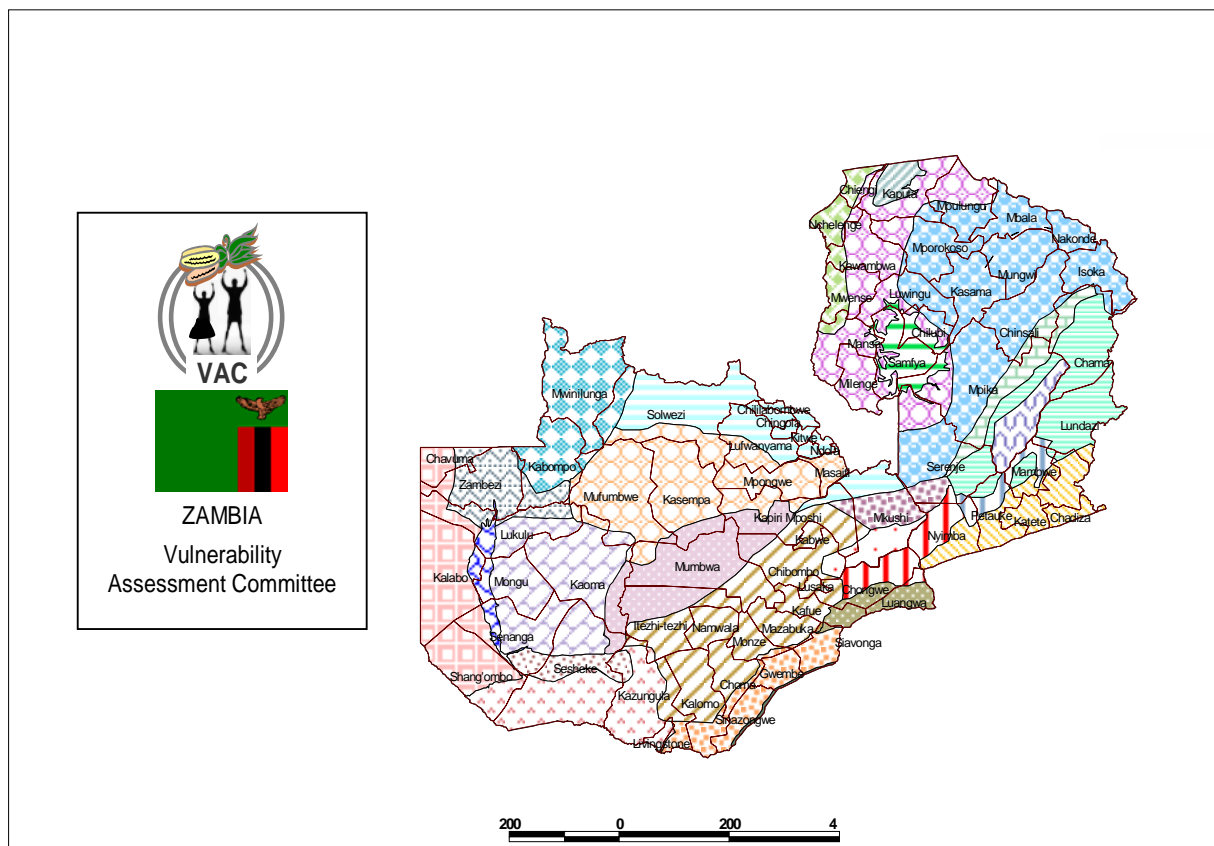


# ZAMBIA LIVELIHOOD MAP REZONING AND BASELINE PROFILING



**Final Report**  
by the  
**Zambia Vulnerability Assessment Committee**

October 2004  
Lusaka  
Zambia

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# Zambia Livelihood Profiles

Introduction

October 2004

## Background

Following two consecutive years of drought in the 2000-2001 and 2001-2002 cropping seasons, 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 food and non-food needs, and inform decision makers on food aid distribution priorities within the country and to guide and inform on-going food security monitoring. The first two assessments focused on the cereal deficit within the country.

In the third assessment, in April 2003, the Zambia VAC used, for the first time, a livelihoods-based analysis to derive food security information. The Food Economy Approach was utilised and examined livelihoods within zones, and within and across wealth groups. Following that exercise, the Zambia VAC decided that there was need to develop a new livelihood zone map for Zambia based on the experiences of the past VAC assessments and on earlier maps.

The current exercise aimed to produce a livelihood zone map of Zambia that was agreed by key partners, together with detailed profiles for four livelihood zones.<sup>1</sup> To this end, a mapping exercise was conducted in late June 2004 involving provincial representatives from nine provinces and key VAC members and partners from Lusaka. Livelihood zones were defined on a map, which is reproduced in full on page 5, and each zone was briefly described. Following that, 22 VAC members were trained in the theory and practice of conducting food economy baseline assessments.

Four livelihood zones were selected for assessment in Phase 1: the Gwembe Valley (in Southern Province), Chongwe-Nyimba Plateau (in Eastern Province), Sioma Plains (Western Province), and Zambezi West Bank (Northwest Province). The choice of zones to visit in this first phase of fieldwork was made according to the areas of the country historically most affected by food insecurity.

The teams went to the field for 10-14 days in July 2004 to collect information on wealth groups, sources of food and income, patterns of expenditure, bad year coping strategies, and seasonal calendars for each livelihood zone. Most of the field data was collected from district and community-level key informants and household-level focus groups. The results of that fieldwork are presented in the four livelihood zone profiles that follow this introduction. It is anticipated that Phase 2 will cover the remaining livelihood zones in the country at some point in the near future.

## Introduction

The livelihood profiles that follow document how rural populations in four areas of Zambia live. *A livelihood* is the sum of ways in which households make ends meet from year to year, and how they survive (or fail to survive) through difficult times. There is increasing interest in using livelihoods analysis as the 'lens' through which to view a number of problems. These problems range from emergency response to disaster mitigation to longer-term development. This interest rests upon two basic observations:

- 1) Information about a given area or community can only be properly interpreted if it is put into context with how people live.
- 2) Interventions can only be designed in ways appropriate to local circumstances if the planner knows about local livelihoods and whether or not a proposed intervention will build upon or undermine existing strategies.

Two main products are offered here:

### National Livelihood Zone Map

The map shows the division of the country into homogeneous zones defined according to a livelihoods framework.

### Livelihood Zone Profiles

The four profiles describe the major characteristics of each zone, including a brief differentiation of the food security status of different wealth groups. There is some emphasis on hazards and the relative capacity of different types of households in different places to withstand them.

<sup>1</sup> This exercise was funded by the Regional Vulnerability Assessment Committee (RVAC), which funded the participation of VAC members, and FEWS NET, which funded the three external consultants.

## Uses of the Profiles

The livelihood zoning and profiles presented here offer an analysis of food security on a geographical basis. The country is divided into homogeneous zones defined according to a livelihoods framework. A brief description of four zones is provided, including an analysis of the position of different wealth groups within the zone. It is envisaged that this product will be useful on three levels, as follows.

### 1. An Introductory Guide to Food Security in the Country

The profiles pack considerable information and analysis into a few pages of presentation. They should therefore form a useful briefing for a newcomer who needs to get a quick grasp of food security conditions in the four zones.

Development planners can also benefit from using the livelihood profiles. One objective of development is to reduce people's vulnerability to hazard and to increase their capacity to cope. An important first step is to understand who is vulnerable, to which hazards, and why. Likewise, efforts to reduce poverty require an understanding of how the poorest households survive in different areas of the country and the reasons for their poverty.

### 2. Early Warning and Food Security Monitoring

Most early warning and food security monitoring systems draw heavily from two information sources: (i) crop and/or livestock production data, and (ii) market price information. Given the predominance of production data, local food security is often equated with production outcomes. Hence, a chronic or temporary production deficit against local food requirement is immediately translated into chronic or temporary food insecurity.

This is almost never the whole story. A full account of the food economy addresses both food supply—that is, what food people produce—and food demand—what cash people earn to purchase food. Thus, data on casual employment or wild foods, or charity from relatives or the sale of handicrafts is equally important to the livelihood story as data on crop and livestock production.

Using a baseline livelihood profile, we can inquire into household capacity to adapt to economic stress, especially failed crop or livestock production; and we can appreciate household activities at different periods in the yearly cycle. All of this feeds directly into our analysis of need, helping to answer key questions such as: which areas and what types of household are likely to cope should a hazard strike and which will need assistance? What types of intervention will be most appropriate, and when and for how long should they be implemented?

National officers working within their national early warning system have an immense knowledge of their countries. The livelihoods approach helps to provide a framework for the full use of that knowledge, as well as adding a new level of information to it.

### 3. Policy Development

Disaster management has been the main impetus to the spread of early warning systems. The rationale in early warning is to improve the efficiency in the scale and timing of emergency food aid. However, increasingly planners are looking at alternatives to food aid in early emergency intervention—and this often requires changes in policy and practice. A case in point is the stabilization of market prices for basic foods. Livelihoods analysis can expose the likely effects of such interventions on different households' capacity to survive a crisis. The analysis can also recommend the optimum timing for intervention.

Livelihood analysis can also be applied to other policy changes. For example, if government taxes on kerosene were reduced, or charges made for government veterinary drugs, what would be the impact on households? More generally, the household viewpoint offers a more secure footing for looking at the increasingly voluminous discussion of poverty alleviation. It allows one to look at the story that lies behind national statistics.

## The Food Economy Approach

There is one basic principle underlying the food economy approach. This principle states that:

*an analysis of local livelihoods is essential for a proper understanding of the impact – at household level – of hazards such as drought or conflict or market dislocation.*

Total crop failure may, for example, leave one group of households destitute because the failed crop is their only source of staple food. Another group, by contrast, may be able to cope because they have alternative food and income sources. These alternative sources—such as livestock to sell or relatives elsewhere who can assist—can make up the production shortfall. Thus, effective hazard impact assessments must be based on livelihood analysis, and livelihood analysis itself involves several steps (see table below).

**The Livelihood Zone Map:** Patterns of livelihood clearly vary from one area to another. Local factors such as climate, soil, and access to markets all influence livelihood patterns. The first step in a food economy analysis is therefore to prepare a livelihood zone map. This map delineates geographical areas within which people share basically the same patterns of access to food (i.e. they grow the same crops, keep the same types of livestock, etc) and have the same access to markets.

**The Wealth Breakdown:** Where a household lives is one factor determining its options for obtaining food and generating income. Another factor is wealth, since this is the major factor determining the ability of a household to exploit the available options within a given zone. It is obvious, for example, that better-off households owning larger farms will in general produce more crops and be more food secure than their poorer neighbours. Land is just one aspect of wealth, however, and wealth groups are typically defined in terms of their land holdings, livestock holdings, capital, education, skills, labour availability and/or social capital. Defining the different wealth groups in each zone is the second step in a food economy analysis, the output from which is a wealth breakdown.

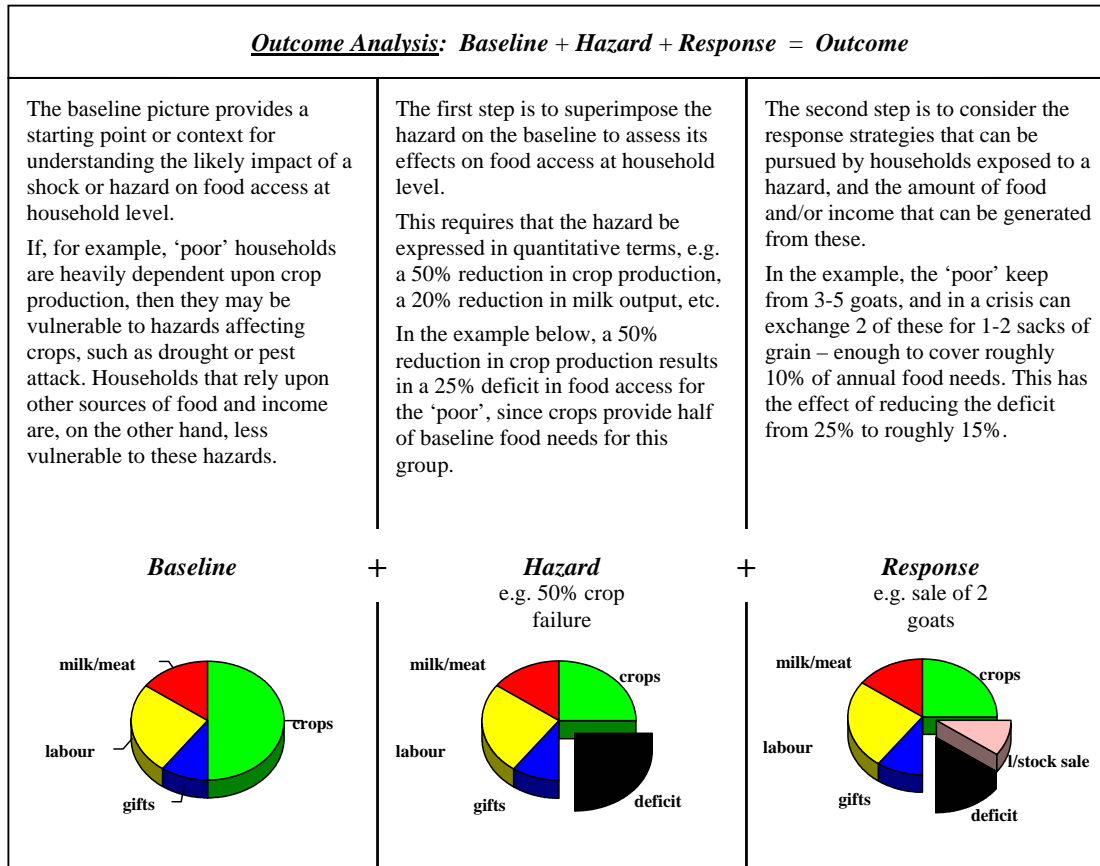
**The Food Economy Baseline:** Having grouped households according to where they live and their wealth, the next step is to generate food economy baseline information for typical households in each wealth group for a defined reference or baseline year. Food access is determined by investigating the sum of ways households obtain food — what food they grow, gather or receive as gifts, how much food they buy, how much cash income is earned in a year, and what other essential needs must be met with income earned.

**Household Coping (or Response) Strategies:** Once this baseline is established, an analysis can be made of the likely impact of a shock or hazard in a bad year. This is done by assessing how food access will be affected by the shock, what other food and income sources can be added or expanded to make up initial shortages, and what final deficits emerge.

**Outcome Analysis:** The objective is to investigate the effects of a hazard on *future* access to food and income, so that decisions can be taken about the most appropriate types of intervention to implement. The rationale behind the approach is that a good understanding of how people have survived in the past provides a sound basis for projecting into the future. Three types of information are combined; (i) information on baseline access, (ii) information on hazard (i.e. factors affecting access to food/income, such as crop production or market prices) and (iii) information on response strategies (i.e. the sources of food and income that people turn to when exposed to a hazard). The approach can be summarised as follows:

**Baseline + Hazard + Response = Outcome**

The idea is that once the baselines have been compiled they can be used repeatedly over a number of years – until significant changes in the underlying economy render them invalid. A good food economy baseline will generally be valid for between 3 and 10 years. What varies is the prevailing level of food security, but this is a function of variations in hazard, not variations in the baseline. Put another way, the level of maize production may vary from year to year (hazard), but the underlying pattern of agricultural production does not (the baseline).



= ***Outcome***

The outcome represents the final result, expressed in terms of the food intake deficit likely to result from a particular hazard, once household-level responses have been taken into account.

In the example, the conclusion is that a 50% crop failure is likely to result in a food intake deficit of 15% for 'poor' households. Similar analyses undertaken for other types of household (e.g. the 'middle' and the 'better-off') will indicate their vulnerability to this particular hazard.

## The National Livelihood Zone Map

A livelihood zone is an area within which people share broadly the same patterns of access to food (i.e. they grow the same crops, keep the same types of livestock, etc). They also share broadly the same access to markets.

Livelihood zone boundaries do not always follow administrative boundaries. Instead, a river or mountain range may be the boundary for a livelihood zone. In this way, one administrative zone may contain different livelihood zones, such as agro-pastoralists alongside fishing communities. Conversely, one livelihood zone may cover several administrative zones. Yet, it is important that livelihood zone boundaries should wherever possible follow lower-level administrative boundaries. The main reason is because resources are allocated on the basis of administrative units not livelihood zones.

A national livelihood zone map for Zambia is presented on the following page. This map should be regarded as a work in progress because additional fieldwork in Phase 2 may lead to small changes to the boundaries of some of the zones. A table on the last page of this section lists the approximate rural population for each zone.

## What is in a Livelihood Profile

The profiles are divided into a number of sections:

**Zone Description** offers a general description of local livelihood patterns. **Markets** contain basic information on the marketing of local production and on any importation of food into the zone.

**Seasonal Calendar** sets out the timing of key activities during the year. This is useful in a variety of ways, such as to judge the likely impact of a hazard according to its timing during the year, or to assess whether a particular activity is being undertaken at the normal time in the current year.

The **Wealth Breakdown** section describes three or four main wealth groups ('poor', 'middle' and 'better-off'), explaining the differences between these groups and how this affects potential access to food and cash income<sup>2</sup>.

The **Sources of Food** and **Sources of Cash** sections examine patterns of food and income access at each level of wealth, relating these to the characteristics of each group. The **Expenditure Patterns** section outlines the ways in which households in each wealth group spend their cash income.

The sections on **Hazards** provide information on the different types of hazard that affect the zone, differentiated by wealth group where this is appropriate. **Response Strategies** describe the various strategies available to different types of household in the zone, together with a judgement of the likely effectiveness of the strategies<sup>3</sup>.

Early warning involves identifying and interpreting key events that indicate that a severe food shortage or famine may be developing. The section on **Indicators of Imminent Crisis** provides information on the key indicators and their likely timing by zone, based upon an understanding of local livelihoods and local patterns of response to food shortage.

Lastly, a **Scenario** section highlights the likely impact of a bad year (e.g. drought) on poor households within the livelihood zone, incorporating both hazard and response strategies.

<sup>2</sup> It is important to bear in mind for this analysis that we are thinking of wealth in relative (and local) terms. Statistical data may indicate that 80% or even 90% of the population in a particular area lives below the national poverty line, but this is measuring poverty on a national, absolute scale. In a livelihoods analysis we are interested in understanding some of the differences within the community and the reasons for these – in which case it is not particularly useful to lump 80-90% of the population into one group.

<sup>3</sup> The term response strategy is preferred to coping strategy for two reasons. Firstly, the term coping strategy is often used to refer to regular components of everyday livelihood (e.g. firewood sale), which strictly speaking are only coping strategies when intensified in response to a hazard. Secondly, 'coping' can be taken to imply that the strategy in question is cost-free, which is not always true.



## POPULATION BY LIVELIHOOD ZONE

Zone Code	Zone name	Population
4A	Central Maize-Cotton	255,000
4B	Chama-Lundazi Rice	317,000
12A	Chiawa-Zambezi Lowlands	106,000
7B	Chongwe-Nyimba Plateau	90,000
2A	Copperbelt Mining	1,665,000
5B	Eastern Province Cash Crop	807,000
11A	Gwembe Valley	278,000
16B	Kaputa Rice	30,000
7A	Kazungula-Mwandi Plains	197,000
11B	Lake Kariba Fishing	13,000
5A	Line of Rail Commercial Farming	2,403,000
15C	Luangwa-Mfuwe Valley	90,000
7C	Luano Valley	187,000
15B	Luapula Valley	247,000
16A	Luapula Northern Wetlands	163,000
12B	Mambwe-Petauke Valley	118,000
13	Mkushi Commercial Block	69,000
3B	Muchinga Escarpment	63,000
3A	Mufumbwe Kasempa	295,000
9	Mulobezi Woodlands	18,000
2B	Northern Province Plateau	979,000
1A	Northwest High Rainfall	201,000
6	Sioma Plain	374,000
1B	Tuta-Luapula Corridor	596,000
10B	Zambezi East	99,000
14	Zambezi Floodplain	70,000
10A	Zambezi West Bank	262,000
<b>Total Population</b>		<b>9,990,000</b>

### Description of livelihood Zones

**Sioma Plain (Zone 6):** This zone is a cropping (maize and cassava) and cattle rearing zone. Incomes for most households come from limited crop and livestock sales and to some extent timber sales. Cattle also provide manure, draught power and milk. Market channels are moderate to difficult mainly because of poor infrastructure. Cattle are mainly sold through local butcheries and main abattoirs by farmers and traders. Maize and cassava is purchased from the local market.

**Zambezi Floodplain (Zone 14):** This is a low-lying wetland that floods yearly. The floods are excessive with a frequency of one in ten years, destroying crops and infrastructure. Households grow maize, rice and sorghum and keep cattle and pigs. Pigs are kept mainly for sale. The area is dissected by the Zambezi River, offering opportunities for fishing and water transport. There is the potential to produce two crops of maize per year in this livelihood zone.

**Mkushi Commercial Block (Zone 13):** This livelihood zone has fertile land and receives rainfall of 800-1000 mm per year, which makes it a high potential area for both crop and livestock production. It is predominantly a commercial farming area, with large-scale farming conducted by both local farmers and settlers from outside the country (especially South Africans and Zimbabweans). The major crops grown are maize, wheat and tobacco, while the main livestock raised are cattle. This zone is also a major source of tomatoes, bananas and potatoes, which are sold in Lusaka and Copperbelt Provinces. The local people around this commercial farming area provide the main source of labour. Despite the long distance to the major markets in Lusaka, Copperbelt and DRC, the infrastructure is quite good.

**Northwest High Rainfall (Zone 1A):** This livelihood zone is characterised by high rainfall and is covered with dense rain forests. Forest products are important sources of food and income, particularly game, timber and honey. The area was once the leading producer of pineapples in the country, but production has declined since the closure of the processing plant in the late 1990s. The zone is mostly rural and is sparsely populated.

**Copperbelt Mining (2A):** This zone is highly urbanised, with wage employment (in mining, manufacturing, banking, etc) and trading representing the main livelihood options for most people. Staple food production is minimal. Copper mining is the main economic activity in the zone, although due to the recent sale of mines, a number of people have been retrenched and have migrated to other zones however new buyers of the mines are increasing operations in the southern and eastern parts of the zone. Already a major copper mine, Kansenshi, has started operating in the eastern part (around Solwezi district) while there are scaled up activities with gemstone mining in the area around Mkushi district. Apart from mining other common livelihood activities are charcoal burning and game, the zone has relatively good infrastructure.

**Mufumbwe-Kasempa Zone (3A):** This zone is self-sufficient in food production and is sparsely populated. It has a good road network and rail system, except for Lufwanyama, Mufumbwe and Kesempa districts in the western part. It is also a major forest reserve and is crossed by two national parks. Timber, honey and game are the major sources of livelihood. In the eastern part of the zone, there has been increased demand for land for agricultural purposes from retrenched, retired and unemployed people. There are moderate numbers of commercial farms in the zone, mostly growing maize, coffee and soya beans.

**Chongwe-Nyimba Plateau Zone 7B):** Compared to many other parts of the country, the Chongwe- Nyimba Plateau has good access to markets and is highly productive in terms of crops and livestock. This livelihood zone is serviced by an all weather road, the Great East Road, which leads to Chipata, the provincial capital. Normal rainfall is about 800 mm per year. The Plateau is a smallholder farming zone, with maize produced as the staple crop, sweet potatoes and pumpkins as supplements, and groundnuts as a component of both relish and snacks. Contract farming of cotton has become the most important cash crop followed by localized production of cassava. Goats are the main livestock reared, though cattle and pigs are also kept. In a year of average production, farmers in the Chongwe-Nyimba Plateau produce a surplus of maize. However, due to the poor feeder road infrastructure, households have difficulties accessing the main markets to sell their crops and livestock at economic prices. The proximity of the zone to the Mozambique border offers a variety of opportunities and threats to livelihood patterns. Cross border trade and labour exchange are major sources of food and income. However, the uncontrolled trade also poses a risk in terms of the introduction of crop pests and livestock diseases. There are limited activities in timber, curios and fishing trade in the zone.

**Central Maize-Cotton Zone (Zone 4A):** This is mostly Mumbwa District. Maize and cotton growing is widespread. Game meat is very common. This area is not prone to drought as rainfall is normally adequate and has moderate access to the market.

**Chama-Lundazi Rice Zone (Zone 4B):** This zone mostly covers Chama and Lundazi Districts, and includes a small area in Mambwe District. Small-scale farming is prominent in most of the zone. Illegal hunting (poaching) is being done. Petty trade and rice production is prevalent in all areas. Tourism in the zone is very active with good (efficient) air travel and several lodges which provide jobs to locals too. The area is prone to droughts and floods. Casual labour is widely used as a coping strategy.

**Chiawa-Zambezi Lowlands (Zone 12A):** This livelihood zone receives less than 700 mm annual rainfall and is prone to a number of periodic hazards, including drought, flood and damage of crops by wild animals. Traditionally, the farming system is sorghum-based and households generally do not produce enough food to sustain themselves throughout the year. Other crops grown include cassava, maize and bananas. Goats and pigs are the main livestock kept. Sources of cash income include fishing, trading and crafts.

**Zambezi West Bank (Zone 10A):** The zone is sparsely populated, with a poor road network. It is connected to the country by a pontoon on the Zambezi River and in times of high rainfall it is inaccessible. There is limited electricity supply and telephone facilities in the area.. The main crops are cassava, maize and sweet potatoes. The main types of livestock kept by households are cattle, goats and poultry. Unskilled casual labour and petty trade are the main income sources for poor households.

The zone has less developed infrastructure in terms of schools, agricultural, medical facilities, etc. Moderate trade takes place with Angola in small livestock and fishing is common. Households in this zone barter fish for maize with adjacent zones. The major crop is cassava

**Zambezi East (Zone 10B):** The zone is sparsely populated, with a poor road network, and is dependent on thermal power for electricity. The main crops are cassava, maize, and sweet potatoes. The main types of livestock kept by households are goats, cattle and poultry. Unskilled casual labour and petty trade are the main income sources for poor households. The zone has well developed social and economic infrastructure. The zone is also the major source of maize consumed or traded in Zambezi West Bank (Zone 10A).

**Line-of-Rail Commercial (Zone 5A):** The main characteristics in this zone are the growth of rainfed and irrigated crops. The soils are good and a lot of different crops are grown. Access to agro inputs is good because of the proximity to towns. Access to markets is fairly good. In the south west part of the zone where road infrastructure and the general terrain is poor (Kafue River flat plains), fishing and game form the major sources of food and income. However the north-eastern parts of the zone is characterised by commercial production of maize, cotton, tobacco, sugarcane and grain legumes. The area has good infrastructure, thereby promoting trade. The population is large and livestock diseases are common hazards. Lately the area has been prone to drought. Deforestation is prominent due to charcoal sales and curing of tobacco.

**Eastern Province Cash Crop (Zone 5B):** Rainfall is high and the soils are fertile in this livelihood zone, which is favourable for crop production (Cotton, Tobacco, Maize and Groundnuts). Except around the main towns (especially Chipata), the area is sparsely populated. Growth of food and cash crops (cotton, tobacco and groundnuts) is another characteristic. The main sources of income are sale of crops, trading and wages.

**Tuta-Luapula Corridor (Zone 1B):** This livelihood zone receives rainfall of over 1200 mm per year and lies at a low altitude. Since it lies on the border with Democratic Republic of the Congo, there is a high level of cross-border trade. The zone is densely populated and the economy is based on fishing and cassava production. The infrastructure to markets is average.

**Northern Province Plateau (Zone 2B):** This livelihood zone covers a large part of Luapula and Northern Provinces. It is sparsely populated and the soils are relatively fertile. Rainfall is well above 1200 mm per year. Livelihoods are based on subsistence cultivation, limited livestock keeping and trading in agricultural products. The infrastructure is poor in terms of road network. The main chronic problems are crop pests and livestock disease. The major sources of income are cross border trade with Tanzania, charcoal sales and wages.

**Kaputa Rice (Zone 16B):** This livelihood zone is at very low altitude and is dominated by wetlands and highlands. There is a lot of fishing and rice production. The zone has a low population density with major settlements for refugees that cross from the Democratic Republic of Congo (DRC). The proximity of the DRC has provided opportunities for cross-border trade in fish and maize meal which is sold or battered for second-hand clothes and other petty commodities.

**Luapula-Northern Wetlands (Zone 16A):** This livelihood zone is at very low altitude and is dominated by wetlands and islands. There is a lot of fishing and rice production and is characterised by a low population density.

**Luano Valley (Zone 7C):** This zone covers the southern parts of Mkushi and Chibombo Districts. Small-scale farmers occupy this area. The main crops grown are maize, tobacco, cotton, cassava, and vegetables. The main livestock kept include cattle, goats, poultry and pigs. The infrastructure in the zone is relatively good in some areas, providing access to markets on the Great North Road, including Kabwe and Lusaka. However, in areas near the Luano valley, roads are impassable and households there are constantly in need of food aid which is usually air lifted. Crop pests and livestock diseases are the main hazards experienced in the area.

**Mulobezi Woodlands (Zone 9):** The zone receives little rainfall with plenty of Kalahari sands which are generally infertile soils. It is sparsely populated, with the population concentrated around the few fertile areas. Livelihood patterns are largely subsistence oriented. The zone has a weak road network and market access is poor. The zone has plenty of forests which are major sources of timber. Timber is sold to major towns within Zambia. In the 1990s, the business in timber led to establishment of some saw mills and a rail line, which provided major sources of income. The saw mills and railway lines are currently undergoing privatization and activities have temporarily slowed down. The major subsistence crop grown is maize, while the major livestock are cattle and goats.

**Kazungula-Mwandi Plain (Zone 7A):** This livelihood zone has a generally semi-arid climate, with periodic drought and flooding (especially in the valleys). The main economic activities include crop and livestock production, formal employment, trading, curios (related to tourism), fishing and sale of wild fruits. With the mushrooming of lodges/hotels along the Zambezi River shores, employment opportunities for local people and even for people from outside the zone has increased. Prostitution is common in high-risk areas such as Livingstone, Sesheke and other border areas and is a means of earning an income. The road infrastructure of late has improved with the completion of

an all-weather road from Livingstone to Sesheke. A modern bridge across the Zambezi River connecting Zambia (Sesheke) and Namibia has also been completed and is likely to influence the livelihoods of most communities in terms of cross border trading, labour based migration, and prostitution.

**Gwembe Valley (Zone 11A):** This livelihood zone is populated by Tonga people who were displaced from the area that is now covered by Lake Kariba when the Kariba Dam was built in the 1960s. Due to its relatively low altitude, the climate is mostly hot and dry, with average rainfall of about 600-700 mm per year. The livelihood pattern in this zone is one of small-scale subsistence agriculture and livestock rearing. The main food crops cultivated are sorghum, millet and maize. These are grown for household consumption with only a little local trade within the zone and no exports outside the zone. Cotton is the main cash crop and vegetable cultivation is an income source for some households during the dry season. The main livestock kept are cattle, goats and chickens and these are important income sources at household level. Cattle are also essential for ploughing. The Gwembe Valley is prone to weather extremes where both droughts and floods are regular problems.

**Lake Kariba Fishing (Zone 11B):** This is a small livelihood zone that borders Lake Kariba in Southern Province. The population lives in small fishing camps and includes migrants from other provinces. Fishing on the lake is the dominant economic activity, but very small-scale crop production and livestock keeping is also practiced. The zone has a large concentration of commercial fishing companies such as crocodile farms and kapenta (small fish) trade. This activity is a major source of income for some households. The zone is also a major tourist destination and has several lodges along the lakeshores. The lodges provide regular employment to some households within the zone.

**Muchinga Escarpment (Zone 3B)**

This zone is moderately populated, the soils are relatively fertile and production of maize is a common livelihood. The zone has the potential to grow into a major commercial agricultural producing area as more area is being opened up in the form of farming blocks. The zone is close to the Great North Road and Tazara Railway line, which links Tanzania and Zambia. As such, significant petty trading in assorted merchandize takes place along the main road and railway.

**Mambwe-Petauke valley (Zone 12B)**

The livelihood of this zone is mainly maize production at subsistence level. Cotton production is done through contract farming and game is another major source of food and income in the zone.

**Luangwa-Mfuwe Valley (Zone 15C)**

The zone lies in the valley and experiences very high temperatures and periodic droughts, which has affected its agricultural activities. As a result of poor climatic conditions, most cropping activities are limited to the riverbank, which exposes them to the risk of flooding. The zone is mainly in the game management area and therefore crops including livestock are frequently attacked by wild animals. The major source of livelihood is fishing, game and employment at numerous tourist game resorts and lodges

**Luapula Valley (Zone 15B)**

This zone is predominantly a cassava growing area. The major sources of income for most households is cross border trade with the Democratic Republic of Congo, fish trading is another important source of food and income because of relatively good road infrastructure, there is significant trade, in fish and cassava, with other zones.

# Zambia Livelihood Profile

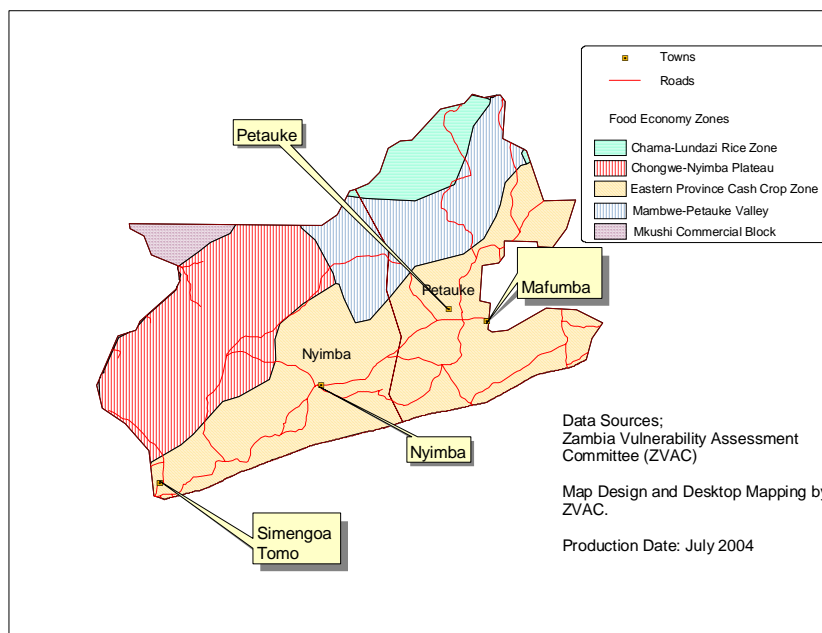
## Chongwe-Nyimba Plateau Livelihood Zone

October 2004<sup>4</sup>

### Zone Description

The Chongwe-Nyimba Plateau Livelihood Zone lies in the eastern part of Zambia, covering parts of Eastern and Lusaka Provinces in Nyimba, Chongwe and Luangwa Districts. The population of the zone is approximately 90,000. The team visited ten villages in Nyimba and Chongwe Districts as part of this assessment.

Compared to many other parts of the country, the Chongwe-Nyimba Plateau has good access to markets and is highly productive in terms of crops and livestock. The zone is serviced by an all weather road, the Great East Road, which leads to Chipata, the provincial capital. Normal rainfall is about 800 mm per year.



The Plateau is a smallholder farming livelihood zone with maize produced as the staple crop, sweet potatoes and pumpkins as supplements, and groundnuts as a component of both relish and snacks. Contract cotton has become the most important cash crop followed by localized production of cassava. Cowpeas, beans and sunflower are also grown in relatively small quantities, primarily for consumption. Goats are the main livestock reared, though cattle and pigs are also kept.

In a year of average production, farmers in the Chongwe-Nyimba Plateau produce a surplus of maize. However, due to the poor feeder road infrastructure, households have difficulties accessing the main markets to sell their crops and livestock at economic prices. The proximity of the zone to the Mozambique border offers a variety of opportunities and threats to livelihood patterns. Cross border trade and labour exchange are major sources of food and income. However, the uncontrolled trade also poses a risk in terms of the introduction of crop pests and livestock diseases.

### Markets

The Chongwe-Nyimba Plateau lies east of Lusaka and stretches towards the Mozambique border. The food crops that can be sold go to Lusaka, while most of the cotton is sent to Petauke and Chipata, where the main ginneries are located. The major access road, the Great East Road, is in a fair condition but the rural roads that feed into it are generally in a poor state and greatly contribute to high marketing costs.

The zone's proximity to the main road and the Mozambique border provides opportunities for cross border trade. For the population living across the border in Mozambique, the Chongwe-Nyimba Plateau is the main market, where a lot of informal trade takes place, mostly through barter. This informal trade with Mozambique greatly influences market behaviour and cross border migration. The soils in Mozambique, which remained unused during the civil wars of the 1980s, are now being utilized and are highly productive. This affects the supply and demand for some commodities. In bad years, maize and livestock is supplied from Mozambique and this favourably influences market prices.

<sup>4</sup>Fieldwork for the current profile was undertaken in July 2004. The information presented refers to the consumption year from March 2003 to February 2004, which was a relatively 'normal' year by local standards (i.e. a year that was neither especially good nor especially bad in terms of food security, when judged in the context of recent years). Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2009).

## Seasonal Calendar

The peak time for land preparation for most crops is between September and November, except for sunflower, for which land is prepared in January. Planting is usually between November and December, though this is largely dependant on the onset of rains. Green consumption of most crops usually begins in late February up until early April.

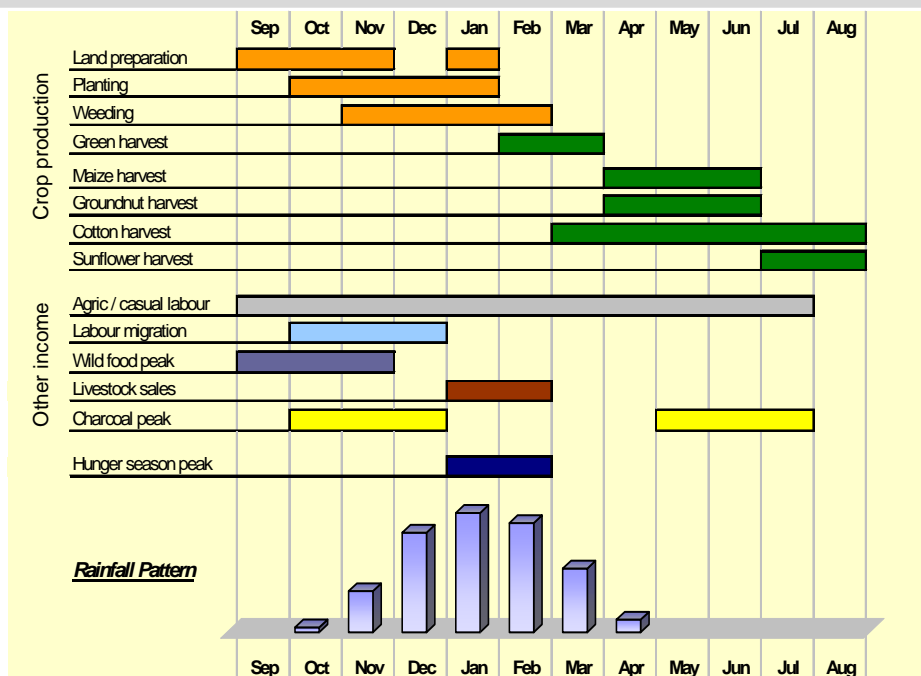
Farm labour opportunities generally start with land preparation in September and peak during the months of December and January when the weeding requirement is highest. Other labour peaks occur

at harvest time between May and July. Cotton in particular is very labour intensive, with weeding taking place over three consecutive months beginning in December.

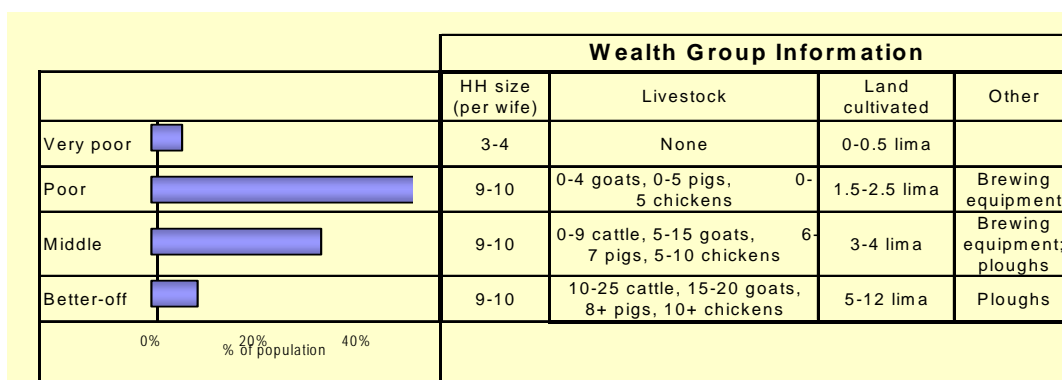
Market prices peak during the lean periods of January and February, when household maize stocks are at their lowest. In an average year, after the lean period, household food stocks increase and the price of the staple food falls.

Generally livestock sales occur only when the household is desperate for cash to meet costs of school fees, medical bills, funerals, and the like. In the diagram above, livestock sales coincide with the peak of the hunger season.

Poaching peaks between the months of December and May when the Game Management Areas are closed to legal safari hunters. Wild food collection starts just before and during the start of the rainy season as a routine activity.



## Wealth Breakdown



The main determinant of wealth in this livelihood zone is cattle ownership, which in turn determines the number of plough oxen that a household owns and the area of land that they are able to cultivate. The number of other types of livestock owned and the agricultural inputs that a household can afford are also related to this.

Key informants described four wealth groups in this livelihood zone. The **very poor** group includes households that are headed by elderly, handicapped, terminally ill or widowed members, often supporting small numbers of grandchildren or young dependents, some of whom may be AIDS orphans. The household heads in this group generally have little capacity to support dependents, which explains the small average household size for this group of only about 3-4 members. Although the very poor make up about 10-20% of households, the small household size compared to other wealth groups means that they are only about 5-10% of the population. Households in this group usually do not own livestock and are highly dependent on gifts and handouts from other households in the community. They cultivate only very small areas of land, if any.

The **poor** comprise approximately half of all households, have few or no productive assets, and labour for food and cash to make ends meet. Due to limited ownership of productive assets or livestock, the poor live a mostly hand-to-mouth existence. They rarely have improved inputs for planting unless they are targeted by NGOs. Most of their time is spent working as labourers on the farms of the better off, which limits the amount of land they are able to cultivate for themselves to roughly 1.5 – 2.5 limas<sup>5</sup>.

The **middle** wealth group includes approximately one-third of all households in this livelihood zone. Middle households perform multiple tasks to generate income, including farming, trading and charcoal burning. They typically own cattle, goats, pigs and chickens and are able to cultivate roughly 3-4 limas. This group provides limited labour opportunities for the poor.

The **better off** make up almost 10% of the zone population. They cultivate both food crops and cash crops on a large scale (with up to 12 limas under cultivation) and have substantial livestock holdings. Better off households provide labour opportunities for the other wealth groups in the zone, who they pay either in cash or in kind.

The following sections outline sources of food and income, and expenditure patterns, for households in the poor and middle wealth groups over the reference period of March 2003 – February 2004, which was a fairly average year in this livelihood zone.

### Sources of Food

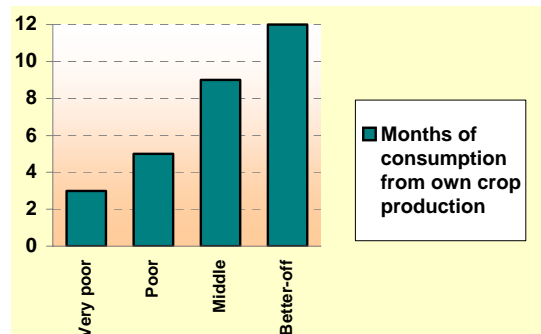
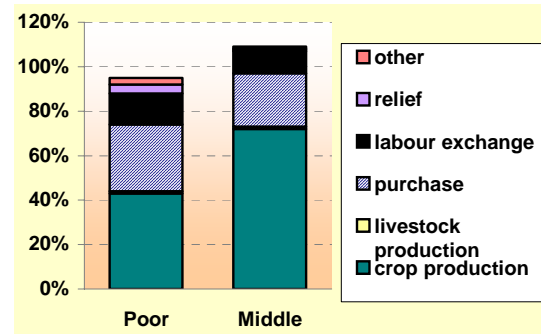
The graph presents the sources of food for households in the Chongwe-Nyimba Plateau livelihood zone for the period March 2003 – February 2004. Food is presented as a percentage of 2100 kilocalories per person per day for the 12-month period starting with the 2003 harvest.

The largest share of food sources for both poor and middle households was obtained from own crop production. Poor households obtained 35-50% of their food from own crop production, or roughly 5 months, whilst middle households obtained 65-80% from own production, or roughly 9 months, in the reference year. The small contribution of own crops for poor households is partly explained by their lack of animal draught power, as well as lack of access to improved seed varieties and fertiliser.

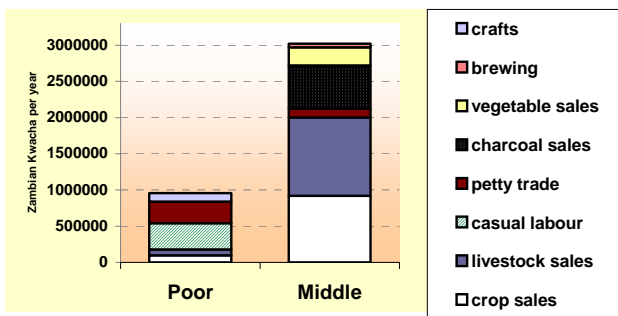
Purchases formed a slightly higher proportion of food sources for poor households than for middle households at 25-35% and 20-30% respectively. As expected, poor households meet a larger proportion of their food energy requirements through labour exchange (working directly for food) than middle households.

Relief and gifts contributed 5-10% of food requirements for poor households and only 0-5% for middle households, suggesting some measure of targeting of assistance in this zone.

Consumption of own livestock and livestock products formed an insignificant contribution to household energy requirements for all wealth groups. Similarly, in the reference year, wild foods contributed very little to the food sources of both poor and middle households, and are included with gifts in the 'other' category in the graph.



### Sources of Cash



The graph presents the sources of cash income for households in the poor and middle wealth groups in the Chongwe-Nyimba Plateau for the period March 2003 – February 2004. Poor households earned roughly ZK 900-1,000,000 in the reference year, compared to ZK 2,500-3,500,000 for middle households.<sup>6</sup> The contribution of income from crops and livestock increased with wealth.

The major source of income for poor households was casual labour, which contributed 35-40% of total income. Other sources of income for the poor

<sup>5</sup> A lima is approximately 0.25 hectare.

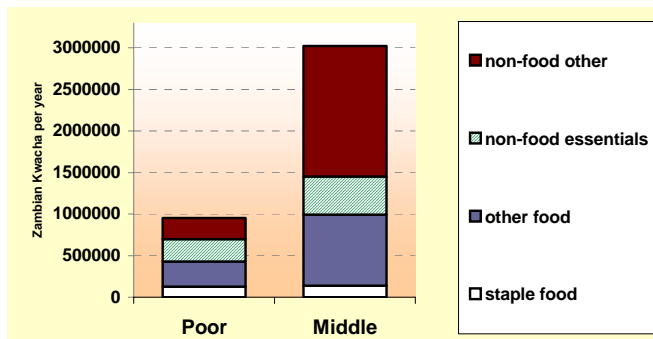
included petty trade, crafts and crop sales. The main crops sold by poor households were groundnuts and sweet potatoes. Livestock sales were a minor income source for this group, which only sold chickens and goats.

Middle households earned most of their income from livestock, crop and charcoal sales. Cotton growing by middle households formed a significant contribution to total crop sales, but maize and groundnuts were also sold. Livestock sales contributed 30-40% of middle household income, with most households selling a cow per year, plus some goats and chickens.

### Expenditure Patterns

The graph presents the expenditure patterns of households in the Chongwe-Nyimba Plateau for the period March 2003 – February 2004.

Poor households spent 15-20% of their annual income on staple food purchases compared to 5-10% for middle households. This is partly explained by the higher proportion of own production obtained by middle households. Both wealth groups spent the same proportion of their annual income on non-staple food items such as cooking oil and sugar, although the absolute amount spent by middle households was much greater.



Poor households spent 40-45% of their income on non-food items such as hammer mill charges, school fees and other related charges, medical fees and transport, whilst middle households spent more than half of their income (50-55%) on similar non-food items. Out of this total, middle households spent 15-20% of total expenditure on agricultural inputs (or roughly K 180-200,000), a category of expenditure that poor households could not afford.

Middle households had a similar overall pattern of expenditure on non-food items compared to poor households. However, the absolute amount of money spent on specific items was significantly higher for middle households than for poor households. For example, poor households spent only 20-25% of what middle households typically spent on school expenses.

### Hazards

The main chronic hazards in this zone are poor soils and crop pests, which mean that crop yields for households that cannot afford inputs are low. This is a problem every year, regardless of climatic conditions and is compounded by the use of poor quality seed. Another problem that is worsening every year is environmental degradation due to charcoal burning and deforestation.

The main periodic hazard that affects the zone is drought, which results in reduced production of food and cash crops. Labour opportunities may also be reduced during a drought, thereby reducing opportunities for poor households to obtain food from labour exchange.

Another periodic hazard is livestock disease, such as East Coast Fever (pigs), Newcastle (chickens) and Corridor (cattle) diseases. As a result, there is a persistent risk of animals being wiped out, leading to a reduction in assets through deaths and the desperate sale of livestock.

The free flow of crops and livestock across the Mozambique border is a threat to productivity in the zone. The lack of phyto and zoo sanitary controls risks crop and livestock disease epidemics, while the low prices of Mozambican goods squeezes farmer profit margins.

### Response Strategies

In a bad year, the most common coping strategies for households in this livelihood zone are consumption and production related. In most cases, households switch expenditure from non-essential (e.g. clothes, kerosene, etc) to essential items (staple food) and from more expensive to less expensive goods.

Strategies that apply to both poor and middle households include increased casual labour (including migration of household members to Mozambique), increased gathering of wild foods for food and cash, increased sales of livestock, and increased reliance on non-traditional foods such as bananas, velvet beans and wild yams as regular food items. In addition, households increase their production of crafts and charcoal for sale.

<sup>6</sup> In US dollars, poor households had an annual income of roughly \$200, whereas middle households had an annual income of in the range of \$520-730. The exchange rate was about US1 = ZK 4800 in July 2004.

## Indicators of Imminent Crisis

Dry spells around December usually mean a bad start to the rainy season. As the season progresses, if there are less than 21 days of rain during tussling and grain filling, it is likely that crop yields will be low.

A rise in the price of staple food (maize) during and shortly after the seasonal harvest period is another indicator of a poor season.

### Season Month Indicator

Season	Month	Indicator
Rainy season	Nov	Dry spells signify a bad start to the rainy season If <21 days rain during tussling and grain filling, yields will be low
	Dec	
	Jan	
	Feb	
Dry season	Mar	High staple food prices during and after harvest Increased livestock sales and low livestock prices after harvest Migration of individuals to Mozambique in search of casual work Wild food collection beyond normal period
	Apr	
	May	
	Jun	
	Jul	
	Aug	
	Sep	
Oct		

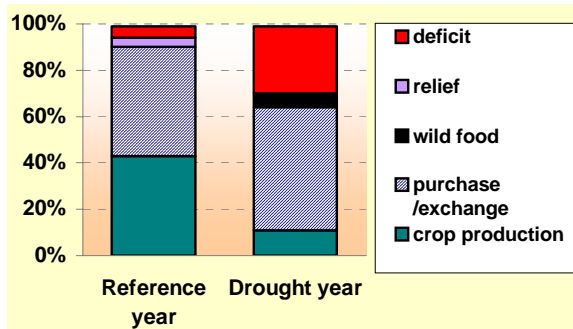
When households engage in the collection of wild foods beyond the normal period (September to November), it is a sign of crisis and results in most households undertaking this activity at the expense of own field preparation.

## Scenarios

In this section, a scenario for a bad year is illustrated. The graph illustrates the impact on poor households' sources of food of a *drought year* with the following characteristics compared to the reference year:

- 75% decrease in crop production (similar to the 2001-02 season)
- Doubling of staple food prices
- 50% decrease in livestock prices
- 10-25% decrease in trading and brewing income

The final picture is that poor households cannot cope with the problem, despite employing numerous response strategies including expanded goat and chicken sales, additional migration for casual labour, and reduced non-essential purchases. They are likely to face a deficit of 25-35%, which is approximately 3-4 months of food.



## Implications for Programming

### Constraints

- Exposure to crop and livestock diseases from Mozambique
- Periodic droughts
- Lack of capacity by poor households to expand production due to lack of draught power and inability to afford modern inputs and drugs
- Lack of market information and inability to take advantage of market opportunities because of limited output

### Opportunities for development

- Formalization of cross border trade with Mozambique
- Livestock control/restriction
- Small scale irrigation to check dry spells
- Promotion of drought resistant crops such as cassava, sorghum
- Restocking schemes or agricultural loans
- Improved marketing arrangements (e.g. improved roads, entrepreneurship development)

# Zambia Livelihood Profile

## Gwembe Valley Livelihood Zone

October 2004<sup>7</sup>

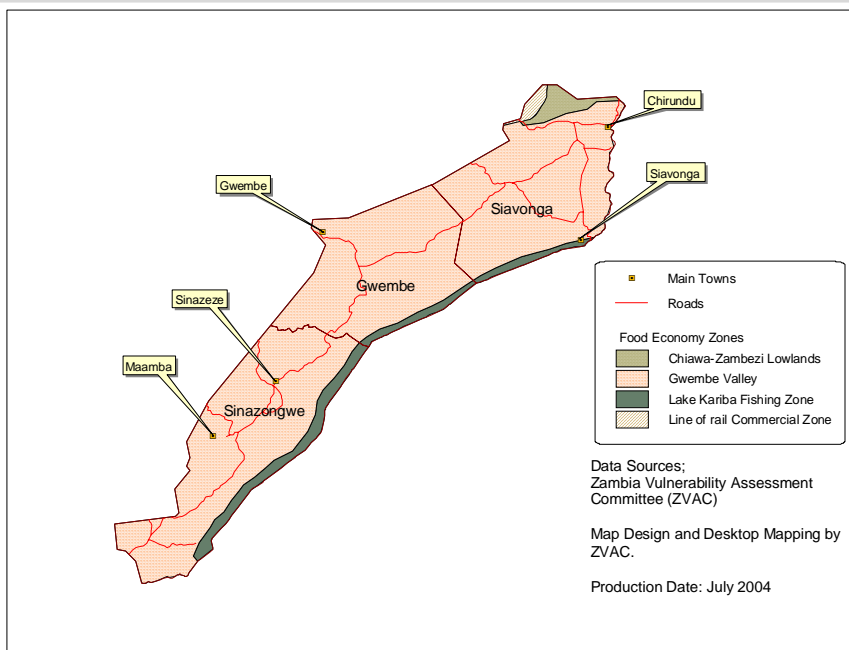
### Zone Description

The Gwembe Valley Livelihood Zone falls in Southern Province and includes parts of five districts: Siavonga, Gwembe, Sinazongwe, Kalomo and Kazungula. The population of the zone is approximately 278,000 people.

This assessment covered parts of Siavonga, Gwembe and Sinazongwe Districts, which are illustrated in the map.

The zone is populated by Tonga people who were displaced from the area that is now covered by Lake Kariba when the Kariba Dam was built in the 1960s.

Due to its relatively low altitude, the climate is mostly hot and dry, with average rainfall of about 600-700mm per year.



The livelihood pattern in this zone is one of small-scale subsistence agriculture and livestock rearing. The main food crops cultivated are sorghum, millet and maize. These are grown locally for household consumption with only a little local trade within the zone and no exports outside the zone. Cotton is the main cash crop and vegetable cultivation is an income source for some households during the dry season. The main livestock kept are cattle, goats and chickens and these are important income sources at household level. Cattle are also essential for ploughing.

In general, the valley is prone to weather extremes and both droughts and floods are regular problems. Indeed, it is possible to have both flooding and drought hazards in the same area in the same year. Numerous seasonal streams cross the zone on their way to Lake Kariba and tend to flood whenever it rains. Farmers take advantage of alluvial fertile soils along the banks of these streams by planting some of their crops here, but this exposes them to the risk of flood damage.

The Gwembe Valley has a number of natural resources. In addition to Lake Kariba to the south of the zone, which is a source of water and of fish, the area is known for the availability of wild foods (including a number of fruits and roots). It also has some small-scale mining of coal and semi-precious stones such as amethysts.

Employment opportunities in the area are quite numerous, to the extent that the labour-based population has been separated into a different livelihood zone from the farming population of this livelihood zone. Employment is found locally both in government and in the private sector (including the cotton ginnery, kapenta and crocodile farms, commercial agriculture (mainly vegetables), tourism and mining). In addition to full time employment, some of these businesses offer seasonal casual work opportunities for the surrounding population. Migration outside the area (to Mazabuka, Choma, Monze and Kafue) is common during bad years. When weather patterns lead to crop failure, people in this zone are accustomed to receiving food aid and the valley has a number of agriculture recovery programmes implemented by the government and external non-governmental organizations.

<sup>7</sup>Fieldwork for the current profile was undertaken in July 2004. The information presented refers to the consumption year from March 2003 to February 2004, which was a relatively 'normal' year by local standards (i.e. a year that was neither especially good nor especially bad in terms of food security, when judged in the context of recent years). Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2009).

## Markets

The main roads to the district headquarters are relatively good in this zone, which means that access to the main markets along the line-of-rail<sup>8</sup> in the nearby plateau zone is easy. However, the smaller roads are in poor condition and many villages get cut off for periods during the rainy season.

Farmers in the Gwembe Valley do not produce staple food on a scale to feed the urban or employment-based populations within the area. Sorghum, millet and maize are grown locally for household consumption with only a little local trade between better off and poorer households. Imports into the area are common in bad years, when private traders and relief agencies bring in grain, mainly from the nearby plateau areas, for sale and distribution in the zone.

Cotton is the major, and to some extent the only, cash crop grown in the area. There is a cotton ginnery located in Gwembe District that provides a ready market and harnesses the local population into cotton out-grower schemes. Vegetables are also extensively grown, but mostly for the local market.

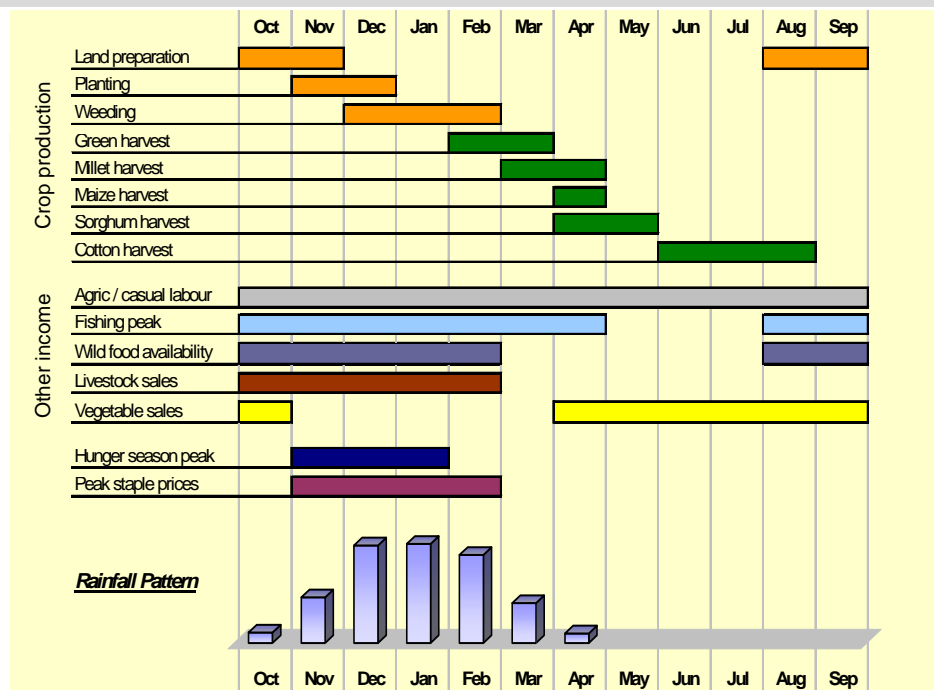
Livestock raised in the zone include goats, cattle, chickens, sheep and pigs. In addition to the local market, livestock are sold along the line-of-rail in the plateau, with Lusaka and the Copperbelt as final destinations. Livestock reach the main markets through two mechanisms: traders come to buy directly in the zone for sale outside the zone, and local people themselves travel to sell their livestock outside the zone.

## Seasonal Calendar

All food and income acquisition strategies in this zone revolve around the rainy season, which usually begins in November and continues through March.

Food crops are generally planted in November – December and harvested in the March – May period. Cotton is generally harvested a little later in the year.

The months leading up to the green harvest (November – January) are the most difficult months in terms of household food security.



## Wealth Breakdown

	Wealth Group Information			
	HH size (per wife)	Average no. of wives	Livestock	Land cultivated
Poor	6-8	2	0 cattle + 0 goats	0.5-1 ha
Lower middle	6-8	2	1-3 mature cattle (including 0-1 plough oxen) + 3-10 goats	1-2 ha
Upper middle	6-8	2	4-9 mature cattle (including 2-4 plough oxen) + 6-20 goats	2-3 ha
Better-off	6-8	2	>10 mature cattle (including 6+ plough oxen) + >20 goats	3-5+ ha

0% 20% 40%  
% of population

The main determinant of wealth in this zone is cattle ownership. This in turn influences land areas cultivated, since

<sup>8</sup> This is the Zambian term for railway line.

households with access to plough oxen are able to cultivate larger areas than those without. Community representatives themselves defined the characteristics that classify wealth groups in this livelihood zone.

Generally there are three major wealth groups: better off (10-20%), middle (20-30%) and poor (55-65%), but the poor can be split into those without cattle and those (described as the lower middle) with 1 to 3 cattle. The cattle figures mentioned in the above table refer to mature cattle (productive females, bulls and oxen).

Wealth status has important implications for household access to food and income. Better off households are able to cultivate larger areas of land and employ labour. As a result, they produce more food and more cotton, the main cash crop. Their livestock also act as a direct source of income through sales. Poor households, in contrast, usually access plough oxen through an exchange for their labour and this generally means that they cultivate only small areas and plant late. They rarely have livestock to sell, with the exception of chickens.

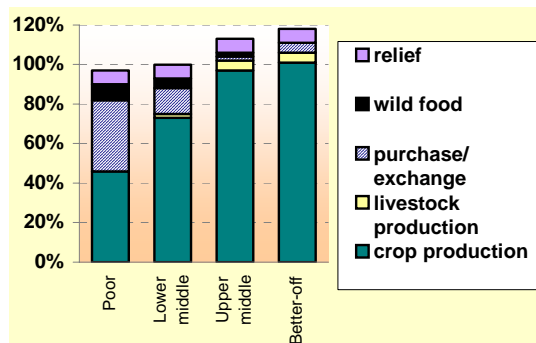
Polygamy is common in this livelihood zone and it was generally stated that wealth status does not affect the number of wives that a man has. An average of two wives per husband was common (although the range was 1 – 4), as was an average household size of 6 – 8 people (per wife). The livestock mentioned in the table above are shared by the entire family (not just by one household). Husbands and wives tend to have separate fields in polygamous families in this zone – each wife usually has her own fields, which are planted with food crops, while the husband devotes his fields to cotton and small quantities of additional food crops. All family members provide labour on the man’s fields. The hectares cultivated in the table above are per wife, and include one wife’s fields and her ‘share’ of the husband’s fields.

The following sections present household sources of food and cash income and expenditure patterns for the reference year (March 2003 – February 2004), which was a year of average production in the parts of the livelihood zone that fall in Gwembe and Siavonga Districts. Production was much lower in Sinazongwe District in the reference year and information from households in this district was used to define household response strategies in a bad year rather than the reference year picture.

### Sources of Food

The graph presents the sources of food for households in the Gwembe Valley livelihood zone for the period March 2003 – February 2004. Food is presented as a percentage of 2100 kilocalories per person per day for the 12-month period starting with the 2003 harvest.

The contribution of own crop production increases with wealth. Poor households obtained 40-50% of their food needs from their own production, or roughly five months, whereas upper middle and better off households obtained almost all of their food from their crops in the reference year. Lower middle households fell between these extremes and obtained roughly nine months of food from their own crop production.



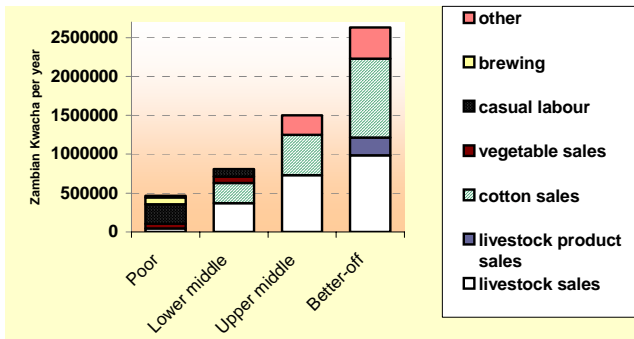
The contribution of purchase or exchange declines with wealth. Poor and lower middle households are forced to make up the shortfall in their crop production through working directly for food (labour exchange) or through working for cash to purchase food (and other essential non-food items). Poor households obtained 30-40% of their food in this way in the reference year and much of this was obtained through labour exchange. When payment was made in food, it was generally calculated at the market price.

Livestock production (in the form of milk and meat) makes only a very small contribution to the food sources of households in this zone. Households that own cows consume small quantities of milk. Slaughter is generally restricted to goats (at times of festivals and funerals) and chickens.

Wild foods (including fruits and tubers) play an important role as a source of food for poor and lower middle households, contributing up to 10% of annual food needs in the reference year. The wild foods that are consumed in average and good years are not considered ‘inferior’ foods, and act to stretch out the period that households rely on their own production.

Relief food accounted for 0 - 15% of caloric food needs across all wealth groups in the reference year. There was no sign of geographical or intra-community targeting. Some villages received assistance within the districts visited and others did not, and this did not seem to be related to need. In villages where assistance had been provided, all households reported receiving assistance.

## Sources of Cash



The graph presents the sources of cash income for households in different wealth groups in the Gwembe Valley livelihood zone for the period March 2003 – February 2004. It is difficult to present the income sources of poor households clearly since a lot of the work that they do is directly for food or other items (including clothes and salt) rather than for cash.

Poor households earned roughly ZK 400-500,000 in the reference year, compared to ZK 2-3,000,000 for better off households.<sup>9</sup> In general, the contribution of income from crops and livestock increased with wealth.

Livestock sales were a source of income for all wealth groups. Poor households sold chickens and goats (if they had them) whilst other groups (especially the better off) sold cattle, goats and even livestock products such as milk (and sometimes meat) to gain cash income.

Poor households generally did not grow cotton since they do not have draught power and only cultivate small areas of land. Income from cotton sales was an important source of cash for the other wealth groups (and is indicated here as profits obtained once inputs are repaid).

Vegetables were grown and sold by households in all wealth groups, but were most typically an income source for poor and lower middle households. Sales were generally local, to upper middle and better off households, except in those communities living along the main roads.

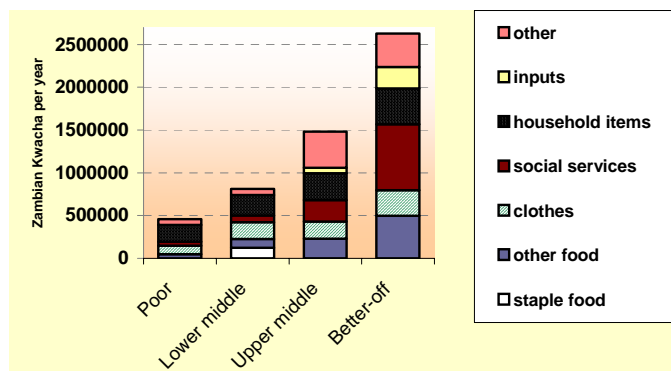
Poor households obtained most of their income from agricultural and other types of casual labour for better off households. This had a direct bearing on their own production, since active members often spent more time working for other households than in their own fields.

The better off and upper middle also had 'other' sources of income, which varied from one household to the next. This category included oxen and ox-cart rentals, remittances, trading, pig and guinea fowl sales, and occasional brewing.

## Expenditure Patterns

The graph presents the expenditure patterns of households in the Gwembe Valley livelihood zone for the period March 2003 – February 2004. Expenditure on staple food does not appear in the bar for poor households because they obtained most of their 'purchased' food directly through work (labour exchange) rather than for cash.

The category 'other food' includes relish items, sugar and oil. 'Social services' includes spending on education and health. 'Household items' includes salt, soap, grinding and candles (or diesel). 'Other' includes beer, utensils and other miscellaneous items. Expenditure on most items increases with wealth.



Inputs for crop and livestock production only appear as expenditure items for upper middle and better off households. Very few households use improved seeds or fertilizer on their food crops, but expenditure is required to repair ploughs and to pay labour. In addition, these households purchase livestock drugs.

## Hazards

The chronic hazards experienced in the zone are livestock diseases (e.g. trypanosomiasis) and crop pests (e.g. grain borer). These reduce crop and livestock productivity every year. The main periodic hazards that affect the zone are droughts and floods, which result in crop failure and increased staple food prices. One or the other of these hazards, or both, occurs at least to a limited extent in roughly 1 out of every 3 years. Very bad years, when rainfall falls below 400 mm per year, are less frequent and occurred in the following agricultural seasons: 2001-02, 1994-95, and 1982-83.

<sup>9</sup> In US dollars, poor households had an annual income of in the range of \$85-105, whereas better off households had an annual income of roughly \$420-625. The exchange rate was about US1 = ZK 4800 in July 2004.

## Response Strategies

When faced with reduced crop production as a result of drought or floods, households in this zone have a number of response strategies. These strategies vary from potentially destructive strategies, such as the unsustainable sale of livestock, to more neutral strategies such as the collection of wild foods.

One strategy that is commonly employed in bad years is to reduce non-essential expenditure. Households reported reducing expenditure on clothes, grinding, relish and other non-staple items in bad years.

All wealth groups attempt to expand their food and income sources that are less directly affected by the hazard in bad years. For example, the collection of wild foods expands in bad years, both for consumption and for sale. Livestock sales also expand in bad years. Indeed, households reported that cattle sales are generally restricted to the most difficult times. Obviously, wealthier households are in a better position to exploit this strategy since they own more livestock.

Migration of individual household members in search of employment outside the zone is a common strategy in bad years, generally employed by poor and middle households. The success of this strategy partly depends on the extent to which neighbouring zones are also affected by the hazard in a particular year. This is generally a fairly neutral strategy, except where individuals resort to high-risk activities such as prostitution.

Relief food has been used as a response strategy by outside organisations. However, this strategy, if used excessively, may have potentially negative effects in terms of destroying the community's own efforts to respond to crises. Furthermore, this type of response does not offer solutions to the real problems of the zone, which require permanent solutions for water management in both drought and flood situations.

## Indicators of Imminent Crisis

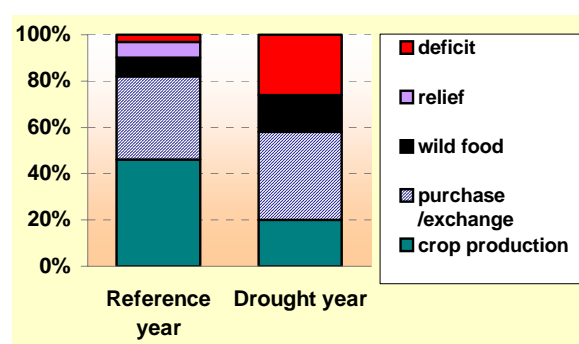
For periodic hazards, the main early warning indicators include a delayed start to the rainy season or long periods without rain at critical stages during the rainy season. If these are followed by some of the indicators mentioned in the dry season section, then serious consequences can be expected at household level.

Season	Month	Indicator
Rainy season	Nov	Delayed start of rainy season Long periods without rain at critical stages in rainy season -->
	Dec	
	Jan	
	Feb	
Dry season	Mar	High staple food prices during and after harvest Increased livestock sales and low livestock prices after harvest Increased sale of wild foods after harvest Migration of individuals to towns and larger farms soon after harvest
	Apr	
	May	
	Jun	
	Jul	
	Aug	
	Sep	
Oct		

## Scenario

In this section, a scenario for a bad year is illustrated. The graph illustrates the impact on poor households' sources of food of a *drought year* with the following characteristics compared to the reference year:

- 70% decrease in maize production
- 50% decrease in sorghum and millet production
- 50% decrease in vegetable production
- 40% decrease in cotton production
- Doubling of staple food prices
- 25% decrease in livestock prices
- 50% decrease in local work for food (labour exchange)



The final picture is that poor households cannot cope with the problem, despite employing numerous response strategies including expanded wild food collection and sales, chicken sales and limited migration for casual labour. They are likely to face a deficit of roughly 20-30% of the year, or roughly 3 months of food.

Interestingly, if staple food prices remained stable compared to the reference year (rather than the doubling illustrated above), poor households are likely to be able to cope with the other aspects of the outlined drought year problem. This suggests the importance of ensuring that households throughout the livelihood zone are well linked to external markets (where prices might be lower in bad years) and of possible market interventions (such as releasing food from the grain reserve onto the local market to stabilize prices in bad years).

## Implications for Programming

### Constraints

- Recurrent floods and droughts
- Lack of draught power for poor households
- Livestock diseases and crop pests
- Poor infrastructure (roads) and difficulties with marketing agricultural (and other) production
- Untargeted free food distributions

### Opportunities for development

- Permanent solutions to recurrent droughts and floods through integrated water management schemes such as simple irrigation techniques for agriculture and small dams for livestock
- Promotion of drought-resistant crops and of water harvesting techniques
- Restocking schemes and other agricultural loans that are carefully tailored to an area with frequent bad years
- Support to livestock disease and pest control programmes
- Small-scale and locally appropriate road improvement schemes
- Community-based targeting of free food distributions only in very bad years

# Zambia Livelihood Profile

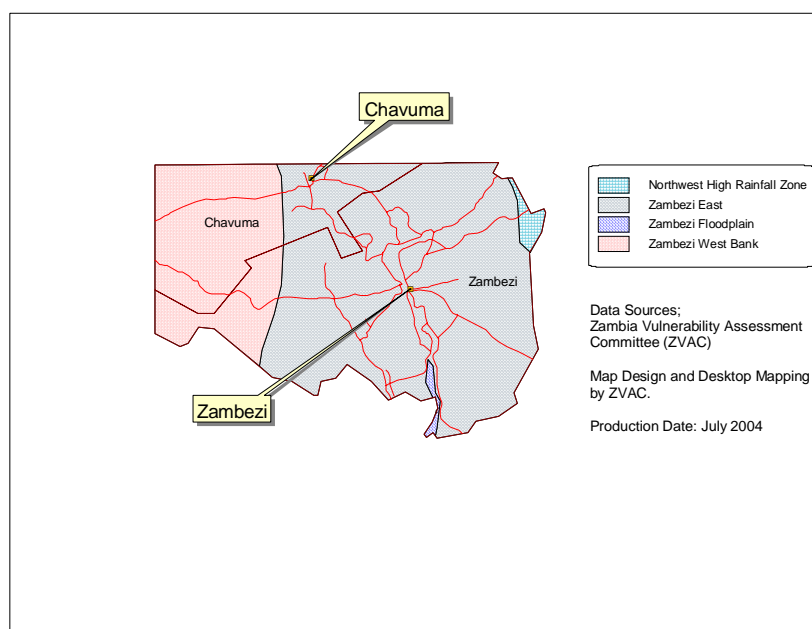
## Zambezi West Bank Livelihood Zone

October 2004<sup>10</sup>

### Zone Description

The Zambezi West Bank Livelihood Zone is part of a large floodplain ecosystem that begins in Angola, stretches through Zambia and Namibia, and ends up in Botswana. In Zambia, this zone stretches from Chavuma District in the west, dissects Zambezi and Lukulu Districts, includes part of Kalabo and Senanga Districts, and finally ends up in Shangombo District. To the west, south and north, the zone borders Angola, whilst in the east, the Zambezi River forms the natural boundary. However, around Mongu town, the zone includes areas found on both sides of the river.

The population of the entire livelihood zone is approximately 262,000 people.



This assessment covered the western parts of Chavuma and Zambezi Districts of Northwestern Province that are in the Zambezi West Bank Livelihood Zone and are illustrated in the map above. This part of the zone is settled by the Luvale people and their livelihoods are based on small-scale subsistence agriculture, livestock rearing and fishing. The main food crops cultivated are cassava, maize, rice and millet. These crops are mainly grown for household consumption, while only a little is traded locally. Rice is the main source of cash income from crops, while cassava is also becoming an important cash crop. Due to the type of soils in the plain, only small quantities of sweet potatoes, groundnuts and beans are cultivated and these do not form a major source of food. The main soils are called the deep Kalahari sands with sparse vegetation consisting mainly of grasslands that support cattle and rich wildlife.

The main livestock types kept are cattle, goats and chicken. Cattle are essential as income sources as well as for ploughing, pulling oxcarts and providing crop manure. Apart from the income accrued from cattle and forest products, fish are a major income source for most of the people in the zone. Forest products like poles and fine grass, and fish, are traded both internally and externally.

The zone is prone to various chronic and periodic hazards of which floods and cattle disease are the most frequent. The Zambezi River and its floodplain are crucial to the survival of the inhabitants of the West Bank. From about December-January, the plain is flooded until March-April in normal years and as late as June in years of high floods. The livelihood patterns of the inhabitants of the Zambezi West Bank revolve around this natural annual flooding phenomenon, which is both an advantage and a threat. The people living close to the river and those engulfed by the floodplains take advantage of the flood by catching the fish it brings, while at the same time the flood exposes crops and residences to damage. The further one moves away from the river, the greater becomes the inaccessibility in terms of transport, communication, market access and general lack of health and education facilities.

<sup>10</sup>Fieldwork for the current profile was undertaken in July 2004. The information presented refers to the consumption year from March 2003 to February 2004, which was a relatively 'normal' year by local standards (i.e. a year that was neither especially good nor especially bad in terms of food security, when judged in the context of recent years). Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2009).

Cattle production is being threatened by the devastating CBPP disease, which has claimed the lives of 30-40% of animals over the last several years. The spillover effects have already started showing in the form of loss of draught power, loss of manure, and loss of cattle sales income or potential exchange for other goods.

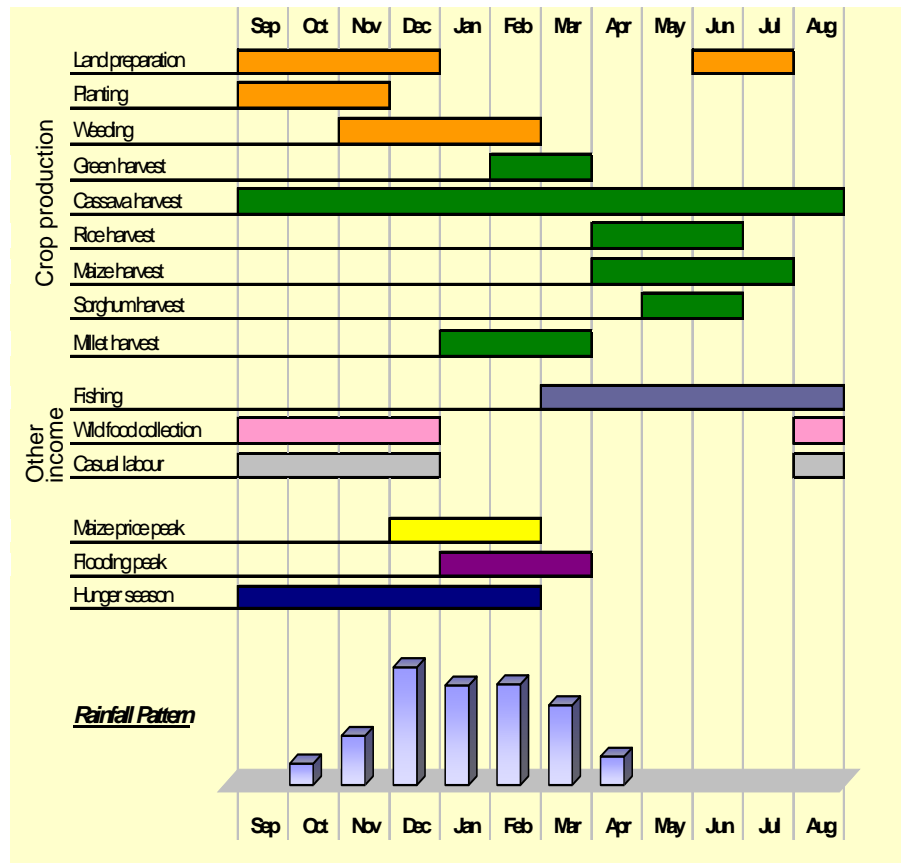
### Markets

The Zambezi West Bank is mostly rural and inaccessible due to poor infrastructure arising from the nature of the terrain and remoteness. The zone has no passable all year road network and hence it is one of the most inaccessible parts of the country. Road infrastructure is the most limiting factor for both imports into and exports from the zone. The Zambezi River is crossed by pontoon or small boats. Farmers use these to cross the river when they go to Zambezi or Chavuma town markets.

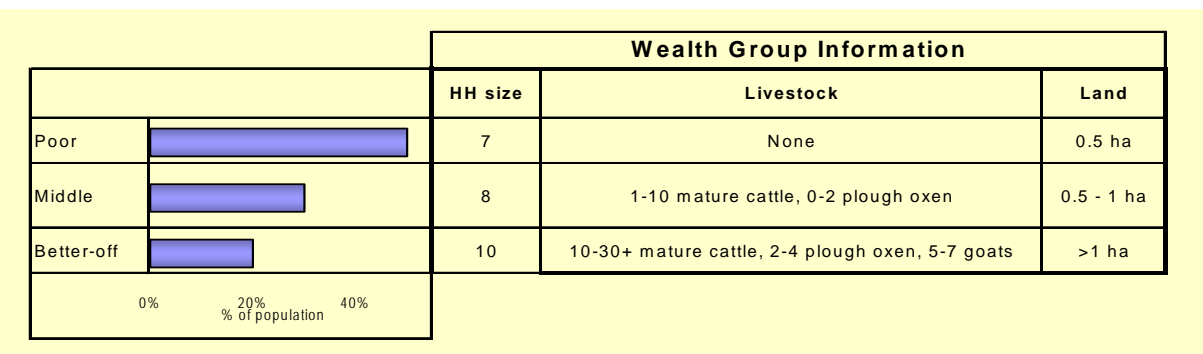
The zone exports cattle, fish, rice and forest products. The main fishing period is from March through August, when huge quantities are exported to the Copper Belt and Lusaka. The zone is a cereal (maize) deficit zone, so maize and maize meal are amongst the most important imports.

### Seasonal Calendar

All food and income acquisition strategies in this zone revolve around the rainy and flood seasons. The rainy season usually begins at the end of November and continues through March. Food crops are generally harvested in the March – May period, while the months leading up to the harvest (September – February) are the most difficult months in terms of household food security. The flood season normally starts in January and ends in March, except at times of very high floods when the season lasts up to June. Fishing starts during the last flooding month (usually March) and continues as an important source of food and cash income until November. In the wetlands, where flood recession farming is practised in the winter season, maize harvesting occurs in November-December.



### Wealth Breakdown



The major determinant of wealth in the zone is cattle ownership. Apart from draught power and cash income, the manure from cattle is used to fertilize farmlands and has a significant contribution to crop production in the livelihood zone. Poor households in this zone typically have no livestock at all, while middle households have 1 to 10 cattle. Better-off households own 10 to 30 cattle, 5 to 7 goats and about 2 oxen. These households also typically own at least one ox-cart, which is a major means for transporting goods like the dried fish and *akeya*<sup>11</sup>. They also earn cash income by hiring out ox-carts and obtain labour from the poor in exchange for plough oxen.

Generally there are three major wealth groups: better off, middle and poor. Wealth status has huge implications in terms of access to food and income. Better off households are able to cultivate larger areas of land and employ labour. As a result, they produce more food and earn more income. Their livestock also act as a direct source of income through sales. Poor households, in contrast, usually access plough oxen through an exchange for their labour and this generally means that they cultivate only small areas and plant late. They have no livestock to sell, and even rarely own chickens.

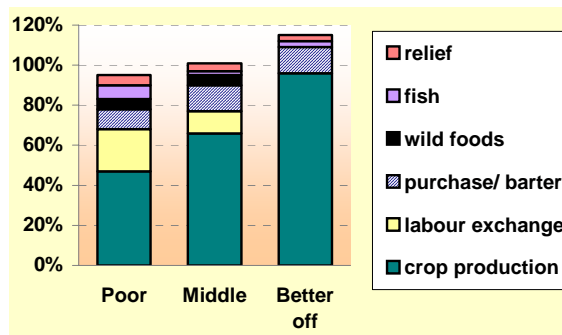
Better off households typically have a larger household size (10) than the middle (8) and the poor (7). This is mainly due to internal mobility of people – from poor to better-off households or relatives – to overcome household-level food shortages, usually on permanent basis.

The following sections present household sources of food and cash income and expenditure patterns for the reference year (March 2003 – February 2004), which was a year of average production.

### Sources of Food

The graph presents the sources of food for households in the Zambezi West Bank Livelihood Zone for the period March 2003 – February 2004. Food is presented as a percentage of 2100 kilocalories per person per day for the 12-month period starting with the 2003 harvest.

The contribution of own crop production increased with wealth. Poor households obtained 45-50% of their food needs from their own production, or 5 to 6 months, middle households obtained 65-70%, roughly 8 months food needs, whereas better off households obtained most of their food from their crops in the reference year.



Poor households were forced to make up the shortfall in their crop production through working directly for food (labour exchange) or through working for cash to purchase food (and other essential non-food items). Poor households obtained about one-fifth of their food through labour exchange in the reference year. They also bartered food for fish or *akeya*. Bartering of fish for cereal crops was also practiced by middle households. Middle households fulfilled the shortfall in their crop production through purchase and bartering in the reference year.

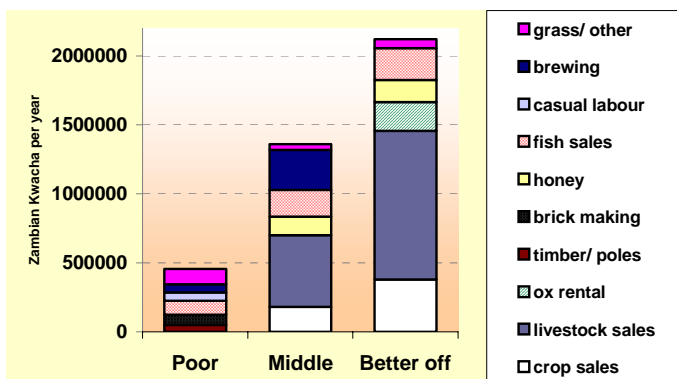
Livestock production (in the form of milk and meat) had no significant contribution to the food sources of households in this zone. Cows are rarely milked. Slaughter was generally restricted to goats (at times of festivals and funerals) and chickens. In recent years, cattle have been slaughtered when households are forced to do so due to disease (CBPP).

Wild foods (including seeds, fruits and tubers) played a minor role as a source of food for poor and middle households, contributing up to 5% of annual food needs in the reference year.

Relief food accounted for 3-5% of the food needs of households of all wealth groups. Relief food (maize) was distributed once in the reference year for all households in the zone. Each household received 12 kilograms of maize per person for six members of a family irrespective of household size.

<sup>11</sup> *akeya* are small fish that are obtained in the floodplain after the floods recede.

## Sources of Cash



The graph presents the sources of cash income for households in the Zambezi West Bank livelihood zone for the period March 2003 – February 2004.

Poor households earned roughly ZK 400-500,000 in the reference year, compared to just over ZK 2,000,000 for better off households. In general, the contribution of income from crops and livestock increased with wealth. Livestock and crop sales were a source of income for middle and better off wealth groups, while the poor did not generate any income from these sources in the reference year.

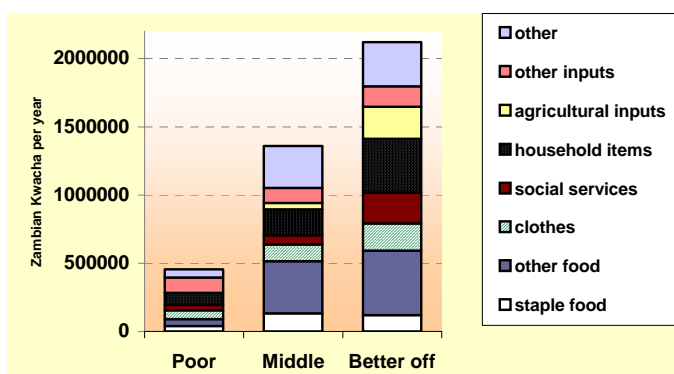
Fish sales, self-employment and casual labour were the main sources of income for the poor in the livelihood zone. Self-employment included sales of grass, fibers, mats/reeds, timber, and poles, brewing and brick making. Small fish and *kakeya* were exported from this zone to the Copperbelt and Lusaka. These were significant sources of income for all households in the livelihood zone. Interestingly, income from fish and *kakeya* increases in years when the volume of floods increases, while on the other hand crops and grazing areas submerge and houses collapse.

Better off and middle households also had 'other' sources of income, which were mainly sales of honey for the middle and honey and oxcart rent for the better off. Honey production, however, varied from village to village.

## Expenditure Patterns

The graph presents the expenditure patterns of households in the Zambezi West Bank livelihood zone for the period March 2003 – February 2004.

The category 'other food' includes relish items, sugar and oil. 'Social services' includes spending on education and health. 'Household items' includes salt, soap, grinding, and candles (or diesel). 'Other' includes beer, cosmetics and other miscellaneous items. Expenditure on most of these items increased with wealth in the reference year.



Only better off households spent money on labour. Other inputs, particularly fertilizers, were used by both middle and better off households in the reference year. However this does not appear in the expenditure graph because they took the inputs on credit and are expected to pay in the current year.

## Hazards

The main chronic hazard experienced in the zone is cattle disease (particularly Contagious Bovine Pleuro Pneumonia or CBPP). This reduces livestock numbers and productivity every year.

One has to be cautious about referring to floods as chronic hazards. Floods in this livelihood zone are both a threat and an advantage, and it is difficult to distinguish between these two. While on the one hand floods damage crops, grazing areas and houses and block communications, they also bring fish/*kakeya* which are a major source of income and food in the zone. The main periodic hazards that affect the zone are dry spells, crop diseases and very high floods. These hazards do not occur very frequently.

## Response Strategies

When faced with reduced crop production as a result of hazards, households in this zone have a number of response strategies. These strategies vary from potentially destructive strategies, such as the unsustainable sale of livestock and excessive exploitation of forest resources, to more neutral strategies such as the collection of wild foods.

One strategy that is commonly employed in bad years is to reduce non-essential expenditure. Households reported reducing expenditure on clothes, relish and other non-staple items in bad years.

All wealth groups attempt to expand their food and income sources that are less directly affected by the hazard in bad years. For example, the collection of wild foods for food and forest products to generate income expands in bad years. Livestock sales also expand in bad years. Obviously, wealthier households are in a better position to exploit this strategy since they own more livestock.

Labour migration outside the zone is not common. However, the search for casual labour within the zone increases, provided that the better off households can accommodate the growing demand. Migration to fishing camps/sites on a temporary basis also increases.

Relief food has been used as a response strategy by outside organizations every year since at least 1998. However, this strategy, if used excessively, may have potentially negative effects in terms of destroying the community's own efforts to respond to crises.

### Indicators of Imminent Crisis

For periodic hazards, the main early warning indicators include a delayed start to the rainy season or long periods without rain at critical stages for crop development during the rainy season. If these are followed by some of the indicators mentioned in the dry season section, then negative consequences can be expected at household level.

Season	Month	Indicator
Rainy season	Nov	Late start and early cessation of rains
	Dec	Long periods without rain at critical stages of crop development
	Jan	Long periods without rain at critical stages of crop development
	Feb	Long periods without rain at critical stages of crop development
	Mar	Destruction of crops by floods before maturing
Dry season	Apr	Increased sales of livestock at low prices immediately after harvest High staple food prices after harvest season
	May	
	Jun	
	Jul	
	Aug	
	Sep	
	Oct	

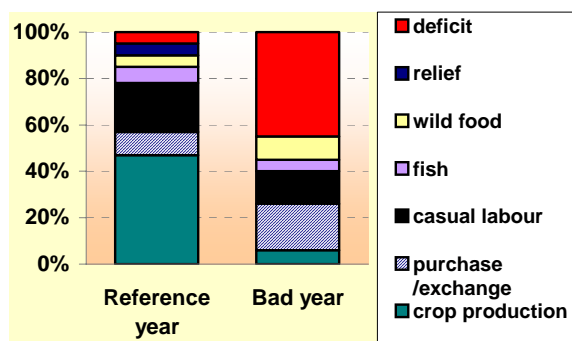
In addition to these, reports of an outbreak of CBPP or other cattle diseases can signify impending problems.

### Scenario

In this section, a scenario for a bad year is illustrated. A very bad year for the Zambezi West Bank is a year that combines both severe drought and devastating crop diseases, particularly cassava disease. These two hazards combined result in a decline of both crop and fish/*kakeya* production and income.

The graph illustrates the impact on poor households of a year with the following specific characteristics:

- 75% decline in maize and other crop production
- 100% decline in cassava and rice production
- 50% decline in agricultural labour (food for work)
- 50% decline in fish production and sales
- Doubling of income from forest products
- Doubling of staple food prices



The final picture is that poor households cannot cope with the problem, despite employing numerous response strategies including expanded wild food collection and sales of forest products, and use of the limited opportunities for casual labour.

This holds true even if staple food prices remained stable or the same compared to the reference year (rather than the doubling illustrated above). In other words, poor households are unlikely to be able to cope with the other aspects of the outlined bad year problem. This highlights how fragile the ecosystem is if people continue to depend on the same food and income sources without improving farming methods, market structure, infrastructure and above all the huge dependency of the poor on forest products.

## Implications for Programming

### Constraints

- Floods
- Lack of draught power on the part of poor and middle households
- Cattle diseases (especially CBPP)
- Poor state of infrastructure (roads) and difficulties with marketing agricultural (and other) production
- Untargeted free food distributions

### Opportunities for development

- Permanent solutions to flood damage through selection of sites for settlements and protection of agricultural blocks through the construction of small dykes
- Restocking schemes and other agricultural loans that are carefully tailored to an area with frequent outbreak of diseases
- Support to disease control programmes, timely vaccination, and restriction of movement of livestock
- Small-scale and locally appropriate road improvement schemes
- Community-based targeting of free food distributions only in very bad years

# Zambia Livelihood Profile

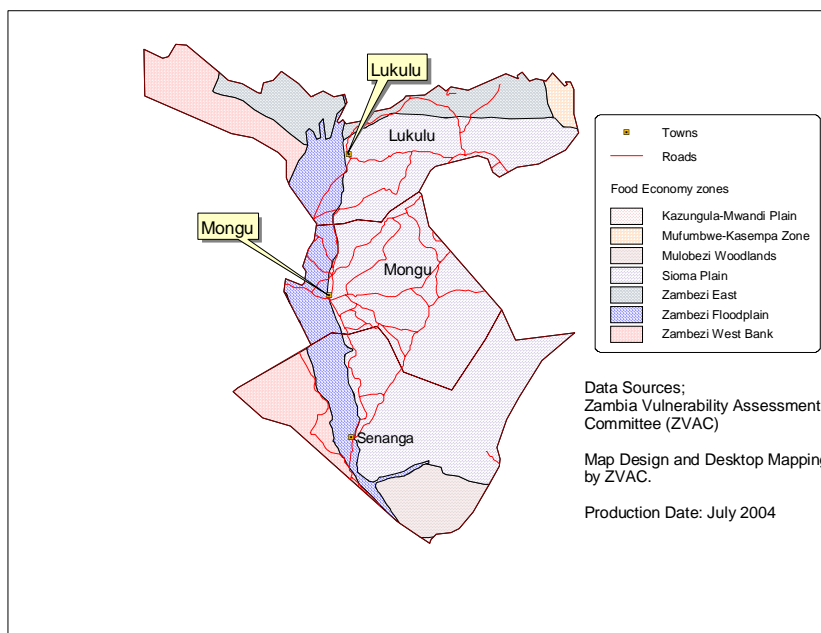
## Sioma Plains Livelihood Zone

October 2004<sup>12</sup>

### Zone Description

The Sioma Plains Livelihood Zone covers parts of Lukulu, Kaoma, Senanga, Mongu, Sesheke, and Shango'ombo Districts. The population of the zone is approximately 374,000 people. This assessment covered parts of Mongu, Senanga and Lukulu Districts, which are illustrated in the map.

The zone lies in the medium rainfall region of the country (800mm-1000mm) and is endowed with both wetlands and uplands. The massive wetlands support fishing, rice and maize production, and livestock rearing. Rice is the major cash crop, mainly grown by better off households. The wetlands are also suitable for crops like maize, due to the rich soils deposited by floods. Maize is usually grown in the winter season between August and December. Other minor crops grown include sorghum, millet and sweet potato. Most of the population in the livelihood zone is concentrated along the wetlands because of the high production potential found in these areas.



The nearby uplands are generally flat and are characterised by infertile Karahari sands, where the dominant crop is cassava. Cassava is one of the major crops in the zone and is grown and consumed all year round, whilst maize is the second most important crop. The production potential of maize in the uplands is severely constrained by the infertile, sandy soils.

Apart from crop production, livestock rearing is one of the most important sources of livelihood in this zone. Cattle are the most important type of livestock, but herds are currently being threatened by the Contagious Bovine Pleuro Pneumonia (CBPP) disease, which has resulted in deaths and increased sales of animals for fear of losing them to the disease.

The zone is dissected by the Mibombo Forest, which is the basis for the timber industry. Timber is an important source of cash income for richer households and provides significant casual labour opportunities for middle and poor households. Another source of income for middle and poor households in the zone is labour migration to Nakambala Sugar Estates in Mazabuka District.

There is seasonal migration within the zone from the flooded Barotse Plain to the upland area locally called Kuomboka during the peak period of water accumulation in April. During this period, people migrate from the flooded wetlands to the uplands together with their livestock. This migration has become a major tourist attraction that needs to be developed to benefit the local inhabitants.

<sup>12</sup>Fieldwork for the current profile was undertaken in July 2004. The information presented refers to the consumption year from March 2003 to February 2004, which was a relatively 'normal' year for crop production by local standards (i.e. a year that was neither especially good nor especially bad in terms of food security, when judged in the context of recent years). It was a very bad year for livestock due to the presence of CBPP. Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2009).

Fishing is an important food and income source for communities residing along the Zambezi River. There is great potential to expand the fishing industry in the area.

### Markets

Mongu (the provincial capital) is the largest market in the zone. Almost all districts within the province have a strong trade link with Mongu as either suppliers of goods, or centres of demand, or both. The district headquarters are the second level markets within the livelihood zone.

Timber, cattle and rice are the most important items supplied to external markets. The interaction with outside markets is year-round, except in some places where road access is obstructed by flooding during the rainy season. Timber is supplied in all seasons, but the supply of cattle and rice vary depending on the prevalence of CBPP and crop performance respectively.

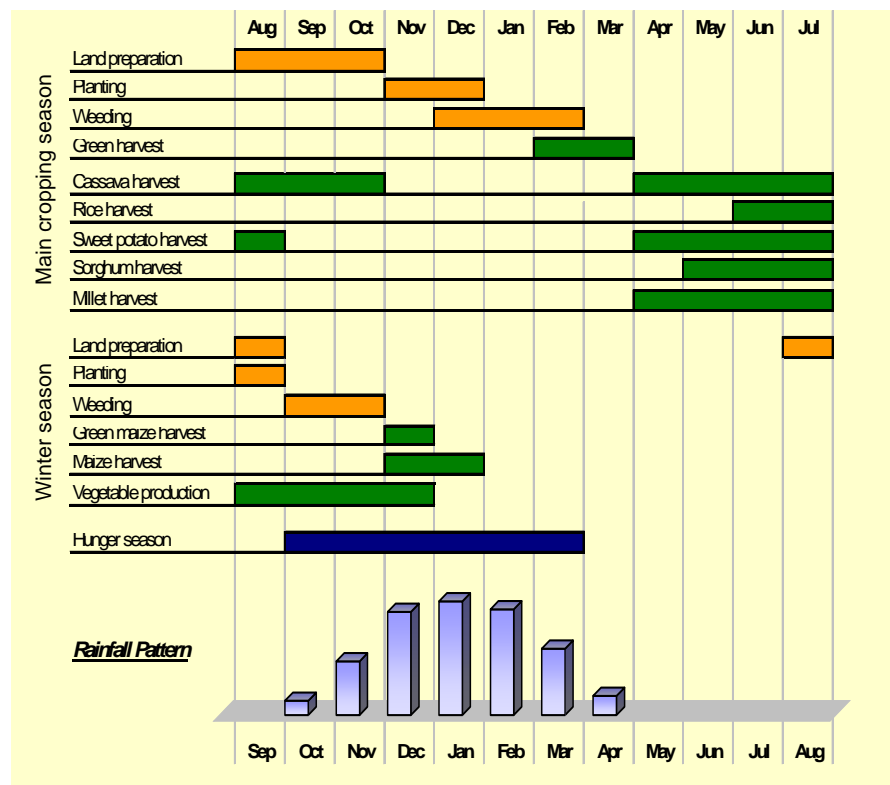
The roads from Mongu to Senanga and from Kaoma to Lukulu are in a bad state. The poor road infrastructure inhibits access to markets both within and outside the zone. During the rainy season, most villages are cut off from the main markets, and the purchase of food and agricultural inputs becomes very difficult during this time. The worst hit district is Lukulu, which has only one major road linking it to other districts. The district is being avoided by most NGOs due to its inaccessibility.

### Seasonal Calendar

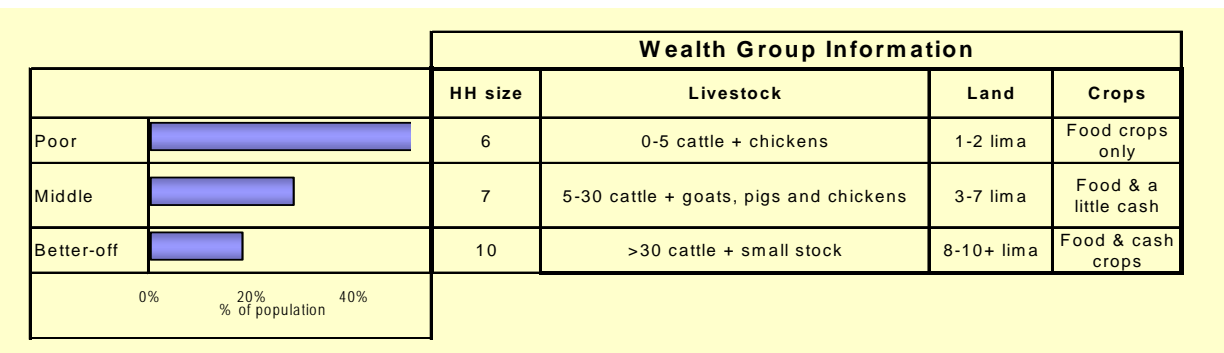
The rainy season begins in October and ends in April. Most of the zone is under rainfed agriculture implying that crop production is largely dependent on seasonal rainfall performance. In the uplands, crop harvesting is done in April – July.

In the wetlands, where flood recession farming is practiced in the winter season, maize harvesting occurs in November – December.

During the lean period there is increased gathering of wild food and labour migration. The peak of the hunger period is from November to February and is characterised by high prices for food commodities.



### Wealth Breakdown



The ranking of people into three wealth groups is mainly based on the type and number of livestock owned. This in turn has a bearing on the size of land they are able to cultivate and subsequently the type of crop and production levels they are able to realise at the end of the growing season. The table is derived from community-level perceptions about the underlying factors that place households in different wealth groups, and the livestock holdings were for the start of the reference year (March 2003).

The poor are the largest group in this zone. They do not own productive assets to improve their economic or food production situation. They are unable to obtain loans or agricultural inputs due to their weak economic position. The poor only cultivate food crops on relatively small pieces of land. They grow vegetables for food and cash. Middle and better off households own cattle, small stock and other productive assets, which enable them to cultivate fairly large areas of land for food and cash crops. The better off typically have a larger household size than the other groups because of their ability to accommodate relatives from poorer households, particularly orphans.

### Sources of Food

The graph presents the sources of food for households in the Sioma Plains livelihood zone for the reference period March 2003 – February 2004. Food is presented as a percentage of 2100 kilocalories per person per day for the 12-month period starting with the 2003 harvest.

The major source of food in the reference year across all wealth groups in this zone was own crop production. The contribution of own crop production increased with wealth. The contribution from livestock products (milk and meat) also increased with wealth, although it was generally a less important direct source of food.

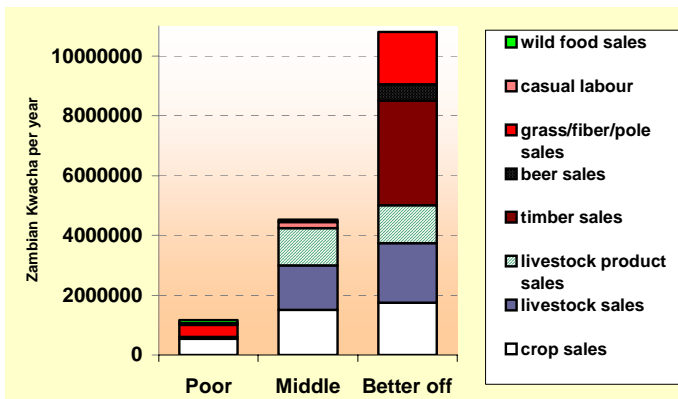


Food purchase was the second most important food source for middle and better off households whilst, for the poor, the second most important source of food was casual labour (labour exchange).

During the growing season, the poor spent part of their time doing casual work that was paid in food instead of concentrating on their fields. This contributed to their poor own food production. The better off took advantage of the cheap labour offered by the poor to cultivate larger areas.

Wild foods, including *mabuyu* and *mungongo*, were an additional minor food source for poor households.

### Sources of Cash



The graph presents the sources of cash income for households in different wealth groups for the period March 2003 – February 2004.

Crop sales were an important source of cash income for poor and middle households in the reference year. However, it must be noted that poor households mostly sold vegetables since they had little capacity to grow enough food crops like maize, rice or cassava for sale. Sales of poles were another important source of cash for poor households, supplemented by casual labour and wild food sales (including game and fish). Livestock were a major source of cash for middle households, including both the sale of live animals and their products.

For the better off, the most important source of income was timber sales. The better off had the capacity to hire labour for timber cutting and also to hire transport to ferry the timber to markets. Most of the timber was sold in Lusaka.

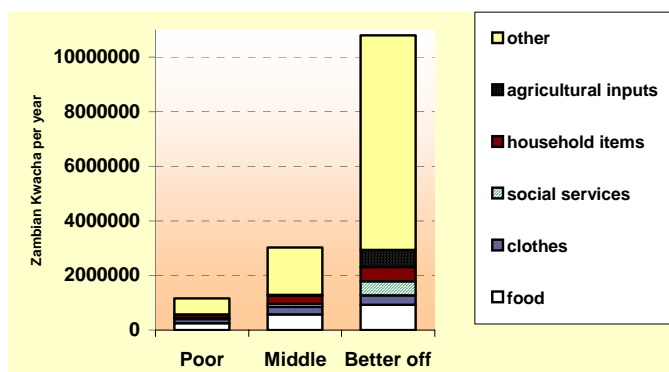
## Expenditure Patterns

The graph presents the expenditure patterns of households in the period March 2003 – February 2004.

With the exception of agricultural inputs, which are relevant for better off households only, all wealth groups spent their income on similar commodities. What differed, however, were the amount of cash spent and the quality and quantity of commodities purchased.

Expenditure on staple food was relatively low for poor households because they obtained most of their 'purchased' food directly through work (labour exchange) rather than for cash. Although they had the highest level of own crop production, better off households spent the most on food because they have the largest household size and they tend to purchase high quality foods that are expensive.

The 'social services' category includes spending on education, health and tax. 'Household items' includes salt, soap, kerosene and grinding. 'Agricultural inputs' includes inputs for both crops and livestock. 'Other' includes a number of miscellaneous items. Expenditure on most items increases with wealth.



## Hazards

The most common hazards in the zone include flood, drought and cattle diseases such as CBPP. Although floods are an annual phenomenon, especially in the low lying areas of the Barotse floodplain, excessive flooding can have a devastating impact on crop production, livestock, infrastructure and health. Furthermore, when there is excessive flooding, some areas become inaccessible by road making it difficult to reach those in need of assistance.

## Response Strategies

With time, the inhabitants of this zone have developed a number of strategies to respond to the types of hazard mentioned in the previous section. Depending on the magnitude, duration and frequency of the hazard, a number of response strategies are employed by different wealth groups. Generally there were three strategies by which households tried to avert the effects of hazards: maximising income, minimising expenditure and shifting consumption patterns. The most common response strategies include sale of livestock, labour migration to other districts like Mazabuka, the collection of wild foods, increased sale of timber, increased fishing and a reduction of non-essential expenditure.

## Indicators of Imminent Crisis

A poor start to the rains causes delayed planting, whilst prolonged dry spells during the peak rainfall months (December – February) results in reduced crop yields due to moisture stress.

Although flooding is normal and has been adapted into household livelihood patterns, excessive flooding in

February through May damages crops, destroys infrastructure and results in livestock and human diseases.

Unusually large volumes of livestock sales and labour migration after August suggest that households are struggling to cope with high food prices. If labour migration is excessive, then land preparation for the next season is negatively affected.

### Season Month Indicator

Season	Month	Indicator
Rainy season	Nov	Poor start to the rainy season in November
	Dec	
	Jan	Prolonged dry spells of 3-4 weeks in December through February
	Feb	Excessive flooding in February through May
Dry season	Mar	Excessive flooding in February through May
	Apr	Excessive flooding in February through May
	May	Excessive flooding in February through May
	Jun	
	Jul	
	Aug	Unusually high volume of livestock sales
	Sep	Unusually high numbers of people migrating for casual labour
	Oct	

## Implications for Programming

### Constraints

- The upland soils are predominantly infertile Karahari sands that only support a limited number of crops.
- The prevalence of cattle disease, particularly CBPP, poses a major threat to livestock rearing in the zone. Cattle are an important source of cash income and of draught power for households.
- Poor road infrastructure has made some areas, such as Lukulu, difficult to access making it difficult for households to purchase and sell goods. This also poses a threat to development efforts in the zone.

### Opportunities for development

- Cassava is more productive than maize in the infertile Karahari sands and any intervention programmes should focus on expansion of the existing cassava crop and introduction of other crops suited to sandy soils.
- Intervention programmes aimed at addressing this problem need to be stepped up. The zone has great potential for livestock rearing, but before restocking can be done there is a need to eradicate CBPP.
- There is need for road rehabilitation to facilitate transport of produce to markets and timely delivery of inputs. Food-for-assets or cash-for-work programmes could be used to rehabilitate some of the feeder roads.

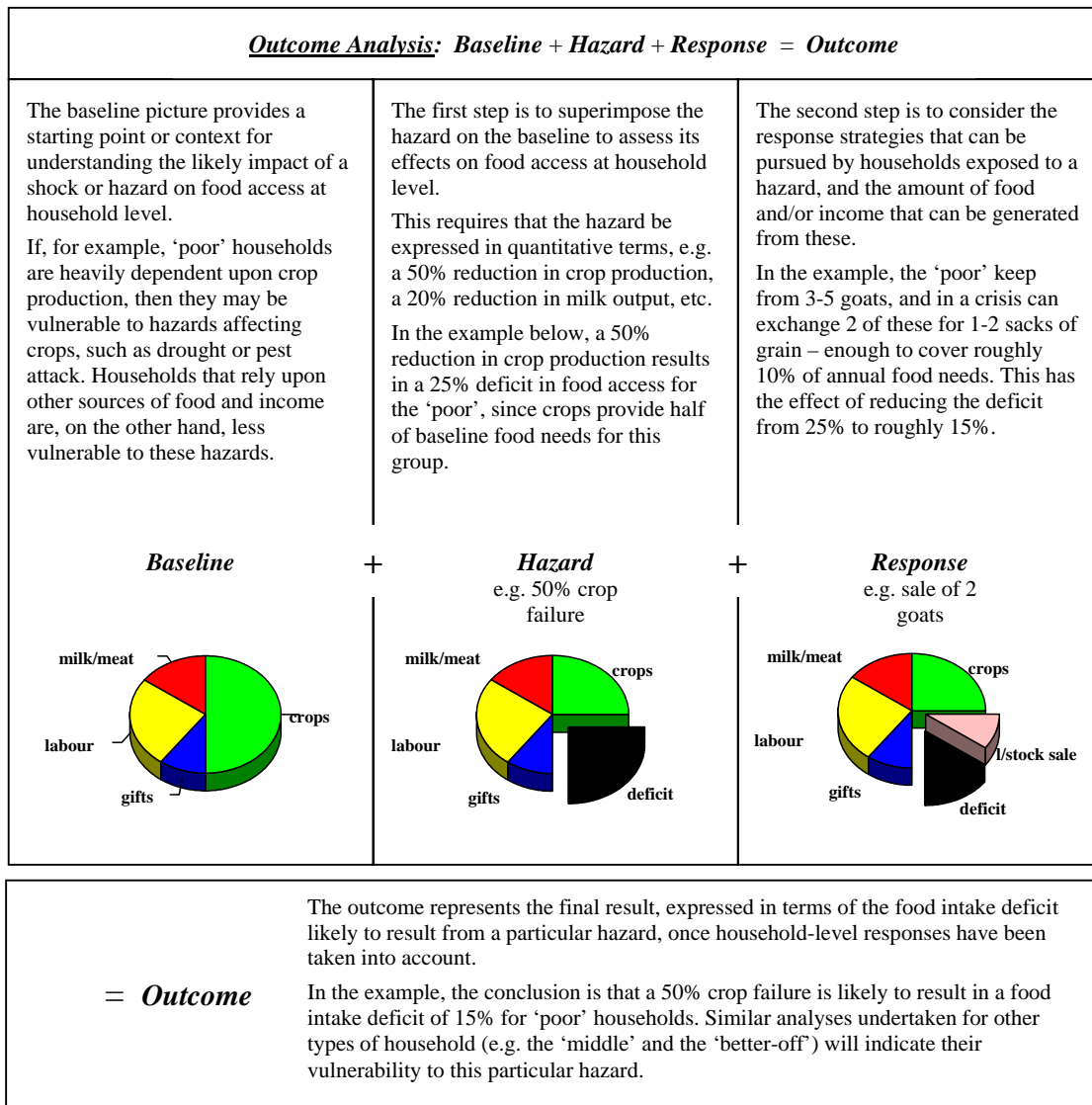
# Zambia Livelihood Profiles

Current Year Analysis

October 2004

## Introduction

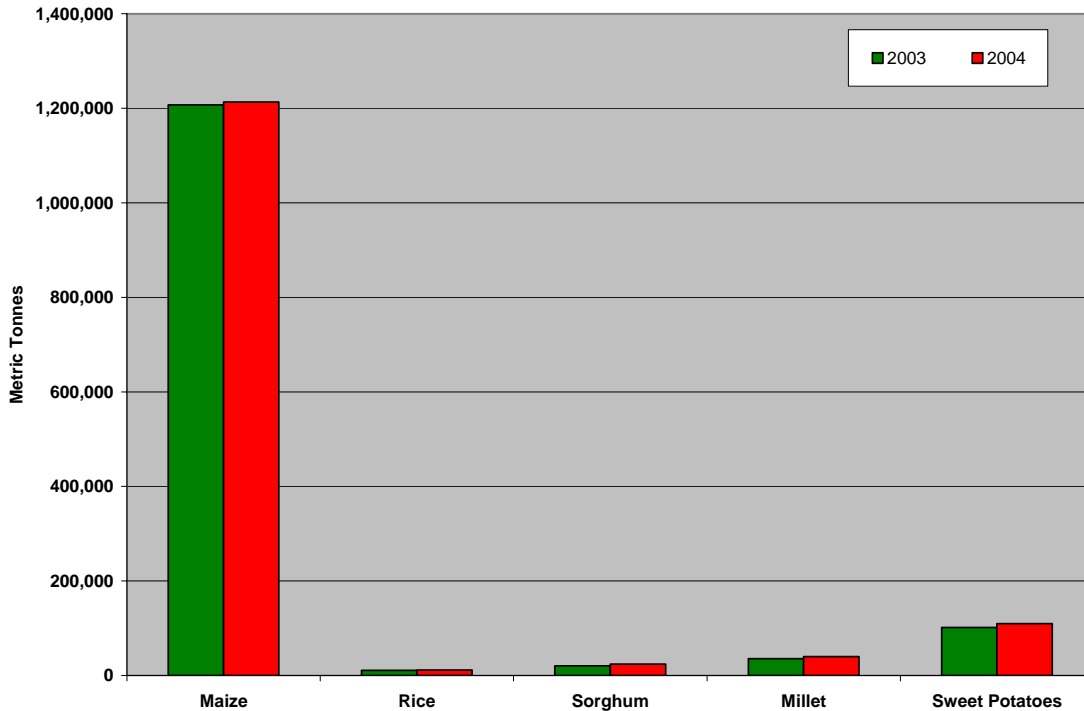
The profiles have outlined a baseline picture of how the population in four livelihood zones in Zambia survived the one-year reference period following the 2003 harvest (March 2003 – February 2004), which was a relatively average year. In order to describe and project the situation for the current year, which is the one-year period following the 2004 harvest (March 2004 – February 2005), it is first necessary to clearly define the ‘problem’ that households are facing. This ‘problem’ can then be analysed in relation to how people survived in the reference year. This analysis should take into account any options that might exist for expansion of existing food and income sources, for the exploitation of new food or income sources, or for switching away from non-essential expenditure in the current year. The final result is a conclusion about whether or not households in various wealth groups will face a food deficit and therefore require food aid or some other type of intervention. This process is summarised in the following graphic, which is repeated from the introduction section of this report.



## Crop Harvest in 2004

The national staple food harvest was greater in 2004 than in 2003 for most crops, as illustrated in the graph below.<sup>13</sup> In the sections below, production in the livelihood zones is described separately.

National Crop Production in 2003 and 2004 (Metric Tonnes)



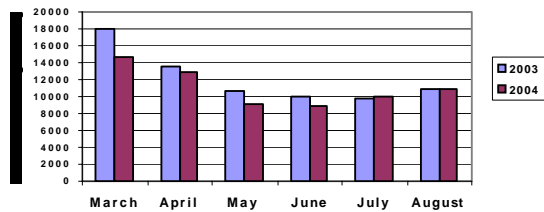
## Food Prices in 2004

Maize prices are generally lower in the current year than in the same period of the reference year. The graphs below compare nominal retail prices in March – August 2003 with March – August 2004, the period for which prices are available so far in the current year.<sup>14</sup>

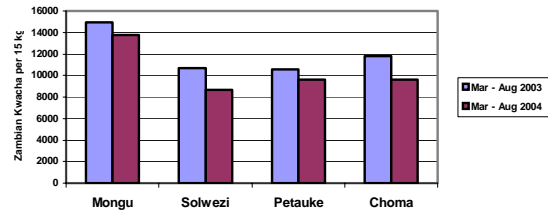
The national average is an average of 38 markets throughout the country. Mongu is in the Sioma Plains livelihood zone. Choma is a nearby market for the Gwembe Valley livelihood zone, as is Petauke for the Chongwe-Nyimba zone and Solwezi for the part of the Zambezi West Bank livelihood zone that was covered in this assessment.

The prices illustrated are nominal and have not been adjusted for inflation, which is currently running at about 15-25% per year. In other words, the low nominal prices recorded in most locations so far this year are even lower in real terms.

Comparison of 2003 & 2004 Maize Prices (March - August) : NATIONAL AVERAGE



Comparison of March - August Maize Prices in 2003 & 2004 in 4 Locations



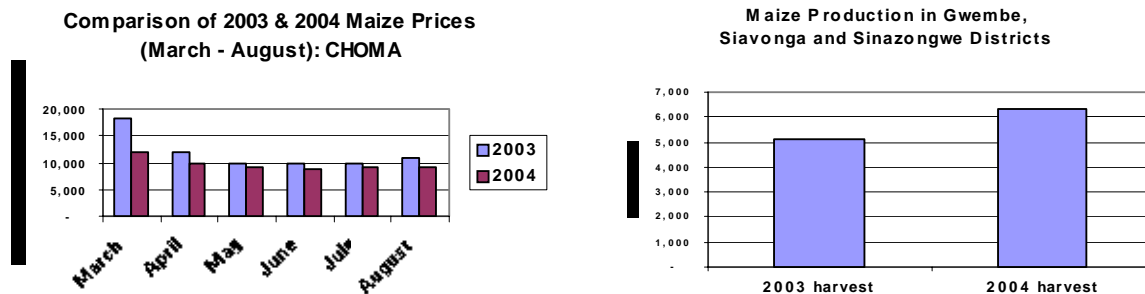
<sup>13</sup> Source: Zambia Ministry of Agriculture

<sup>14</sup> Source: FEWS NET

## Gwembe Valley Livelihood Zone

The current year (March 2004 – February 2005) has so far been better than the reference year. Rainfall was normal to above normal during the 2003-04 agricultural season and production of sorghum, maize, millet and cotton was higher in 2004 than in 2003 in each district, although there are some localized variations (and there has been some flood damage along seasonal streams). Total maize production in the three districts in 2003 and 2004 is presented in the graph below. (District-level production figures are not yet available for other crops).<sup>15</sup>

Staple food prices have been almost 20% lower in the current year so far compared to the same period in the reference year (see graph below for maize prices in a nearby market<sup>16</sup>). Most other income and expenditure items are 15-25% higher than in the reference year, which is in line with general inflation. Overall, households are in a relatively good position in terms of household food security and relief interventions are inappropriate in the current year.



## Chongwe-Nyimba Livelihood Zone

Overall the 2003/04 agricultural season was better than the 2002/03 agricultural season. Community-level key informants reported that there was more rainfall and this resulted in a larger harvest of both food and cash crops. Prices have also been more favourable for households following the 2004 harvest, compared to the same period in the reference year. The prices of staple foods are lower, at least in real terms, while the prices of the things that households sell (including cash crops, livestock and charcoal) are higher.

This suggests that most households are experiencing improved staple food availability and improved opportunities to obtain income through cash crop and livestock sales. Therefore, the current consumption year is a better year overall than the reference year. However, the long-term problems that were outlined in the Chongwe-Nyimba livelihood zone section of this report remain.

## Zambezi West Bank Livelihood Zone

The situation in the current year is worse than in the reference year described earlier. Crop production has decreased this year in this livelihood zone due to the effects of very high floods. Though there are some localized differences, cassava and maize production has decreased by about 25 to 50%, according to key informants, while rice and bean production has decreased by about 75%. Millet and sorghum production has remained roughly the same, with slight variations from village to village.

Staple food prices have increased by about 25% so far compared to the same period in the reference year. Most other income and expenditure items are 10-25% higher than in the reference year, which is in line with the inflation.

On the positive side, the quantity of fish caught and hence income obtained from fish/*kakeya* has increased by about 40%. Poor households are also attempting to increase their income through increased sales of forest products such as grass, fibers, and timber/poles, increased brick making and more engagements in casual labour.

Overall, households are expected to overcome the shortfalls in crop production through purchase and labour exchange and are not expected to face serious shortages in terms of household food security. Therefore, relief interventions are not recommended for the current year.

<sup>15</sup> Source: Zambia Ministry of Agriculture

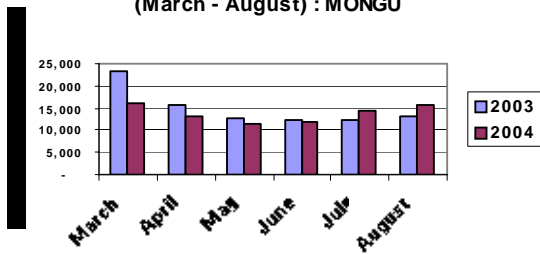
<sup>16</sup> Source: Zambia Meteorological Department

## Sioma Plains Livelihood Zone

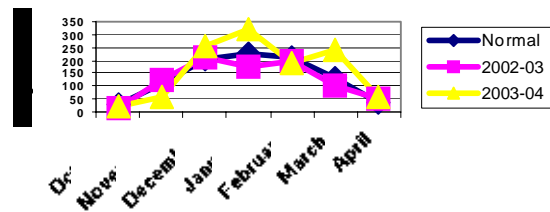
In terms of rainfall, crop production and prices, the current year is a fairly normal year, and not very different from the reference year.

However, the prevalence of cattle disease (CBPP) has forced many households to sell cattle in large numbers. There has been a corresponding increase in the number of abattoirs in Mongu and Senanga Districts to accommodate the increased sales. The battle to combat the CBPP is ongoing and because of this disease there has been a drastic reduction in the number of cattle per household. The Mongu District Livestock Officer estimated that cattle numbers have dropped from about 150,000 in 2002 to about 80,000 at the time of the assessment (July 2004). This is a reduction of 47% and will have serious implications for the ability of households in this livelihood zone to withstand bad years caused by flood or drought in future.

**Comparison of 2003 & 2004 Maize Prices  
(March - August) : MONGU**



**Rainfall in MONGU:  
Normal, 2002-03 & 2003-04**



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