HIV prevalence rates than those found in the rural areas of Zambia (10 % of adults), remains unclear.

² Assuming that the presence of one or more of the proxy indicators is an indication of households affected by HIV/AIDS.

1.0 INTRODUCTION

1.1 Background

Zambia has an estimated population of 9.8 million³ of which 60% live in rural areas. For additional demographic, social and economic indicators see Table 1.1.

In the last 10 years, droughts of varying severity have occurred in 1991-92, 1994-95, 2000-01, and 2001-02 and In addition, annual rainfall in the Southern parts of the country over the last 10 years has been particularly varied. Nationally, as a result of the drought in Southern Africa (including Zambia), increased food purchases by government and uncertainties over the future of the mining sector following the pull-out of Anglo American Corporation from the Konkola Copper Mines, the GDP growth was just 3% as compared to 5.2% in 2001⁴.

Within the agricultural sector, the real growth rate has fluctuated significantly in the last 10 years mainly due to an over dependence on seasonal rainfall, market liberalization, reduced investment in maize production and reduction in livestock numbers following disease outbreaks (particularly ECF/corridor disease in the late 90s and anthrax in 2001). Over the last decade, this sector's contribution to the GDP has averaged 18 percent.

At a district level, recurrent droughts and market liberalization initiated in 1991/2 have led to: the collapse of the traditional credit delivery which focused mainly on maize seed and fertilizer inputs; crop diversification and an increase in out-grower associations and contract farming arrangements⁵ especially for cotton, tobacco, paprika and castor oil⁶. Cattle holdings in 2002, suggest that herd sizes have returned to pre 2001 levels of approximately 2,500,000⁷.

Following two consecutive years of drought in the 2000-2001 and 2001-2002 cropping seasons that reduced the national cereal production particularly in the southern and western parts of the country, the National Vulnerability Assessment Committee a consortium of government, NGO and UN agencies) decided to conduct a series of food security assessments in August and December 2002 and in April 2003. This was part of a regional initiative coordinated by the Southern Africa Development Community (SADC) Food, Agriculture and Natural Resources (FANR) Vulnerability Assessment Committee. The purpose of these assessments was to assess needs, inform food aid distribution priorities within the country and guide/inform on-going food security monitoring. The first two assessments focused on looking at the cereal deficit within the country.

Following a review of: the previous assessments; a number of nutrition surveys which suggested that nutritional status had remained stable during the previous 12 months; food relief data indicating that less than 50% of the requested food relief had been distributed; and additional information on informal

³ This is the de jure population figure as recommended by CSO for planning purposes.

⁴ Price Waterhouse Coopers. Budget Bulletin. The 2003 Zambian Budget in brief.

⁵ MAFF, MFED, MCDSC Targeted Food Security Pack for Vulnerable but viable farmers in Zambia 2000 -2003
Agricultural seasons August 2000

⁶ ZAMBIA Agricultural Sector Performance Analysis 1997-1998, MAFF December 1999

⁷ Cattle numbers decreased in 2001 to 1,596,271 from 2,620,987 in the previous year mainly due to outbreaks of disease such as East Coast Fever Source: National Livestock Epidemiology and Information Centre. March 2003.

imports⁸ of maize and other goods ('Hidden' regional trade was estimated to be worth at least US\$ 600 million and worth more than legal regional trade⁹). The national VAC decided that the last assessment in the series would focus on livelihoods, and look at how people lived last year and the role of food aid.

1.2 General Objective of the Assessment

To assess vulnerability and livelihood patterns in Zambia.

1.2.1 Specific Assessment Objectives

The specific objectives of the assessments were as follows:

- To have an understanding of people's livelihoods, how they have survived in the last 12 months (April 2002 – March 2003) including the role of food aid.
- To project access to food from April 2003 to March 2004 based upon available crop production figures for the current season
- Develop a basic scenario for food security needs during this period (both food relief and other interventions).
- To take account of potential interactions between HIV/AIDS and food security.

To achieve these objectives, the national VAC decided to utilize 2 survey methodologies: the Household/Key Informants Survey and the Food Economy Approach and do a joint analysis of the data collected together with information from secondary sources.

Table 1.1: Demographic, social and economic indicators, Zambia

Indicator	Estimate	Year
Total population (million)	9, 8	2003
Population aged 15-49 (thousand)	4,740(a)	2001
Annual population growth	2.5(a)	1995-2000
Population density (Persons per square km.)	12.6	2002
Percentage Population urbanised	40(a)	2000
Average annual growth rate of the urban population	2.5(a)	1995
GNP Per Capita (US \$)	330(b)	1999
GNP Per Capita Average Annual Growth Rate	2.2(b)	1999
Per Capita expenditure on health	23(b)	1998
% of Government budget spent on health care	12.6(c)	1998
Total adult literacy rate	75(d)	1997
Adult male literacy rate	83(d)	1997
Adult female literacy rate	68(d)	1997
Male primary school enrolment rate	91.4(d)	1995
Female primary school enrolment rate	85.6(d)	1995
Male secondary school enrolment rate	33.6(d)	1994
Female secondary school enrolment rate	21.1(d)	1994
Crude birth rate (births per 1,000 pop.)	44(a)	1995-2000
Crude death rate (deaths per 1,000 pop.)	21(a)	1995-2000
Maternal mortality rate (per 100,000 live births)	870(c)	1995
Life expectancy at birth	41(a)	1995-2000
Total fertility rate	6.0(a)	1995-2000
Infant mortality rate (per 1,000 live births)	95(e)	1997-2001
Under 5 mortality rate	143(e)	1997-2001

Sources: (a) UNPOP (b) World Bank (c) WHO (d) UNESCO (e)ZDHS 2001

⁸ FEWSNET/WFP Cross Border Trade during the 2001/2 Marketing Year in Mbeya and Rukwa Regions. March 2002, and USAID SDA Unrecorded Cross Border Trade between Tanzania and her neighbours. Sept 1998. Technical paper #89

⁹ EIU Country Report 2001

1.3 Methodology

1.3.1 Livelihood Based Analysis

Livelihood based analysis is a holistic tool for gathering information about people's patterns of income and expenditure, the types of food people eat, and how food is accessed (It may be noted that where people live and their socio-economic background control people's food security and livelihoods). Analytically, areas with broad livelihood similarities are grouped into livelihood zones. Livelihoods-based Vulnerability Assessment focuses on the analysis of food sources and incomes by livelihood zone and wealth group. To achieve this, the Zambia April Vulnerability Assessment used two investigative methods, namely the Household/Key Informants Survey and the Food Economy Approach.

The Household/Key Informants Survey is an important tool for gathering information within and across households, and has been used widely in Zambia. In April's survey, the household instrument queried people as to their household demographic and health characteristics, asked them to quantify their own-production and livestock holdings between 2002 and 2003, ascertained what they thought to be limiting factors of production, listed coping strategies employed over the previous year, and ranked incomes and expenditures over the past 12 months. The Key Informants survey compared current with April 2002 sales and purchase prices for staple foods, livestock, and cash crops, ascertained water sources and means of waste disposal, and queried as to newly employed coping strategies for both food and income.

The Food Economy Approach examined livelihoods within zones, and within and across wealth groups. The approach quantified people's access to 2100 kilocalories of food per day through production, purchase, exchange, gifts/relief, wild food consumption; potential gaps and income sources for purchasing food is quantified. In addition, the approach identified potential hazards in each food economy zone and looked at how people might respond to these. Information collected enabled comparisons to be made among wealth groups and food economy/livelihood zones.

Both methods have been widely used in other countries.

1.3.2 Survey Design, Stratification and Sampling used in the Household and Key Informants Survey

Administratively, Zambia is divided into nine provinces. Each province is in turn subdivided into districts. For statistical purposes each district is subdivided into Standard Enumeration Areas (SEAs). Zambia has 72 districts and 16,000 SEAs. CSO selected the SEAs using a 2-stage stratified-cluster sample method. The SEAs were first stratified by livelihood zone using the NVAC-modified FHANIS livelihood map. Subsequently, 114 SEAs were selected proportional to the population size of the zone based on the 2000 census. For the design of this survey only the rural part of the sampling frame was used. Time constraints later reduced this selection to 72 SEAs, randomly selected from within the original set.

At the second stage, 4 villages were randomly selected in each sampled SEA. Within each village, a household list was collected/compiled and between 4 to 6 households randomly chosen for interview.

Random number tables were provided to the enumerators. For Key Informant interviews, 4-6 community leaders were assembled for a focus group discussion with participation of women emphasized. Both the focus group interview and household questionnaire used open and closed ended questions to gather information. The total number of households covered in the survey was 1448, whilst 69 key informant interviews were conducted. Appendix 1 and Appendix 2 shows map of SEA's, and the sampling frame.

1.3.3 Survey design and selection of Zones for Food Economy Approach

Initially, livelihood economy zones (Livelihood Economy Zones (LEZs): areas where households share similar methods of accessing food and income) were identified using the following criteria:

- Zones clearly defined on both the FHANIS and NVAC livelihood maps
- Zones identified as needing relief food in both the August and December assessments (4 out of 6 zones)
- Zones in diverse parts of the country (i.e. to bring out contrasts/differences in livelihoods)
- Accessibility (i.e. flooded areas were inaccessible at this time).

Within LEZs, purposive sampling was used to select key informants, sites, and focus groups. Focus group discussions, with at least 4-6 key informants, were held with district level GRZ staff, NGOs, and church organizations to facilitate the identification of 2 “representative” villages (“typical” of the zone, neither the worst nor the best and taking population density into consideration). In addition, these interviews contributed to the development of wealth group descriptions, decadal timelines of production and hazards, and seasonal calendars. In each village and at the community level, 4 focus group discussions were held with both men and women separately and together. These were people who represented their community. These interviews provided a crosscheck to complete the wealth group rankings and descriptions, built up a history of the area, and developed the seasonal calendars. Information was also collected on local units of measure and prices of foodstuffs, both through market and household visits.

These focus group interviews were followed by 8 interviews with 4-6 individuals representing each wealth groups. Using a locally relative definition of wealth, the interviews focused on the poor and middle wealth group, but where time allowed also developed descriptions of the very poor and/or the better off. In these wealth group discussions, information was collected on sources of food, income, and expenditures for a “typical” family within the wealth group. Calculations were made to ensure that the information added up to at least 2100 kilocalories/person/day.¹⁰ (average energy requirements, Sphere standard) The information collected was summarized and triangulated at every stage of the process to identify both agreement within the team and ensure that any differences were cross-checked/followed up in the field the following day.

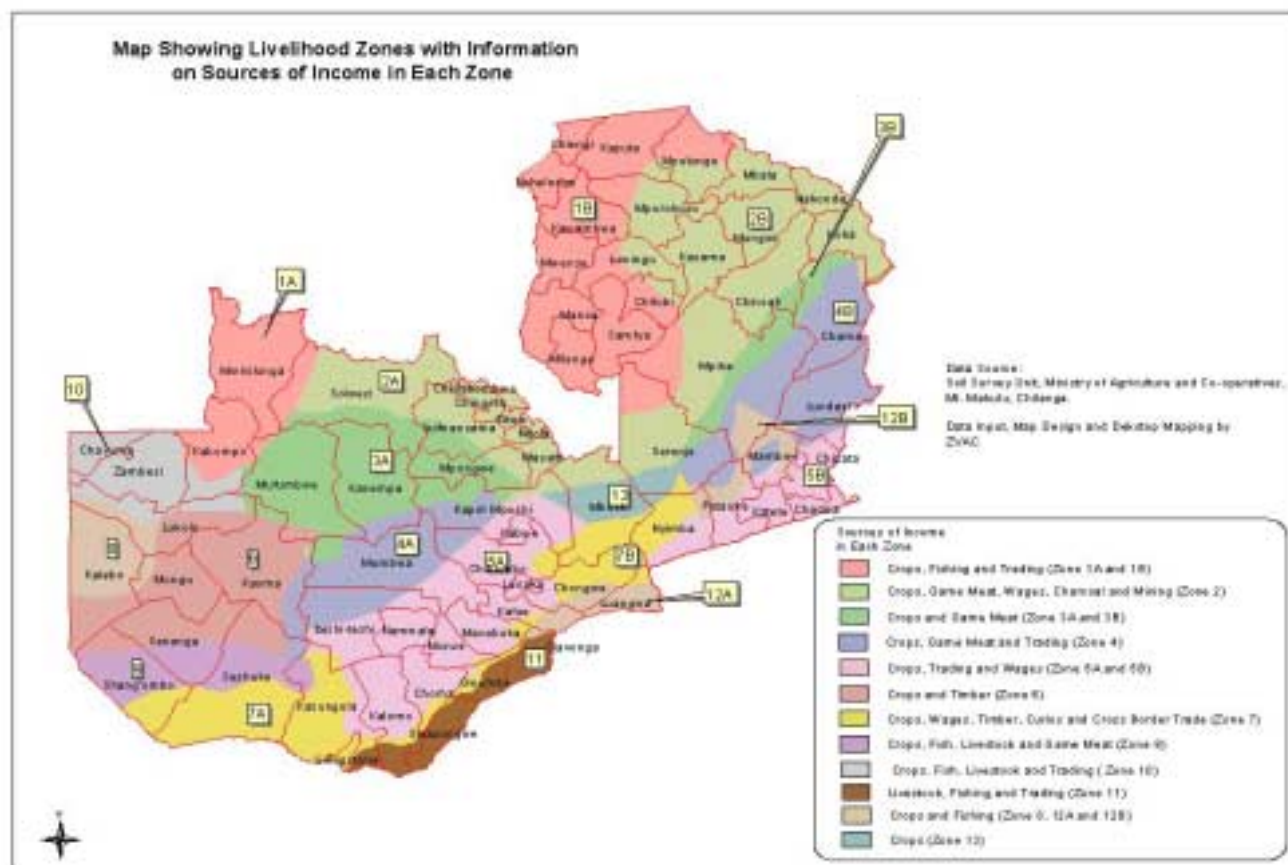
1.3.3.1 Livelihood Zone Map and Description

In 2000, the first attempt at coming up with a Livelihoods Zone map of Zambia was made. This was against a backdrop of the need for a food security analysis approach that would take into account

¹⁰ Since all nutrition surveys in the past year indicate no significant deterioration in wasting among children under-5 years of age, the implication is that all age groups across the country covered their requirements of 2100 kcal/person/day.

livelihoods across the country. A one-day working group meeting was held with Zambian experts drawn from a range of institutions. The product of this one-day meeting was a livelihoods zone map of Zambia with an accompanying table of livelihood zone descriptions. This was later modified in collaboration with FHANIS and the map in Figure 1.1 compiled. Appendix 3 gives further description of each zone.

Figure 1.1: Livelihood Economy Zone Map



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1.4 Training

Following one week of training and pre-testing of the instruments, the field component commenced. The “households” group fielded 6 teams of 4 people for 21 days (1st to 21st April), while the Food Economy group sent 3 teams of 4 people for the 21 days that included some days of analysis. A one-day meeting to share findings of both approaches was held on 30th April to look at the ways in which the two approaches would complement each other during analysis. The two teams were made up of members of the NVAC as well as consultants from UCT Associates and FEWSNET.

1.5 Analytical Framework

Nutrition status data collected in Zambia between May 2002 and March 2003 show that rates of global acute malnutrition (GAM) have been stable at around a 5% prevalence rate. The household questionnaire quantified the contribution of the main sources of cereals and tubers to the energy intake

by zone throughout the country. The food economy detailed how people last year accessed their 2100 kcal/person/day in 6 zones. Within each zone, this information, combined with the household questionnaire's information on other food sources, coping strategies, and incomes, with additional information from secondary sources, provided an overview of how people met their food requirements.

The primary data for the household survey was analyzed using Statistical Package for Social Sciences SPSS 11.1™ and ArcView™ Geographical Information System (GIS). The process made use of un-weighted average production per household, calculated from the total average production and total average household size for each LEZ; this was used instead of the weighted (individual household size) average production to smooth the influence of data outliers. During the analysis (10-22 May), the emphasis was placed on the triangulation of data using primary sources collected during the surveys (household and key informant questionnaires, food economy focus-group interviews), MACO crop production data, data on imports, health, sanitation, population, and other relevant secondary sources. The combination of approaches enabled a rational story to be developed about how households survived and met their food requirements in light of last season's cereal shortage.

1.6 Constraints to the surveys

Timing was a major constraint as the surveys took place when some areas were inaccessible due to rain and damaged infrastructure. In addition some household members were away tending to their fields and often had to be waited for. This reduced the number of SEAs visited and households interviewed, as well as limiting the food economy study to 6 out of the planned 9 zones.

2.0 NATIONAL LIVELIHOODS SECURITY

2.1 Crop and Food Supply

Total staple cereal production (excluding wheat) for the 2001-2002 farming season in Zambia amounted to 667,667 MT with carry over cereal stocks from the previous year totaling 23,000 MT. This is against human consumption requirements of 1,160,969 MT of staple cereal for the 2002-2003 marketing year. The total staple cereal deficit over the same period amounted to 671,766 MT.

The food deficit was reduced by cassava and sweet potato production where surplus production was experienced. The previous VAC reports (August and December 2002) had estimated a cumulative cereal food aid requirement for the period September to March 2003 as 224,000 MT to assist a total of 2.9 million people.

Since December 2002, when the second round of food need assessments was carried out, the Zambian Government had facilitated the importation of 46,854 MT of relief maize, of which 19,288 MT was brought in through the Food Reserve Agency (FRA), and 27,666 MT through private firms. In addition, since August 2002 the World Food Programme (WFP) had imported a total of 79,194 MT of cereal under its Emergency Operations (EMOP) which was distributed as relief. Thus a total of 126,048 MT (46,854 + 79,194 MT) were brought in against a demand of 224,000 MT or 56%.

2.2 Economic and Agricultural Sector Performance

By the end of 2002, the economy had attained a 3.0% growth in gross domestic product compared to 5.2% in 2001. Growth for 2003 is forecast at 4% or more. Overall, the major issues in the economy were privatization, economic diversification and poverty reduction.

Annualized inflation for 2003 is targeted at 17.9%, down from 26.7% the previous year. The high inflation achieved in 2002 has worsened effective demand for agricultural produce. Weak consumer demand will continue to have an adverse impact on the economy and the projected inflation target may not be achieved as long as consumer demand remains weak. Inflation will remain a serious problem as long as the monetary and fiscal measures used by government are unable to contain the depreciation of the Kwacha.

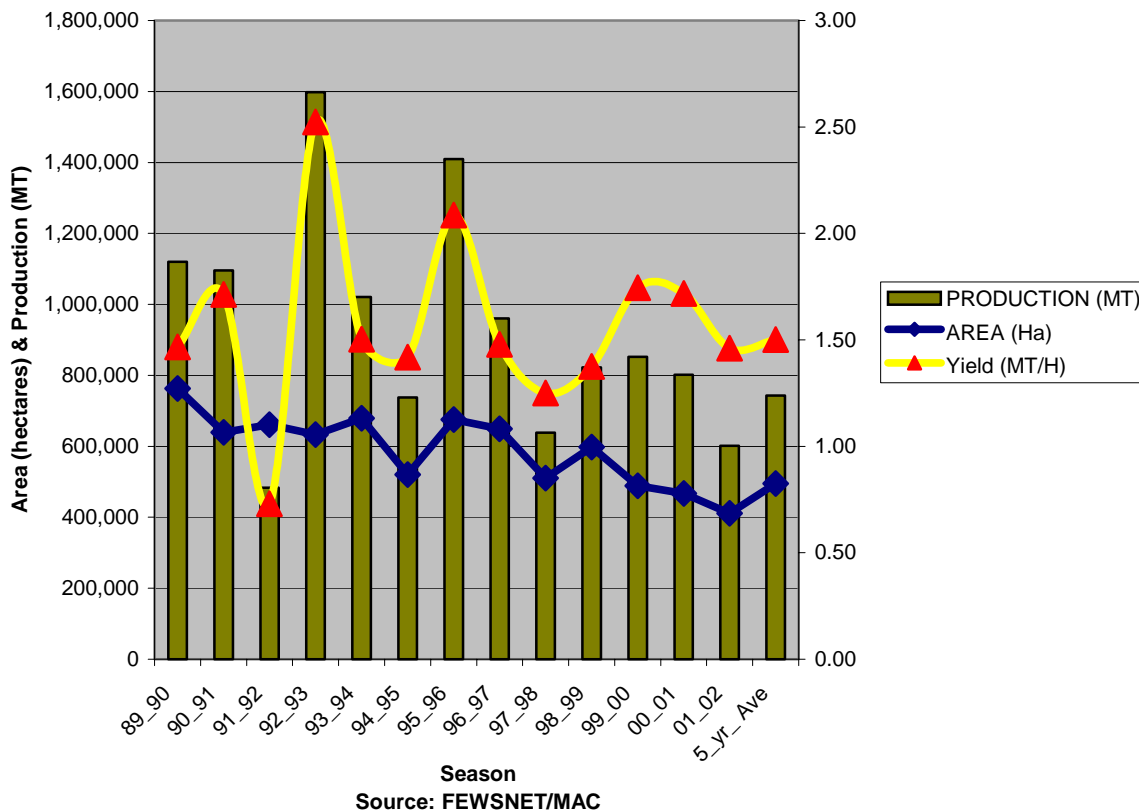
The exchange rate averaged ZMK 4,800 per 1 US\$ during the year, implying marginal appreciation of the Kwacha. Commercial lending rates continued to average 41% whilst the savings rates have remained static at 5%. The interest rates remained unfavorable for borrowing and this will be the situation as long as inflation remains.

2.2.1.1 Maize Production Trend

The area harvested for maize in Zambia has been slowly declining since 1989/90 (Figure 2.1 illustrates this trend). In Zambia, the area under cultivation appears to be a major factor in food security and vulnerability. In the last 14 years, the area harvested has gradually declined, pulling down with it the average yield. The drought years of 2000-01, 2001-02, 1994-95 and 1991-92 resulted in corresponding decline in area harvested whilst the observed peaks in 1992/93 and 1995/96 are explained by

deliberate Government subsidy and support expenditure policies related to election periods. The worst drought in Zambia was in 1991/92 when production fell far below the recent five-year average.

Figure 2.1: Maize Area and Production 1989/90 to 2001/02

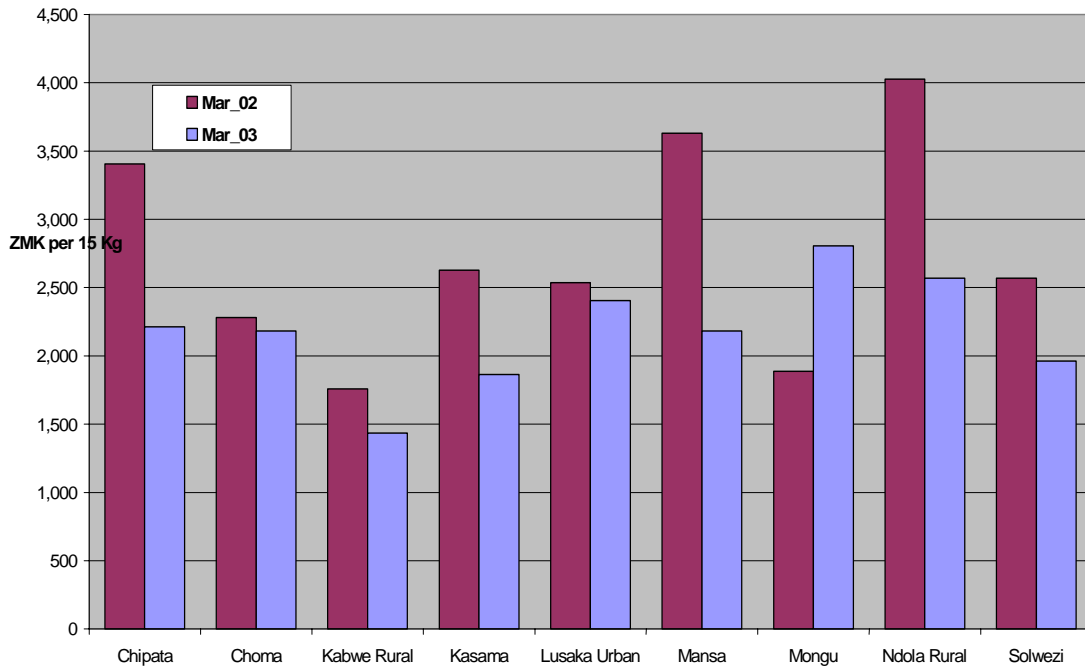


The observed trend can be explained by the liberalization of agricultural markets that has resulted in farmers producing maize only when it is economically viable to do so.

2.2.1.2 Food Access

Ndola rural (Zone 2a), Mansa (Zone 1b) and Chipata (Zone 5b) experienced relatively high prices in March 2002 while lower prices were experienced in Mongu and Kabwe rural (Zone 5a). As shown in Figure 2.2, there has been a fall in maize prices in all provincial centers, making access to maize relatively favorable this year, except in Mongu (Zone 8), where prices have risen. The reason why Mongu is experiencing higher prices compared to Kabwe this year is because: Mongu is a typical deficit area and Kabwe a surplus area. Figures 2.3a and 2.3b show how the prices have behaved during the period March 2002 and March 2003 in deficit and surplus regions.

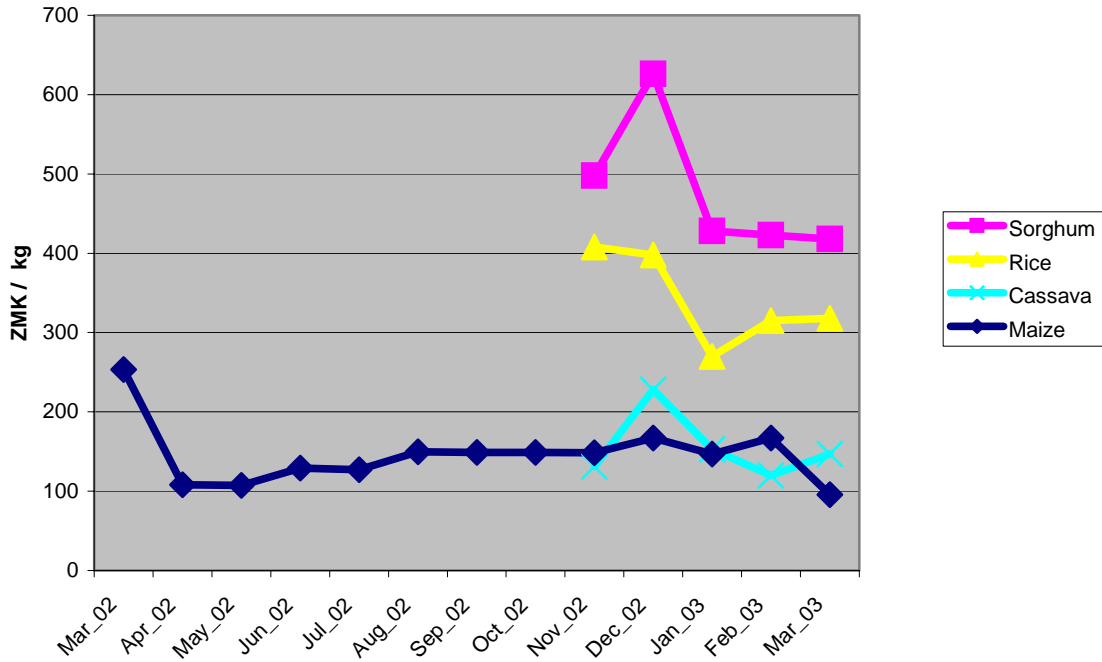
Figure 2.2: Real Maize Prices in March 2002 and March 2003



Source: FEWSNET / CSO

- Both surplus and deficit areas experienced relative stability in maize prices after an initial fall in March 2002 with the deficit areas experiencing relatively higher prices than surplus areas.
- However in all locations the prices during the period under review were above the recent five-year average implying that access problems affected all areas at varying degrees.
- Maize prices when compared to prices of other cereals and tubers (sorghum, cassava, and rice) are lower (see Figures 2.3a and 2.3b), even in Mongu a predominately cassava and rice growing area.
- In maize deficit producing areas access to staples will continue to be a problem whilst alternatives to maize exhibit higher prices.

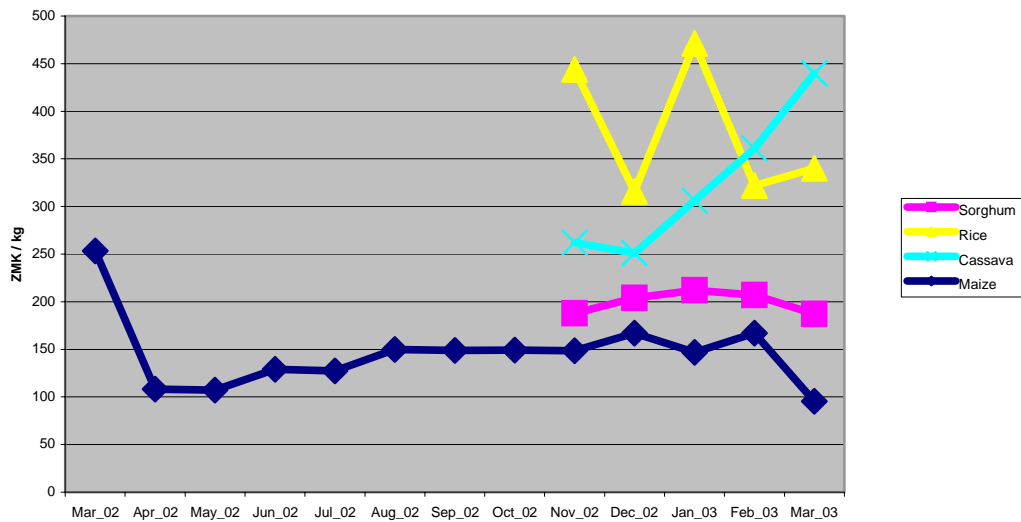
Figure 2.3a: Cereal Real Prices in a Surplus Area (Kabwe)



Source: FEWSNET

The high price of sorghum could be explained by its use in brewing and therefore attracts a premium price.

Figure 2.3b: Cereal Real Prices in a Deficit Area (Mongu)



Source: FEWSNET

The price of maize grain continues to be determined by land use capability and weather including proximity to the market. In addition, other determinants of price will be the terms of trade with other substitute cereals or tubers. This implies that price is particularly crucial to food access in maize deficit areas like Mongu where cassava prices have risen almost exponentially relative to maize.

The present downward trend in maize grain prices is expected to continue until the end of the harvest and marketing season (around August) when most household stocks will start to run out. A number of factors support this conclusion including: continued import of maize by the Government; higher than expected production; and, according to the Agricultural Commodity Exchange April report complains by some millers of poor quality maize caused by late rains in early April 2003. This has resulted in a reduction in the price millers are willing to pay for maize.

In agriculture, the Government is looking towards ensuring timely delivery and distribution of agricultural inputs and the rehabilitation and development of infrastructure. The Zambian Government has also set aside funds to tap the massive potential in irrigation. Funding has also been set aside to establish the Crop Marketing Authority (CMA) that will build up the food security stocks and ensure that farmers have better prices at which to sell their produce.

2.3 Nutritional Situation

The major nutrition problem in Zambia is chronic malnutrition. Data available on nutritional status is primarily derived from anthropometric measurement on children under five years of age. Three indicators are often used, height-for-age (stunting)¹¹, weight-for-age (underweight)¹² and weight for height (wasting)¹³. Children under 5 years old are considered the most vulnerable, and therefore children's nutritional status is a good outcome indicator as it reflects both the general population and household's food security situation. Trend data for analysis of nutrition status has been derived from secondary data using:

- 2001-2 Zambia Demographic Household Survey (ZDHS)
- NGO nutritional surveys supported by UNICEF at districts level.
- Annual health statistical bulletin 2002, (Growth monitoring data from health facilities)

The underlying causes of malnutrition are divided into three categories and show links between inadequate household food security, basic health and environmental services and childcare and feeding. These underlying causes are further influenced by factors such as income, wealth of households, distance to markets, crops grown and livestock owned. Likewise, the dependency ratio also affects the capacity of households to assure their needs.

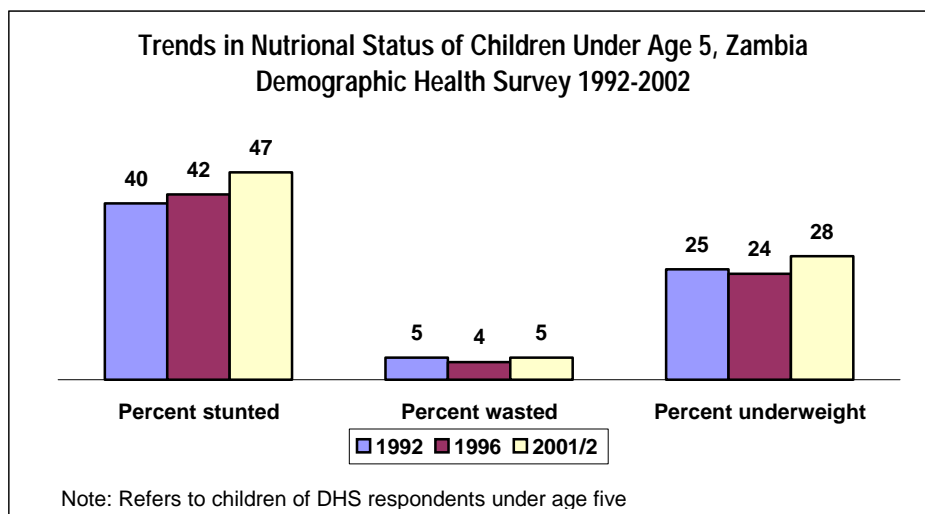
¹¹ Height-for-age: which shows linear growth and is a measure of long-term nutrition. A child whose height is below two standard deviation of the Z-score is stunted or chronically malnourished. Stunting is a result of long term deprivation due to repeated illnesses or inadequate dietary intake

¹² . Weight-for-age is a composite indicator of both linear growth and body proportion. A child whose weight-for-age is below two standard deviation of Z-score is considered to be underweight. A child can be underweight either because he is stunted or wasted.

¹³ . Weight-for-height is a measure of fatness or thinness. A child whose weight in proportion to height is below two standard deviation is wasted. Weight-for-height is an indicator of current nutritional status. It is sensitive to recent past illness or acute dietary intake. Wasting is a form of acute malnutrition.

Figure 2.4 represents trends in the three nutritional indicators between 1992 and 2002 using data from ZDHS 2001/2. The results document a gradual increase in both the proportions of children stunted and underweight and a stable pattern with respect to the level of wasting. The prevalence of acute malnutrition (wasting) ranged between 2.5% and 7.6% and has remained stable. These rates are within the global acceptable range and do not suggest a need for an emergency food.

Figure 2.4: Trend Analysis of Malnutrition at National Level



The prevalence of wasting as captured in nutritional surveys in the respective districts (see Appendix 4) is comparable and consistent with national level data (See Figure 2.5). The prevalence of acute malnutrition (wasting) ranged from between 2.4% (CARE, Kalomo, Dec 2002; CARE, Namwala, Jan 2003) and 7.7% (Oxfam, Siavonga, Jan 2003).

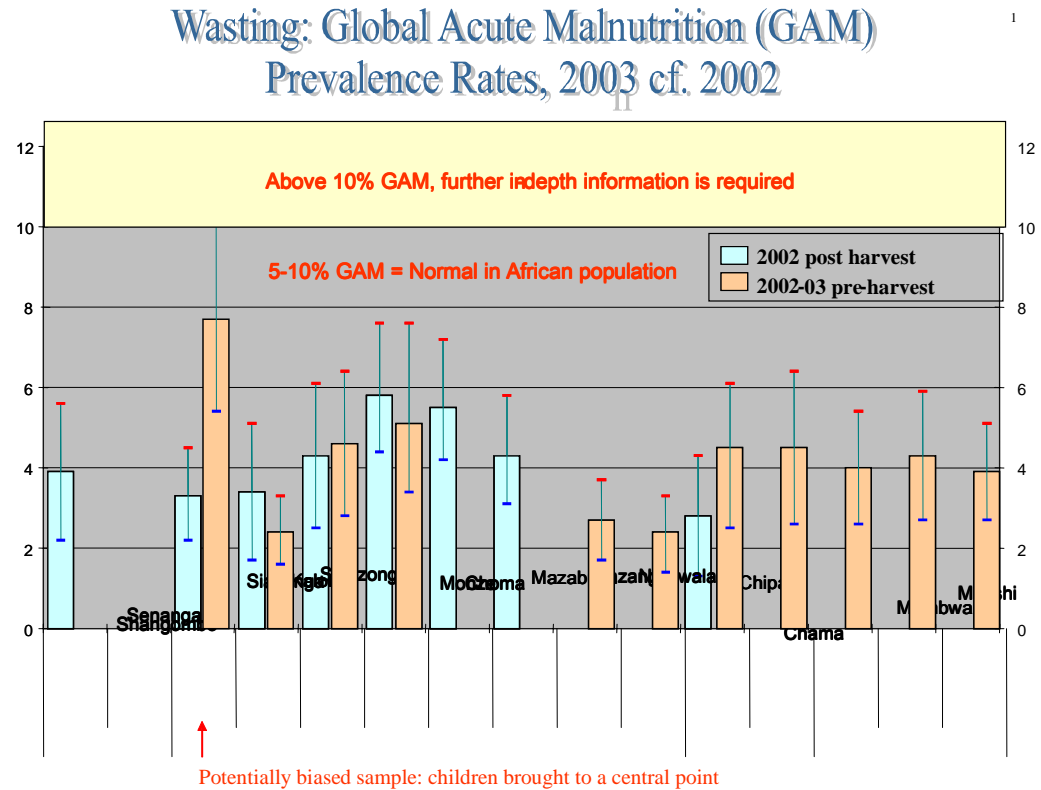
Stunting has increased over the last decade from 40% in 1992, to 42% in 1996 and 47% in 2001-2002 (ZDHS, 1992, 1996 & 2001/2). The rate of stunting varies between 35.6% (Lusaka Province) and 59.4% (Eastern Province). Provinces that show high rates of stunting are: Eastern (59.4%), Luapula (57.6%), Northern (54.8%) and Central (45.9%) Provinces.

Underweight as reported by the Health Management Information System (HIMS, 2002) ranges from 14.2% (Copperbelt Province) and 33.1% (Luapula Province). For each of the provinces, the prevalence is lower than in 1999. Provinces with the lowest prevalence are Lusaka (35.6%) and Copperbelt (39.9%).

Limited data on adult malnutrition has been collected in the last 12 months. Oxfam in Monze, Senanga and Siavonga districts measured adults' nutritional status using MUAC in one survey in January/ February 2003. The measurements of mothers using MUAC showed that 0.4% to 2.3% of the mothers were presenting with 10 - 14% with moderate or severe malnutrition (<23cm and <21cm respectively). This does not indicate a large proportion of mothers having a MUAC varying greatly from the average.

Data concerning adult malnutrition are limited and do not suggest a high prevalence of malnutrition.

Figure 2.5: Wasting Prevalence



Trend data suggests that chronic under-nutrition levels are increasing at both national and household levels. Stunting is indicative of a cumulative problem of the past. Wasting measurements show a somewhat static or insignificant movement implying that the general population is meeting their basic 2100 kcal daily requirements.

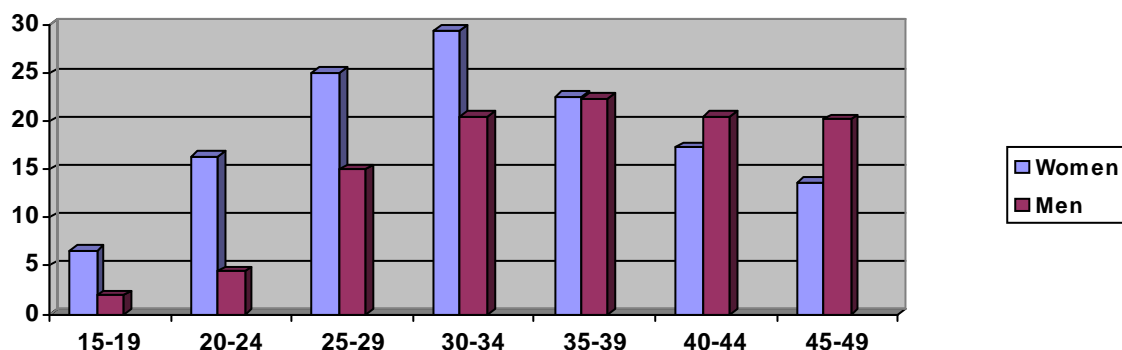
2.4 Context of HIV/AIDS in Zambia

Zambia is facing an HIV/AIDS epidemic of considerable proportions (see Figure 2.6a and b). The recently completed Zambian Demographic and Health Survey (ZDHS) found that approximately 15% of the Zambian population aged 15-49 are HIV positive (Central Statistical Office, Central Board of Health and ORC-Macro, 2002). The findings from this population-based survey suggest that in the younger age groups, women have higher infection rates than men. In the age group 25-29 approximately 25 % of women tested positive compared to 15 % of men. In the older age groups men predominate among those infected (see Figure 2.6a). Prevalence data do not provide a grasp of the annual number of new infections, nor can it provide an indication of how long ago people were infected. Nevertheless, the data indicate that large numbers of the Zambian population will fall ill and

die within the next couple of years with multiple health, social, economic as well as food security consequences.

Recent estimates by UNAIDS and the WHO put the number of people in Zambia that died of AIDS-related causes at 120,000 in the year 2001. These organizations estimate that there are currently 570,000 children under 15 years in Zambia who have lost one parent or both parents to AIDS.

**Figure 2.6a: HIV Prevalence Rates in Zambia, 2001-2002
By Age group and Sex**

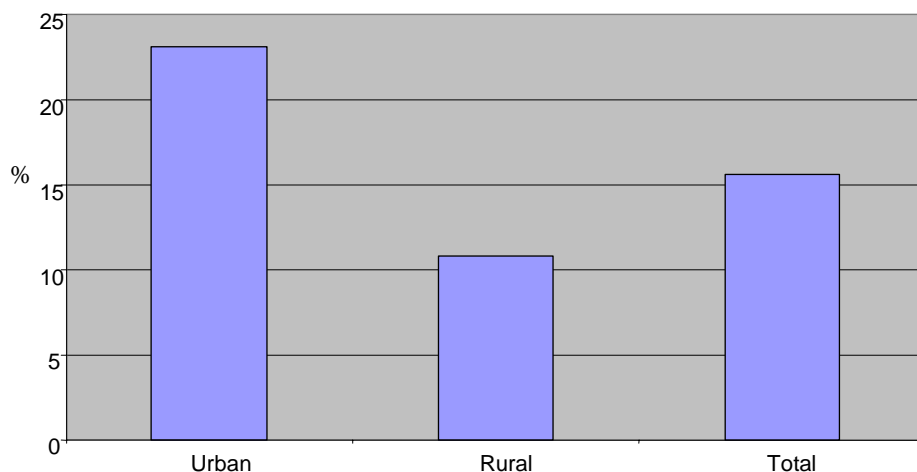


Source: Zambia Demographic and Health Survey, 2001-2002.

HIV prevalence rates differ markedly by province with the highest prevalence in Lusaka (25 %) and the Copperbelt (22 %) provinces. The Northern (8,8%) and North-Western Provinces (10 %) have much lower infection rates. Differences in prevalence rates by province are largely a function of the level of urbanisation in each province. The 2001-2002 ZDHS found that HIV infection differ markedly by place of residence. In urban areas the HIV prevalence were twice as high compared to rural areas (see Figure 2.6b).

The Zambian VAC survey was confined to rural areas, and the lower prevalence of HIV in rural areas should be reflected in the findings of the survey, in terms the impact the epidemic is having on rural households in general.

Figure 2.6b: HIV Prevalence rates by residence



2.5 Water Potential

The main watersheds in Zambia are listed in the Table 2.1 below. The 10-year mean annual flow for these watersheds ranged from 330-1900 m³/s. This is sufficient to meet Zambia's domestic, industrial and agricultural requirements and if utilised for irrigation could enhance food security within the country.

Table 2.1: Water Basins in Zambia

Basin	Annual Mean Flow (m ³ /s)	2002 Mean (m ³ /s)	Annual Flows	Remarks
Chambeshi	690	702		Increase
Luangwa	500	507		Increase
Luapula	690	710		Increase
Kafue	350	375		Increase
Tanganyika	330	355		Increase
Zambezi	1900	1975		Increase

Source: MEWD, 2002

In 2002, the annual mean flow was slightly above average (355-1975m³/s). This combined with the government policy over the last 10 years of expanding access to water sources particularly in drought prone areas means that water availability did not deteriorate sufficiently in the 2002 drought to impact negatively on population health status, livestock access to water or the quantity of water available for irrigation¹⁴.

¹⁴ Water Aid data

that in the following districts: the number of boreholes/protected water points in each district had increased by between 72-150.

3.0 FINDINGS ON CURRENT HOUSEHOLD FOOD SECURITY IN 2002/3

Data is presented by livelihood zones and covers a 12-month period from April 2002 to March 2003. The zones have been grouped by staple food production and consumption. The four categories are:

- Dominant cassava consuming zones;
- Mixed cassava/cereal;
- Cereal consuming zones - frequently flood/drought affected, and
- Cereal consuming but less frequently affected by drought.

3.1 How Rural Households survived in 2002/03

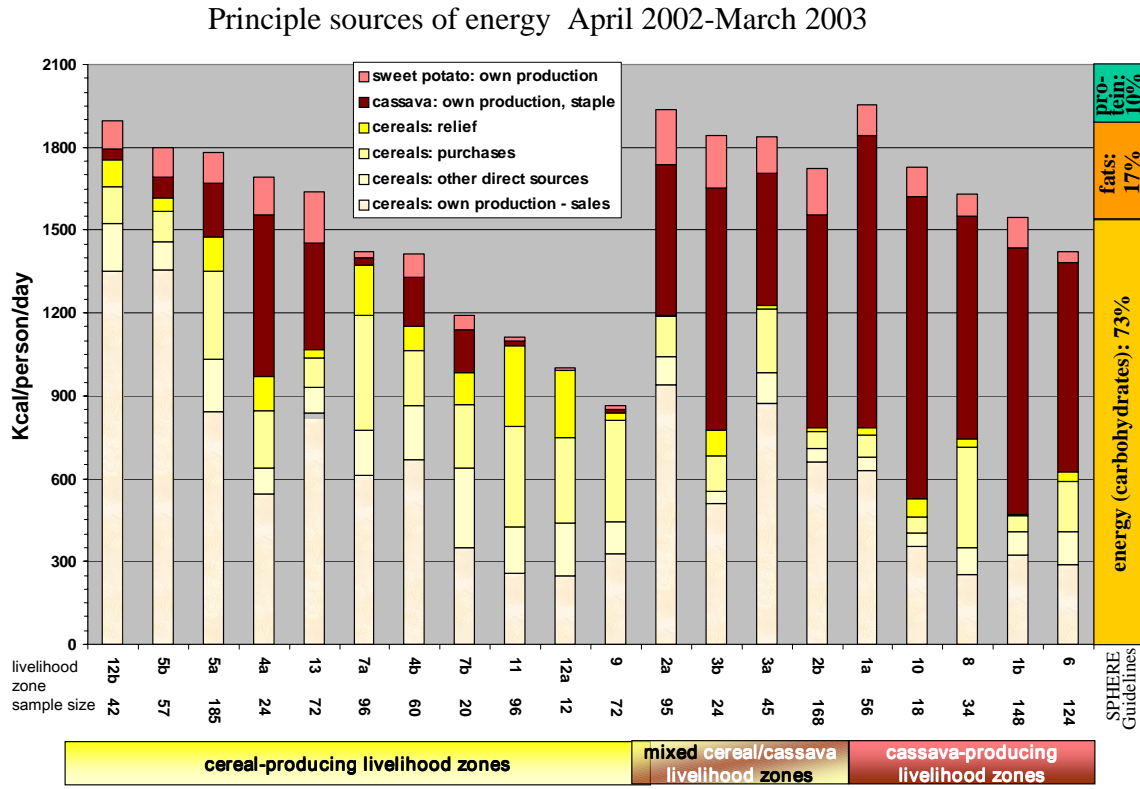
The main sources¹⁵ of cereal and tubers identified were sufficient to provide on average 70% of energy requirements¹⁶ in most zones except the Southern zones: 11-Gwembe valley (53%), 12 a-Luangwa (48%) and 7b-Chongwe (57%) and the Western zone 9-Shangombo area (41%). For all zones, the remaining household food requirements came from additional sources of cereals/tubers and other foods eg vegetables, fish, milk, forest products (roots, fruits, nuts, game), meat, oil. An important additional source of cereals/tubers was exchange. Two types of exchange are common: exchange of labour for food: mealie meal, grain or cassava or barter/exchange of goods for food eg in the Gwembe valley (11) and Kazungula/Sesheke (7a) households exchanged livestock, sour milk and fish for cereals.

Income sources used to purchase these additional foods varied between livelihood zones but came from a combination of: sale of crops (maize/cassava/ vegetables/cotton/tobacco), livestock, poultry, traditional opaque beer, and forest products/game; cross-border trade/petty trade; self-employment (eg production and sale of handicrafts, grass, timber, charcoal); employment (eg mining, commercial farms/fishing); casual labour and exchange of labour, livestock, forest products, fish for food. These sources of income have been developed over several years and were not specifically as a result of the drought. Coping strategies adopted by household were generally limited to changing food intake (eg replacing nshima with other foods).

¹⁵ The main sources of cereals/tubers identified by the included: production of maize, sorghum, millet, rice from the 2001/2 April harvest (after cereal sales and gifts have been deducted) including the winter maize harvest and green maize consumption; other direct sources including: cereal given in payment for casual labour; cereal purchased with money received as remittances; gifts of cereal; purchases of cereal and cereal/beans received as relief food; sweet potato and cassava production/consumption.

¹⁶ 2100 kilocalories is the mean population requirement for energy intake. It is recommended that staples (cereals/tubers) should provide about 70% of kilocalories (eg 400g of cereals/person/day) with the rest of kilocalories coming from protein and fats (see Sphere standards). 1kg of cereal flour provides an equivalent kilocalorie intake as 2.4kg of cassava tuber or 1.1kg of cassava flour.

Figure 3.1: Sources of Energy April 2002 to March 2003



A) Maize Consuming - Frequently drought/flood Affected Areas

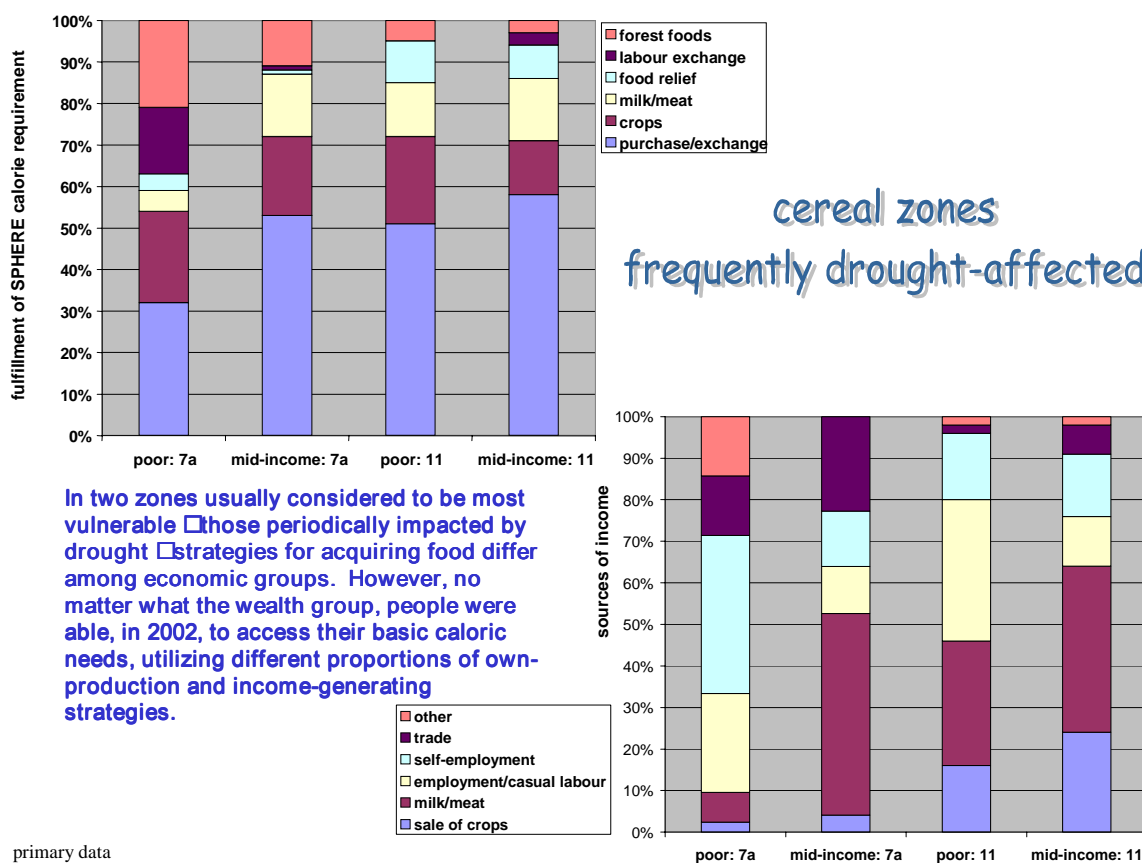
These zones were identified last year as the most vulnerable. Zones in this group include the Luangwa valley (12a), Gwembe valley (11), Shangombo (9), Kazungula/Sesheke (7a), and Mambwe (12b). These are zones which have been frequently drought/flood affected in the last 10 years. Last year, these zones received less of their food from the principle food sources and more from other sources. Other sources included: livestock e.g. milk consumption¹⁷ and livestock sales (particularly cattle/goats); forest products (fruits, nuts, roots and leaves) particularly in the Gwembe valley (11), Shangombo (9); fish along the shores of Kariba and the Zambezi. Food relief provided over a 12-month period was estimated to provide approximately 10-15% of Kilocalories on average to all households in Luangwa valley (12a), Gwembe valley (11) and 1-10% of Kilocalories in Shangombo (9), Kazungula/Sesheke (7a). For a detailed review of the food relief intervention, including targeting, timeliness and seasonality, see discussion below. Sources of income included sale of vegetable crops and cotton in the Gwembe valley, fishing (both for oneself and through employment), sale of livestock and casual employment, which was highlighted as important in most of these zones (see Figure 3.2).

Information collected in both the Gwembe valley (11), and Kazungula/Sesheke (7a) complement these findings. In both zones, households were able to access sufficient food to meet their annual energy

¹⁷ Milk consumption identified through the HHQ 7 day recall was higher in Shangombo, Kazungula/Sesheke, and Gwembe valley than in other zones in the country.

requirements of 2100 kcals/person/day. In both zones, other sources of food and income were considerably more important than own crop production (cereal, pumpkins, vegetables), which provided less than 25% of food intake last year. Purchase/exchange/barter and labour exchange provided 50% of kilocalories for both the poor and middle wealth groups. In Kazungula/Sesheke many poor households would exchange their labour for food. Households would also travel to neighbouring areas to exchange sour milk, fish and livestock for maize. Forest products contributed to food intake in both zones but were particularly important in Kazungula/Sesheke zone (7a) where the variety of fruits, roots and nuts¹⁸ ensured year round access. Food relief over the 12 months under discussion, provided between 1-5% of kilocalories in Kazungula/Sesheke (7a) and 8-15% of kcals in Gwembe valley (11) (see discussions on food relief below). The prevalence of wasting for under 5 years children in Shangombo (9) has been stable and acceptable between April and November 2002 (see figure 2.5) where as the energy requirements covered by carbohydrates are low (figure 3.1).

Figure 3.2: Sources of Food and Income in Cereal Zones Frequently Drought –affected by Wealth Group



Livestock census data suggests that herd sizes are recovering from the outbreak of East Coast Fever (Corridor) in 1999 and mortality rates in livestock have reduced since then. Employment in the Gwembe valley includes: commercial horticultural production (Agriflora), commercial kapenta fishing, crocodile farming gemstone and coal mining (e.g. Maamba and Mapatizya mine, Kalomo), Nakambala sugar company, NGOs (about 10) and the civil service. In Kazungula/Sesheke, some

¹⁸ Mungongo oil was an important source of food and income for the poor. The oil is so popular that 1 litre of local mungongo costs ZMK 3000/litre and is only marginally cheaper than imported oil which sells for ZMK 3500/litre

people go to Namibia to work on commercial farms, as domestic workers or animal herders. Informal cross-border trade with Namibia includes sale/exchange of forest products (fruits, timber, reeds) and livestock for a variety of groceries. Self-employment in both zones includes fishing, handicrafts, and selling forest products. Vegetable production has also expanded in recent years particularly in Gwembe valley. The produce is marketed in Choma. An international company (Dunavant cotton) supports a number of cotton out grower schemes in this zone.

B) Maize Consuming – Droughts less Frequent.

Zones in this group include Chipata/Chadiza area (5b), Southern Province Plateau (5a), Chama/Lundazi (4b), Chongwe area (7b) Kafue Flats(4a), Mkushi Farming Block(13). These zones are found in the east and the centre of the country. This is the centre of commercial agricultural production and processing (coffee, tobacco, sugar, paprika, cotton, vegetables and flowers) in Zambia – where many households depend on agricultural labour.

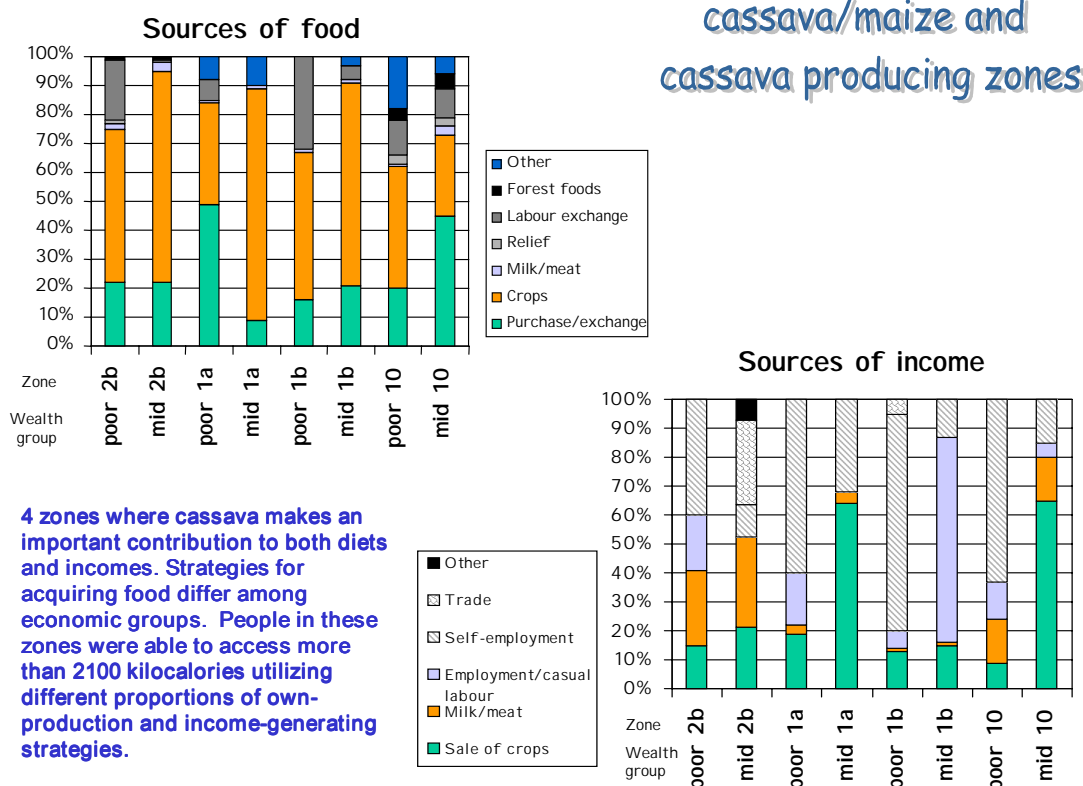
C) Mixed Cassava/Cereal Consuming Zones and Cassava Consuming Zones

Mixed cassava/cereal zones include: Copperbelt and Solwezi(2a), Northern Province (2b), Muchinga Escarpment(3b), Kasempa/Mufumbwe(3a). In these zones, households grow and consume both cassava and maize. Cassava consuming zones include: Zambezi/Chavuma(10), Luapula Region(1b), Kalabo area(Barotse Plains) (8) and Kaoma/Mongu(6), Mwinilunga/Kabompo(1a). In these zones, households focus on cassava production and can meet most of their energy requirements from own crop production (both cassava and maize)- see Figure 3.3.

Cereal production in 2002 in these areas was not affected by drought. Sources of income in these zones include sale of cereals, sale of tubers; casual labour particularly in zones Kasempa/Mufumbwe (3a) and Muchinga Escarpment (3b); cross border trade with the Democratic Republic of Congo in zones Mwinilunga/Kabompo(1a), Copperbelt and Solwezi(2a) and with Tanzania in Northern Province (2b); with the exception of Kalabo area(Barotse Plains) (8) where flooding is common and cattle sales important, livestock did not make a significant contribution to diets.

Likewise, food relief contributed <5% of the required energy intake. In the central areas Kasempa/Mufumbwe (3a) and Muchinga Escarpment (3b) game meat provides an additional source of food and income.

Figure 3.3: Sources of Food and Income in Cassava / Maize Producing Zones by Wealth Group



Food economy information found that in these zones, households could generally access 2100 kilocalories or more. Own crop production (including cassava, maize, sweet potatoes, groundnuts, pumpkins and beans) made a significant contribution to food intake in these zones: 28%-80% depending on zone and wealth group. The poor in Mwinilunga/Kabompo (1a) were more dependent on purchase (49%) than own production (35%) as they had limited access to draught power which resulted in smaller areas cultivated. Whilst in Zambezi/Chavuma(10) as one moved up the wealth groups – households switched to cultivating maize as a cash crop and purchasing cassava for their own consumption – so own crop production made up a smaller proportion of intake (28%) whilst purchase was more important (45%). Cassava is consumed in all households and makes a significant contribution to food intake. For example in Northern Province (2b), poor households accessed cassava through: production (50%), purchase (7%) and exchange (13%). The middle and better-off households tend to mix cassava with maize throughout the year, whilst the poor wealth groups may mix cassava with maize or millet during the harvest period. Milk/meat made a small but significant contribution to diets in Northern Province but were less important in other zones.

Zones bordering Tanzania and DRC benefited from cross-border trade, particularly Northern Province (2b). Other sources of income included agricultural labour: clearing and burning (*chitemene*), making mounds for cassava or ridges for sweet potatoes, preparing land in 'permanent' fields for maize production, planting, weeding and harvesting. Labourers negotiate specific terms with their employers, the middle and better off households within the zone. Some may be paid in kind, while others opt for

cash. Payment is usually by area completed rather than a daily rate¹⁹. Labour exchange was important for example in Luapula Region (1b), this was the main source of fish in the diet for poor households who were often paid 1 dish (2kg) of fish for 1 days work.

3.2 Coping strategies

The assessment highlighted the diverse sources of income and food (see Appendix 5) that contributed to livelihoods in different zones within the country. Some of these sources of food and income were specific to one or two zones, for example forest products (fruits, nuts) were most important in zones 7a, 8 and 9; cross-border trade was particularly important in zones 1a, 1b, and 7a, 8. Other sources of food/income were found in most zones (e.g. agricultural labour, sale of poultry). These diverse economic strategies help to protect people's livelihoods and reduce the impact of hazards on the household (e.g. as a response to frequent droughts, households in the southern parts of the country have diversified into vegetable production, livestock trading. Certain of these livelihood strategies will have a long-term negative impact on the environment unless appropriate controls are put in place e.g. crop production using the slash and burn farming systems (*chitemene*), charcoal production (Northern Province 2b), timber logging (Kazungula/Sesheke 7a), forest product collection (e.g. grass, reeds, game) and fishing (e.g. Luapula, 1b and Gwembe valley 11, Kasempa/Mufumbwe 3a).

Within the questionnaire, coping strategies were grouped into: consumption, expenditure, income and migration strategies. Those adopted in most zones focused on changes in consumption. This included: getting food from other sources, changing from preferred foods to less expensive foods, reducing the number of nshima meals per day and sometimes not eating nshima, and eating only vegetables. The least common strategies were borrowing food/money to buy food, relying on the consumption of wild foods in zone (9), relying on own catches of fish in zone 10 and reducing expenditure on fertiliser and pesticides Mkushi Farm Block (13) a less drought affected zone. The fact that expenditure, income and migration coping strategies were adopted by a limited number of households highlights the number of existing economic strategies in many parts of the country that enable most households to meet their basic needs. It should however be realised that some coping strategies are undesirable (eg school dropouts²⁰.) Zones that reported the highest number of coping strategies were zone 11 and zone 7a. In some zones (zones 11, 12a, 5a, 7a) – food aid did contribute up to 15-35% of kcal requirements over a 6-9 month period. See discussion below.

3.3 Hazards and Vulnerability

Hazards that different zones face vary. In the southern maize producing areas – whilst drought threatens maize production, these areas would be as affected if not more affected by hazards that impacted on their vegetable production during the dry season, reduced their access to labour or impacted on livestock. Several areas in the south also face irregular flooding (e.g. Gwembe). In cassava growing areas – potential hazards include cassava disease (e.g. mosaic virus) and deforestation. In cross-border areas – trade restrictions would increase the level of vulnerability.

¹⁹ The standard payment to clear 11ima (0.25 Ha) was K15000, regardless of the number of people working or the length of time taken to complete the task.

²⁰ 10% of households surveyed reported children dropping out of primary school in 2002 – however figures are not available at present on usual drop out rates.

The most vulnerable in each zone to these hazards would be the very poor. These were households who had less livestock (e.g. few chicken, no cattle), and cultivated less land (e.g. 1-2 Lima) and often only had labour. Annual incomes ranged from less than 100,000 to over 500,000/year. Definitions of very poor depend upon the zone. Sometimes land cultivation was limited by the need to earn money/food to meet the households daily requirements. Two types of very poor households were identified: labour poor households and households with labour²¹. Labour poor households, were those with almost no labour: female headed households and/or elderly couples both looking after young children/orphans who were too young to contribute to the household food or income generation. These households relied more on the sale of chickens and a few cultivated crops for survival, prostitution was also reported. Very poor household with labour, albeit limited, would have somebody capable of working for others either fishing or doing agricultural labour for middle or better off households. The type of labour available to very poor households will influence the type of income support programmes that would be appropriate.

The food economy assessments highlighted the fact that maize producing areas which have been regularly drought/flood affected have diversified in recent years away from maize production into other sources of food and income (e.g. labour, vegetable production and livestock sales). This implies that vulnerability assessments need to go beyond crop assessments to include a review of livestock and other sources of food/income. Chronic vulnerability as identified by nutrition status data (stunting) suggests that households more at risk of chronic malnutrition are in fact those in the north rather than in the south of the country.

3.4 Contribution of Food Relief

The August and December VAC assessments identified 46 districts that would require approximately 224,200 MT of food relief for a maximum of 2,896,000 people between September 02 and March 03²². However, less than 50% (Alfred) of this was sourced and distributed. Following initial delays in the arrival of the food relief, further geographical targeting was conducted, with some districts in the south, central and eastern zones (4a, 4b, 5a, 5b, 7a, 11, 12a) being prioritised for earlier distributions. As more food relief arrived towards the end of the year, distributions were expanded to include more of the original 46 districts.

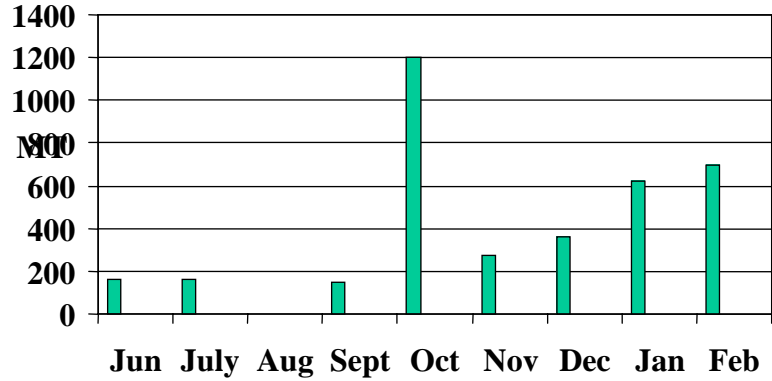
The increase in distributions (both in terms of coverage and quantities) towards the end of the year may have enabled farmers to: concentrate on weeding their own fields during the cultivation period (November – February) rather than looking for work elsewhere; to conserve their maize rather than harvesting it too early. In addition, in some districts distributions also appear to have occurred just before the planting season (eg Sinazongwe). This may have enabled farmers to cultivate large areas.

The contribution of food relief to individual households varied by district and depended on the quantities of food distributed and the targeting methodology adopted. Primary data from the household questionnaire shows that the percentage of households targeted in each zone ranged from 7-100% and that if households received in all of this food relief in a 3 – 6 month period, it would contribute between 6 and 69% of energy requirements (see example in Figure 3.4).

²¹ See FEA report for details.

²² Based on households receiving 400g/person/day (approximately 1470 kcals/day)

Figure 3.4: Food Distribution by Month in Sinazongwe



The contribution of relief was most significant in the following zones: 11, 12a, 12b, 7b where most households (80-100%) assessment reported receiving food relief. Secondary data suggests that this food was in fact received over a 6 – 9 month period and would have provided between 10 and 35% of kilocalories/person over 6 months²³ (see Table 3.1).

Table 3.1: Estimated Contribution of Food Relief and Food For Work

Livelihood Economic Zone	% of households who received relief	% of energy requirement per day		
		If received over 3 months	If received over 6 months	
Maize	11	96	69	34
	12a	100	55	27
	12b	100	21	11
	7a	84	45	23
	9	51	12	6
	13	38	19	9
Maize	4a	83	37	19
	4b	85	26	13
	5a	59	53	27
	5b	47	23	12
Cassava/maize	7b	100	26	13
	2a	11	16	8
	2b	27	13	7
	3a	7	61	31
Cassava	3b	71	23	12
	10	72	21	10
	1a	39	13	6
	1b	4	7	4
	6	44	10	10
	8	74	11	6

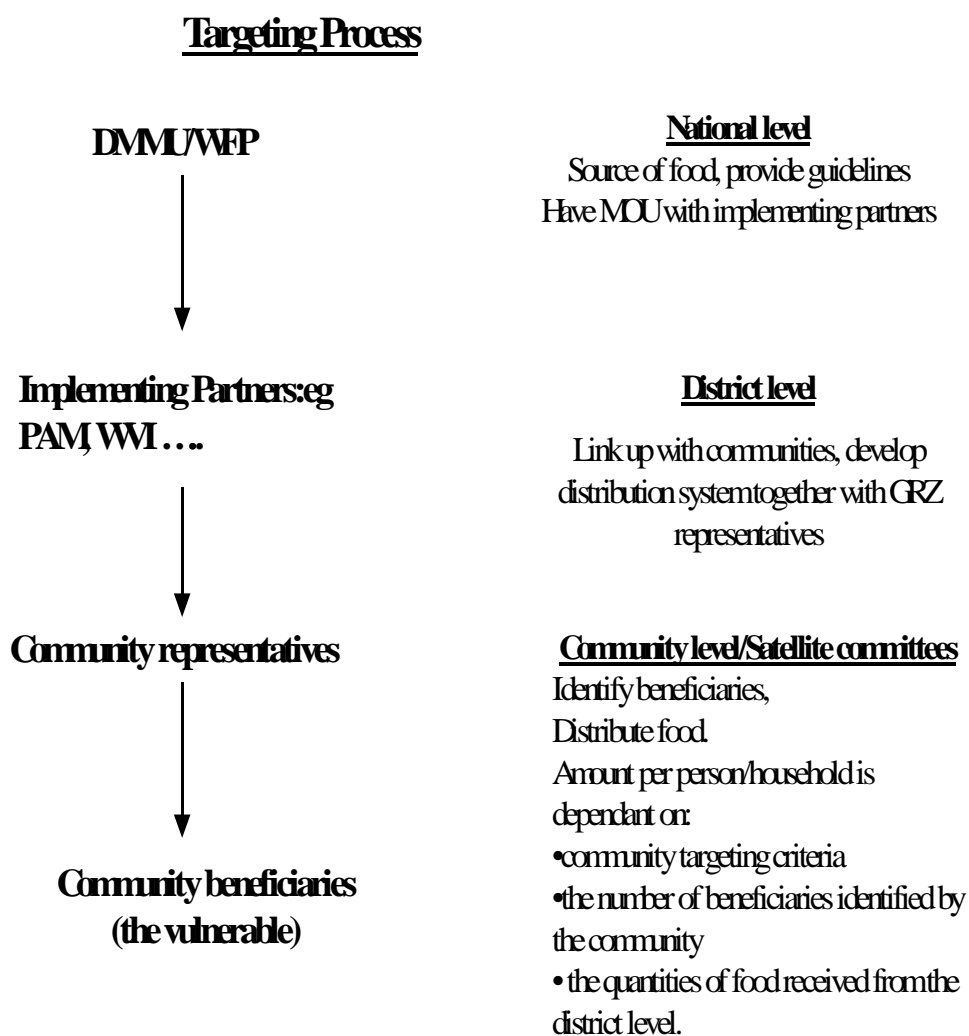
This table shows the percentage of households who received food relief/FFW and estimates the contribution that this would have made to energy requirements- if this food was received over a 3month period or a 6 month period.

²³ Details of food distributed by district are presently being compiled.

3.5 Food Aid Targeting

According to the last experience, WFP/DMMU would supply implementing partners with relief; this is illustrated in Figure 3.5. The implementing partners would distribute the food through satellite committees with assistance from the District Disaster Management Committee²⁴. The communities with support from the implementing partners were supposed to identify the beneficiaries.

Figure 3.5: Targeting Flow Chart



²⁴ See National Disaster and Relief Programme 2001-2002, Operational Guidelines. Office of the Vice President Disaster Management and Mitigation Unit

Overview of distributions in Sinazongwe.

Food relief has been distributed in 1991/2, 1995, 1997/8. Agencies distributing food in Sinazongwe include: the Red Cross, WVI and the Salvation Army (their programme targeted: vulnerable groups: orphans, widows and elderly and others around the Sinazongwe boma but is reported to be coming to an end). WVI started distributing to the most vulnerable in October 2001. Targeting criteria were strictly applied and were less popular with sections of the community who were not receiving food relief. In June 2002, the present round of relief started with DMMU/WFP food. The target population ranged from 13-50,000 people each month. The ration proposed to community representatives was 10.5kg/person/month.

Observed targeting: Food was distributed 8 out of 9 months. Beneficiaries received 4-6 times - the distribution rotated through the beneficiaries. Quantities received varied between villages (i.e. different community representatives had different targeting criteria). Focus groups reported the following quantities distributed: 10.5kg/household; 50kg sack/household (large households of 10-12 people would get 2 sacks); 10.5 kg/person; quantities dependant on the number of children in household. Some complained of distribution biases by the distribution committees. Others reported that the elderly were told "to go and produce children" to qualify for a ration.

It should be noted that at the time of the survey efforts were being made to improve this system by modifying the distribution committees to reduce the distribution bias.

Data suggests that in some districts – food tended to be distributed to all households rather than full rations being targeted to the most vulnerable. In other zones/districts – food was targeted within the district – but the absolute quantities of food received per person were low.

4.0 FINDINGS ON RELATIONSHIPS BETWEEN FOOD INSECURITY, HIV/AIDS, HEALTH, EDUCATION, CHILD PROTECTION, WATER AND SANITATION

4.1 Demographic and Health Characteristics

Table 4.1 shows the main demographic and health characteristics of the household population included in the 2003 Zambia VAC. The youthful nature of the rural Zambian population is noteworthy (49 % of the population is younger than 15 years old). The mean household size of 6.5 indicates that the rural population live in relatively large households. The crude mortality rate of more than 50 per 1000 of the population aged 15-59 is extremely high. Recall problems and data collection errors may have contributed to this. The high mortality may also reflect persons returning from urban areas to their rural homes after becoming ill and dying there.

Table 4.1: Selected demographic, Social and Health indicators,

Indicator	Zambia VAC survey, March 2003
Sex composition of the household population (%)	
Males	49
Females	51
Age composition of the household population (%)	
0-14	49
15-59	45
60+	6
Sex of household head (%)	
Male	78
Female	22
Age of household head	
Percentage older than 60 years	24
Marital status of household head (%)	
Married	76
Widowed	14
Divorced/separated	8
Other	2
Mean household size	6.5
Schooling issues	
Percentage of households with children dropping out of school	10
Crude chronic mortality rate (per 1000)	88
Crude death rate 15-59 (per 1000)	51

4.2 The Relationship between HIV/AIDS and Food Security

HIV/AIDS can no longer be considered solely as a health problem; and efforts are needed to address its social, economic and institutional consequences. The HIV/AIDS epidemic has an impact on nutrition, food security, agricultural production and rural economies in many countries. All dimensions of food security - availability, stability, access and use of food - are affected where the prevalence of HIV/AIDS is high. IFAD has suggested that the HIV epidemic is disproportionately affecting agriculture relative to other sectors (2001). In agrarian societies, the HIV/AIDS epidemic is

intensifying existing labour bottlenecks, increasing widespread malnutrition; proving a barrier to traditional mechanisms of support during calamities, adding to the problems of rural women, especially female-headed farm households arising from gender division of labour and land rights/resources, and deepening macroeconomic crises by reducing agricultural exports. De Waal and Tumushabe argue that this is not because rates of HIV are higher among workers in the agricultural sector, both commercial and small-scale subsistence, than elsewhere but because the structure of the agricultural sector, especially the smallholder sub-sector, is such that it is much less able to absorb the impacts of the human resource losses associated with the epidemic (2003).

The potential impact of HIV/AIDS on agriculture may include:

- A decrease in the area of land under cultivation at the household level (due to a lack of labour stemming from illness and death among household members).
- A decline in crop yields, due to delays in carrying out certain agricultural interventions such as weeding and other inter-cultivation measures as well as cropping patterns.
- Declining yields may also result from the lack of sufficient inputs, e.g. fertilizer and seeds.
- A reduction in the range of crops produced at the household level.
- A loss of agricultural knowledge and farm management skills, due to the loss of key household members due to AIDS.
- Decline in livestock production as the need for cash and the loss of knowledge and skills may force some families to sell their animals.

De Waal and Tumushabe have argued that HIV/AIDS is creating the ‘new variant famine’ that has recently struck southern Africa. It operates through the epidemic in combination with drought and the food crisis. This argument is currently gaining adherents in contemporary debates around HIV/AIDS and food security. The ‘new variant famine’ hypothesis posits that southern Africa is facing a new kind of acute food crisis in which there is no expectation of a return to either sustainable livelihoods or a demographic equilibrium. It is important to recognise this position although questions remain about various elements of the debate.

In southern Zambia, Waller conducted a small-scale study (32 households) in the Monze district to investigate the impact of HIV/AIDS on farming. One observation of the study was that in households with sick persons, many of these individuals were coming from other districts. The study also pointed to the change in household composition due to an aging process within households as productive members die (the so-called granny households). One key observation was the time allocated to care giving. The study showed the differential vulnerability between the wealthier and larger household and the poorer and smaller ones. Also observed was the fact that the more wealthy households were taking in the most orphans.

4.3 HIV/AIDS Field Data Analysis

This section seeks to identify the possible links between HIV/AIDS and the multiple elements of a household food security strategy (agricultural production, income, non-agricultural multiple livelihood strategies). It should be noted that a typical VAC survey was not designed to explore HIV/AIDS related issues. Therefore, no direct HIV/AIDS related data is collected. In addition, there is a complex

inter-relationship between HIV/AIDS, food security, poverty, climatic conditions, macro-economic conditions and the resultant general vulnerability of rural households.

To describe the relationship between HIV/AIDS and food security, the SADC FANR VAC (2003) sought to detect associations between proxy indicators of HIV/AIDS and measures of household food security. In essence, the approach was to compare households affected by HIV/AIDS (see the proxy variables Appendix 6) with those households not affected by HIV/AIDS in terms of food security outcomes. A similar approach is used in this section. The proxy indicators used in this analysis are listed in Table 4.2.

The analysis in this section relate to the total sample, although broad food economy zones were also used in some instances to enhance understanding of a particular issue. Analysis by province and district was not feasible due to the relatively small sample sizes. The Zambian VAC survey was targeted at the rural population. The rural part of Zambia has a lower HIV prevalence compared to the urban areas (11% compared to 23%) and hence the data contained a relatively small number of households falling into the proxy indicator categories.

Table 4.2: HIV/AIDS Proxy Indicators: Zambia VAC household survey, 2003
Percentage of households

Proxy indicators	Households with:	Households without:
Morbidity indicators		
Chronically ill adult aged 20-59 present in household	22	78
Household head among chronically ill	9	91
Mortality indicators		
Adult died in the last year (aged 15-59) after being chronically ill	9	91
Adult household head died in the last year after being chronically ill	2	98
Social indicators		
Households absorbing orphans from other households	18	82
Demographic indicators		
Dependency ratio (0-14 and 60 + as a ratio of 15-59)	7	65

4.3.1 HIV/AIDS and Food Production

HIV/AIDS not only affects the productivity of the infected, but also diverts the labour of the household and extended family away from other productive and reproductive activities, as other members have to take care of the sick. Savings are consumed. Assets are sold to help pay for medical expenses. The utilisation of agricultural land declines as inputs become unaffordable, household labour supply is reduced and dissipating wealth makes hiring labour difficult.

One of the impacts of HIV/AIDS on agriculture is the loss of productive labour. It is assumed that households affected by HIV/AIDS would tend to leave land normally under production, uncultivated as a result of the shortage of labour within the household. In the household survey, respondents were asked whether they left land that was usually cultivated, uncultivated the last growing season. About 63 % of responding households stated that land was left uncultivated. These households were then asked what the reasons were for leaving land uncultivated. More than one reason could be given. The four most common reasons given by these households for leaving land uncultivated was “Lack of labour” (41 %), “Lack of money to hire labour” (33 %), “Unavailability of animal draught power” (33 %) and “Lack of fertilizer” (29 %).

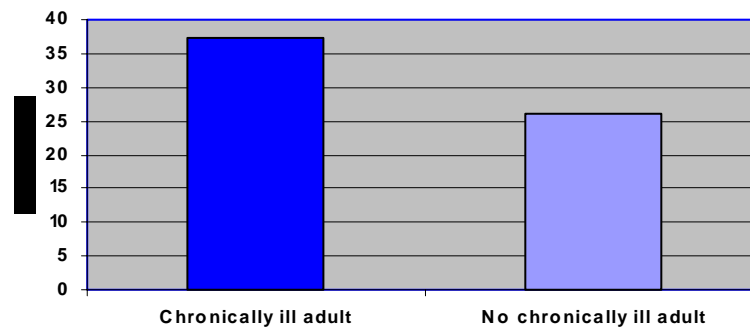
To test whether HIV/AIDS affected households were more likely to cite labour constraints as a reason for curtailing the amount of land cultivated, households with proxy indicators were compared to households not falling in these categories. The results of the analysis are contained in Figure 4.1. There was a significant difference between households who reported the death of a chronically ill adult and who stated a lack of labour as reason for limiting cultivated land (25 %) compared to households who did not lose an adult member and gave the same reason (13 %) (Chi-square=14.817, $p=0.002$). A significant difference was also observed between households where the head died of a chronic illness compared to households where this was not the case (77 % compared to 41 %). Households with no adult member were also significantly more likely to report a lack of labour as reason for non-cultivation than households with a low dependency ratio. No such association was found among households reporting a chronic illness or having taken in orphans. One possible reason why households with orphans from other households did not mention the lack of labour as a constraint could be that orphans are required to fulfill a variety of duties within those households to alleviate labour shortages. This possibility needs further investigation.

To partially explain the association between the death of an adult member and the lack of labour one should take into account that the average planting time of this years harvest was approximately 4- 6 months before the survey, and deaths were reported for a period of 12 months before the survey. Where deaths occurred in the early part of the 12 month period, this was not long before the planting season and it can be assumed that the shock of a death and its implications was still felt by the household at the time of the planting season. If the death occurred in the latter part of the 12-month period it can be assumed that the household had to take care of a serious ill person at about the time of the planting season. In fact, the death of an adult member (whether chronically ill or not,) was also significantly associated with giving “lack of labour” as a reason for non-cultivation of a part of the fields.

A similar finding was made when analyzing answers to a question regarding the main limitation to the production of cereal the last growing seasons of the main limitation. However, when these questions were analyzed by categorizing the sample of households into three broad wealth rankings, the expected differences remained, but without being significant. One problem that is encountered in such an analysis is the small number of cases in each cell.

Due to increased expenses and reduced incomes, it is reasoned that rural households affected by HIV/AIDS will have less resources available for agricultural inputs (chemical fertilizer, seeds etc.). In the Zambian VAC household survey households with a chronically ill adult were significantly more likely to indicate a lack of fertilizer as a reason for leaving land usually cultivated, uncultivated (see Figure 4.1 and Appendix 7). When analyzed by broad wealth ranking, the significance of this association disappeared. No other major differences were detected between the affected and non-affected households in terms of the lack of other in-puts as a reason for non-cultivation of land

Figure 4.1: Lack of Fertilizer and land Uncultivated Land
Comparison between households with a chronically ill adult and those without a chronically ill adult



4.3.2 HIV/AIDS and food production

Using the March 2003 VAC data, a number of food production measures (e.g. cereal production in 2002, cereal production in 2003, the difference in cereal production between 2002 and 2003) were used to detect an association in a reduction/lesser food production between being a households affected by HIV/AIDS and households not affected by HIV/AIDS. No such association in the field of food production could be found.

4.3.3 HIV/AIDS and Multiple livelihood Strategies

It is believed that households under stress (hunger, poverty, disease e.g. HIV/AIDS, malaria and tuberculosis) will be adopting a range of strategies to mitigate their impact through complex multiple livelihood strategies. These entail choices that are essentially “erosive” (unsustainable, undermining resilience) and “non-erosive” (easily reversible) (see SADC FANR VAC, 2003). Households with stronger economic safety nets and a wider range of options to draw upon during a crisis are less vulnerable at each stage of the continuum of HIV/AIDS illness than their poorer counterparts. It is important to recognise that the impact of HIV/AIDS on rural households is not equal: The poorer ones are much less able to cope with the effects of HIV/AIDS than wealthier households who have the ability to access food are better able to absorb shocks.

4.3.4 Removal of Children from School

One option for households under stress is the removal of children from school in order to (1) release them for household strategies requiring labour or (2) to relieve costs associated with school attendance (fees, uniforms, stationary). The “erosive” nature of such a strategy is the diminishing stock of human capital for future livelihood options. Another “negative” for food security is that these children may be removed from school feeding schemes and denied opportunities for nutritional balance.

Table 4.3 shows that households with a chronically ill adult were significantly more likely to remove a child from school (15 %) compared to households without a chronically ill adult (9 %) Even more significant was the fact that households that have taken in orphans from other households were more likely to remove children from school (23 % as opposed 7 %).

Other options available to households under stress are to reduce expenditure on a variety of items. One such option is to reduce expenses on education. Of those households that absorbed orphans a significant proportion (31 %) reduced overall expenditure on education compared to 18 % of households that had no orphans (Chi-square=58.4, p=0). The reduction in expenditure seems to be as a result of removing children from school (see above).

Table 4.3: Association between Households affected by HIV/AIDS and removing Children from School

Proxy indicator	% of households removing a child from school	N
Households with a chronically ill adult	15	310
Households without a chronically ill adult	9	1135
(Chi square 11.53, p=.001)		
Households that absorbed orphans	23	260
Households without orphans from other units	7	1188
(Chi square 56.745, p=.000)		

4.3.5 Other “Coping Mechanisms”

Households with chronically ill adults were more likely to sell livestock/poultry (30%) than those without chronically ill adults (18%). Another coping strategy followed by slightly more households with chronically ill adults compared to households without chronically ill adults was to reduce the number of “nshima meals” eaten per day (64% versus 55%, Chi-square=7.606, p=0.005). There was also a slight tendency for households with a chronically ill adult to skip entire days without eating any “nshima meal” (59% compared to 45%, Chi-square =7.715, p=0.005).

4.3.6 Conclusion

As expected, those households who were directly affected by HIV/AIDS²⁵ were more likely to cite labour shortages within the household as an important issue compared to households not affected by HIV/AIDS. The same applies to a variety of coping strategies. These responses were signs of households under stress.

However, in terms of a reduction in the amount of food produced or differences in food production, the data of the Zambian VAC survey on the whole showed no real differences between households categorized by the presence of one of the proxy variables and households not affected by HIV/AIDS. One possible reason could be that the measures of food production collected in the VAC were inappropriate for this purpose. There was also a lack of other pertinent information. For instance, crop production is partly dependent on the area cultivated, (at present and in the past), a measure not collected in the VAC. Other factors that have an effect on food production include the economic position of individual households and the characteristics of the members of the household. For instance educational attainment may be an important factor in mitigating the effect of HIV/AIDS. However, the VAC household survey did not collect such detailed information. The same applies to

²⁵ Assuming that the presence of one or more of the proxy indicators is an indication of households affected by HIV/AIDS.

the productive activities of household members. The inability to include these and other factors may mask the specific impacts of HIV/AIDS at the individual household level. Another important factor that may have masked possible differences was the favourable climatic conditions during the past year in most of Zambia. This allowed a general increase in yields compared to last season.

This does not imply that individual households affected by HIV/AIDS are food secure or “coping”. Targeted food aid strategies will do much to lessen the plight of such households. In addition, efforts that emphasize conservation farming, including minimum tillage operations, the development of new labour saving technologies (see for instance the Zam-wipe weeder²⁶) and the development of new varieties of crops, should be supported. Such efforts will mitigate the impact of HIV/AIDS in rural areas by assisting households affected by HIV/AIDS to become more food secure.

At the national level, higher rainfall figures this season resulted in better harvests and led to an improved food security situation among most rural households in Zambia. The food economy analysis conducted during this VAC emphasized the wide range of strategies followed by households to satisfy food requirements. The findings of the Zambian VAC failed to provide hard evidence to support the notion of “the new variant famine” operating in the country. It would appear if climatic conditions, food pricing policies, the lack of agricultural support and extension services, environmental degradation, a lack of infrastructure and poverty play a larger role in inadequate harvests than HIV/AIDS. However, the epidemic may compound matters during an environmentally induced food shortage, such as what happened the previous season.

Whether the same can be said of countries with significantly higher HIV prevalence rates than those found in the rural areas of Zambia (10 % of adults), remains unclear.

4.3.7 Recommendation

This analysis is a tentative attempt to investigate the link between HIV/AIDS and food security in Zambia and should be followed up by a more in-depth analysis, e.g. a multi-variate analysis to disentangle the complex relationships between poverty, food security and HIV/AIDS. Unfortunately, the range of available data limits such an approach.

Given the primary goal of a VAC survey, it is not feasible to extend the focus of a VAC survey to include a multitude of elements that may be used to investigate the impact of HIV/AIDS at the household level. One alternative would be to conduct a more intensive study looking at food production and food security issues among a smaller sample of households, including both affected and non-affected households. Another alternative would be to visit the same households in repeated VAC surveys. A longitudinal approach would provide an important time element, which should assist in answering many intriguing questions.

4.4 Water

Improved access to clean water particularly in drought-affected areas is having a positive impact on water related diseases such as cholera, dysentery, the incidence of which has reduced in the last 5

²⁶ A device developed by the Conservation Farming Unit in Zambia

years. Cholera officially first recorded in 1979²⁷, became endemic with the highest fatalities reported in 1991/2. In the last 5 years, the incidence of cholera has decreased from a recent high of 11,615 cases (337 deaths) in 1999 to 587 cases (15 deaths) in 2002. Likewise, although prevalence's are still high in Southern province (13 per 1000 population in 2002) dysentery outbreaks have been declining in all provinces since 2000 particularly in Western and Eastern Province. Northern Province recorded the lowest incidents in this period with general incident trends declining over the last three years. However, non-bloody diarrhoea has increased in the last 3 years. The highest incidences of non-bloody diarrhoea were reported in Lusaka followed by the Copperbelt, but the highest case fatalities reported in Southern Province and the Copperbelt.

²⁷ CBOH Annual Health statistical bulletin

5.0 NATIONAL FOOD SECURITY: OUTLOOK FOR 2003-04 MARKETING YEAR

5.1 Crop and Food Supply

Maize production particularly increased from 601,606MT to 1,207,202 MT (81%) (see Table 5.1). compared to the previous season. This increase is attributed to the generally favourable weather pattern in most parts of the country except for a few pockets in the south of the country. Another factor contributing to the increase is the input subsidy programme for small-scale farmers introduced by Government and the favourable maize prices that obtained towards the end of last year. Commercial farmers contributed 412,381 MT (36%) of the total maize production with the balance coming from small and medium scale farmers. Most of the traditional maize growing areas²⁸ recorded an increase in production of over 100% compared to the last season. This was accompanied by an overall increase in area planted to maize of 22%. However; low increases and/or a reduction in production were recorded in eastern province. This can be attributed to diversification by farmers into the production of high value crops such as cotton and tobacco (out- grower schemes).

Sorghum recorded a marginal increase of 21% attributed to the long-term effects of drought that has had an adverse impact on maize production. A marked increase in local beer brewing could be another factor. Although overall production of millet declined by 6 percent, significant increases were recorded in Mambwe, Chilubi, Sesheke, Samfya as well as most drought prone²⁹ areas. Rice production declined by 8 percent. However, in Northern Province rice production increased 100 percent.

Cassava production has increased by 15 percent country wide compared to last year. It is important to note that this increase is also prevalent in areas that are not traditional cassava growing areas. For instance, production in Kapiri Mposhi and Lundazi increased by over 200% and 180% respectively compared to the previous year. The increase in non-traditional cassava areas is attributed to the Food Security Pack Programme under which early maturing cassava varieties have been distributed to small-scale farmers over the last three years.

The above scenario indicates that the food security situation in terms of cereal and tuber availability has improved tremendously over the previous year. Cassava has continued to contribute significantly to food availability. Sorghum, millet and rice production continue to provide marginal contribution.

²⁸ Chibombo, Mkushi

²⁹ Gwembe, Mambwe, Sesheke,

Table 5.1: Zambia National Food Balance for 2003/04 marketing year,

Zambia National Food Balance for 2003/04 marketing year, Based on the 2002/2003 MACO/CSO Crop Production Estimate (Metric Tonnes)							
		Maize	Paddy rice	Wheat	Sorghum/ millet	Potatoes	Cassava flour
A.	Availability:						
	(i) Opening stocks (May 2003)	1/	100,156	0	2,000	1,000	0
	(ii) Rural production (2002/03)	2/	1,157,861	10,744	135,968	55,632	132,026
	(ii) Urban production (2002/03)	3/	49,341				
	Total availability		1,307,358	10,744	137,968	56,632	132,026
B.	Requirements:						
	(i) Staple food requirements:						
	Human consumption	4/	981,298	16,707	131,702	52,850	125,425
	Food Reserve Stocks (net)	5/	55,700	0	0	0	1,000
	(ii) Industrial requirements:						
	Stockfeed	6/	50,000	0	0	0	0
	Breweries	7/	30,000	0	0	0	0
	Seed	8/	10,000	0	1,500	1,000	0
	(iii) Losses	9/	60,360	537	6,798	2,782	6,601
	Total requirements		1,187,358	17,244	140,000	56,632	132,026
C.	Surplus/deficit (A-B)	10/	120,000	-6,500	-2,032	0	376,191
D.	Commercial import requirements	11/		6,500	2,032		
Notes							
E.	Food aid import requirements	12/					
1/	Stocks expected to be held by commodity traders, millers, FRA and commercial farmers as at May 2003, NOT including stocks held by small-scale farmers in rural areas.						
2/	Production estimates from MACO/CSO. Cassava production is based on the total area under cassava, using an annual yield figure of 11.7 tonnes per hectare (MAFF Root and Tuber Improvement Programme, 1996). A flour extraction rate of 25% is used. Other tubers are sweet potatoes and Irish potatoes.						
3/	Urban production of maize is estimated at 6.61% of rural smallholder production, based on 1998 Living Conditions Monitoring Survey's urban respondents who cultivated one hectare of maize or less.						
4/	Staple foods are assumed to represent 70% (1,421 kCal/person/day) of total diet (2,030 kCal/person/day), converted to crop requirements for the national 2003/04 population of 10.11 million people. The maize grain and cassava meal surplus represents an overall surplus of staple foods. Cross-substitution may make this surplus partly available in the form of other crops.						
5/	Locally purchased FRA stocks expected to be carried over into the next season.(this does not indicate total FRA purchases on the local market nor imports)						
6/	Estimated requirements by major stockfeed producers.						
7/	Estimated requirements by industrial breweries.						
8/	Estimated seed crop grown for seed companies.						
9/	Post harvest losses are estimated at 5% for grains and sweet potatoes, and 2% for cassava.						
10/	Expected surpluses or deficits that arise after meeting minimum overall staple human consumption requirements as well as industrial requirements. Cassava and maize surpluses may be substitutable with other crops and may result in different exportable volumes than the ones indicated here.The rice deficit is based on what is known to be imported each year, as indicated under D.The wheat deficit is based on the estimated market size as indicated in B, less availability as indicated in A.						
11/	Imports required to be made by the private sector to meet the commercial market demands.						
12/	Total estimated requirement for food relief among vulnerable groups, to be imported. This could be met with maize or other grains.						

The 2002-03 final crop forecast estimates the seasonal cereal production for the 2003-04 consumption year to be 1,224,236 MT of which 1,157,861MT is maize; 20,301 MT Sorghum; 35,331 MT Millet and 10,744 MT Rice. (Wheat has not been included in the analysis for VAC purposes because it is a non-staple). The Balance sheet further indicates a marginal surplus of 160,000 MT of maize and that of cassava of 421,927MT. The rest of the cereal staples will be in deficit. It is important to note that the surplus or deficit levels will be influenced by competing requirements such as human consumption, reserve requirements, stock feeds, breweries, seed and cross border trade (export).

Despite the improved cereal and cassava production situation in the country, some areas like Chama, Katete, Petauke, Mwense, Chinsali, Luwingu, Kabompo and Senanga have experienced an overall reduction in cereal and tuber availability ranging between 20% and 40% reduction, but still produced sufficient to meet their basic energy requirements. However, it is worth noting that the situation in Chama, Katete and Petauke can mainly be attributed to cotton and tobacco contract farming (high value crops) whereas that in Mwense can be attributed to the move from crop production to fishing. The situation in the remaining districts can be attributed to the dry spells experienced during the season.

The above factors will determine whether Government should consider imports. Generally there should be downsizing on importation of both relief and commercial maize supplies to allow the market to function. When mitigating the factors mentioned above Government should work towards avoiding market failure (Loss of confidence) vis-à-vis timely imports and exports of maize.

5.2 Current Maize Availability and Access

As of 28 May 2003, available information on cereal stocks indicates that the Food Reserve Agency had 41,000 MT of maize as strategic reserves with an additional 20,000 MT held on behalf of the Office of the Vice President (DMMU). The DMMU also had an additional 13,700 MT of grain which included 7,000 MT of winter maize and 5,500 MT of food aid rice.

On May 16th the Government announced the maize floor price in rural areas at K30, 000/ 50Kg bag (~US\$122/MT) in order to protect small-scale farmers from traders trying to pay unfair prices. However, the floor price may impact negatively on the commercial farmers as they will not be able to sell their maize crop immediately at competitive prices. Overall, the floor price will only yield desirable results if sufficient funds are immediately released to FRA to start buying maize from outlying areas and moderate supply in order to allow the market to function normally. Otherwise, commercial farmers will lobby for a lifting of the export ban to enable them seek import parity prices. This will have its own consequences on the local availability of grain.

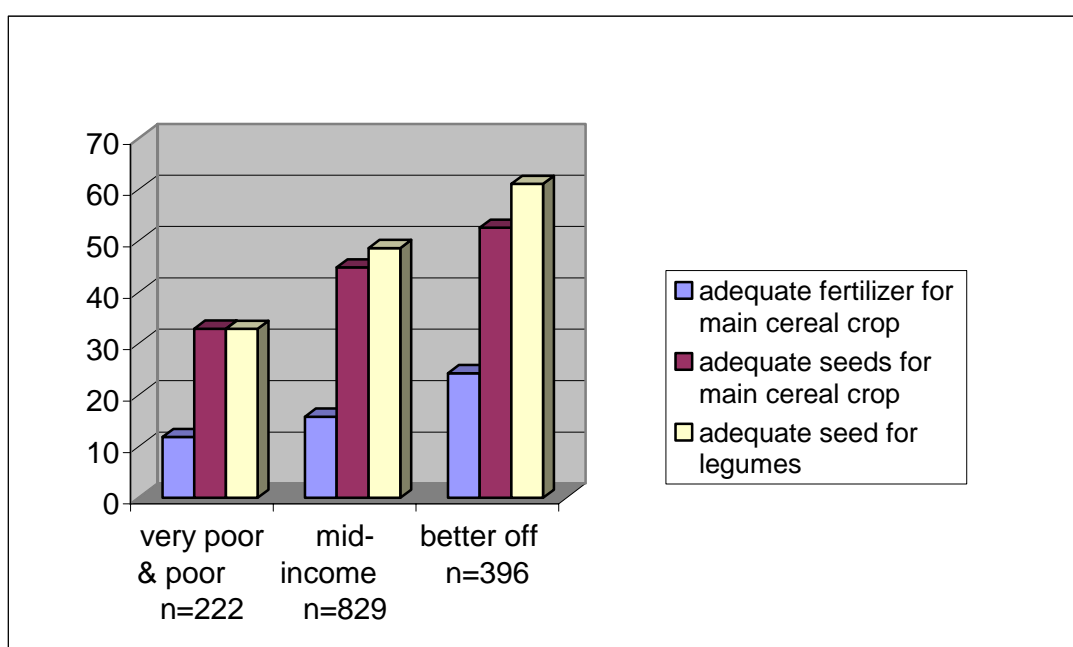
5.3 Agricultural Inputs

In 2002, the Government initiated a Fertilizer Support Programme (FSP) meant to improve access to farm inputs for small-scale farmers by providing subsidized seed and fertilizer and thereby increasing household buying power. In order to qualify for receipt of inputs, cooperatives had to pay only 50% of the cost of inputs. This program was important since seed retention among small-scale farmers had become very low following two consecutive years of poor harvest.

The FSP distributed almost 100% of the fertilizer targeted under the programme whilst out of the 2,400 MT of seed intended for delivery, only 60 percent, or 1,439.45 MT was actually supplied to farmers. With the exception of Eastern and Western provinces, provincial and district centers received at least 60 percent of the intended quantities of seed. North Western, Central and Luapula all received over 80 percent of their allocated seed. However, many farmers reported delays in the distribution of inputs and reported receiving inputs rather late.

According to the findings of the survey, in general, better off households had more access to seed and fertilizer for crop production compared to very poor/poor households (see Figure 5.1). In addition some farmers complained about being left out of the distribution list for inputs.

Figure 5.1: Access to Inputs by Wealth Group



Based on survey results, the major reason for land being left uncultivated by most farmers was ‘lack of household labour’ followed by ‘lack of seed’. Of the very poor/poor households, 45 % of households leaving land uncultivated was due to ‘lack of household labour’ and 42% due to ‘lack of seed’, while for the better off it was 36% and 29 % respectively.

The main reason identified in the survey for cereal seed inadequacy across wealth groups was ‘failure to purchase seed’. The survey found that 65% of the very poor/poor compared to 50% of the better off wealth group could not afford to purchase seed for cereal production. Most respondents also stated that they did not retain enough seed from the previous season.

Across wealth groups the main reason cited for ‘lack of use of fertilizer’ was that it was not affordable despite districts reporting having received fertilizer for distribution under the FSP. The survey also found that the amount of fertiliser reaching the household level was low, due to poor road infrastructure and inadequate resources to meet the required down payment.

6.0 VULNARABILITY AREAS AND TARGETING

6.1 Analysis of Food Gap, Beneficiaries and Districts Affected

The analytical basis for determining the cereal gap and beneficiaries that will be affected is based on the underlining assumption that last year people met their kilocalorie/energy requirements. The evidence for this being that most of the population did not adopt unusual detrimental coping strategies and the nutrition status data shows that levels of acute malnutrition did not increase over the year.

Cereal Deficit

To assess the cereal deficit this year – the analysis looked at what aspects of household's economies had changed since last year that might impact on their ability to meet their requirements this year. The main changes identified were:

- Crop production (cereal/cassava) had changed
- Food aid may not make a contribution to diets

Source of Figures Used

- Crop production data for 2002/03 season (cereal and cassava) from MACO annual crop assessment
- Food relief distribution data on quantities sent to each district by the time of the survey and assumed to have been distributed to beneficiaries. Population data used was CSO data for 2003 (9.8 million) in the rural areas based on the 2000 census. The population in the urban areas was excluded from these calculations.

Identification of Vulnerable Districts

- The urban populations were excluded.
- The contribution of this year's production to kilocalorie intake was assessed. All districts were reviewed and those producing less than 1470 kilocalories/person/day were identified. Those with less than 1470 kcals were then assessed in terms of whether crop production has increased or decreased this year and the contribution of relief food to livelihoods in each district last year
- Districts in which last year's production together with last year's relief food contribution exceeded this year's production were identified as needing assistance.
- Districts in which last year's production together with last year's relief food contribution is marginally lower than this year's production were short listed for future monitoring and contingency planning.

Identification of Population in Need in each District

- Districts in which last year's production together with last year's relief food contribution exceeded this year's production were identified.
- The percentage deficit/gap in kilocalories as a percentage of 1470 was then calculated for the whole district and then converted into full rations. VAC survey results had estimated that the

upper limit in each district of vulnerable persons was 15% of rural population. Based on this estimated the number of full rations gave the target population in each district.

- The higher of the two estimates was used as the figure for people in need in each district.
- A similar approach was used for populations that will be under monitoring and contingency plans.

6.2 Districts and Populations with Cereal Deficit

Table 6.1 shows the districts that will experience cereal deficit between May 2003 and April 2004 together with the effected populations. In addition, the required quantities and proposed time frame for distribution is depicted in the table. This information is further depicted in Figure 6.1 which shows the spatial locations of the affected districts.

Table 6.1: Districts that with Experience Cereal Deficit between May 2003 and April 2004

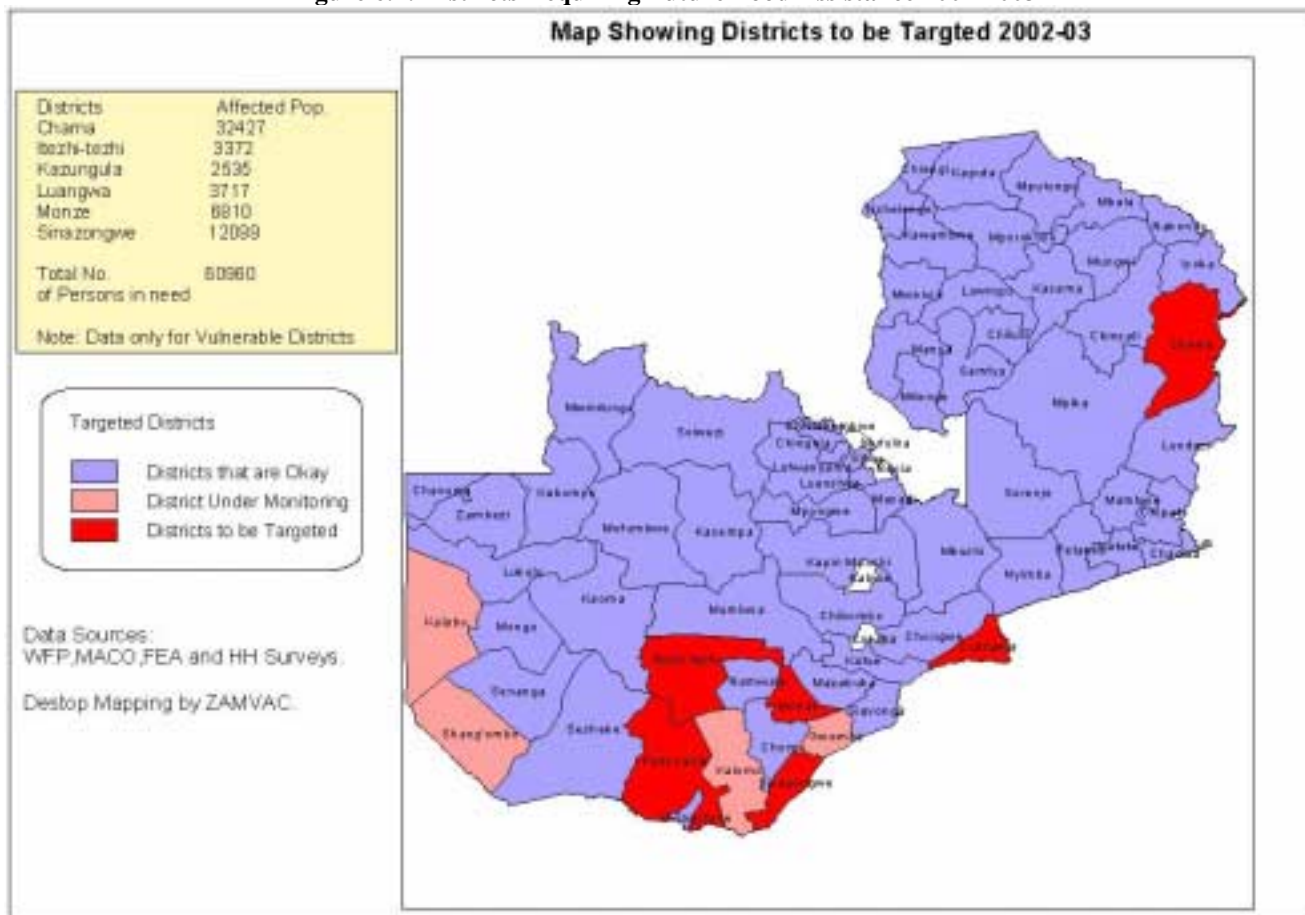
Estimated food relief requirements between May 2003 – April 2004 (based on a cereal/main staple requirements of 1470 kcals - 70% of basic energy requirements)				
District	Target population	Percentage Cereal Gap (%)	Cereal MT requirement	Time-frame
Chama	10,349	47	732	October - February
Itezi-tezhi	6,323	8	78	October - February
Kazungula	9,506	4	60	October - February
Luangwa	2,655	21	84	October - February
Monze	20,431	5	141	October - February
Sinazongwe	10,675	17	274	October - February
Total	59,939		1,369*	

The total population that will need assistance between May 2003 and April 2004 is 59,939 or 0.06% of the population. A total of 1,369 MT of cereal is required for the targeted population in order to feel the existing cereal gaps in the target districts. Chama will require the most relief cereal food followed by Sinazongwe and Monze. The least requirement will be in Kazungula. Equally, based on the cereal gap, the most affected beneficiaries are in Chama, Luangwa and Sinazongwe. The least affected are Itezi Itezi, Monze and Kazungula.

It is important to note that the proposed future rationing must be commensurate with the existing gap per household. This is because it is assumed that the households have met part of the recommended 400g per day ration and only require a top up from relief. For example, despite Monze having a large population in need, the ration requirement per person is nevertheless marginal. The proposed period for distribution is October to February 2004, a period which the survey determined as the leanest.

***If however, it is decided that all affected persons get full rations (400 grams of cereal per day) irrespective of the cereal gap then 3,600 MT will be required for assistance. (That is, 400g x 60,000 people x 5months x 30 days/1000 to convert to kg/1000 to convert to MT = 3600 MT)**

Figure 6.1: Districts Requiring Future Food Assistance 2002-2003



6.3 Districts and Populations Requiring Monitoring

Table 6.2 shows the districts that will require monitoring between May and April 2004. Any contingency planning may be based on this population as they have a higher possibility of descending into food insecurity (see Figure 6.1).

Table 6.2: Districts that require Monitoring between May 2003 and April 2004

District	Population
Gwembe	4,736
Kalabo	17,060
Shangombo	8,320
Western Zambezi	9,470
Total	39,585

6.4 Targeting

It is recommended that most vulnerable should be identified (using a combination of social and economic criteria). Social criteria on their own are not sufficient, for example, it is possible to have relatively wealthier widows or orphans in a community.

7.0 RECOMMENDATIONS

7.1 Short Term

7.1.1 Relief

- Phase out of free food relief programmes in most areas except in districts highlighted in Chapter five where food should be targeted to the most vulnerable (defined by a combination of social and economic criteria) for up to 5 months during the hungry season. During free food relief phase-out, development interventions should be identified to target the most vulnerable; these could include FFW, CFW and livestock restocking as appropriate. The aim is to mitigate those coping strategies that are detrimental or unsustainable, such as depletion of livestock assets.
- FFW should be linked to mid term community development (e.g. the food for asset programme). Interventions should build on community financial capital (e.g. supplies of credit, savings and markets), physical capital (e.g. roads), social capital (e.g. social resources (access to wider institutions of society and networks) upon which people draw in pursuit of livelihoods), human capital (e.g. good health, education and other important skills/knowledge base) and natural capital (e.g. environmental resources, fishing, water and biodiversity).
- Procurement of any relief food must first be done locally to ensure that market confidence is maintained.

7.1.2 Food Security and HIV/AIDS

- Strengthen service delivery systems for HIV/AIDS programmes within both relief and development. These will need to be rural and urban specific and focus on information, education, and communication.
- Strengthen cross border initiative programmes.
- Strengthen programmes aimed at reducing stigmas and discrimination.
- Support Home Based Care programmes.
- Consideration should be given to conduct a longitudinal VAC| survey, targeting those households affected by HIV/AIDS (according to the proxy indicators) on the one hand and a similar group of households not affected by HIV/AIDS. This should provide the opportunity to collect data over time, to compare the livelihood strategies of both groups. Alternatively a more intensive study focusing on livelihood strategies of households affected by HIV/AIDS and how that impact on food security in general may be more appropriate.

7.1.3 Agricultural Inputs

- Timely delivery of quality agricultural inputs especially at sub-district level.

7.1.4 Targeting/Monitoring of Food Relief

- Joint GRZ/UN/NGO review of community based targeting with the aim of producing the following outcomes:
- A review of targeting guidelines; criteria for beneficiary selection and verification; guidelines for use of community based structures for distribution; clear structures for monitoring a) distribution b) post-distribution and c) impact and guidelines for joint monitoring by organizations at each level: community, district and national level (bottom up).
- Re-orient all stakeholders (government, NGOs, community leaders, satellite committees, DDM [district disaster management committees on targeting guidelines.
- Evaluate the relief program and its management.

7.1.5 Actions Requiring Follow Up:

- VAC should undertake a Livelihood Zone Mapping survey to rezone and update information.
- VAC must undertake a baseline survey of the identified zones.
- Future assessments should focus on looking at livelihoods (access to food and income) and not be limited to cereal production and rainfall.
- Development of baseline livelihood profiles across the country involving 1-2 district level staff as well as GRZ/NGO staff at the national level.
- Cross border trade studies of marketing (both formal and informal).
- District level staff to collect information for monitoring purposes once baseline is established.
- Need to collect/compile secondary data for the past 5-10 years & technical data (crop production, livestock data, formal employment, prices, fishing etc.).
- Explore the links between food economy, on-going monitoring and rapid assessments including questionnaires.
- Look at methods that could be adopted to ensure availability of maize at fair price in marginal maize producing areas

7.2 Mid/Long Term – Area Specific

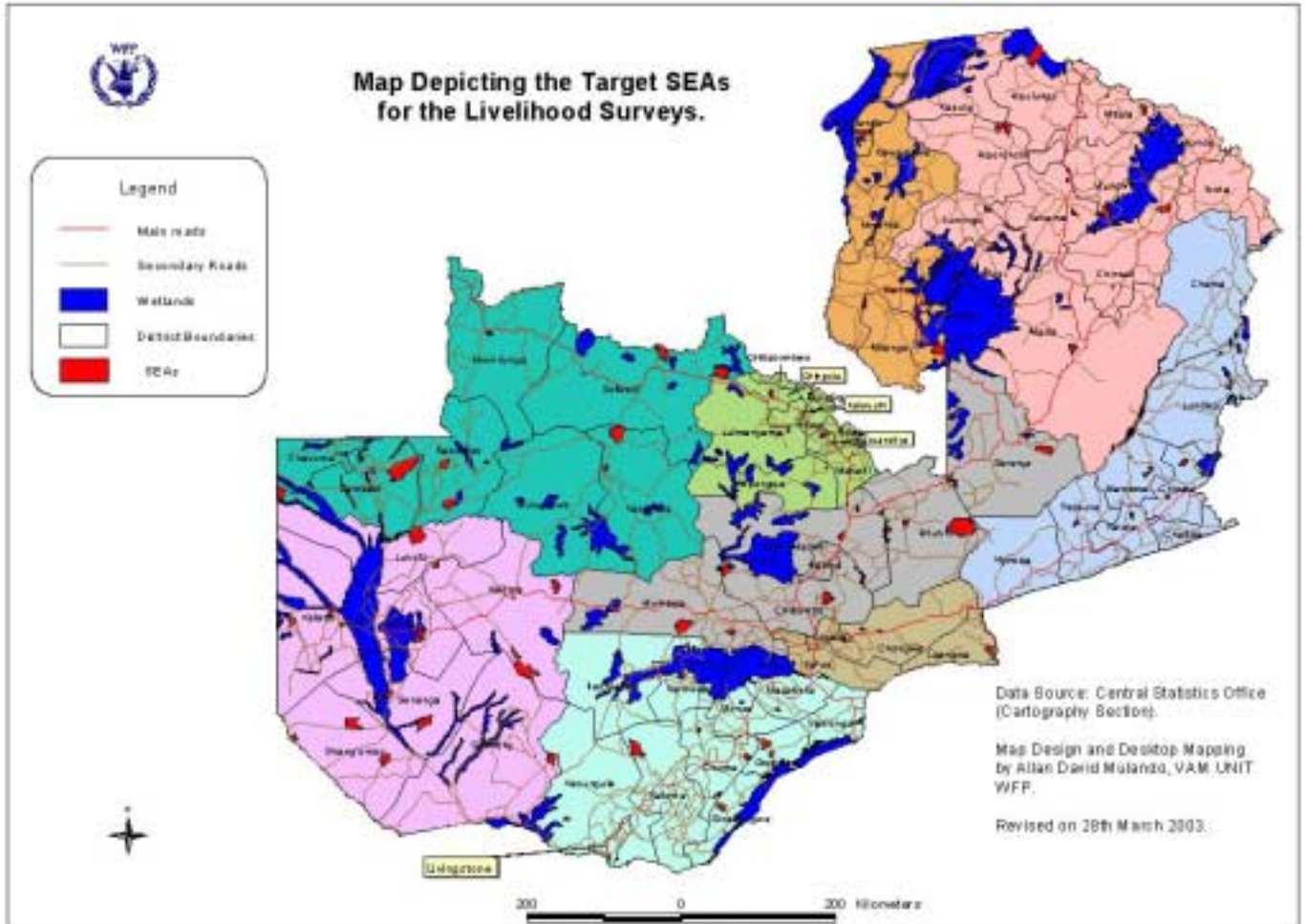
The dietary should be more diversified in the majority of livelihood zones in order to prevent nutritional deficiencies.

- Livestock restocking programmes.
- Strengthen veterinary programmes. The animal disease control program should be reviewed, with an aim to strengthening it in the South and extending it to the North West and West.
- Improve extension services including introduction of early maturing cassava variety, millet, nuts, beans, peas, soya and development of fish farms.
- Improve fat availability by cultivating groundnuts, sunflower and planting of palm oil trees (e.g.: palm oil tree cultivation in Luapula province, with the support of FAO).
- Milk, which is an essential source of calcium, is deficient in all the zones: the consumption of goat milk should also be initiated as well as small fish like Kapenta.
- Develop co-operative initiatives including partnerships with the private sector.
- Revival of development initiatives (e.g.. irrigation, pineapple, honey) and enterprise development (e.g. mangongo/manketti oil). Micro credit-small business loans and market development.
- Improve food processing (fish, cassava and wild foods.
- Sensitisation to reasons for and implementation of the fish ban should be supported.
- Strengthen infrastructure (support to roads).

**

Appendices

Appendix 1: Standard Enumeration Areas (SEAs) Surveyed



Appendix 2: Sampling Frame

Household (HHQ)/Key Informant Questionnaires:

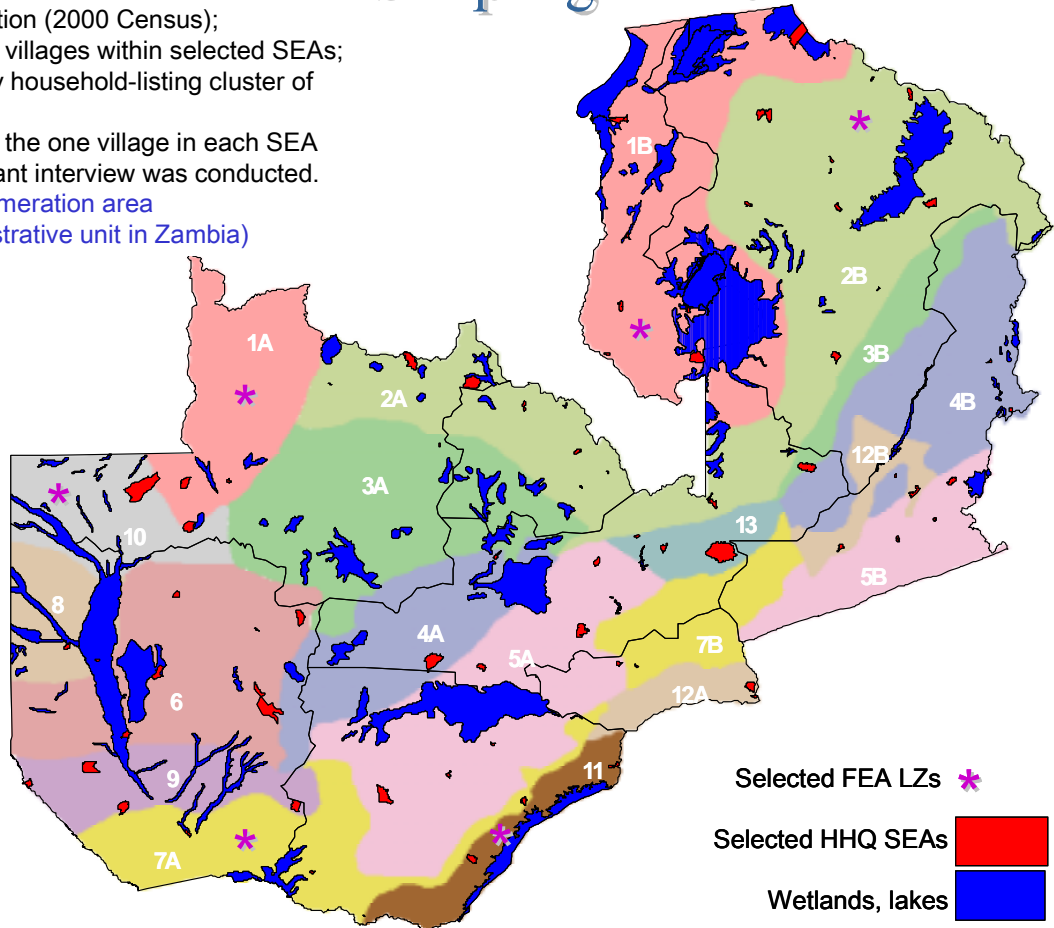
- ☐ Stratified cluster: SEAs selected within each LZ and proportional to population (2000 Census);
- ☐ Random selection of villages within selected SEAs;
- ☐ Random selection by household-listing cluster of individual interviews;
- ☐ Random selection of the one village in each SEA where the Key Informant interview was conducted.

* SEA = standard enumeration area
(the smallest administrative unit in Zambia)

Food Economy Approach (FEA):

- ☐ Selection of 6 LZs, including those in drought-affected areas;
- ☐ Key informant interviews with District officials to ascertain typical (neither the worst nor the best) villages;
- ☐ Proportional piling of wealth groups;
- ☐ Focus group surveys with each wealth group, gender-separate as well as mixed;
- ☐ Triangulation over 4 days of fieldwork.

Sampling Frame



Appendix 3: Example Livelihood Zone Descriptions

FEZ NO.	Zone descriptive name	MAIN CROPS	MAIN LIVESTOCK	OTHER FOOD SOURCES	MAIN INCOME SOURCES
1a	Mwinilunga/Kabompo	Cassava, maize, beans	Cattle, Goats	Own Production, honey	Cereal, casual labour, other business
1b	Luapula Region	Cassava	Goats	Own Production	Sale of cereal, tubers, other crops, fish, trade, brewing, casual labour
2a	Copperbelt and Solwezi	Sweet pots, cassava, sorghum, maize, ground nuts, beans, millet, horticulture	Cattle, Dairy, Poultry	Wild foods (ifinkubala)	Mining, livestock, sale of cereal, tubers, casual employment, cross-border trade, sale of wild foods, charcoal.
2b	Northern Province	Cassava, Maize, millet	Cattle, Goats	Wild foods/game. (ifinkubala), fish, rice	Sale of crops (cereals, tubers) cross-border trade, sale of wild foods/game, Charcoal, fishing, livestock, tobacco
3a	Kasempa/Mufumbwe	Cassava, sweet pots, maize, millet, game meat, beans, sorghum	Goats	Game	Sale of cereals, tuber crops, other cultivated crops, casual labour
3b	Muchinga Escarpment	Cassava, sweet pots, maize, millet, game meat, beans, sorghum	Goats	Game, Rice	Sale of cereals, tuber crops, other cultivated crops, casual labour
4a	Kafue Flats	Maize,	Cattle, goats	Game, mushrooms, groundnuts, beans	Cotton, crop sales, poultry, casual employment, brewing
4b	Chama/Lundazi	Maize, sorghum	Cattle, pigs, goats	Mangoes, game, mushrooms groundnuts, beans	Cotton, crop sales, poultry, casual employment, brewing
5a	Southern Province Plateau	Maize, sorghum	Goats, Cattle	Fish, Pumpkin, vegetables	Sale of cereals fish, livestock, poultry, charcoal, casual employment, and petty trade, sunflowers
5b	Chipata/Chadiza area	Maize. Ground nuts, cotton	Goats, Pigs	Pumpkins, vegetables	Sale of Cotton, other cultivated crops, casual employment, sunflower
6	Kaoma/Mongu	Cassava, rice, maize	Cattle, Goats	Fish	Sale of cereals, tubers, other cultivated crops, fish, handicrafts, casual employment., timber, tobacco
7 a	Kazungula/Sesheke	Maize, sorghum	Cattle goats	Pumpkin, Wild foods, purchase	Cross border trade, labour in Namibia

Appendix 4

Trend analysis of nutritional status at district level

Information from district based results of cluster nutrition surveys conducted by NGOs are described in table

Province	District	First round				Second round			
		NGO	Period	Wasting Z-Score and Oedema	Severe wasting Z-Score and oedema	NGO	Date	Wasting ZScore and Oedema	Severe wasting ZScore and oedema
West	Shangomb o	MSF-H	May 02	3.9% [2.2-5.6%]	1.2% [0.2-2.1%]	CRS/ UNICEF	Nov 02	4.2% [3.1-5.4%]	0.8% [0.3-1.4%]
South	Siavonga	MSF-H	Jun 02	3.3% [2.2-4.5%]	0.9% [0.3-1.4%]	OXFAM /UNICEF	Jan 03	7.7% [5.4-10.7%]	1.2% [0.5-2.9%]
South	Kalomo	WVI	Jun 02	3.4% [1.7-5.1%]	0.7% [0-1.7%]	CARE	Dec 02	2.4% [1.6-3.3%]	0.7% [0.2-1.2%]
South	Sinazongw e	WVI /UNICEF	Jul 02	4.3% [2.5-6.1%]	1.1% [0.2-2.0%]	WVI/ UNICEF	Feb 03	4.6% [2.8-6.4%]	0.7% [0-1.4%]
South	Monze	OXFAM	Jul 02	5.8% [4.4-7.6%]	1.5% [1.1-2.5%]	OXFAM/ UNICEF	Jan 03	5.1% [3.4-7.6%]	1.1% [0.4-2.7%]
South	Choma	OXFAM	Jul 02	5.5% [4.2-7.2%]	1.9% [1.3-2.9%]				
South	Mazabuka	OXFAM	Jul 02	4.3% [3.1-5.8%]	1.2% [0.8-2.1%]				
East	Chipata	RCZ/ UNICEF	Sep 02	2.8% [1.3-4.3%]	1.1% [0.1-2.1%]	LWF/ UNICEF	Feb 03	4.5% [2.5-6.1%]	1.0% [0.2-1.8%]
South	Kazangula					CARE	Dec 02	2.7% [1.7-3.7%]	0.7% [0.1-1.0%]
Central	Chibombo					CARE	Jan 03	4.0% [2.6-5.4%]	1.7% [[0.8-2.5%]
Central	Mumbwa					CARE	Jan 03	4.3% [2.7-5.9%]	0.8% [0.1-1.5%]
South	Namwala					CARE	Jan 03	2.4% [1.4-3.3%]	0.6% [0-1.1%]
West	Senanga					OXFAM/ UNICEF	Feb 03	4.5% [2.9-6.9%]	0.3% [0-1.5%]
East	Chama					LWF/ UNICEF	Feb 03	4.5% [2.6-6.4%]	0.7% [0-1.4%]
Central	Mkushi					NFNC/ UNICEF	Mar 03	3.9% [2.7-5.1%]	0.6% [0-1.3%]

Appendix 5: Coping Strategies

Zone	General food/cash sources	
	Other foods available	Non-food
1a	Fish, pumpkins	Cross border trade, Fishing and sale of Palm oil
1b	Fish,sugarcane	Cross border trade, Fishing, local beer sales,casual labour
2a	Mangoes,Guavas,catterpillar,G/nuts,Fish	Cattle sales, wage employment, charcoal sales
2b	Mushrooms,Sugarcane,S/potatoes,Irish potaoes,pumpkins,Beans	Sale of Charcoal and cattle
3a	Mushrooms,Sugarcane,S/potatoes,Irish potaoes,pumpkins,Beans	Trading
3b	Potatoes,Pumpkins	Trading
4a	Legumes and game	Poaching,Poultry, sales and casual labour
4b	Legumes and game	Poaching and local beer sales
5a	Fish,Goats,watermelon,S/potatoes	Sale of cereals,livestock,fish,charcoal,Poultry and casual labour
5b	Pumpkins, Forest products	Casual labor and sale of cotton
6	Fish	Cattle sales
7a	Pumpkins, Forest foods	Cross border trade
7b		Casual labor and sale of livestock/poultry
8	Forest foods, fish	cattle sales
9	Forest foods	Cross border trade
10	S/potatoes,Beans,G/nuts,honey,game meat,fish,mushrooms,catterpillar	Sale of tubers,Fish,sale of livestock/Poultry
11	Okra,Pumpkins,Cowpeas,G/nuts,Fish	Livestock sales
12a	Fish	Livestock sales and poaching
12b	Fish,Pumpkins,game	Fishing and poaching.
13	S/potatoes, Beans,Pumpkins,Fish	Sale of livestock, tomatoes, tubers and poultry

Appendix 6: HIV/AIDS Proxy Indicators.

To identify households affected by HIV/AIDS an indirect approach was used. At the level of the household, HIV/AIDS manifests through chronic illnesses of individuals and later death. By asking questions about morbidity and mortality, it was intended to obtain a measure of the prevalence of chronic morbidity in a household (excluding accidents etc), as well as deaths resulting from chronic illness. This information can be used as an indirect (or proxy) indication of the prevalence of HIV/AIDS in households. The following questions pertaining to chronic morbidity were asked in the Zambian VAC:

- a) Are there any adults (20-59 years) in the household who have been ill for more than 3 months during the past 12 months?
- b) Is the head of the household among those who have been ill for more than 3 months in the last 12 months).

Mortality information was obtained by asking respondents the following questions:

- c) Has any adult (20-59 years) died in the last year? after being ill for more than 3 months?
- d) Was the adult that died ill for more than 3 months?
- e) Was the person that died after being ill for more than 3 months the head of the household?

The presence of orphans in the household and the absorption of orphans from other households are a direct indication of parental deaths on the one hand and the dissolution of other households on the other. To obtain such information, respondents in the Zambia VAC survey were asked the following question:

- f) Number of orphaned children (defined as “both parents lost” and “less than 15 years of age”) in the household who have come from other households.

In addition, the questionnaire obtained information regarding the number of persons resident in the household, by specific age and sex categories.

The information obtained in the VAC household survey was used to construct a number of indicators that could serve as a proxy for “HIV/AIDS” (see Table A1). These proxies fall in two broad categories namely proxies for individuals infected by HIV (see the morbidity and mortality indicators) and affected households (all the indicators). It should be realized that a household exhibiting one of these proxy indicators is not necessarily affected by HIV/AIDS, but there is an increased likelihood that this may be the case.

Brief discussion of the indicators

Chronically ill adults

The Zambia VAC survey results show that a chronically ill adult was present in approximately 22 % of the households covered in the survey. In 44 % of households with a chronically ill person(s), it was reported that the household head were among those persons. Given the present prevalence rates of HIV in Zambia, the morbidity rates are therefore not unexpected. However, it should be noted that Zambia has high prevalence rates of malaria and TB, to name just two illnesses. Persons suffering from these diseases were included in the results. The presence of other diseases weakens this indicator somewhat as a proxy for HIV/AIDS.

Mortality among adults

According to the results of the survey an adult died in the last 12 months in about 12 % of the households covered in the survey. About seven-and-a-half percent of households reported the death of an adult after being chronically ill. About 2 % of households lost a head due to death after a chronic illness in the last year. What should be taken into account is that according to accounts (see FEA field notes) of members of rural households

who moved to urban areas, return to their original households when they become ill with AIDS related infections. On the one hand this increase morbidity rates (see above) with increased care responsibilities for the rural household, and on the other hand, increase mortality rates.

Dependency ratios

Changes in the age composition of households provide some evidence of the impact of HIV/AIDS. Since AIDS-related mortality is concentrated in the adult age groups, the ratio between adult and mostly younger members will change (i.e. the dependency ratio) having an impact on both the economic position of the household and on the ability of the household to care for its members. It has been argued that the dependency ratio is a suitable indicator to measure these impacts (De Waal and Tumushabe, 2003). The dependency ratio is a demographically determined indicator. Apart from the previously mentioned impact of a reduction in the number of adults that increases the dependency ratio, the dependency ratio is largely influenced by the fertility rate of a population. Under conditions of high fertility, high dependency ratios are the norm. Although Zambia has been experiencing a decline in fertility, rates remain high (TFR of 4.9 children per woman). This high fertility will be reflected in high dependency ratios independent of the HIV/AIDS epidemic. Also, higher dependency ratios due to higher mortality rates among adults are partially offset by a reduction in the dependency ratio due to high mortality among young children (In Zambia the IMR is 95). Another factor that impacts upon the dependency ratio at a household level is the out-migration of members in the economic active ages to look for employment in the urban areas. Results of the Zambia VAC survey show a dependency ratio skewed to the right as expected.

Presence of orphans

Results of the Zambia VAC indicate that in 18 % of households covered in the survey, there was an orphan(s) present that originated from another household. The presence of orphans may increase food insecurity and strain the financial position of the receiving household. However, in rural households, orphans, depending on their age, may function as a labour source offsetting labour shortages in the household. Other factors such as the socio-economic position and demographic characteristics of the host household are important. The crude proxy: “presence of orphans” cannot detect these important nuances, and this reduces its usefulness for the purpose of analysis.

Appendix 7: The Association between Households Affected By HIV/AIDS and The Lack Of Labour for Farming Activities

Dependent variable	Proxy indicator	% of households giving this reason	N
Lack of labour as a reason for leaving land uncultivated	Households where a chronically ill adult died in the last year	59	76
	Households not reporting the death of a chronically ill adult in the last year	40 (Chi square 10.047, p=.001)	832
	Households where the adult who died of a chronic illness was the head	77	22
	Households where no head died of a chronic illness	41 (Chi square 10.485, p=.001)	886
	Households where an adult died in the last year	55	121
	Households not reporting the death of an adult	39 (Chi square 10.67, p=.001)	786
	Low dependency ratio	38	587
	Medium dependency ratio	46	219
	High dependency ratio	45	65
	No adult present in household	68 (Chi square 15.461, p=.001)	37
The lack of labour as the main limitation to last growing seasons' cereal production	Households where a chronically ill adult died in the last year	25	103
	Households not reporting the death of a chronically ill adult in the last year	13 (Chi square 10.305, p=.001)	1217
	Households where the adult who died of a chronic illness was the head	38	29
	Households where no head died of a chronic illness	14 (Chi square 11.846, p=.001)	1291
	Low dependency ratio	12	864
	Medium dependency ratio	15	305
	High dependency ratio	21	89
No adult present in household	27 (Chi square 15.377, p=.002)	62	
