



Republic of Zambia

Central Statistical Office

**The Food Security, Health and Nutrition
Information System
(FHANIS)
AUGUST 2003**



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The Food Security, Health and Nutrition Information System

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Preface

The Food Security, Health and Nutrition Information System (FHANIS) is a survey undertaken by the Living Conditions Monitoring Branch (LCMB) of the Central Statistical Office. It is an important surveillance system meant to provide quick, timely and regular indicators on the Food Security, Health and Nutrition situation in Zambia. From 1993 the FHANIS surveys had been carried out to monitor food security, health and nutrition in the country, until the time they were discontinued in 1998 due to lack of funding. This report contains results of the FHANIS survey that took place in August 2003. The survey covered the whole country on a sample basis covering 240 Standard Enumeration Areas (SEA). About 4,800 households were interviewed. The Zambia Social Investment Fund (ZAMSIF) provided financial support for the preparatory and the survey activities of the FHANIS (2003), while the Central Statistical Office played the key role in the implementation of the survey.

The design of the survey was done with the help of the following institutions; Ministry of Agriculture and Cooperatives (MACO), Central Board of Health (CBoH), National Food and Nutrition Commission (NFNC), The University of Zambia (UNZA) - School of Agriculture, The Office of the Vice President (OVP) – Disaster Management and Mitigation Unit (DMMU) and the Food Security Research Project (FSRP).

The cooperation of selected households supplying the data is greatly appreciated. I wish to take this opportunity to highly commend the individuals who contributed to the survey. These include the survey management team of the Central Statistical Office (CSO), the field staff that have been responsible for collecting the data all over the country, the data processing personnel and the various users who contributed to the finalization of the survey.



Dr. Buleti G. Nsemukila

DIRECTOR OF CENSUS AND STATISTICS

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List of Abbreviations

AER	Agro-Ecological Region
BCG	Bacillus Calmete Guerin (Vaccination against Tuberculosis)
CSO	Central Statistical Office
CSA	Census Supervisory Area
DIMS	Drought Impact Monitoring System
DPT	Diphtheria Pertussis and Tetanus
FEZ	Food Economy Zone
FHANIS	Food Security, Health and Nutrition Information System
LCMB	Living Conditions Monitoring Branch
PAM	Programme Against Malnutrition
PSU	Primary Sampling Unit
SEA	Standard Enumeration Area
UNICEF	United Nations Children’s Emergency Fund
CBoH	Central Board of Health
MACO	Ministry of Agriculture & Cooperative
NFNC	National Food and Nutrition Commission

Executive Summary

The FHANIS survey provided information on Food Security, Health and Nutrition situation in Zambia. The following is the summary of the findings from the FHANIS survey that took place in August 2003.

Population Issues

- The FHANIS survey estimated the population of Zambia to be 10.4 million as at August 2003. This estimate excludes institutional population.
- Sixty percent of the population resides in rural areas and 40 percent in the urban.
- Eighteen percent of the households in Zambia are female headed

Orphans

- The survey results show that about 19 percent of the children below the age of 18 Years are orphans in Zambia. The highest proportions of orphaned children were observed in Zones 7 and 8, with 24 percent each. These Zones cover Kazungula, Livingstone, Sesheke, Chongwe, Luangwa, Nyimba, Kalabo and Lukulu.
- Double orphans (that is both parents dead) accounted for 5 percent of children below 18 years.
- Maternal orphans were about 3 percent of children below 18 years.
- Paternal orphans constituted about 11 percent of children below 18 years. Zones 7 and 8 recorded the highest proportions of paternal orphans, at 18 and 15 percent respectively.

Health

- Twenty-one percent of the population reported to have been either ill or injured during the two weeks prior to the survey.
- Of the 21 percent who reported to have been ill or injured, 45 percent reported to have suffered from malaria/fever. The incidence of malaria was highest in Zone 7 comprising Kazungula, Livingstone, Sesheke, Chongwe, Luangwa, Nyimba Kazungula, Livingstone, Sesheke, Chongwe, Luangwa and Nyimba North.
- Results on consultation levels over illnesses show that more than 50 percent of all the persons reporting illness did consult some medical personnel/institution for almost all the illnesses. More than 30 percent of the ailing population in Zones 10 and 11, covering Chavuma, Zambezi, Lukulu, Gwembe, Siavonga and Sinazongwe, neither consulted nor used self-administered medicine.
- Only 19 percent of those who reported to be ill at the time of the survey consulted a Medical Doctor. Consultation with Medical Doctors was lowest in Zones , 3, 8 and 10 covering Kasempa, Mufumbwe, Solwezi, Chavuma, Zambezi, Kalabo, Lukulu, Mpongwe and Mpika districts.
- Ten percent of the households in Zambia had members who suffered from various chronic illnesses. . Zone 8, which comprises of Kalabo and Lukulu (West) districts recorded the highest percentage (24) of households having chronically ill persons.

Water and Sanitation

- About 45 percent of the population does not have access to safe water. These constitute households, which use water from the rivers, lakes, streams and unprotected wells. Over 90 percent of households in Zones 8, 9 and 10, covering Kalabo, Lukulu, Shang'ombo, Senanga, Sesheke, Chavuma and Zambezi, have access to unsafe water.
- Thirty percent of all households treat their drinking water. Of these 48 percent treat water by chlorination at their homes.
- Thirty-four percent of the households in Zambia do not have toilet facilities of their own. The highest proportion of households without toilet facilities was in Zone 8 and 6, with 81 and 79 percent, respectively. These Zones comprise Kalabo, Lukulu, Kaoma, Mongu and Senanga districts.

Education

- Fifteen percent of children aged 5 to 6 years were attending school as at August 2003.
- Seventy-five percent of children aged 7 to 13 years were attending school as at August 2003.
- Sixty six percent of children aged 14 to 18 years were attending school as at August 2003.

Child and Health Nutrition

- Results show that 25 percent of children in the age group 0- 3 months were exclusively breastfed. Only 7 percent in the age group 4- 6 months were exclusively breastfed.
- About 53 percent of the children between the ages of 3- 59 months were reported to have chronic malnutrition (stunting). 59 percent of the children in rural areas were stunted compared to 43 percent in urban areas.
- About 5 percent of children aged 3-59 months were wasted while 24 percent were under weight.. Zone 4, which covers Chama, Lundazi, Itezhi-Tezhi, Mambwe and Mumbwa districts, recorded the highest levels of wasting, at 12 percent,
- Over 90 percent of all the children below the age of five years had received DPT, BCG and Polio vaccinations and 83 percent have had measles vaccination.

Food Security at Community level

- About 34 percent of the households in the surveyed communities were reported to have run out of staple food stocks as of August 2003. More than half of the households residing in Zone 11 (covering Gwembe, Siavonga and Sinazongwe), Zone 8 (covering Kalabo and Lukulu west) and Zone 7 (covering Kazungula, Livingstone, Sesheke, Chongwe West, Luangwa North, and Nyimba North) had already run out of staple stocks as of August 2003.
- About 20 percent of the households were expected to run out of their food stocks within 1 month. Twenty-two percent of the households in the surveyed communities only had enough stocks to last 2 to 3 months while 24 percent had food stocks to last for more than 3 months.
- About 67 percent of the surveyed communities relied on own food production as a major source of food, while 20 percent of the communities obtained their food through purchases. Food for Work and Relief Food programmes catered for 7 and 4 percent of the households, respectively. Consumption of own produce was lowest in Zones 8 and 11 comprising Kalabo, Lukulu, Gwembe, Siavonga and Sinazongwe districts.
- About 50 percent of the communities covered during the FHANIS survey had food security programmes.
- Forty five and 32 percent of the households in the surveyed communities were reported to have benefited from the food Relief and seed distribution programmes, respectively. The proportions of households who benefited from food security packs and fertilizer distribution programmes were estimated at 24 and 22 percent, respectively.
- Maize and Cassava were reported to be readily available for purchase to 58 and 40 percent of the communities, respectively. Maize and cassava were not readily available at all to 10 and 25 percent of the communities, respectively.
- The average price of maize grain (50Kg bag) declined by 10 percent, from K36, 129 in August 2002 to K32, 480 in August 2003. The unit price of maize grain (50Kg bag) was highest in Zones 8, 11 and 12, which include districts such as Kalabo, Lukulu, Gwembe, Siavonga and Sinazongwe.

Food Security Issues at Household level

- The average quantity of cereals per rural household was 590 Kgs (as of August 2003). The quantities were lowest in Zones 8 (63.9Kg) and 10 (148.6Kg) covering Kalabo, Lukulu, Chavuma and Zambezi districts.
- On average, households in rural areas received about K252, 329.00 from sale of cash crops 3 months prior to the survey.
- About 41 percent of all rural households in Zambia obtain their cereal requirements through purchases. Food remittances catered for 21 percent of households while payment in kind and food aid accounted for 16 and 15 percent of rural households, respectively. More than 50 percent of households in Zone 8, which covers Kalabo and Lukulu, obtained their cereal requirements through food aid.

Household Consumption

- Results show that the most commonly consumed food items during the week preceding the survey were cereals and vegetables. On average the households reported consuming cereals and vegetables for 5 days in a week.
- On average both adults and children take 2 meals in a day.

Coping strategies

- Twenty-four percent of the households reported to have relied on some coping strategies 12 months prior to the survey. Zone 11, which covers Gwembe, Siavonga and Sinazongwe districts, had the highest percentage of households who were reported to have developed coping mechanisms, at 36 percent. This Zone had the highest proportion of households that relied on relief food distributions, at 92 percent.
- The most commonly used coping strategy by households was the reduction of the number of meals taken per day, at 64 percent.

CHAPTER 1

OVERVIEW OF ZAMBIA

1.0 Introduction

Zambia is a Sub-Saharan African country sharing borders with eight countries, Malawi and Mozambique to the east, Botswana, Zimbabwe and Namibia to the south, Angola to the west, Democratic Republic of Congo and Tanzania in the north. Zambia lies between 8 and 18 degrees South latitudes and 22 and 34 degrees east longitudes. It is a landlocked country and covers an area of approximately 753,000 square kilometers.

Administratively Zambia is divided into nine provinces and 72 districts. The nine provinces are Central, Copperbelt, Eastern, Luapula, Lusaka, Northern, North-western, Southern and Western.

1.1 Background of the survey

In 1992, Zambia along with much of the rest of the Southern Africa suffered a severe drought, which resulted in a substantial fall in the domestic production of food and a severe income shock to more than two million people. In order to help maintain the food security of the drought-affected population, the government with assistance from UNICEF and the World Bank spearheaded the establishment of the Programme Against Malnutrition (PAM). PAM was mandated by the government to manage food relief programmes in the affected areas. The Drought Impact Monitoring System (DIMS) was established to provide information on community and household food security and nutrition status to assist with targeting and management of the relief programmes.

DIMS proved to be very effective and was able to provide monthly reports of conditions through out the drought affected areas within a very short period of time between data collection and dissemination of the results. The information generated proved to be an important factor in the management of the relief programmes. In some districts, where changes in indicators were identified, more intensive follow-up investigations were mounted using Rapid Participatory Assessment methodology. In general, the findings of DIMS were supported by these surveys.

The Drought Impact Monitoring System (DIMS) had continued to generate very useful information for monitoring of food security and health situation even after the drought. Hence in 1993, it was decided to transform the system into a more permanent "Food Security, Health and Nutrition information System" (FHANIS). This change reflected two main concerns. First, it was recognized that in many of the drought affected areas there would be a prolonged period of recovery and it would be important to continue to monitor welfare of the population during this period. Second, it was generally recognized that even in 'normal' times many households in Zambia were food insecure and vulnerable to external shocks.

The DIMS started its evolution into FHANIS in March 1993. The change to FHANIS brought about a few changes in the monitoring system such as to expand coverage to the whole country. Overall, the plan was to develop FHANIS into an ongoing permanent, household-based surveillance system with information collected on a monthly basis. The old FHANIS continued running up to 1998 when the project stopped mainly due to lack of financial resources. The new FHANIS was re-established in 1999 under the Living Conditions Monitoring Branch (LCMB) of the Central Statistical Office (CSO) after extensive consultation with other stakeholders. However, the FHANIS activities could not start immediately due to inadequate resources.

The FHANIS survey activities started in 2002. It was decided that this survey will be held every quarter of the year. The objectives of the FHANIS are as follows: -

1.2 Overall Objectives

The overall objective is to provide quick, timely and regular indicators on food security, health and nutrition so as to facilitate policy-making, planning, and decision making with regard to targeting of interventions by government and co-operating partners.

1.3 Specific objectives

- To monitor food security conditions,
- To monitor levels of malnutrition,
- To monitor morbidity and mortality levels,
- To monitor the impact of policies on food security, health and nutrition conditions of the population,
- To improve the links between changes in indicators of the welfare of the population and policies, and
- To enhance links between agencies concerned with the collection, analysis and use of food security, health and nutrition statistics.

The first round of the FHANIS was conducted during the month of August, 2003. This report presents results from this survey.

CHAPTER 2

SAMPLE DESIGN

2.0 Introduction

The FHANIS Survey covered non-institutionalized private household population in Zambia. The design for the survey called for a representative probability sample that would produce reliable estimates at national, locality (rural/Urban) and zonal levels. A representative probability sample of 4,800 households was selected for the FHANIS survey.

2.1 Sampling Frame and Stratification

Administratively, Zambia is divided into nine provinces. Each province is in turn subdivided into districts. For statistical purposes each district is subdivided into Census Supervisory Areas (CSAs) and these are in turn subdivided into Standard Enumeration Areas (SEAs). During the 1998-2000 mapping exercise in preparation for the 2000 Census of Population and Housing, CSAs were nested in wards, wards in constituencies, constituencies in districts and districts in provinces. In total, Zambia has 72 districts, 150 constituencies, 1,289 wards, about 4,400 CSAs and about 17,000 SEAs. The listing of SEAs has information on number of households and the population. The number of households will be used as a measure of size for selecting primary sampling unit (PSU). Therefore, the sample frame of this survey is the list of SEAs developed from the 2000 Census Population and Housing.

The SEAs are grouped into urban and rural categories. For urban areas, SEAs are categorized into low-, medium-, and high-density residential areas. For rural areas, households were grouped into four categories, namely small-scale farmers, medium-scale farmers, large-scale farmers and non-agricultural households, based on information collected during listing. Under the proposed design, the SEAs in both rural and urban areas were further grouped by livelihood zone, defined by agro-ecological conditions, agricultural land use and cattle distribution.

2.2 Determination of the Livelihood Zones

Zambia is divided into three major Agro Ecological Regions with rainfall as the dominant climatic factor distinguishing the three regions. These agro-ecological regions are meant to profile the climatic characteristics of various parts of the country.

Agro- ecological region I (AER I) comprises the Luangwa-Zambezi valley and western semi-arid plains. The region includes drought and flood prone valleys of Gwembe and Lunsemfwa, the central and southern parts of the Luangwa valley as well as the southern parts of western province

Agro-ecological region II (AER II) is characterized by moderate rainfall, between 800 and 1000 mm and a relatively large number of sunshine hours (5-6), a longer growing season of 100 to 140 days and relatively fertile soils. It covers the central belt of the country, which comprises central, southern and eastern fertile plateau. This region is further subdivided into two sub-regions, IIa and IIb.

Sub-region IIa comprises the degraded plateau of Central, Southern, Lusaka and Eastern provinces. Sub-region IIb includes the Kalahari sand plateau and the Zambezi flood plain.

Agro-ecological region III (AER III) constitutes 46% of the country, and covers the Copperbelt, Luapula, Northern and Northwestern provinces. This region is characterized by high rainfall with an average in excess of 1000 mm and a long growing season (120 to 150 days). The region has relatively fertile soils.

A zoning system was devised using information from agro ecological and land use zonal systems. The resultant zones, which are called livelihood zones were arrived at by overlaying the land use and agro ecological maps. Land use is defined by type of staple crops produced and availability of livestock. Combining agro ecological zones with land use zones made it possible to reflect spatial climatic and land use differences. While recognizing the fact that food security and nutritional concerns experienced in Zambia are caused to a great extent by adverse weather changes, peoples responses and the degree of success in mitigating the resultant problems are also influenced by land use systems

practiced in their localities. Thus, all districts that share the same combinations of agro ecological and land use characteristic should be fairly similar in food and nutritional attributes.

2.3 The 13 livelihood Zones can briefly be described as follows;

Zone 1

Livelihood Zone 1 is located in agro-ecological region (AER) III, with cassava as the main staple crop produced and consumed. Other livelihood strategies include trading, fishing and income from sale of crops.

Zone 2

Livelihood Zone 2 falls in AER III with maize as the main staple crop. Although crop income is important, people in this zone also rely on a host of other livelihood strategies, including sale of game meat, trading, charcoal and precious mineral sales, and wage income.

Zone 3

Located in the high-rainfall northern region of the country (AER III) and has a relatively more diversified staple crop composition comprising maize and cassava. In addition to crop and game meat income, cattle contribute significantly to livelihood in this part of the country.

Zone 4

Located in AER IIa with maize and cassava constituting the staple crop base. Other sources of livelihood include cattle, crop income, income from sale of game meat and trading.

Zone 5

Located in the non-Kalahari medium-rainfall (800-1000 mm) plateau (AER IIa), where maize and cassava are the main staple crops produced and consumed by the residents. Other sources of livelihood include cattle, crop income, charcoal, mining and other trading activities.

Zone 6

Located in AER IIb, which is the western part of AER II with Kalahari sandy soils 800-1000 mm of rainfall. In this part of AER IIb, residents are almost solely dependent on maize for staple food. Cattle rearing is an important economic and livelihood activity. Income is mainly from crop and timber sales.

Zone 7

Located in the driest parts of the country (AER I). In Livelihood Zone 7, both maize and cassava are important sources of staple food. Cattle rearing is also common, with a very diversified income base, including crop sales, wages, timber and curio sales, and cross-border trade.

Zone 8

Located in AER IIb with cassava as the main staple food source and cattle rearing constituting a significant portion of livelihood strategies. Main income sources include crop sales and fishing.

Zone 9

Located in AER I with maize as the main source of staple food and cattle rearing constituting a significant part of livelihood. Income sources include crop, fish, livestock and game meat sales.

Zone 10

Located in high-rainfall AER III with cassava as the main source of staple food and cattle rearing constituting a significant part of livelihood. Major income sources in this livelihood zone include crop sales, fishing and fish sales, livestock sales and general trading.

Zone 11

Located in low-rainfall low-lying areas of the country (AER I), where sorghum is the main staple crop and cattle rearing is an important part of economic and social activity. Income sources include livestock sales, fishing and trading.

Zone 12

Located in low-rainfall, low-lying areas of the country (AER I) in which maize and cassava are the most important staple crops. Important income sources include crop sales and fishing.

Zone 13

Located in AER IIa, in the part where maize is the most important staple crop and crop sales is the most important income source.

2.4 Sample allocation and selection

In order to facilitate reasonable comparison between stratum estimates and also obtain stratum estimates at acceptable levels of sampling errors, a disproportionate method of allocation referred to as the “Power Allocation” Method was used. A two stage stratified cluster design was employed for sample selection. At the first stage, 240 Standard Enumeration Areas (SEAs) were selected with Probability Proportional to Estimated Size (PPES). During the second stage, 20 households were sampled from each selected SEA. The selection of households was preceded by an area listing exercise. The design ultimately yielded a probability sample of about 4,800 non-institutionalised private households.

2.5 Interpretation of survey results

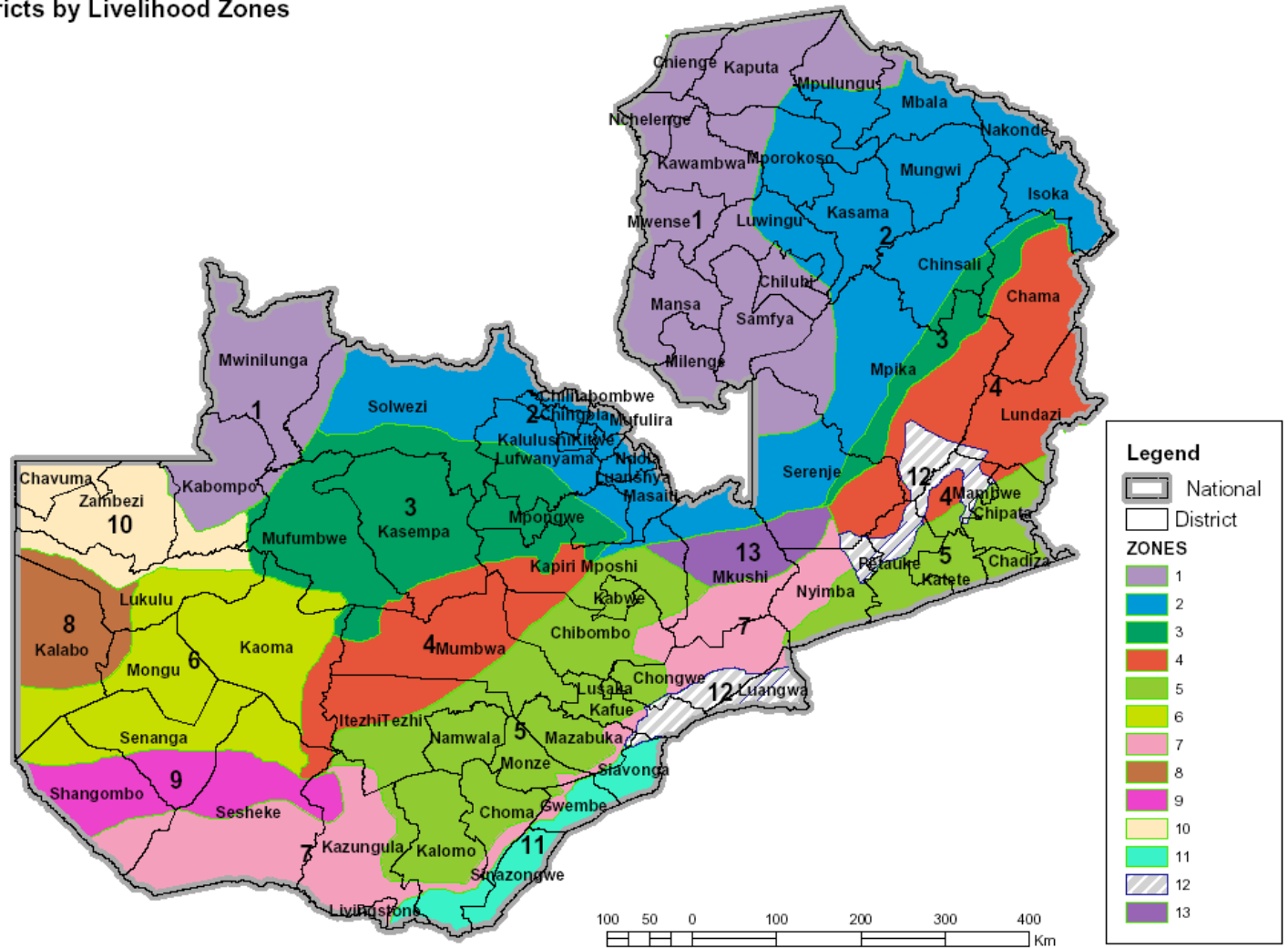
The Livelihood Zones are not restricted to district boundaries. In some cases zones cut across district boundaries although the majority of the districts fall entirely within a Livelihood Zone. For District with two or more Livelihood Zones the population/household distribution in the area, will determine which Livelihood Zone best describes the Food Health and Nutrition situation in the particular district. The analysis has been done at Zone level but statements can be made about districts falling in respective Zones.

The distribution of districts by livelihood zones is shown in table 2.1 and the geographical map below.

Table 2.1: Classification of districts by Livelihood Zones

Livelihood Zone	District Name
Zone 1	Chiengi, Chilubi, Kabompo, Kaputa, Kawambwa, Luwingu, Mansa, Mpulungu, Milengi, Mwense, Mwinilunga, Nchelenge Samfya and Mpika (west).
Zone 2	Chililabombwe, Chingola, Chinsali, Isoka, Kalulushi, Kitwe, Luanshya, Lufwanyama, Luwingu (East), Masaiti, Mbala, Mkushi (North), Mpika, Mporokoso, Mufulira, Mungwi, Nakonde, Ndola, Serenje, Solwezi and Mpongwe (North).
Zone 3	Kasempa, Mpongwe, Mufumbwe, Mpika (North) and Solwezi (South).
Zone 4	Chama Lundazi, Itezhi-Itezhi (North), Mambwe (Valley) and, Mumbwa (West).
Zone 5	Chadiza, Chibombo, Chipata, Choma, Chongwe, Itezhi-Itezhi, Kabwe, Kafue, Kalomo, Kapiri-Mposhi, Katete, Mazabuka, Monze, Mumbwa, Namwala, Nyimba, Petauke, Kazungula (East) and Mambwe (Plateau).
Zone 6	Kaoma, Lukulu, Mongu Senanga and Kalabo(East).
Zone 7	Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa (North) and Nyimba (North).
Zone 8	Kalabo and Lukulu (West)
Zone 9	Shang’ombo, Senanga (West) and Sesheke (North-west).
Zone 10	Chavuma , Zambezi and Lukulu (North)
Zone 11	Gwembe, Siavonga and Sinazongwe.
Zone 12	Mambwe (Valley- South) and Luangwa.
Zone 13	Mkushi

Districts by Livelihood Zones



CHAPTER 3

DEMOGRAPHIC CHARACTERISTICS OF THE SURVEY POPULATION

3.0 Introduction

This chapter provides a descriptive summary of some demographic characteristics of the population in the sampled households. It is essential to collect demographic information of households to facilitate meaningful interpretation of survey results. Marital status, age distribution and, household composition and size are some of the critical factors in determining vulnerability and poverty levels, agricultural production capacity and food security status of any given community.

3.1 Population by Sex of Head

The FHANIS survey estimated the population of Zambia to be 10.4 million. On the overall 60 percent of the population reside in rural areas and 40 percent in urban areas. Distribution of the population by livelihood zone reveals that the highest proportion constituting one third is found in zone 5 while the second highest is found in zone 2. Other notable population sizes are 16 percent in zone 1 and 6 percent in zone 6. The rest of the zones are very small ranging from 1 to 4 percent of the total population.

The majority of people in Zambia (82 percent) belong to male-headed households. Only 18 percent belong to households headed by females. This is also true for rural and urban areas as well as all the zones. A higher proportion (25 percent) in rural areas than urban areas (8 percent), belong to female-headed households. By Zone, the highest percentage of female-headed population belongs to zone 8 (31 percent) followed by zone 6 (28 percent) comprising Kalabo, Lukulu, Kaoma, Mongu and Senanga districts. Zone 3 has the least proportion of the population headed by females (9 percent).

Table 3.1: Persons by Sex of Head of Household, Livelihood Zone and Rural/Urban

Location	Total (%)	Sex of household head (%)			Population
		Male	Female	Both Sex	
All Zambia	100	82	18	100	10,420,000
Rural	60	75	25	100	6,452,000
Urban	40	92	8	100	3,968,000
Livelihood Zone					
Zone 1	16	83	17	100	1,729,000
Zone 2	30	84	16	100	2,996,200
Zone 3	2	91	9	100	267,000
Zone 4	2	82	18	100	235,000
Zone 5	34	87	13	100	3,435,000
Zone 6	6	72	28	100	596,000
Zone 7	3	82	18	100	405,000
Zone 8	1	69	31	100	101,000
Zone 9	1	75	25	100	124,000
Zone 10	1	80	20	100	127,000
Zone 11	2	78	22	100	249,000
Zone 12	1	77	23	100	95,000
Zone 13	1	83	17	100	60,000

3.2 Households by Sex of Head

The majority of households are found in rural areas. Sixty percent of households are in rural areas compared with 40 percent in urban. The zonal distribution of households is almost the same as in Table 3.2. The biggest zone is 5 with 34 percent of the households followed by zone 2 with 30 percent.

Regarding headship, 82 percent of households are male-headed compared with only 18 percent headed by females. Three-quarters of households in rural areas are male-headed while the remaining one-quarter, is headed by females. The percentage of female-headed households is higher in rural areas compared with urban areas. Headship by livelihood zone indicate zone 8 as having the highest percentage of female-headed households (35 percent) closely

followed by zones 6, 9 and 11 with 31 percent each. Zone 5 has the least proportion of female-headed households. These zones embrace Kalabo, Lukulu, Kaoma, Mongu, Senanga, Shang'ombo, Sesheke, Gwembe, Siavonga and Sinazongwe districts.

Table 3.2: Households by Sex of Head of Household, Livelihood Zone and Rural/Urban

Location	Total (%)	Sex of household head (%)			Number of Households
		Male	Female	Both Sex	
All Zambia	100	82	18	100	2,015,000
Rural	60	75	25	100	1,255,000
Urban	40	92	8	100	760,000
Livelihood Zone					
Zone 1	16	81	19	100	337,000
Zone 2	30	83	17	100	567,000
Zone 3	2	85	15	100	50,000
Zone 4	2	78	22	100	49,000
Zone 5	34	86	14	100	670,000
Zone 6	6	69	31	100	122,000
Zone 7	3	79	21	100	73,000
Zone 8	1	65	35	100	20,000
Zone 9	1	69	31	100	23,000
Zone 10	1	75	25	100	28,000
Zone 11	2	69	31	100	45,000
Zone 12	1	72	28	100	19,000
Zone 13	1	81	19	100	12,000

3.3 Average Household Size by Headship

Table 3.3 shows average household sizes by sex of head of household and place of residence. The results show overall that the average household size for female-headed households is smaller compared with male-headed households (4.6 members compared with 5.3 members). This is true for rural areas having an average of 5.1 members in female-headed households compared with 5.5 in male-headed households. However, the results show that in urban areas male-headed households have smaller household sizes compared with female-headed households (5.2 versus 5.7).

In all livelihood zones female-headed households are smaller than male-headed households. There are no notable variations by zone regarding average household sizes in male-headed households but zone 11, comprising Gwembe, Siavonga and Sinazongwe districts, has a largest household size and zone 10 has the smallest. Among female-headed households on the other hand zone 2 has the largest average households size while zone 3 has the smallest.

Table 3.3: Average Household Size by Sex of Household Head, Livelihood Zone and Rural/Urban

Location	Total	Gender of household head (%)		Sample households
		Male	Female	
All Zambia	5.2	5.3	4.6	2,015,000
Rural	5.1	5.4	4.4	1,255,000
Urban	5.2	5.2	5.7	760,000
Livelihood Zone				
Zone 1	5.1	5.3	4.5	337,000
Zone 2	5.3	5.4	4.9	567,000
Zone 3	5.4	5.7	3.4	50,000
Zone 4	4.9	5.2	3.9	49,000
Zone 5	5.1	5.2	4.7	670,000
Zone 6	4.9	5.1	4.4	122,000
Zone 7	5.6	5.8	4.8	73,000
Zone 8	4.8	5.1	4.3	20,000
Zone 9	5.4	5.6	4.4	23,000
Zone 10	4.6	5.0	3.6	28,000
Zone 11	5.5	6.2	3.9	45,000
Zone 12	4.8	5.2	4.0	19,000
Zone 13	5.2	5.4	4.7	12,000

CHAPTER 4

ORPHANHOOD

4.0 Orphanhood

Information on orphanhood is of particular interest in the assessment of HIV/AIDS impact. Among other reasons, increasing levels of HIV/AIDS prevalence is expected to subsequently increase numbers of orphaned children. Orphaned children are those that have lost one or both parents. Children who have lost a mother are referred to as maternal orphans while those that have lost a father, paternal orphans. Double orphans are children who have lost both parents.

Table 4.1 presents data on Orphanhood pertaining to children under the age of 18. The FHANIS survey found that overall, 19 percent of children are orphans. The survey found that children are more likely to lose a father than mother. While only 3 percent of the children lost their mother, about 11 percent have lost their father and 5 percent have lost both parents. Table 4.1 further shows that orphanhood is more prevalent in urban areas than rural areas. There are about 4 percent maternal orphans in urban areas compared with 3 percent in rural areas, 14 percent paternal orphans in urban areas compared with 10 percent in rural areas. Six percent of the children in urban areas have lost both parents compared with only 4 percent in rural areas.

Analysis of rural areas by livelihood zones shows that double orphanhood is most prevalent in zones 3, 5, 7 and 12. Six percent of children in each of the four zones are double orphans. Zone 10 has the least proportion of double orphans (1 percent). Maternal orphanhood does not vary much by zone as paternal orphanhood. Zones 8, 7 and 1 have proportions of paternal orphans higher than the national average (18, 15 and 13 percent respectively compared with the national average of 11 percent). The highest proportions of orphaned children were observed in zones 7 and 8, with 24 percent each. Zone 7 covers Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa and Nyimba (North) districts, while zone 8 consists of Kalabo and Lukulu districts. The incidence of Orphanhood was equally high in zones 5 and 12, at 21 percent each.

Table 4.1: Orphanhood by Type, Livelihood Zone and Rural/Urban

Location	Type of Orphans (%)				Total (%)	Persons aged below 18 years
	Non-orphan	Double orphans	Maternal orphans	Paternal Orphans		
All Zambia	81	5	3	11	100	5,137,000
Rural	83	4	3	10	100	3,375,000
Urban	76	6	4	14	100	1,762,000
Livelihood Zone						
Zone 1	82	3	2	13	100	898,000
Zone 2	81	4	3	11	100	1,398,000
Zone 3	83	6	2	8	100	132,000
Zone 4	84	5	3	9	100	122,000
Zone 5	79	6	4	11	100	1,682,000
Zone 6	82	3	4	11	100	290,000
Zone 7	77	6	3	15	100	208,000
Zone 8	76	2	4	18	100	55,000
Zone 9	82	4	3	11	100	67,000
Zone 10	91	1	2	7	100	66,000
Zone 11	85	4	2	9	100	136,000
Zone 12	78	6	4	11	100	49,000
Zone 13	84	2	3	11	100	33,000

CHAPTER 5

HEALTH

5.0 Persons reporting various illnesses

Table 5.1 below shows the proportion of persons reporting illness in August 2003. The table shows that about 21 percent of persons in the country reported having been sick in the two weeks prior to the survey. The proportion in urban areas was higher than that in rural areas. The table also shows that malaria/fever was the most commonly reported illness both in rural and urban areas and this was followed by cough/cold. The zone distribution shows that for zones 3, 4, 10, 11, 12 and 13 there were more people reporting cough/cold than those reporting malaria. After malaria and cough/colds, there were high proportions of people reporting measles especially in zones 6, 8, 9, 10 and 11. The table also shows high proportions of people reporting tuberculosis/asthma in zone 8 and diarrhea in zones 8, 9 and 11.

Specifically, the incidence of malaria was highest in zone 7 (57 percent) comprising Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa and Nyimba (North) districts. The highest incidence of tuberculosis/asthma was recorded in zone 8 (11 percent), which covers Kalabo and Lukulu districts. Diarrhoea cases were much common in zones 12, 8 and 9. Zones 12 and 9 covering Mambwe (Valley area), Luangwa, Shang'ombo, Senanga, and Sesheke, fall in the driest parts of the country where water is very scarce. Results further indicate that 28 percent of the population afflicted by illness in zone 8 suffered from Measles. (For details, refer to geographical map in Annex 5, page 51).

Table 5.1: Persons reporting various illnesses by Livelihood Zone and Rural/Urban

Location	Reporting Sick	Various illnesses (%)									
		Malaria/fever	Cough	TB/Asthma	Diarrhoea	Abdominal pain	Blood/Anaemia	Skin Infection	Hypertension	Measles	All
All Zambia	21	45	29	2	6	4	1	3	1	8	100
Rural	19	39	30	2	7	6	1	4	1	10	100
Urban	23	53	28	3	5	3	0	3	1	5	100
Livelihood Zone											
Zone 1	17	40	28	3	8	6	0	3	1	9	100
Zone 2	23	47	31	1	7	3	1	4	0	6	100
Zone 3	16	31	49	2	5	3	1	2	3	5	100
Zone 4	17	26	52	3	4	1	2	6	2	4	100
Zone 5	22	48	28	3	4	5	0	3	1	7	100
Zone 6	15	45	16	4	7	5	1	1	4	18	100
Zone 7	23	57	19	3	5	3	0	3	4	6	100
Zone 8	19	31	16	11	11	1	.	1	.	28	100
Zone 9	16	37	13	9	11	8	2	2	2	17	100
Zone 10	21	27	41	3	3	4	.	2	3	17	100
Zone 11	17	29	33	2	12	7	1	2	1	15	100
Zone 12	18	38	40	5	2	4	0	0	3	7	100
Zone 13	19	34	43	5	6	3	.	4	0	6	100

5.1 Consultation Status

Results on consultation levels over illnesses show that more than 50 percent of all the persons reporting illness did consult some medical personnel/institution for almost all the illnesses. Consultations were higher for persons reporting, TB/Asthma, Anaemia and hypertension. In both rural and urban, about a third of the persons reporting most illnesses used self-administered medicines (Refer to table 5.2).

Further analysis by zones (Refer to table 5.3) reveals high levels of medical consultation in zones 8 (73 percent), 6 (67 percent) and 12 (64 percent). Medical consultation was lowest in zones 7 and 2, with 44 and 45 percent respectively. The use of self-administered medicine was much common among the ailing population residing in zones 7 (46 percent) and 2 (40 percent). On the other hand, quite significant proportions of the population in zones 10 (37 percent) and 11 (31 percent) covering Chavuma, Zambezi, Lukulu, Gwembe, Siavonga and Sinazongwe districts neither consulted nor used self-administered medicine over their ailment.

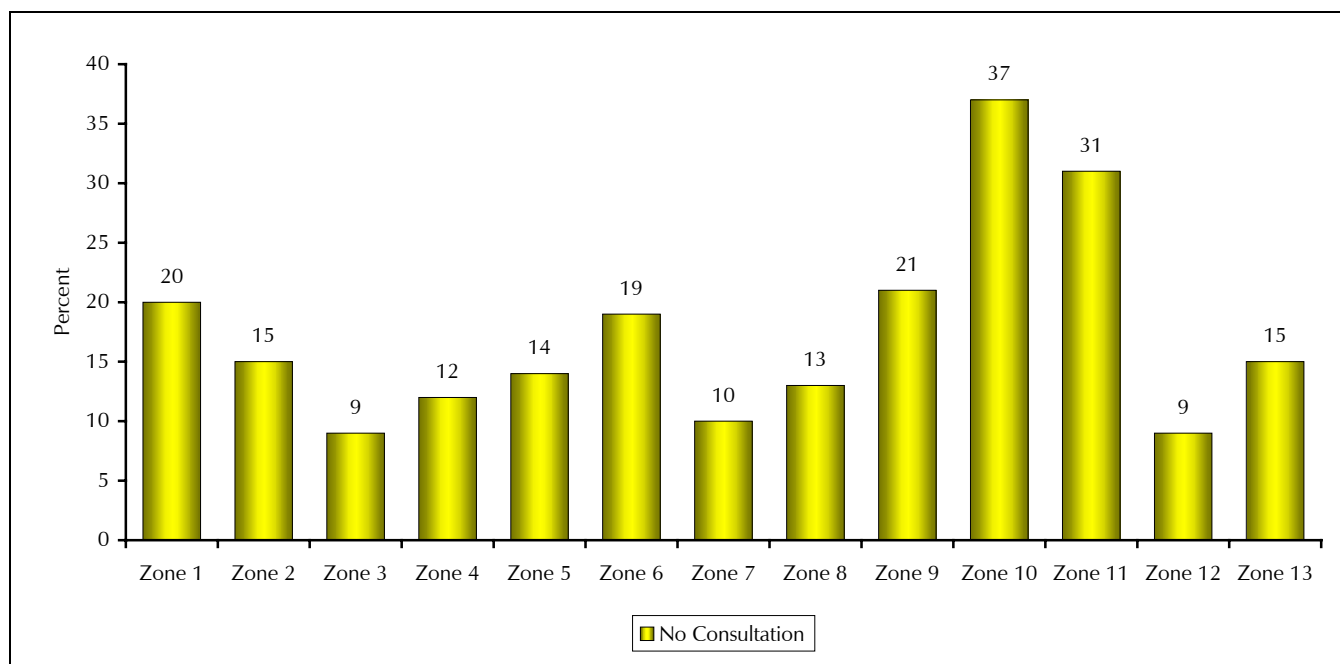
Table 5.2: Illnesses by Consultation Status by Rural/Urban

	Consultation status	Various Illnesses (%)								
		Malaria	Cough	TB/ Asthma	Diarrhoea	Abdominal pain	Blood Anaemia	Skin Infection	Hypertension	Measles
All Zambia	Consulted	53	46	80	52	51	84	62	70	45
	Used self									
	Administered medicine	34	37	14	33	30	6	26	26	21
	None	13	16	6	15	19	10	12	3	33
Total Rural/Urban		100	100	100	100	100	100	100	100	100
Rural	Consulted	54	48	74	55	51	88	55	69	52
	Used self									
	Administered medicine	30	34	15	28	30		31	31	14
	None	16	19	12	17	19	12	14	.	33
Total Rural		100	100	100	100	100	100	100	100	100
Urban	Consulted	51	44	87	46	49	71	74	72	29
	Used self									
	Administered medicine	39	42	13	42	32	29	18	23	38
	None	10	14	.	11	19	.	8	6	33
Total Urban		100	100	100	100	100	100	100	100	100

Table 5.3: Illnesses by Consultation Status by Livelihood Zones

Livelihood Zones	Consultation Status (%)			
	Consulted	Used own Medicine	None	Percent Total
Zone 1	52	27	20	100
Zone 2	45	40	15	100
Zone 3	55	35	9	100
Zone 4	62	26	12	100
Zone 5	54	32	14	100
Zone 6	67	15	19	100
Zone 7	44	46	10	100
Zone 8	73	15	13	100
Zone 9	59	20	21	100
Zone 10	51	12	37	100
Zone 11	54	15	31	100
Zone 12	64	27	9	100
Zone 13	51	34	15	100

Figure 5.1: Medical Consultation Status by Livelihood Zones



5.2 Consultation by Health Care Provider

The results on who was consulted for the various illnesses show that most of the persons that consulted over their illness consulted clinical officers. This was true in both rural and urban areas. A high proportion of the population also consulted a nurse or a midwife. Only 11 percent in rural compared to 30 percent in urban areas consulted mainly a medical doctor. Consultations with medical doctors were lowest in zones 3, 8 and 10, which cover Kasempa, Mufumbwe, Solwezi (South), Chavuma, Zambezi, Kalabo, Lukulu, Mpongwe and Mpika (North) districts. The highest proportion consulting doctors were in zones 2, 5, 7 and 12. Consultations to traditional healers were more in zones 1, 8 and 11.

Table 5.4: Consultation by Health Care Provider, Livelihood Zone and Rural/Urban

	Health Care Provider (%)					Total
	Medical Doctor	Clinical Officer	Nurse/Midwife	Community Health worker	Traditional healer	
All Zambia	19	47	26	6	2	100
Rural	11	50	26	10	2	100
Urban	30	43	25	1	1	100
Livelihood Zone						
Zone 1	15	54	18	8	4	100
Zone 2	26	42	25	5	1	100
Zone 3	4	31	50	14	.	100
Zone 4	15	49	26	11	.	100
Zone 5	20	46	29	2	2	100
Zone 6	7	52	22	17	2	100
Zone 7	20	60	13	6	0	100
Zone 8	4	57	18	15	6	100
Zone 9	9	46	29	13	3	100
Zone 10	5	50	27	17	.	100
Zone 11	11	40	32	12	4	100
Zone 12	19	34	36	12	.	100
Zone 13	8	44	43	3	1	100

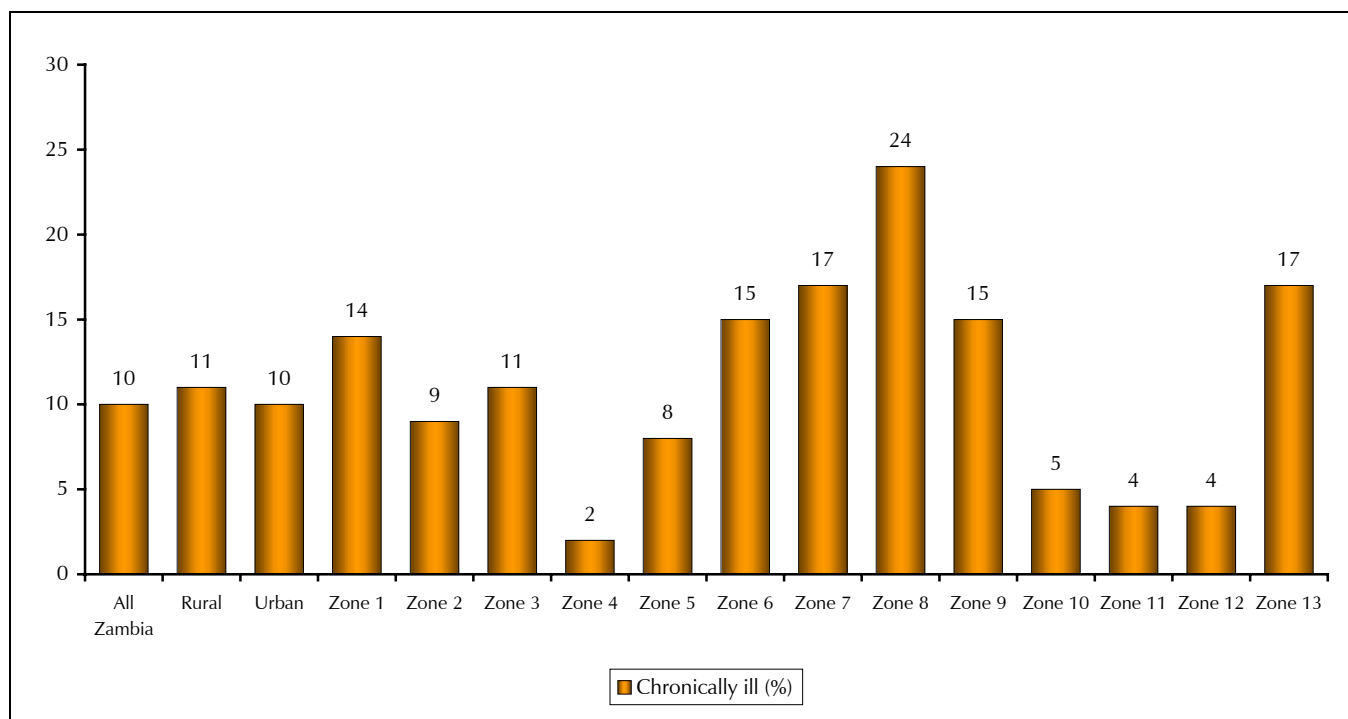
5.3 Chronic illness in the Households

Chronic illness in the FHANIS was defined as persons who had been ill for three months or longer prior to the survey. Households with chronically ill persons were regarded as vulnerable households. Chronically ill persons were present in about 10 percent of the households surveyed. Some zones had very high proportions of households having chronically ill persons and these are zones 8 (comprising Kalabo and Lukulu districts), Zone 7 (covering Kazungula, Livingstone, Sesheke, Chongwe, Luangwa and Nyimba districts), Zone 13 (Covering Mkushi district), Zone 9 (with Shang'ombo, Senanga and Sesheke districts) and Zone 6 (embracing Kaoma, Lukulu, Mongu, Senanga and Kalabo districts). Note that all the zones except zone 13, with high proportions of chronically ill persons have some portion of the zone in the border areas. Zone 4 had the least proportion of persons reporting chronic illness.

Table 5.5: Households with Chronically ill Persons by Livelihood Zone and Rural/Urban

Location	Chronically ill Percent
All Zambia	10
Rural	11
Urban	10
Livelihood Zone	
Zone 1	14
Zone 2	9
Zone 3	11
Zone 4	2
Zone 5	8
Zone 6	15
Zone 7	17
Zone 8	24
Zone 9	15
Zone 10	5
Zone 11	4
Zone 12	4
Zone 13	17

Figure 5.2: Households with Chronically ill Persons by Livelihood Zone



5.4 Antenatal Care for Pregnant Women

Antenatal care is very vital for pregnant women. It is recommended that women should get Ante Natal care immediately they realize they are pregnant. Results from the survey show that most of the people start getting Antenatal care after the fourth month of pregnancy. This is true for both rural and urban areas. The zone distribution also shows a similar pattern.

Table 5.6: Women by Number of Months Pregnant before getting Antenatal Care, Livelihood Zone and Rural/Urban

	Number of months pregnant before attending Ante Natal Clinic (%)					Total
	Never went to antenatal	1-3 months	4-6 months	7 month to delivery	Don't know	
All Zambia	6	23	57	9	5	100
Rural	8	21	59	7	5	100
Urban	3	25	55	11	5	100
Livelihood Zone						
Zone 1	5	26	62	4	3	100
Zone 2	6	23	52	13	7	100
Zone 3	2	23	68	7	0	100
Zone 4	5	29	49	11	7	100
Zone 5	5	25	58	8	4	100
Zone 6	7	5	68	14	6	100
Zone 7	4	35	52	6	3	100
Zone 8	6	13	65	11	4	100
Zone 9	8	13	69	4	6	100
Zone 10	3	22	53	13	10	100
Zone 11	9	25	61	3	2	100
Zone 12	12	15	62	10	0	100
Zone 13	15	25	52	6	2	100

CHAPTER 6

WATER AND SANITATION

6.0 Introduction

The water and sanitary conditions of the population form an important measure of the living conditions of the population. This chapter presents some findings on water and sanitation from the FHANIS survey.

6.1 Source of Water Supply

According to the FHANIS survey safe water is considered to be that which is drawn from a protected well, borehole or a tap. The source of water from unprotected wells, rivers, streams or lakes is considered to be unsafe.

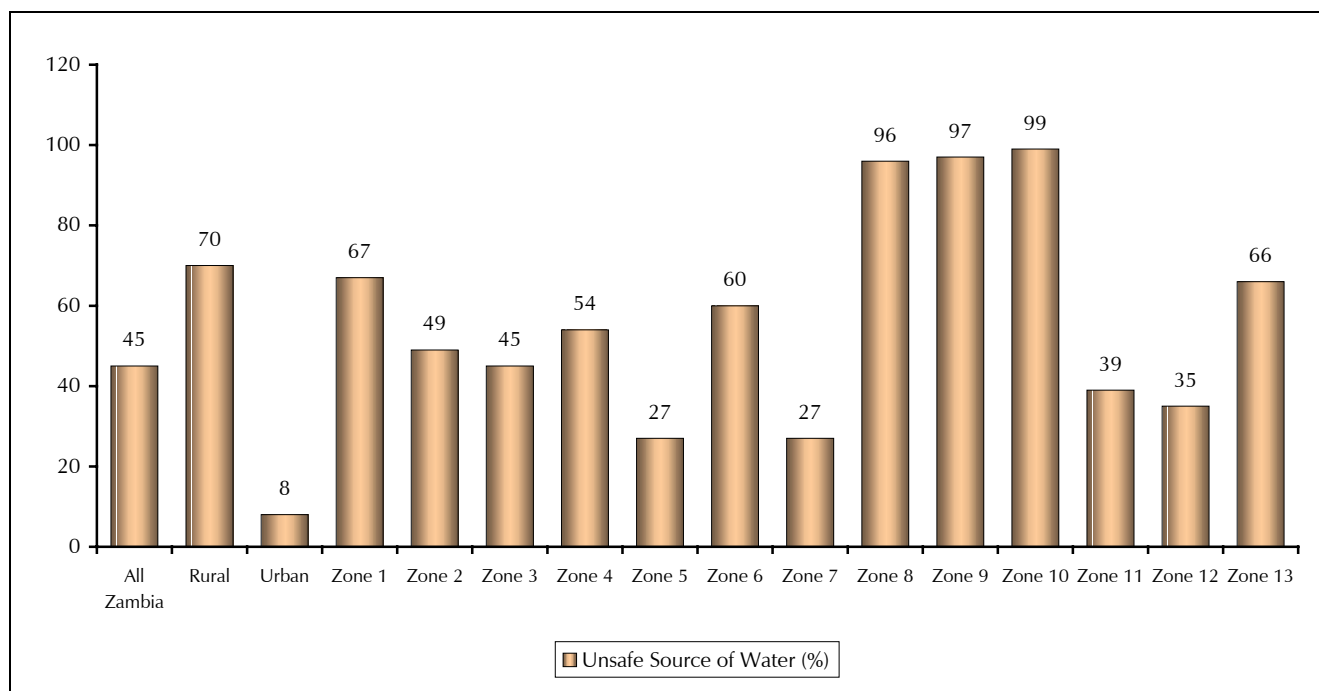
Table 6.1 shows that 55 percent of households in Zambia have access to safe or clean water. This distribution shows very high variation by rural/urban with 70 percent of rural households reporting use of unsafe water sources while only 8 percent of urban households use unsafe water sources.

Dissagregation by Livelihood Zones shows that more than 60 percent of households in four zones (5, 7, 11 and 12) have access to safe water. The majority of households in the remaining zones have access to unsafe sources of water. Among them, zones 8 (covering Kalabo and Lukulu districts), Zone 9 (Shang'ombo, Senanga west, and Sesheke N/west) and Zone 10 (Chavuma, Zambezi and Lukulu North) are the worst affected with over 90 percent of households in each zone having access to river, lake, stream and unprotected wells. These findings clearly illuminate the high incidence of diarrhoea in Zone 8 and 9.

Table 6.1: Households by Main Source of Drinking Water, Livelihood Zone and Rural/Urban

Location	Source of Drinking water (%)					Total
	River/lake/stream (Percent)	Unprotected well (Percent)	Protected well (Percent)	Hand pump (borehole) (Percent)	Piped water (Percent)	
All Zambia	20	25	7	12	35	100
Rural/Urban						
Rural	32	38	10	16	4	100
Urban	3	5	3	6	83	100
Livelihood Zone						
Zone 1	43	24	8	7	18	100
Zone 2	26	23	7	4	40	100
Zone 3	30	15	20	22	12	100
Zone 4	34	20	31	15	.	100
Zone 5	5	22	7	16	50	100
Zone 6	3	57	3	26	11	100
Zone 7	11	16	2	29	42	100
Zone 8	38	58	4	.	.	100
Zone 9	64	33	1	0	2	100
Zone 10	5	94	1	.	.	100
Zone 11	39	0	.	27	34	100
Zone 12	16	19	10	53	2	100
Zone 13	42	24	18	12	4	100

Figure 6.1: Households by Main Source of Drinking Water, Livelihood Zone and Rural/Urban



6.2 Access to Water

Water is a very essential commodity for the daily survival of household members. However, the commodity has proved to be scarce in some parts of the country leading to households spending more time fetching it. According to results in table 6.2, half of all households in Zambia reported that their main sources of water were within five minutes of their dwelling units. Table 6.2 shows that 6 percent of the households used a source, which was more than half an hour's walking distance. The households that take between five and fifteen minutes to reach their water sources constitute 35 percent, while those that take 16 to 30 minutes constitute 9 percent. Generally, urban households have water much closer to their dwelling units than rural households. Zones 6 and 7 show high proportions (11 and 18 percent respectively), of households that have to walk for more than 30 minutes to access their water for drinking. Apparently, Zones 6 and 7, which comprise Kaoma, Lukulu, Mongu, Senanga, Kalabo (East), Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa (North) and Nyimba (North) districts, fall in the Kalahari sandy and driest parts of the country.

Table 6.2: Households by Time taken to reach Main Source of Drinking Water by Livelihood Zone and Rural/Urban

Location	Walking Time				Percent Total
	Less than 5 minutes (Percent)	5 to 15 minutes (Percent)	16 to 30 minutes (Percent)	More than 30 minutes (Percent)	
All Zambia	50	35	9	6	100
Rural/Urban					
Rural	35	44	12	9	100
Urban	71	22	5	2	100
Livelihood Zone					
Zone 1	43	36	12	9	100
Zone 2	58	30	8	3	100
Zone 3	31	38	23	7	100
Zone 4	46	40	10	4	100
Zone 5	50	37	8	5	100
Zone 6	36	42	11	11	100
Zone 7	47	26	8	18	100
Zone 8	67	32	0	.	100
Zone 9	37	47	12	5	100
Zone 10	30	39	22	8	100
Zone 11	44	38	11	7	100
Zone 12	38	43	11	8	100
Zone 13	62	29	2	7	100

Figure 6.2: Households walking for more than 30 minutes to reach Main Source of Drinking Water by Livelihood Zone and Rural/Urban



Table 6.3 shows the time taken to queue and draw water from the main source of water. A comparison of the waiting time to draw drinking water among rural and urban households shows little variation. Analysis by zone indicate that at least 20 percent of the households found in Zones 3, which covers Kasempa, Mpongwe, Mufumbwe, Mpika (North) and Solwezi (South), and Zone 7 comprising Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa (North) and Nyimba (North) districts, spend more than 30 minutes to queue and draw water from the main source.

Table 6.3: Time taken to queue and draw Water from the Main Source of Water by livelihood Zone and Rural/Urban

Location	Queuing Time (%)				Total Percent
	Less than 5 minutes (Percent)	5 to 15 minutes (Percent)	16 to 30 minutes (Percent)	More than 30 minutes (Percent)	
All Zambia	65	19	7	9	100
Rural/Urban					
Rural	65	20	7	8	100
Urban	65	19	7	10	100
Livelihood Zone					
Zone 1	70	20	4	7	100
Zone 2	76	13	5	6	100
Zone 3	55	11	8	26	100
Zone 4	58	30	8	3	100
Zone 5	58	24	7	10	100
Zone 6	48	20	14	18	100
Zone 7	56	16	8	20	100
Zone 8	90	8	2	.	100
Zone 9	84	12	3	2	100
Zone 10	52	22	15	12	100
Zone 11	58	21	16	4	100
Zone 12	34	40	17	9	100
Zone 13	83	7	2	8	100

6.3 Methods of Water Treatment

Table 6.4 shows the proportion of households who treat drinking water and the methods used. In Zambia, about 30 percent of all households treat their drinking water. The proportion of households that treat drinking water is higher in urban (47 percent) than in rural areas (18 percent). Analysis by zones shows that households in zones 10 (2 percent), 8

(2 percent), 6 (4 percent) and 9 (7 percent) are less likely to treat water for drinking. These zones cover, in some cases partially, Chavuma, Zambezi, Lukulu, Kalabo, Kaoma, Mongu, Senanga, Shang'ombo and Sesheke districts.

The most popular method used to treat water is chlorination at home as it accounts for nearly half (49 percent) of the households in Zambia. Another 28 and 19 percent of the households have their water treated by boiling and chlorination at the source of water, respectively. The remaining percentage of households use a combination of methods to treat their water for drinking. Analysis by zones reveals that chlorination at home is still a dominant method of treating water for the majority of the households with the exception of those in zones 10, 12, 11, 4 and 6. About 100 and 93 percent of households in zones 10 and 11 boil their water for drinking, respectively. On the other hand, the majority of households in zones 12 (96 percent), 4 (56 percent) and 6 (44 percent) take water that is chlorinated at the source.

Table 6.4 : Households who treat Water by Method of Treatment, Livelihood Zone and Rural/Urban

Location	Proportion who treat water	Method of treatment (%)					Total
		Boiling at home	Chlorination at the source	Chlorination at home	Chlorination at source & boiling at home	Chlorination at home & boiling at home	
All Zambia	30	28	19	49	0	2	100
Rural/Urban							
Rural	18	26	31	40	1	2	100
Urban	47	30	12	55	0	2	100
Livelihood Zone							
Zone 1	33	24	17	53	1	5	100
Zone 2	32	32	15	50	0	3	100
Zone 3	16	30	7	57	1	5	100
Zone 4	27	21	56	23	-	-	100
Zone 5	35	27	20	52	-	1	100
Zone 6	4	22	44	34	-	-	100
Zone 7	21	36	6	54	3	1	100
Zone 8	2	34	-	66	-	-	100
Zone 9	7	14	18	68	-	-	100
Zone 10	2	100	-	-	-	-	100
Zone 11	22	93	-	7	-	-	100
Zone 12	49	0	96	4	-	-	100
Zone 13	24	16	28	51	-	5	100

6.4 Toilet Facility

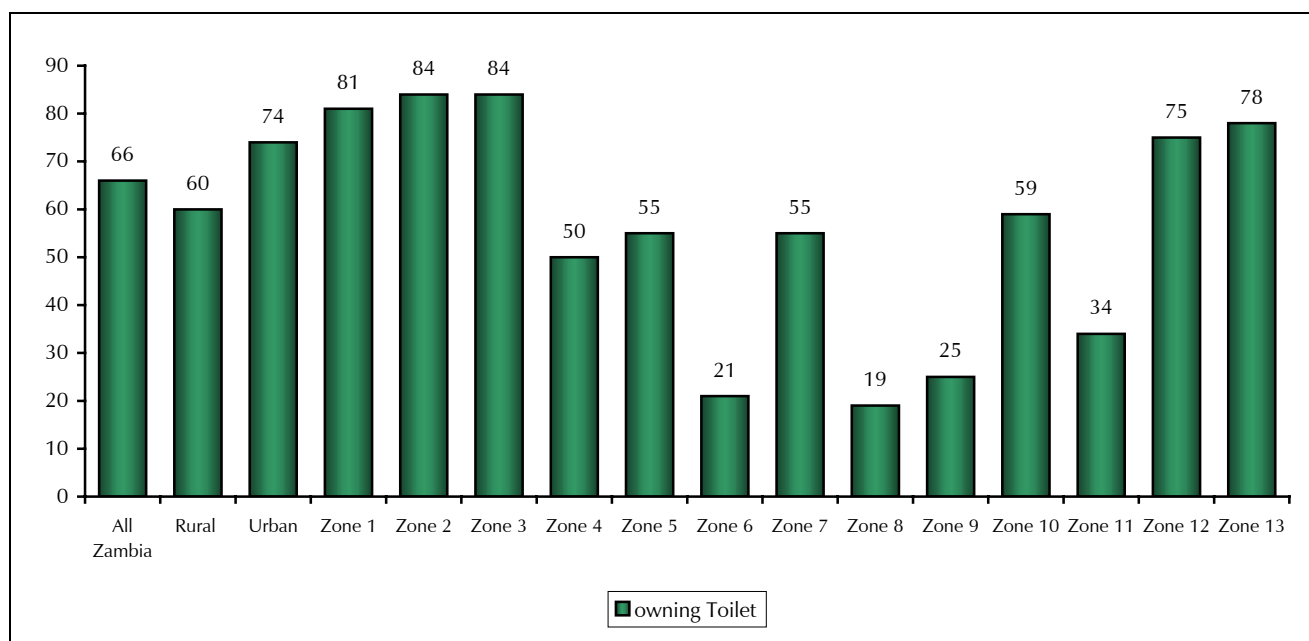
The results presented in table 6.5 reveal that 66 percent of all households in Zambia own a toilet facility. Ownership of toilet facilities is higher in urban (74 percent) than in rural areas (60 percent). Further analysis by livelihood zones reveals that the majority of households in zones 8, 6, 9 and 11 do not own toilet facilities. The opposite is true for the remaining zones where more than half of the households own various toilet facilities.

Further analysis of households by type of toilet facility used indicates that only 18 percent of households in Zambia use safe toilet facilities (i.e. flush toilet or VIP latrine). The disparity by rural/urban is very high as only 2 percent of rural households compared with 40 percent of urban households use safe toilet facilities. Countrywide, Pit latrine is the most used toilet facility by the majority of the households (61 percent), while the next commonly used alternative is bush, which accounts for 20 percent. The usage of pit latrine and bush as toilet facilities is higher in rural (65 and 32 percent) than in urban areas (54 and 2 percent), respectively. Zones 8, 6, 9 and 11 have high percentage of households (more than 60 percent) that use the bush as a toilet facility. Apparently ownership of toilet facility is very low in these same zones, which cover nearly all parts of Western province and Gwembe, Siavonga and Sinazongwe in the Southern province.

Table 6.5: Households who have Toilet Facility by Livelihood Zone and Rural/Urban

Location	Proportion owning toilet facility	Type of Toilet (%)						Total
		Flush toilet inside the house	Flush toilet outside the house	Pit Latrine	VIP Latrine	Other	Bush	
All Zambia	66	13	4	61	1	1	20	100
Rural/Urban								
Rural	60	1	1	65	1	1	32	100
Urban	74	31	9	54	1	2	2	100
Livelihood Zone								
Zone 1	81	8	2	81	2	1	7	100
Zone 2	84	19	10	62	1	2	5	100
Zone 3	84	3	1	83	2	1	10	100
Zone 4	50	-	-	73	1	-	26	100
Zone 5	55	14	2	61	1	1	21	100
Zone 6	21	1	3	23	0	1	72	100
Zone 7	55	24	1	31	0	1	42	100
Zone 8	19	-	-	22	2	1	75	100
Zone 9	25	0	-	32	-	-	68	100
Zone 10	59	-	-	70	1	-	29	100
Zone 11	34	18	1	19	-	1	61	100
Zone 12	75	0	1	76	-	-	22	100
Zone 13	78	1	-	82	2	1	15	100

Figure 6.3: Proportion owning Toilet Facilities by Livelihood and Rural/Urban



6.5 Garbage Disposal

Exposure of household members to garbage has serious health implications particularly during the rainy seasons. Therefore, the method used to dispose of garbage is one of the important factors in assessing preventive health practices. For example a household that disposes of garbage within it's yard faces more health risks than the one which has it's garbage collected or dumped outside the yard. Table 6.6 shows the percentage distribution of households by various methods of garbage disposal.

Garbage is collected from only 2 percent of households in Zambia. Another 42 percent of the households use pits within their yards to dispose of their garbage while 36 percent are associated with dumping outside their yards. Dumping inside the yard and burning as garbage disposal methods only accounts for 11 and 7 percent of the households, respectively.

This general pattern holds by rural/urban and livelihood zones. The majority of the rural households are associated with dumping outside their yards (48 percent) while their urban counterpart use pits within their yards (48 percent) for garbage disposal. Disposing of garbage within the yards through dumping or pitting is more prevalent in Zones 1, 13 and 2 where more than 60 percent of the households are associated with the practice. These zones cover Mkushi district and nearly all the districts in Luapula and Northern provinces.

Table 6.6: Households by Type of Garbage Disposal, Livelihood Zone and Rural/Urban

Location	Garbage disposal						Total Percent
	Garbage collected (Percent)	Burning (Percent)	Dump outside (Percent)	Pit within yard (Percent)	Dump inside the yard (Percent)	Other (Percent)	
All Zambia	2	7	36	42	11	2	100
Rural/Urban							
Rural	0	8	42	37	10	2	100
Urban	6	5	27	48	13	1	100
Livelihood Zone							
Zone 1	.	4	23	62	10	1	100
Zone 2	5	9	25	49	12	1	100
Zone 3	.	3	46	40	11	0	100
Zone 4	3	8	57	22	10	.	100
Zone 5	2	6	38	38	12	4	100
Zone 6	1	12	62	15	9	1	100
Zone 7	1	7	36	38	7	.	100
Zone 8	0	12	82	3	1	3	100
Zone 9	1	5	78	12	3	.	100
Zone 10	.	6	55	25	14	.	100
Zone 11	5	3	79	13	0	.	100
Zone 12	.	1	82	13	3	1	100
Zone 13	1	4	29	38	26	1	100

CHAPTER 7

EDUCATION

7.0 School Attendance

Many Researchers and Commentators have established a relationship between school attendance on one hand and food availability and health on the other. In fact, chapter 10 of this report on households coping strategies has revealed that about 5 percent of the rural households pulled children from school as a way of coping with various emergency including inadequate food stocks. In order to arrest the decline in attendance rates, the Ministry of Education and other cooperating institutions attempted School Health and Nutrition and School feeding programmes in some pilot basic schools. Therefore, it is important to monitor school attendance over time, particularly among the primary school age children, as it has a tendency to fluctuate with the food and health situation in the country.

The school attendance rate is computed as the proportion of individuals attending school at the time of the survey in specific age groups.

The regulation age for a child to start school in Zambia is seven years. The age groups for which the attendance rate was computed were selected to correspond with levels of school (pre-school, primary, and secondary).

- Pre-school grades correspond to children of ages 5 and 6 years
- Primary grades 1 to 7 correspond to pupils of ages 7 to 13 years
- Secondary grades 8 to 12 correspond to pupils of ages 14 to 18 years

It should be noted that though the age groups used (5-6, 7-13, 14-18) may correspond with respective education levels (pre-school, primary, and secondary), the attendance may not necessarily have represented appropriate grades because of existence of age-grade mismatches.

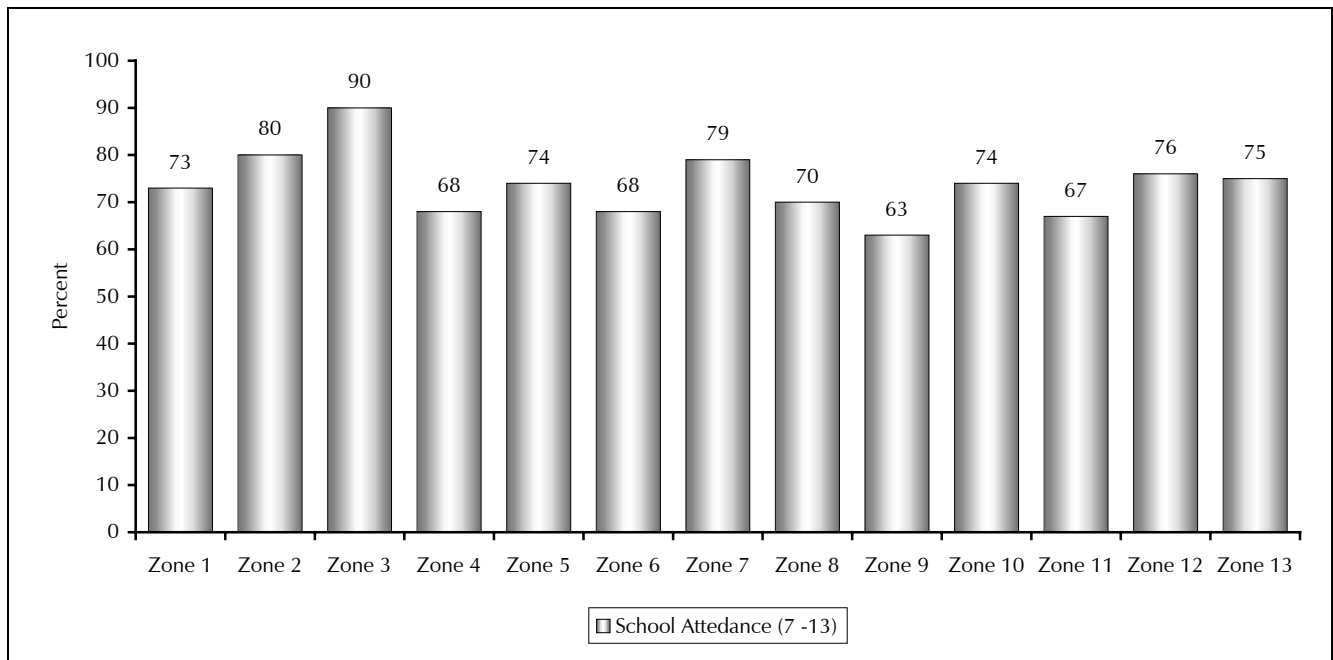
Table 7.1 shows that 15 percent of individuals aged 5 to 6 years were attending school. Seventy-five percent, and 66 percent of the primary school age (7 to 13 years), and secondary school age (14 to 18 years), respectively, were attending school. The rate of school attendance declined with age.

Zone 3 showed the highest levels of attendance with 28 percent of pre-school, 90 percent of primary school age and 75 percent of the secondary school age population attending school. The rate of school attendance among children aged 7 to 13 years was lowest in Zones 9 (63 percent) and 11 (67 percent). These zones cover Shang'ombo, Senanga (West), Sesheke (N/west), Gwembe, Siavonga and Sinazongwe districts. Furthermore, the proportion of children aged 14 to 18 years attending school was below 60 percent in zones 11, 9, 10 and 6. These zones embrace Gwembe, Siavonga and Sinazongwe districts in Southern province, nearly all the districts in Western province, Chavuma and Zambezi districts of North western province.

Table 7.1: School Attendance Rates by Age Group and Livelihood Zone

Province/Zone	5 to 6 years	7 to 13 years	14 to 18 years
Zambia	15	75	66
Livelihood Zone			
Zone 1	10	73	74
Zone 2	21	80	68
Zone 3	28	90	75
Zone 4	12	68	68
Zone 5	20	74	63
Zone 6	11	68	59
Zone 7	11	79	71
Zone 8	8	70	69
Zone 9	3	63	55
Zone 10	5	74	58
Zone 11	14	67	54
Zone 12	9	76	66
Zone 13	18	75	60

Figure 7.1: Population aged 7 to 13 years Attending School by Livelihood Zones



CHILD HEALTH AND NUTRITION

8.0 Introduction

The FHANIS survey collected information on child feeding practices, Immunization and children's age, weight and height. This information was collected for all children aged 0 to 59 months although stunting, wasting and under weight indicators were only computed for children aged 3 – 59 months.

Malnutrition reduces a child's mental, physical growth and development and makes children more susceptible to disease. They are more likely to die even from minor illnesses. Children with mild form of malnutrition have twice as much risk of dying than those who are well nourished. The risk is greater as the child develops severe form of malnutrition. The study focused on the following nutritional indicators - stunting, wasting and underweight.

STUNTING (Chronic Malnutrition) – is when a child has low height or length (stature) for its age. Stunting is associated with long-term effects of low food / nutrient intake over a long period of time and may be exacerbated by chronic illnesses and repeated infections. A child whose height is less than 2SD of the normal height curve for its age is considered to be 'stunted'.

WASTING (Acute Malnutrition) – is when a child has low weight for its height. Wasting is frequently associated with acute and short-term consequences such as severe infections or recent failure to receive adequate nutrition. When a child's weight is less than -2SD of the normal weight for height curve, it is classified as 'Wasted'.

UNDERWEIGHT – is when a child has low weight for its age. A child can be underweight due to either chronic or acute malnutrition or a combination of both. Weight that is less than -2SD of the normal weight for age curve is classified as 'underweight'.

Measuring children's height for age provides an indication of whether the child is suffering from chronic malnutrition or growing normally. Stunting does not vary by season and can be compared over time. The other two measures – underweight (weight – for-age) and wasting (weight –for- height) fluctuate according to short food availability or illness, which is likely to confuse comparisons for both the urban and rural children.

Height in this case is compared to the international standards for all age groups. All children who fall less than 2 standard deviations from the normal count are considered to be moderately malnourished, whilst those less than 3 standard deviations away are considered severe.

8.1 Nutrition Status of Children Aged 3 – 59 Months

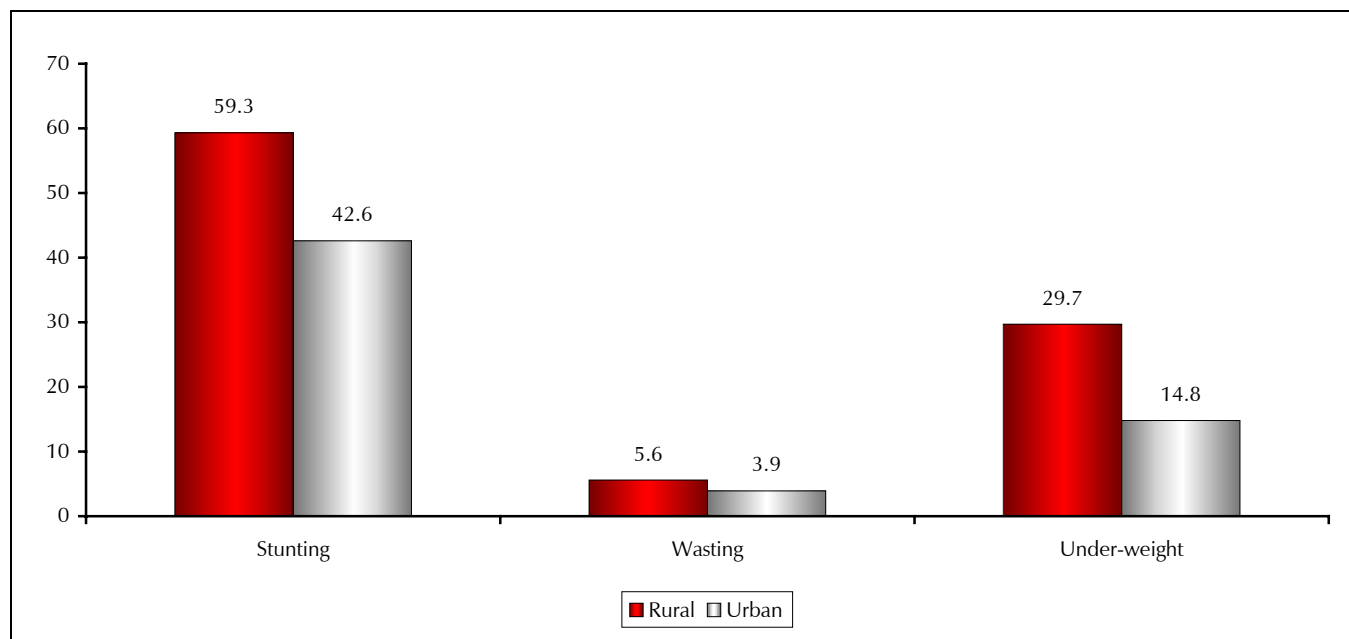
According to the results in table 5.1 about 53 percent of the children aged between 3-59 months were stunted while 5 and 24 percent of the children were wasted and underweight respectively. Results also indicate that 4.7 percent of the children were found with oedema. Zone 2 indicated the highest proportion of children (8 percent) of children with oedema malnutrition and the lowest (1.8 percent) levels being in Zone 12. For all the three indicators the situation in rural areas was worse than that in urban areas.

The stunting level by zones showed that the situation was worse in zones 12, covering Mambwe (South) and Luangwa districts, and Zone 9 (covering Shang'ombo, Senanga (West), and Sesheke (N/west) districts), with the highest levels of above 70 percent. Zones 4, 6 and 8 also had levels above 60 percent. Wasting was highest in Zone 4 while under weight was highest in Zones 1, 4 and 6. Zone 1 includes Chilubi, Mpika West, Luwingu, Kaputa and Mpulungu districts in Northern province, all the districts in Luapula province and Kabompo district in North Western province. Zones 4 and 6 cover districts such as Chama, Lundazi, Itezhi-Tezhi (North), Mambwe (Valley), Mumbwa (West), Kaoma, Lukulu, Mongu, Senanga and Kalabo. For details refer to geographical map in Annex 5, page 52.

Table 8.1: Children aged between 3 and 59 months who are stunted, wasted and underweight by Livelihood Zone and Rural/Urban

Location	Stunted (Percent)	Wasted (Percent)	Under Weight (Percent)	Oedema Present (Percent)
All Zambia	53.3	5.0	24.4	4.7
		Region		
Rural	59.3	5.6	29.7	4.4
Urban	42.6	3.9	14.8	5.4
Livelihood zone				
Zone 1	57.1	8.4	33.7	3.0
Zone 2	51.3	5.0	25.6	8.0
Zone 3	58.9	0.6	12.1	3.2
Zone 4	60.6	11.6	33.6	2.1
Zone 5	51.6	2.4	17.3	3.2
Zone 6	60.9	8.0	34.9	2.2
Zone 7	34.8	9.3	21.6	2.4
Zone 8	66.3	3.7	26.6	4.6
Zone 9	73.5	1.6	19.7	3.1
Zone 10	51.2	5.9	15.6	3.7
Zone 11	46.1	0.8	19.0	6.1
Zone 12	78.3	2.6	21.0	1.8
Zone 13	45.0	6.4	13.6	5.7

Figure 8.1: Stunting, Wasting and Under-Weight by Rural/Urban



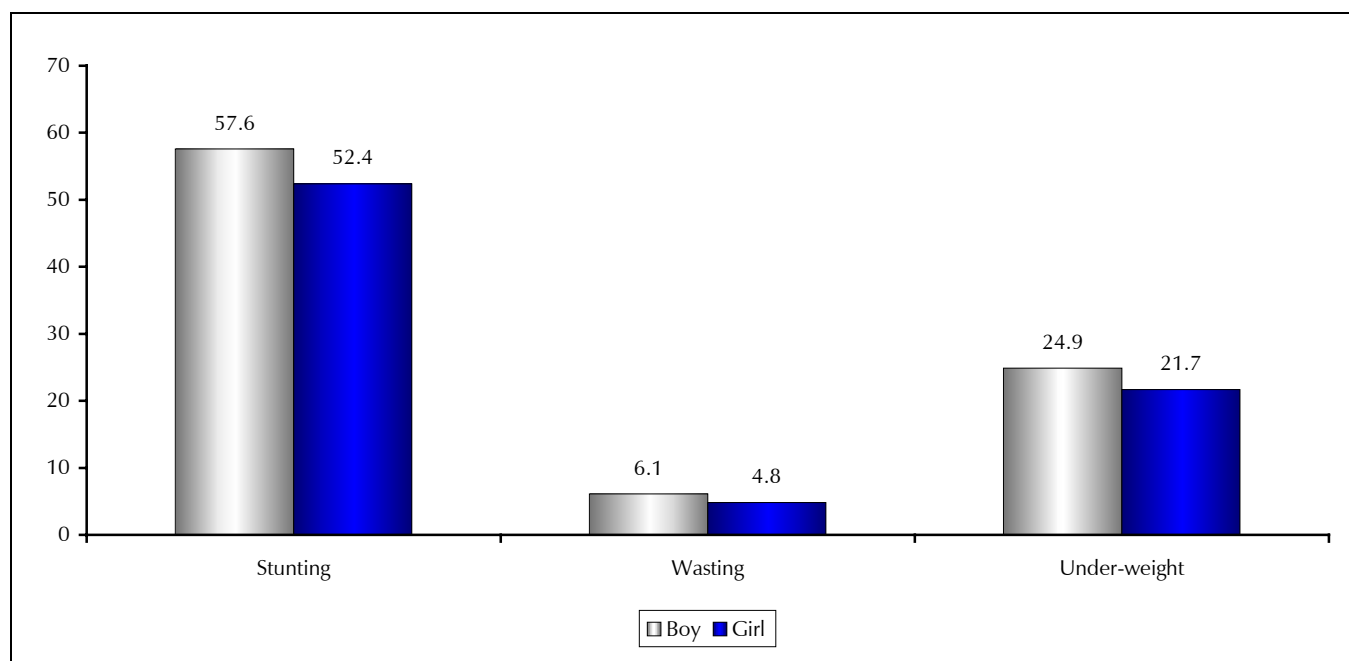
8.2 Stunting, Wasting and Underweight by Sex and Age of Child

Stunting levels by sex of child and age groups show that more boys than girls were stunted. This was the same with wasting and underweight. The age distribution shows that stunting and under weight was highest among children in the older age groups, between ages 12 to 59 months. Wasting was highest in the age group 10 to 23 months.

Table 8.2: Children Aged between 3 and 59 months who are Stunted, Wasted and Under Weight by Sex and Age Group

Age group	Stunted (Percent)	Wasted (Percent)	Underweight (Percent)	Oedema Present (Percent)
Boy	57.6	6.1	24.9	4.5
Girl	52.4	4.8	21.7	4.2
3-6	36.7	4.6	6.0	3.7
7-9	39.4	6.4	17.2	3.0
10-11	41.2	9.2	19.3	5.0
12-23	59.5	8.0	28.3	5.7
24-25	57.6	4.9	28.4	4.4
36-47	60.2	4.6	25.0	4.3
48-58	56.9	3.2	19.2	3.2

Figure 8.2: Children between 3 and 59 months Stunted, Wasted and Under-weight by Sex of Child



8.3 Feeding Practices

The Global Strategy for Infant and Young Child Feeding adapted by Zambia, recommend that the child should be exclusively breastfed for the first six months of life, and with nutritionally adequate and safe complementary feeding through introduction of safe and adequate amounts of indigenous food stuffs and local foods while continuing and sustaining breastfeeding up to the age of two years and beyond.

This recommendation has shown to have many health and social benefits; including reducing the incidence and severity of diseases such as acute respiratory infections, diarrhoea and reduced expenditure on other breast feeding alternatives. (IBFAN, Breastfeeding briefs, 1999).

Results from the survey show that only a quarter (25 percent) of the children in the age group 0-3 and 7 percent in the age group 4 – 6 were exclusively breastfed. This indicates that more than half of children aged 0- 6 months are eating other foods apart from breast milk, which is a challenge in the era of HIV/AIDs.

Table 8.3 reveals that about 46 percent of infants between the age of 0-3 months have already started on other food supplements. The study also reveals that more than 93 percent of infants between the age of 7 – 9 months had started eating other foods along- side breastfeeding.

Table 8.3: Feeding Status for Children aged between 0 and 59 Months by Age Group

Age Group	Feeding Status				Total
	Exclusively breast feeding	Not being breastfed	Breast feeding with Supplements	Plain water only	
0 - 3	25	10	46	19	100
4 - 6	7	3	86	4	100
7 - 9	2	5	93	.	100
10 - 12	0	22	77	1	100
13 - 15	2	15	83	0	100
16 - 18	0	18	82	.	100
19 - 21	.	45	55	2	100
22 - 24	.	69	29	0	100
25 - 27	0	89	10	.	100
28 - 30	.	84	16	.	100
31 - 33	.	93	7	.	100
34 - 36	.	95	5	.	100
37 - 59	.	97	3	.	100

Table 8.4: Frequency of Feeding on Solids by Children's Age Group

Age group	Frequency of feeding on solids							Total
	Once	Twice	Thrice	Four Times	Five times	More than five times	Not yet started on solids	
Total	5	26	51	13	3	1	1	100
0 - 3	19	26	39	11	1	.	3	100
4 - 6	26	41	26	3	0	.	4	100
7 - 9	7	28	51	11	1	.	1	100
10 - 12	5	24	54	15	0	1	1	100
13 - 15	3	35	42	14	4	1	2	100
16 - 18	4	29	53	10	3	2	.	100
19 - 21	5	17	48	21	8	.	.	100
22 - 24	2	16	52	23	4	4	.	100
25 - 27	1	21	58	18	2	0	.	100
28 - 30	3	18	59	15	2	4	.	100
31 - 33	0	24	53	11	6	4	.	100
34 - 36	1	29	55	10	4	1	.	100
37 - 59	2	25	54	13	3	2	0	100

8.4 Immunizations

Children are supposed to be fully vaccinated by the age of 12 months. That is, they are supposed to get all the recommended vaccinations that include, BCG, all the DPT, all the POLIO and the measles vaccinations. The results from the table 8.5 show that only 23 percent of the children below the age of 12 had been fully vaccinated at the time of the survey. The proportion in urban areas was slightly higher than that in rural areas. The age distributions shows that the proportions fully vaccinated increased with increased age.

Table 8.5: Children Fully Vaccinated by the Age of 12 Months

	Proportion fully Vaccinated
Total	23
Rural	22
Urban	25
Age of a Child	
0 - 3	13
4 - 6	7
7 - 9	16
10 - 12	51

The Table 8.6 below shows the proportions of children below the age of five years who had received the various vaccinations. The table shows that, at the national level; over 90 percent of all the children below the age of five years had received the DPT, BCG and POLIO vaccinations. About 83 percent of the children also received Measles vaccination.

Table 8.6: Children Vaccinated by Type of Vaccination received, Rural/Urban and Age Group

	Proportion Vaccinated				
	BCG	DPT	POLIO	MEASLES	ALL
Total	94.1	92.1	92.3	83.2	52
Rural	92.2	91.4	90.8	82.7	50
Urban	97.5	93.3	94.9	83.9	55
0 - 3	77.1	70.9	53.2	37.2	13
4 - 6	80.9	83.8	80.3	33.9	7
7 - 9	92.8	85.9	88.2	47.0	16
10 – 12	95.2	92.0	92.1	83.9	51
13 – 15	93.4	90.7	89.6	85.1	51
16 – 18	97.4	97.1	96.9	92.9	52
19 – 21	99.2	99.3	96.0	96.4	70
22 – 24	98.1	95.8	99.6	97.4	64
25 – 27	95.5	94.8	94.4	89.9	60
28 – 30	97.8	97.7	95.3	96.0	62
31 – 33	96.0	90.9	95.6	91.6	69
34 – 36	98.0	98.7	98.2	96.7	62
37+	95.7	93.4	96.3	94.3	63

FOOD SECURITY AND CONSUMPTION

9.0 Introduction

The Household Food Security, Health and Nutrition Information System (FHANIS) survey collected information that highlights some aspects of food security and consumption at community and household levels in rural and urban areas. Information at community level was only collected in rural areas. For the purposes of the FHANIS survey, a Standard Enumeration Area (SEA) approximated a rural Community. A total of 165 rural communities were covered during the survey. Data collection at community level involved focus group discussions with at least 6 to 8 knowledgeable persons in the sample communities.

The best way to define food security is to first look at the prevailing food situation both at national, community and household level. In most cases food security is closely identified with various causes of food deprivation at the individual, household, community and national levels leading to inadequate intake of calories, protein and micronutrients. The apparent interest in food security and consumption analysis in Zambia stems from the fact that a large segment of the population in Zambia has lost rather than gained secure access to adequate food over the last 10 to 15 years. This development can be attested to by the high poverty levels of more than 70 percent by 1998 (LCMS Report, 1998). The last decade or so witnessed broad fluctuations in food production from one year to another as a result of severe drought periods, particularly during the 1992/1993 and 2001/2002 agriculture seasons, inadequate local and community food storage, high transport costs, high inflation rates or excessive swings in food prices in private markets and poor agricultural marketing policies for inputs and produces.

Given this scenario, the World Bank definition of food security is more appropriate and has been adopted for this report. Therefore, food security is defined as access by all people at all times to enough food for an active and healthy life. The definition has two essential elements namely, the availability of food and the ability to acquire it.

In order to measure some aspects of food security and consumption at community level, the following topics were covered in the FHANIS community questionnaire:

- Proportions of households running out of staple food at the time of the survey
- Main source of food for the majority households
- Existence of food security programmes in the communities
- Proportions of households benefiting from food security programmes such as food security packs, food relief distribution, seed and fertilizer distribution.
- Availability of selected commodities in the community
- Commodity and livestock price comparisons
- Main source of water in the community, and
- Main source of draught power in the community.

Data collected at household level covered the following topics related to food security and consumption:

- Average stocks of Cereals (Maize, rice, Sorghum and millet) remaining for households at the time of the survey.
- Average area in hectares under mature cassava
- Average household income from sale of cash crops
- Proportion of households getting cereals from direct sources in the last 3 months
- Period the cereals obtained from direct sources were consumed
- Proportions of households using various sources of cash income
- Most important source of household cash income

Nearly all the food security analyses at community level have been carried out at province and 13 livelihood zone levels.

9.1 Food Security at Community Level

The major staple foods in Zambia include maize, millet, Cassava, sorghum and rice. Maize, which according to the National Food and Nutrition Commission (NFNC) accounts for 50 to 65 percent of all calories consumed in Zambia, is grown in almost all the regions of the country. One of the major components of the food security system is that of availability of food for consumption by the population in the community. Through community focus group discussions, the FHANIS survey collected information on the proportion of households in the community that had already run out of food. In addition the communities were asked to estimate the proportions of households whose staple stocks were to run out within a month. The participants were also asked to estimate the percentage of households that had food stocks to last for at least 3 or more than 3 months.

Table 9.1 shows the proportion of households in the rural communities who were reported to have already run out of staple food stocks at the time of the survey and those who are likely to run out of the food after 3 months. In addition, the communities were also asked to estimate the percentage of household that had enough staple stocks to last for more than 3 months. Results from the community focus group discussions indicate that 34 percent of the households in the surveyed communities had run out of food by the month of August 2003. Another 20 percent of the households were likely to run out of the staple stocks within 1 month. Furthermore, about 22 percent of the households were reported to have enough staple stocks to last for 2 to 3 months. Only 24 percent of the households had enough stocks to last for more than 3 months.

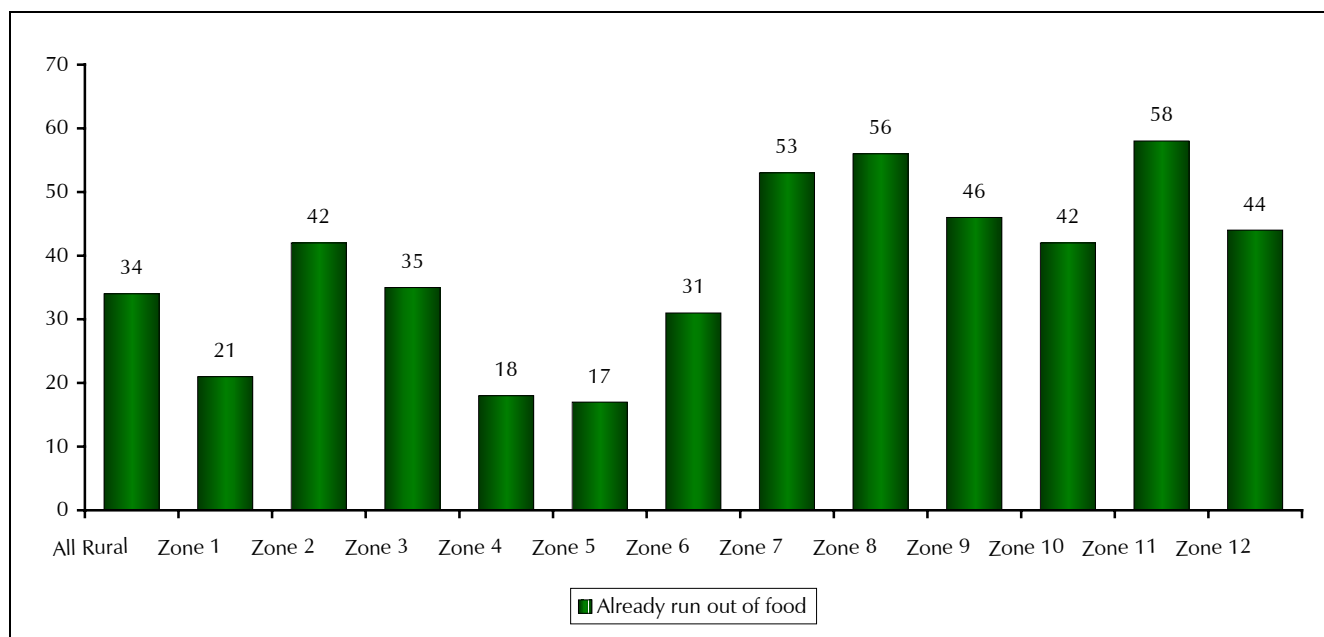
Analysis by livelihood zones indicate that more than half of the households residing in Zone 11 (covering Gwembe, Siavonga and Sinazongwe), Zone 8 (covering Kalabo and Lukulu west) and Zone 7 (covering Kazungula, Livingstone, Sesheke, Chongwe West, Luangwa North, and Nyimba North) had already run out of staple stocks as of August 2003. Zones 11, 8 and 7, which are located in the driest low-lying or flood prone areas of the country characterized by low-rainfall and poor sandy soil, had the highest proportions of households who had run out of food, at 58, 56 and 53 percent, respectively. The percentage of households reported to have run out of staple stocks were equally high in communities found in zones 9 (46 percent), 12 (44 percent), 2 and 10 (at 42 percent each). The lowest percentages of households without staple stocks were reported in communities found in zone 5 (17 percent) and Zone 4 (18 percent).

Further, the highest percentage of households to run out of food within a month was reported in Zone 6 (34 percent), followed by zones 4 and 11, at 26 percent each. These zones cover Kaoma, Lukulu, Mongu, Senanga, Kalabo, Chama, Lundazi, Mambwe (Valley), Itezhi-Tezhi, Mumbwa (West), Gwembe, Siavonga and Sinazongwe Communities in Zones 5 and 4 reported the highest proportions of households with staple stocks to last for 2 to 3 months, at 29 and 28 percent, respectively. In addition, the focus group results indicate that the majority of the households in Zones 5 (41 percent) and 1 (38 percent) had staple stocks to last them for more than 3 months. For details, refer to the geographical map in Annex 5, page 53.

Table 9.1: Households' Staple Stocks by Livelihood Zone

Livelihood Zone	Percent Total	Already Run out of staple Stocks (%)	Staple Stocks to finish within 1 Month (%)	Staple Stocks to last for 2-3 Months (%)	Staple Stocks to last for more than 3 Months (%)
Zambia	100	34	20	22	24
Zone 1	100	21	17	24	38
Zone 2	100	42	12	21	25
Zone 3	100	35	17	23	25
Zone 4	100	18	26	28	28
Zone 5	100	17	13	29	41
Zone 6	100	31	34	15	20
Zone 7	100	53	23	21	3
Zone 8	100	56	11	14	19
Zone 9	100	46	24	15	15
Zone 10	100	42	20	20	18
Zone 11	100	58	22	17	3
Zone 12	100	44	26	15	15

Figure 9.1: Proportion of Households reported to have run out of Staple Stocks by Livelihood Zones



9.2 Major Sources of Food in Rural Communities

Diversity of sources of food available in a community is in itself a buffer against exposure to potential food security risks. It is therefore important to have a clear understanding of the nature of each source in terms of regularity and dimension. Results from various surveys indicate that daily livelihood of households in rural communities to a large extent depends on production of own staple stocks.

Table 9.2 shows major sources of food as perceived by the communities. Results in the table indicate that 67 percent of households in the communities were reported to rely on own food production for their consumption needs, while 20 percent obtained their food requirements through purchases. Another 7 percent of households were reported to rely on ‘Work for Food’ programmes as the main source of food, while 4 percent of the households were associated with relief food. Other sources of food not mentioned here accounted for about 2 percent.

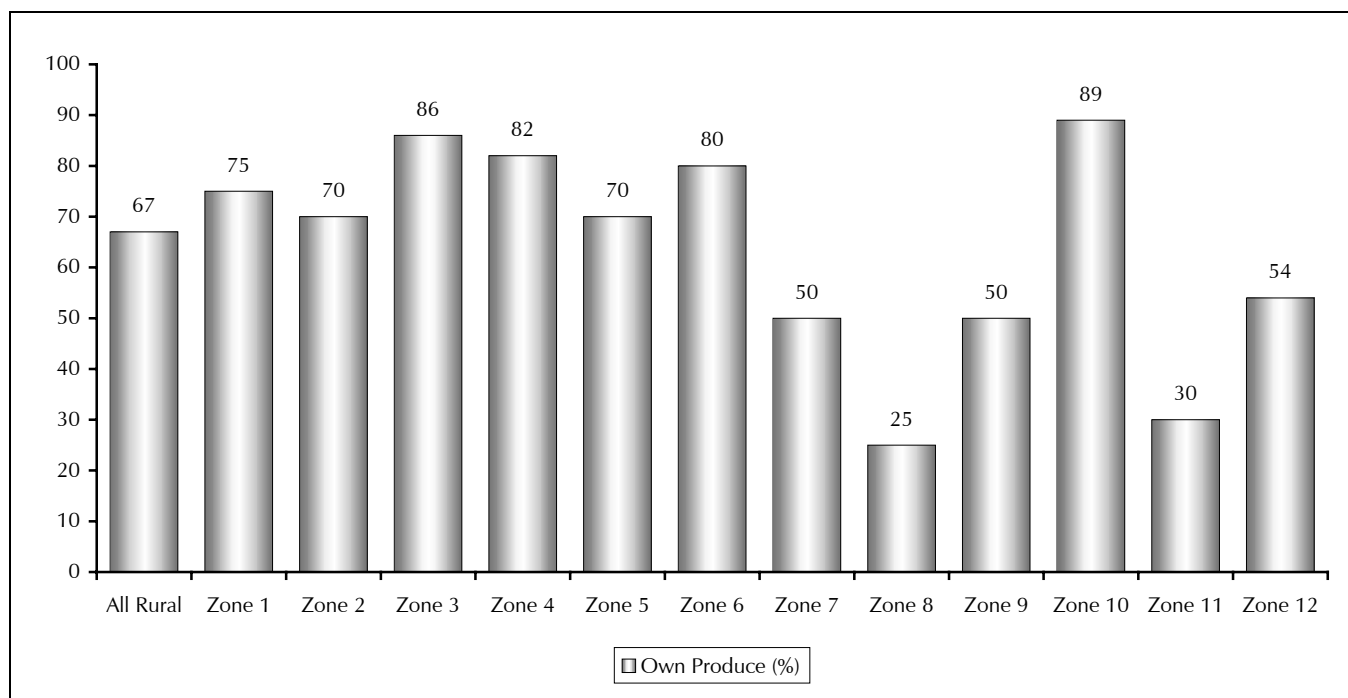
Analysis of source of food by livelihood zones shows that the major source of food in all zones was own production. The proportion of own food stock varied from about 89 percent in zone 10 to 25 percent in zone 8. A high percentage of households in zone 8 and 11 were reported to acquire most of their food needs through purchases, at 75 and 70 percent, respectively. Apparently Zone 8, which covers Kalabo and Lukulu (west) districts, is characterized by the Kalahari sand up-land and the Zambezi flood plains where crop production is generally poor. Zone 11, which covers Gwembe, Siavonga and Sinazongwe districts, is mainly located in the low-rainfall valley areas where sorghum is the main staple food. Communities falling in zones 5, 6 and 12 also recorded high proportions of households (20 percent or more) relying on food purchases.

Furthermore, about one third of households found in zones 7 and 9 alike were associated with relief food and food for work programmes as their main source of food, respectively. These zones, which include districts such as Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa and Nyimba (North), Shang’ombo and Senanga (West) are located in drought and flood prone areas which are characterized by low and poorly distributed rainfall that affects food production. For details, refer to the Geographical map in Annex 5, page 54 and 55.

Table 9.2: Communities by Major Sources of Food and Livelihood Zone

	Number of Communities	Total	Major Sources of Food (%)				
			Own Stocks	Purchased	Relief Food	Work for Food	Other Sources
Zambia	165	100	67	20	4	7	2
Livelihood Zone							
Zone 1	24	100	75	8	-	4	13
Zone 2	23	100	70	17	-	13	-
Zone 3	14	100	86	-	-	7	7
Zone 4	17	100	82	12	-	6	-
Zone 5	23	100	70	26	4	-	-
Zone 6	5	100	80	20	-	-	-
Zone 7	6	100	50	17	33	-	-
Zone 8	4	100	25	75	-	-	-
Zone 9	6	100	50	-	17	33	-
Zone 10	9	100	89	-	-	11	-
Zone 11	10	100	30	70	-	-	-
Zone 12	24	100	54	29	8	8	-

Figure 9.2: Proportion of Communities relying on Own Production of Food by Zones



9.3 Availability of Food Security Programmes and their Beneficiaries

Due to persistence of low crop production in the country as a result of unpredictable poorly distributed rainfall, the government and its cooperating partners had initiated various programmes aimed at mitigating the effect of food insecurity among vulnerable households in the country. The most common food security programmes include food security packs, Relief food, seed and fertilizer distribution.

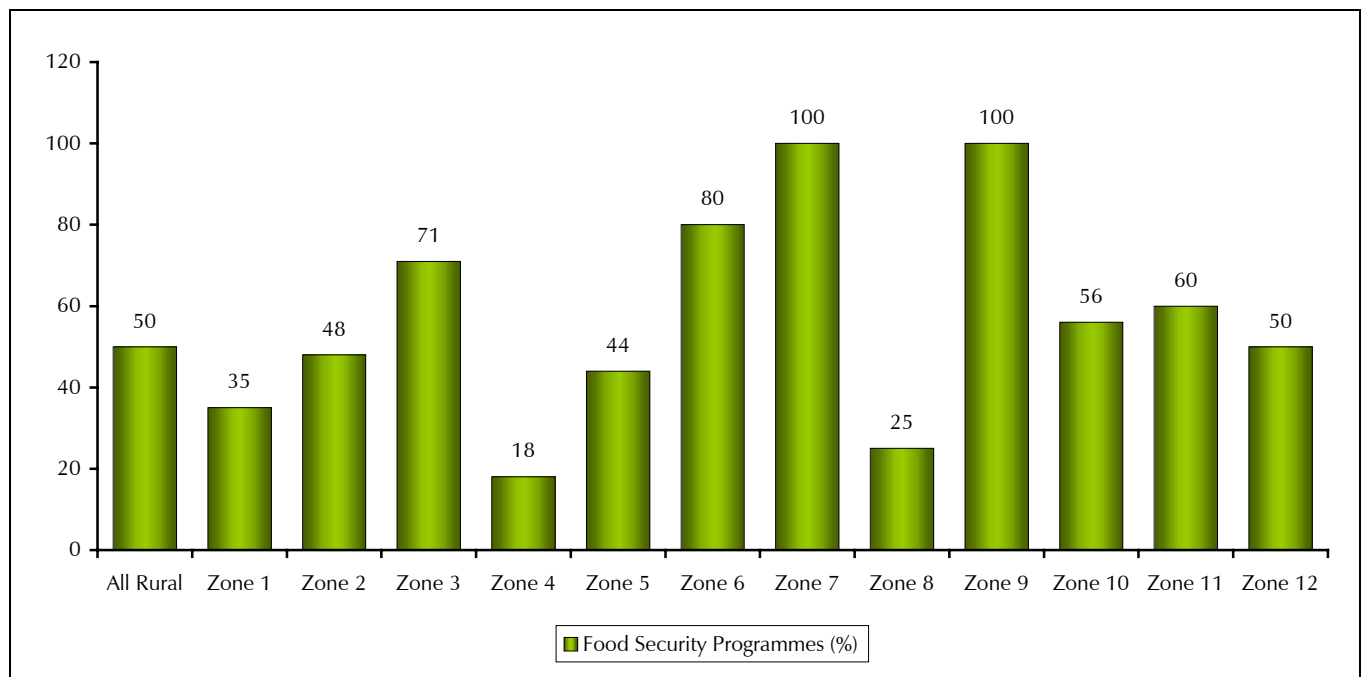
Table 9.3 shows the percentage of communities with food security programmes. Results indicate that about 50 percent of the communities covered during the FHANIS survey had food security programmes. Overall, 45 percent of the households found in these communities were reported to be beneficiaries of relief food distribution. Another 32 percent of the households were reported to have benefited from the seed distribution programmes. Food security packs and fertilizer distribution catered for about 24 and 22 percent of the households, respectively. Other food security programmes serviced about 9 percent of the households.

In areas falling under livelihood Zone 6 (comprising Kaoma, Lukulu, Mongu, Senanga, Kalabo), Zone 7 (comprising Kazungula, Livingstone, Sesheke, Chongwe West, Luangwa and Nyimba North), and 9 (Shang'ombo and Senanga West and Sesheke N/west), which are located in the Kalahari sands and the Valleys, 80 to 100 percent of the communities had food security programmes. These areas are prone to unpredictable droughts and floods, which limit viable crop production. The largest percentages of beneficiaries from the food security packs were reported in zone 10 and 6, at 94 and 54 percent respectively. Access to relief food distribution can be said to have been universal in zones 6 and 10 but almost non-existent in zone 1. Furthermore, zone 6 recorded the highest proportions of seed and fertilizer distribution beneficiaries of 61 and 48 percent, respectively. Zones 10 and 6 include districts such as Kaoma, Lukulu, Mongu, Senanga and Kalabo in Western province and Chavuma and Zambezi in North-western province.

Table 9.3: Availability of Food Security Programmes and their Beneficiaries by Livelihood Zone

Province/Zone	Communities with food Security programmes	Proportion of Beneficiaries by type of program				
		Food Security Pack	Relief food	Seed Distribution	Fertilizer Distribution	Others
Zambia	50	24	45	32	22	9
Livelihood Zone						
Zone 1	33	52	2	73	71	-
Zone 2	48	10	42	15	11	5
Zone 3	71	12	32	17	20	6
Zone 4	18	13	36	33	12	7
Zone 5	44	13	25	40	22	15
Zone 6	80	54	100	61	48	15
Zone 7	100	11	51	36	10	25
Zone 8	25	0	42	0	0	0
Zone 9	100	22	41	40	6	0
Zone 10	56	94	100	24	12	0
Zone 11	60	30	68	20	9	17
Zone 12	50	2	51	5	6	6

Figure 9.3: Proportion of Communities with Food Security Programmes by Livelihood Zones



9.4 Availability of Maize and Cassava Staple Food

One of the most important components of food security is the aspect of food availability. Once food is available in the community, households are more likely to have secure access to it even during times of uncertainty. During the FHANIS survey, communities were asked to indicate the availability of various food items for purchase. Table 9.4 shows some of the results on food availability in communities.

9.4.1 Availability of Maize in Communities

Results indicate that maize was readily available for purchase in about 58 percent of the communities. Another 32 percent of the communities indicated that maize was not readily available implying that the commodity was scarce during some periods. On the other hand, 10 percent of the communities had no maize available at all for purchase.

Analysis by livelihood zones indicate that there is a high likelihood to purchase maize in zones 5, 12, 3, 1 and 4 where maize was readily available for purchase to more than 60 percent of the communities. On the other hand Zone 8 had no maize available for purchase as the commodity was very scarce. The commodity was not available for purchase to 25 percent of the communities in Zone 8. The commodity was also not available for purchase to 22 and 20 percent of the communities found in zones 10 and 6, respectively. Maize was not readily available (Scarce) for purchase to the majority of the communities found in Zones 11 (80 percent), 8 (75 percent), 7 (67 percent) and 6 (60 percent). Apparently, Zones 6, 7, 8 and 11, which are characterized by poor rainfall and low crop production include districts such as Kaoma, Lukulu, Mongu, Senanga, Kalabo, Kazungula, Livingstone, Sesheke, Chongwe, Luangwa, Nyimba, Gwembe, Siavonga and Sinazongwe districts. Generally the scarcity of maize in the surveyed communities ranged from 13 percent in Zone 5 to 80 percent in Zone 11.

9.4.2 Availability of Cassava for Purchase in Communities

Table 9.4 shows the availability of cassava in the communities. Cassava is the second most important staple food in Zambia as it can grow in almost all the livelihood zones. In the case of Zambia, Cassava qualifies to be called a food security crop in the sense that it does not need a lot of rains and has shown great resilience to drought. About 40 percent of the communities reported that cassava was readily available for purchase. The commodity was scarce in 35 percent of the sample communities. However, cassava was not available at all in about 25 percent of the communities.

Results further show that cassava is more readily available for purchase in zones 1, 10, 2 and 8. The commodity is more scarce (Not readily available) in zones 6, 12 and 8 compared to other zones. Moreover, the food crop was not available at all for purchase to more than half of the communities found in zones 5, 7, 9 and 11. These communities are more likely to be food insecure particularly during drought periods. Zones 5, 7, 9 and 11 include districts such as Chadiza, Chipata, Katete, Nyimba, Petauke and Mambwe in eastern province, Chibombo, Kabwe, Kapiri Mposhi and Mumbwa in Central province, all the districts in Southern province, all the remote districts in Lusaka province except Lusaka district, and Sesheke, Shang'ombo and Senanga in Western province.

Table 9.4: Availability Status of Maize and Cassava Crops by Livelihood Zone

Location	Maize			Cassava		
	Readily Available	Not readily Available	Not Available	Readily Available	Not readily Available	Not Available
Zambia	58	32	10	40	35	25
Livelihood Zone						
Zone 1	67	21	13	92	8	-
Zone 2	52	30	17	65	30	4
Zone 3	77	21	-	43	43	14
Zone 4	65	24	12	29	41	29
Zone 5	83	13	4.3	13	35	52
Zone 6	20	60	20	20	80	-
Zone 7	17	67	17	-	33	67
Zone 8	-	75	25	50	50	-
Zone 9	50	50	-	17	33	50
Zone 10	22	56	22	78	22	-
Zone 11	10	80	10	-	30	70
Zone 12	79	17	4	17	54	29

9.5 Average Prices of Selected Food Items per 50Kg bag

Table 9.5 shows the average prices of major staple crops as at August 2003.

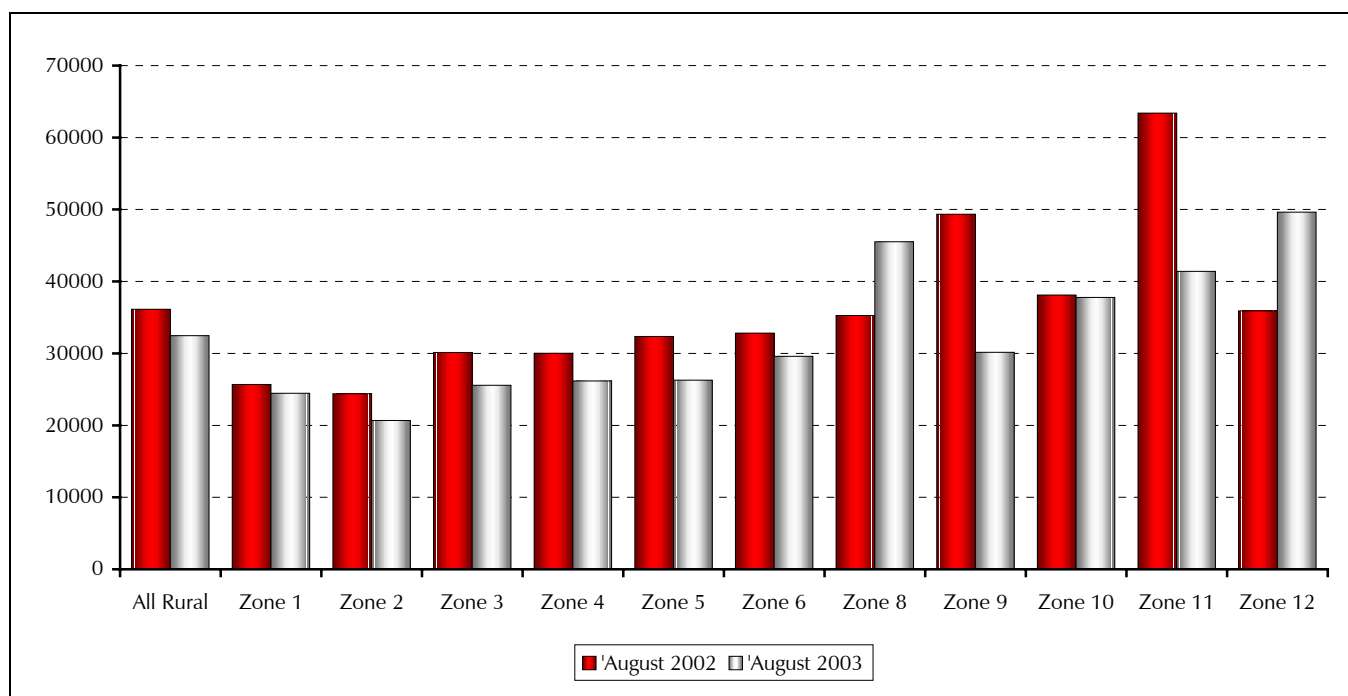
The FHANIS survey also collected average purchasing market prices of Maize, Sorghum, Millet, Rice, Cassava chips and flour in rural communities per 50Kg bag. The average price of a 50Kg bag of maize declined by 10 percent between August 2002 and 2003, from K36, 130 to K32, 480. The average price of a 50Kg bag of sorghum equally dropped by 12 percent during the same period, from K26, 498 to K23, 328. On the other hand the price of millet, rice and Cassava flour increased by 31, 36 and 13 percent respectively.

In August 2003, the unit prices of a 50Kg bag of maize grain were highest in Zones 8, 11 and 12. These Zones, which cover Kalabo, Lukulu west, Gwembe, Siavonga, Sinazongwe, Mambwe and Luangwa districts, are located in the dry valley areas where maize production is low due to poor rainfall. Generally, all zones recorded price declines with the exception of zones 8 and 12 (Refer to Figure 9.4).

Table 9.5: Average Prices for Major Crops by Livelihood Zone

Livelihood Zone	Crop											
	Maize		Sorghum		Millet		Rice		Cassava Chips		Cassava Flour	
	New Price	Old Price	New Price	Old Price	New Price	Old Price	New Price	Old Price	New Price	Old Price	New Price	Old Price
Zone 1	24,458	25,692	-	-	16,642	16,800	38,824	34,294	15,652	21,257	23,817	23,235
Zone 2	20,682	24,409	20,667	24,792	33,526	33,368	42,900	40,000	14,621	14,400	18,213	18,200
Zone 3	25,586	30,129	25,818	32,036	44,667	35,933	120,000	72,000	15,450	14,700	31,500	29,000
Zone 4	26,188	30,031	-	-	26,455	26,636	61,250	32,188	-	-	-	-
Zone 5	26,300	32,357	-	-	-	-	-	-	-	-	-	-
Zone 6	29,600	32,800	-	-	-	-	-	-	24,600	24,200	-	-
Zone 7	-	-	-	-	-	-	-	-	-	-	-	-
Zone 8	45,500	35,250	-	-	-	-	63,333	61,667	16,000	14,000	33,500	27,000
Zone 9	30,167	49,333	23,500	22,667	35,167	42,667	-	-	-	-	-	-
Zone 10	37,778	38,111	-	-	-	-	-	-	15,000	15,000	31,250	25,375
Zone 11	41,400	63,400	-	-	-	-	-	-	-	-	-	-
Zone 12	49,618	35,909	-	-	-	-	-	-	-	-	-	-

Figure 9.4: Average Price of a 50Kg bag of Maize by Livelihood Zones, August 2002 and August 2003



9.6 Household Food Security and Consumption

The major cereal crops in Zambia include maize, millet, sorghum and rice. These cereals dominate food production particularly maize, which accounts for between 50 to 65 percent of calories. Food security in Zambia to a large extent depends on the production of these cereals. The cereals provide on average about 352 kilo calories per 100 grams. In addition to these cereals, cassava has slowly gained ground both as an ordinary and emergency staple in some parts of the country. During the FHANIS survey, households were asked to indicate their current stock of cereals and area under mature cassava.

Table 9.6 shows the average stocks of cereals per household and average area under mature cassava. At national level the average stock of cereals was estimated at 590.4 kilo grams. The quantities of cereals per household varied from 63.9 kilograms in zone 8 to 679.2 kilograms in zone 5. Specifically, the average stocks were lowest in Zone 8, followed by zones 10 (148.6Kgs), 11 (158.0Kgs), 7 (238.8Kgs) and 12 (245.9Kgs). These zones include districts such as Kalabo, Lukulu, Chavuma, Zambezi, Gwembe, Siavonga, Sinazongwe, Mambwe (South) and Luangwa. Notably, the average stock of cereals were below 500 kilo grams in zones 1, 3 and 10 where cassava is the main staple, and zones 6 to 12, which fall in the valley and Kalahari sands areas.

On average, a household had about 0.3 hectare under mature cassava. The hectareage varied from 0.01 hectare in zone 7 and 12 to 0.59 hectare in zone 8. It has been possible to convert area under mature Cassava to the equivalent maize grain since 1 hectare of mature cassava produces approximately 7 tonnes of raw Cassava and 1 Kg of Cassava is equivalent to 0.41Kg of maize grain. The conversion indicate that on average, households who rely on own produced Cassava (861Kgs equivalent) as a staple are more likely to be food secure than those who depend on cereals (590.4 Kgs). High production of Cassava in zones 5 to 6 and 8 to 10, which are located in drought and flood prone areas, clearly epitomizes the food security qualities of the crop. Households in these zones are more likely to be food secure than those in zones 7, 11, 12 and 13, which normally receive inadequate rains. These zones cover Kazungula, Livingstone, Sesheke, Chongwe (West), Luangwa (North), Nyimba (North) Gwembe, Siavonga, Sinazongwe, Mambwe (South), and Mkushi districts. For details, refer to the geographical map in Annex 5, page 56.

Table 9.6: Average Stocks of Cereals and Area under Mature Cassava by Livelihood Zone

	Average stock of Cereals (Kgs)	Average Area under mature Cassava (Ha)	Cassava- maize Equivalent (Kgs)*	Average
All Zambia	590.4	0.30	861	5.4
Livelihood Zone				
Zone 1	331.0	0.45	1292	5.4
Zone 2	533.4	0.29	832	5.2
Zone 3	442.8	0.50	1435	5.5
Zone 4	508.4	0.07	201	5.1
Zone 5	679.2	0.18	517	5.6
Zone 6	427.9	0.49	1406	5.1
Zone 7	238.8	0.01	29	5.2
Zone 8	63.9	0.59	1693	5.3
Zone 9	444.2	0.33	947	5.5
Zone 10	148.6	0.56	1607	5.2
Zone 11	158.0	0.03	86	5.4
Zone 12	245.9	0.01	29	5.1
Zone 13	631.1	0.08	230	5.4

* 1 hectare of mature cassava produces approximately 7 tones of raw cassava. 1 Kg of cassava is equivalent to 0.41 Kg of dry maize grain.

9.7 Household Source of Cereals

Studies in food security have shown that availability of varied sources of cereals to households reduces the risk of exposure to food insecurity. Table 9.7 shows the percentage distribution of household by source of cereals during the 3 months preceding the survey. Results show that apart from own production, cereal purchases is the second most important source of cereals for rural households. About 41 percent of all rural households in Zambia obtain their cereal requirements through purchases. Food remittances catered for 21 percent of households while payment in kind and food aid accounted for 16 and 15 percent of rural households, respectively.

Analysis by livelihood zones shows a high proportion of rural households purchasing food nearly in all the zones except zone 3, 4 and 10. The proportion of households who purchased cereals ranged from 22 percent in zones 10 to

79 percent in zone 8. Food aid remained a dominant source of cereals for households found in zones 8, 9 and 11. More than half of the households in zone 8, which covers Kalabo and Lukulu west, survived on food aid. Food aid also catered for significantly high proportions of households in Zones 9 (38 percent) and 7 (30 percent), which comprise Shang'ombo, Senanga, Sesheke, Kazungula, Livingstone, Chongwe (West), Luangwa and Nyimba (North) districts. In general, the proportion of households depending on food aid was highest in drought and flood prone valley and Kalahari sands areas (Zones 7 to 13).

The proportion of households relying on remittances ranged from 38 percent in zone 8 to 9 percent in zone 4. Almost 2 thirds of households residing in zones 6, 9, and 12 depended on remittances as the main source of cereals. The highest percentage of households who relied on payment in kind was observed in zone 8 followed by zones 12 and 6.

Table 9.7: Households getting Cereals from Direct Sources 3 Months prior to the Survey by Livelihood Zone

	Purchased	Payment in Kind	Remittances	Food Aid	Households
All Zambia	41	16	21	15	1,257,000
Livelihood Zone					
Zone 1	45	10	17	5	275,000
Zone 2	48	18	19	8	288,000
Zone 3	25	9	16	4	51,000
Zone 4	24	3	9	20	49,000
Zone 5	33	16	23	19	305,000
Zone 6	41	25	32	17	109,000
Zone 7	55	15	21	30	44,000
Zone 8	79	45	38	52	20,000
Zone 9	33	22	31	38	23,000
Zone 10	22	8	19	25	28,000
Zone 11	59	10	12	33	34,000
Zone 12	38	28	32	46	19,000
Zone 13	28	23	22	12	12,000

9.8 Average Household Income from Sale of Cereals

The FHANIS survey also collected information on the sale of cash crops during the 3 months preceding the survey. Availability of income at times ensures household access to food especially when households run out of own produced food stocks. On average annual households in rural areas received about K252, 329 from sale of cash crops. The average income ranged from K499, 659 in zone 13 to K183, 621 in Zone 2. Apparently, no incomes from sale of cash crops were captured from Zones 7 to 11, which are mainly characterized by poor rainfall and low levels of cereal production.

Table 9.8: Average Household Income from Sales of Cash Crops 3 Months prior to the Survey by Livelihood Zone

	Average Income (ZMK)	Average Household Size
All Zambia	252,329	5
Livelihood Zone		
Zone 1	216,200	5
Zone 2	183,621	5
Zone 3	190,640	5
Zone 4	219,048	5
Zone 5	273,556	5
Zone 6	191,417	5
Zone 12	499,659	5
Zone 13	26,393	3

9.9 Source of Household Income

Table 9.9 shows the proportion of households by most important source of income. There are various ways in which households in rural areas earn their income. The table below shows the common sources of income in rural areas.

The most common source of income for most of the rural households was sale of crops, with 29 percent, followed by casual labour in agriculture and sales from brewing e.g. beer, Maheu etc, at 10 percent each. It is evident from the table that a larger proportion of the rural households do not depend on sale of timber as a source of income.

Table 9.9: Households most important source of income by Livelihood Zone and Rural/Urban

Location	Source of income														Total
	Casual labour agriculture	Casual labour non agriculture	Formal labour	Crop sales	Live-stock sales	Business/ Trading	Char-coal sales	Fire-wood	Brewing	Craft sales	Fish sales	Timber sales	Vegetables sales	Other	
All Zambia	10	9	6	29	3	7	4	0	10	2	7	0	7	6	100
All Rural Livelihood zone	10	9	6	29	3	7	4	0	10	2	7	0	7	6	10
Zone 1	9	4	4	32	0	10	3	1	8	2	16	.	3	7	100
Zone 2	9	9	3	36	2	7	4	.	12	1	4	1	7	7	100
Zone 3	3	18	16	34	5	3	1	.	12	.	1	0	2	4	100
Zone 4	1	16	11	32	2	9	.	.	6	2	1	1	10	7	100
Zone 5	10	11	11	24	3	7	7	.	6	3	1	0	13	5	100
Zone 6	20	4	0	26	3	5	.	0	17	3	13	1	2	6	100
Zone 7	8	9	8	25	7	8	7	.	10	5	1	.	7	5	100
Zone 8	8	21	3	8	2	1	.	.	17	4	32	1	2	2	100
Zone 9	17	11	7	15	7	5	.	.	18	1	10	.	4	5	100
Zone 10	8	7	2	24	2	1	1	.	18	3	24	3	1	6	100
Zone 11	6	9	4	3	21	8	.	2	8	3	14	.	15	5	100
Zone 12	25	4	8	33	6	4	1	.	5	8	1	.	4	1	100
Zone 13	14	4	17	30	.	4	1	.	16	0	10	.	5	0	100

Table 9.10 shows that the most important source of income in urban areas is from casual labour in agriculture, 59 percent. This is followed by business/trading, 27 percent.

Table 9.10: Households Most Important Source of Income

Location	Casual labour-agriculture	Casual labour-non agriculture	Formal labour	Livestock sales	Business /trading	Charcoal sales	Firewood sales	Brewing e.g. beers, maheu	Timber sales	Vegetables	Total
All Zambia	59	2	2	0	27	5	0	1	0	4	100
Urban	59	2	2	0	27	5	0	1	0	4	100

9.10 Average Number of Meals taken by Adults and Children in a Day

A reduced number of Dietary food intakes leads to dietary deficiencies in life sustaining nutrients such as vitamins, minerals, proteins and carbohydrates. Growth can only occur if organs and tissues receive the required nutrients. It is therefore important to note that the good health of each individual is dependant on an adequate diet.

The traditional family diets of most rural households pose as a source of risk to both adult and child nutrition. This is because they are frequently of low caloric and protein density. Table 9.12 shows that most of the rural diets are based on cereal and thus a low protein/energy ratio. This coupled with inadequate frequency of meals has a particularly devastating effect on growth.

Table 9.11 shows on average, adults and children in rural households reported the same number of meals consumed in a day, i.e. two (2) meals in a day. This situation raises concern because children need to feed more frequently in a day than adults due to their small tummies and increased demand for nutrients to match their rapid growth rate, which slows down as they get older. Analysis of rural areas by zone shows the same trend for all the zones.

Table 9.11: Average Number of Meals taken by Adults and Children a day Prior to the Survey by Livelihood Zone

	Average number of meals adults took	Average number of meals Children took	Households
All Zambia	2.3	2.2	1,257,000
Livelihood Zone			
Zone 1	2.2	2.3	275,000
Zone 2	2.3	2.1	288,000
Zone 3	2.3	2.2	51,000
Zone 4	2.2	2.3	49,000
Zone 5	2.5	2.4	305,000
Zone 6	2.1	2.1	109,000
Zone 7	2.2	2.5	44,000
Zone 8	1.9	2.1	20,000
Zone 9	2.2	2.2	23,000
Zone 10	1.9	1.8	28,000
Zone 11	2.2	2.1	34,000
Zone 12	2.6	2.5	19,000
Zone 13	2.4	2.4	12,000

9.10.1 Household Consumption of Various Food Items in a Week

During the survey, individual households were also asked questions on the number of meals and all the different foods their household members consumed in the last seven (7) days.

The table 9.12 shows the average number of days a particular food item was consumed in the last seven (7) days in rural areas. At the national level it shows that in a week most households consume more cereals and vegetables for five (5) days. Here cereals include maize, sorghum, millet and rice. At the time of the survey, no household reported to have consumed Irish potatoes. The results also show that the consumption of cooking oil in seven (7) days is only three (3) days.

The consumption of cereals in the following zones – 4,5, 11,12, and 13 is almost on daily (7 days) basis. This is followed by zones 3, 7 and 9 where households reported to have consumed cereals for six (6) days in the last seven (7) days.

The consumption of cassava is relatively high in zones 1 and 10. Consumption of cassava is higher in zones characterized by low consumption of cereals. This implies that cassava may be regarded as a perfect substitute of cereals particularly in drought and flood prone valley and Kalahari sands areas.

Table 9.12: Average Number of Days various Food Items are Consumed in a Week by Livelihood Zone

Location	Average Number of Days												
	Cereals	Cassava	Irish Potatoes	Sweet Potatoes	Sugar	Legumes	Vegetables	Fruits	Meat	Eggs	Fish	Cooking oil	Milk
All Zambia	5	3	0	2	2	2	5	1	1	1	2	3	1
Rural	5	3	0	2	2	2	5	1	1	1	2	3	1
Livelihood Zone													
Zone 1	4	6	0	2	2	3	5	1	1	1	4	3	0
Zone 2	5	3	0	4	2	3	5	1	1	1	2	3	1
Zone 3	6	1	0	3	2	2	4	1	1	1	2	3	0
Zone 4	7	1	0	2	1	3	5	1	1	0	1	3	1
Zone 5	7	0	0	3	3	2	6	1	1	1	1	4	1
Zone 6	5	4	0	1	1	2	4	1	1	0	3	2	0
Zone 7	6	0	0	0	2	2	4	1	1	0	1	3	1
Zone 8	4	4	0	0	2	2	4	1	1	0	1	3	1
Zone 9	6	1	0	0	2	2	3	1	1	0	4	2	1
Zone 10	3	6	0	2	1	1	3	1	1	0	4	1	0
Zone 11	7	0	0	0	2	1	5	1	1	0	1	3	1
Zone 12	7	1	0	1	4	3	6	1	1	0	2	4	0
Zone 13	7	1	0	4	3	2	5	0	1	1	3	5	1

CHAPTER 10

COPING STRATEGIES OF HOUSEHOLDS

10.0 Introduction

Zambia like most of its neighbours has suffered a number of shocks such as changes in weather patterns, which have affected the food security of its people. Most of the households have had to rely on various coping strategies for survival in times of need. During the survey, information on coping strategies for people living in rural areas was collected.

Table 10.1 shows the proportion of households relying on various coping strategies. The table shows that the proportion of households relying on coping strategies was 24 percent. It is also noticeable that livelihood Zone 11, which covers Siavonga, Gwembe and Sinazongwe districts, had the highest proportion of households relying on some form of coping strategies, at 36 percent followed by Zones 8 and 7, which cover Kalabo and Lukulu, Sesheke, Kazungula, Livingstone, Chongwe (west) Luangwa and Nyimba (North) districts, at 34 and 32 percent, respectively. Zone 10 recorded the least proportion of households relying on coping strategies, at 20 percent.

Table 10.1: Households relying on Coping Strategies by Livelihood Zone

Location	Relying on coping strategies
All Rural Livelihood zone	24
Zone 1	22
Zone 2	21
Zone 3	21
Zone 4	25
Zone 5	27
Zone 6	27
Zone 7	32
Zone 8	34
Zone 9	26
Zone 10	20
Zone 11	36
Zone 12	21
Zone 13	26

Table 10.2 shows the proportion of households that used various coping strategies by type. The most commonly used coping strategy among the rural households was the reduction in the number of meals per day, (64 percent). This was followed by asking from friends, (57 percent), reducing on the use of other household items, such as detergent, (54 percent) and substituting ordinary meals with fruits (e.g. mangoes) and other non-conventional meals, (53 percent). Relief food catered for about 35 percent of all households in rural areas. The results also show that begging from the streets, formal borrowing and pulling children out of school played a minor role as coping strategies.

Analysis of coping strategies by livelihood zones further shows that relief food was a popular coping mechanism among households residing in Zones 11 (92 percent), 12 (72 percent) and 4 (71 percent). These Zones cover Gwembe, Siavonga, Sinazongwe, Mambwe (South), Luangwa, Chama, Lundazi, Itezhi-Tezhi (North) and Mumbwa (West). The proportions of households relying on relief food in times of need were equally high in Zones 7, 8 and 5 where more than half

Table 10.2: Households relying on Coping Strategies by Type and Livelihood Zone

Coping strategies	All	Livelihood Zone												
	Rural	01	02	03	04	05	06	07	08	09	10	11	12	13
Piecework on farms	37	24	33	27	44	44	43	46	65	49	38	42	59	37
Other piecework	31	27	31	39	42	31	25	41	53	31	32	30	24	32
Food for work or food for assets	16	8.5	12	28	32	16	19	36	34	12	10	22	19	22
Relief food, free food from government and other bodies	35	10	22	24	71	53	33	56	55	42	40	92	72	33
Eating wild food only	19	11	21	5.9	16	20	28	24	51	30	2.9	40	6.7	25
Substituting ordinary meals with mangoes	53	63	44	53	48	52	66	38	71	40	41	43	54	73
Reducing on the number of meals of food intake	64	62	56	58	66	65	79	77	71	58	67	88	38	68
Reducing on the use of other household items	54	54	54	23	61	53	69	54	29	51	36	85	10	56
Informal borrowing	15	23	8.4	10	4.3	17	13	21	25	16	10	22	5.1	12
Formal borrowing	3.7	3.7	3.8	7.1	3.3	4.1	2.1	3.4	2.9	2.0	0.8	0.1	4.3	15
Church charity	7.2	10	4.4	14	4.0	7.5	2.9	15	6.8	13	7.6	5.5	5.8	5.5
NGO charity	16	2.7	9.0	5.1	1.0	27	20	46	57	39	11	30	3.2	8.8
Pulling children out of school	5.3	5.3	6.3	1.8	1.6	4.8	3.6	7.5	14	9.0	2.9	8.1	0.6	7.1
Sale of assets	15	9.0	14	12	6.9	20	12	26	6.6	19	5.2	52	4.7	8.4
Petty vending	9.9	12	9.7	7.3	4.6	13	5.7	10	4.6	1.0	3.3	10	4.6	8.3
Asking from friends, neighbors, relatives	57	62	47	54	49	61	59	65	54	48	50	69	69	57
Begging from the streets	1.0	0.9	1.6	1.0	1.0	0.8	.	0.6	3.7	0.6	0.9	.	0.4	1.4
Other	2.3	0.4	5.3	2.1	0.6	1.6	3.2	1.7	.	2.8	2.2	.	.	2.0

CHAPTER 11

OWNERSHIP OF HOUSEHOLD ASSETS

11.0 Introduction

It is important to observe that household's well-being is not determined by income alone but also by the property possessed. Thus, assets possessed by households are an important indicator of wealth and is a useful proxy for characterizing food security for the households.

The FHANIS survey collected data on household Asset ownership. Households were asked whether or not they own any assets, which were in usable condition at the time of the survey. The proportion of households who reported to have at least one asset is shown in Table 11.1.

The table shows that very few rural households owned grinding mills (1.5 percent), harrows (2.4 percent) and Ox-carts (4.1 percent). Ownership of tractors, planters, donkeys, sheep, turkey and rabbits by rural households was almost none existent. However the majority of the rural households were found to own Bicycles, 41 percent.

The table also shows that radios, which constitute a very important media for disseminating information on Food Security, Health, Nutrition and other developmental issues, are one of the important assets that are owned by a considerable number of rural households. About 38 percent of the rural households reported owning a radio. Less than 30 percent of households in zones 8, 10, 11, and 6 owned radios. These Zones include districts such as Kalabo, Lukulu, Chavuma, Zambezi, Siavonga, Gwembe, Sinazongwe, Kaoma, Mongu and Senanga. More than 30 percent of households in the remaining Zones owned radios (Refer to Figure 11.1).

Figure 11.1: Ownership of Radios by Livelihood Zones

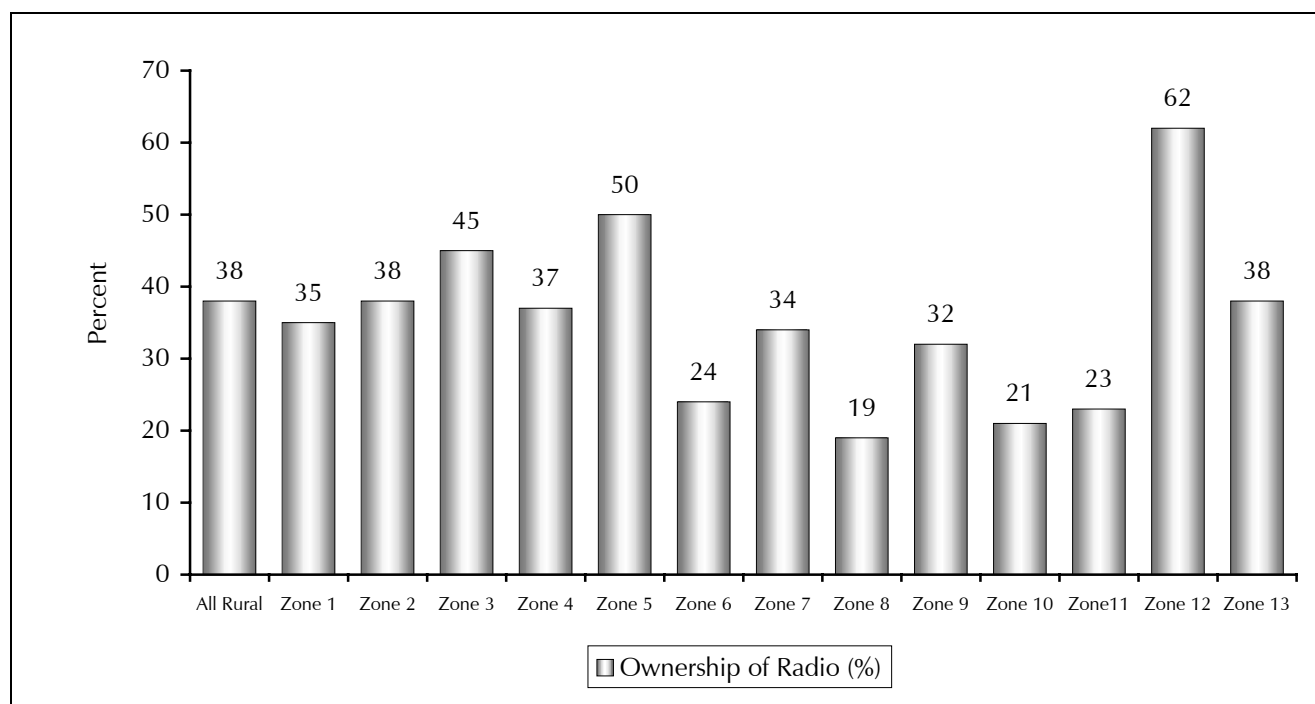


Table 11.1: Households who own various Assets by Livelihood Zone

Asset	All Rural	Livelihood Zone												
		01	02	03	04	05	06	07	08	09	10	11	12	13
Bicycle	41	41	42	53	43	54	18	27	6.7	9.2	27	19	70	36
Radio	38	35	38	45	37	50	24	34	19	32	21	23	62	38
Plough	14	1.3	6.0	9.8	9.5	29	17	26	8.1	38	2.0	32	2.4	6.7
Tractor	0.3	0.3	0.1	0.5	.	0.6	.	0.1	.	.	.	.	.	0.4
Harrow	2.4	0.3	0.2	5.5	9.9	5.5	0.8	3.3	.	8.4	0.5	1.3	.	1.2
Crop sprayer	5.6	1.7	4.8	9.5	15	10	0.2	9.4	.	4.6	.	7.5	6.5	2.0
Planter	0.4	0.3	0.3	0.4	0.2	0.1	.	0.5	.	.	.	.	0.6	0.9
Ox-cart	4.1	1.2	0.4	4.0	7.2	9.3	4.2	11	1.6	6.8	4.3	2.8	0.6	2.9
Grinding mill	1.5	1.1	1.9	1.2	0.9	2.5	0.4	1.3	.	0.9	.	0.9	0.2	.
Fishing net	11	24	6.5	1.7	2.4	1.5	23	0.8	36	32	24	9.3	7.3	6.9
Fishing boat	1.6	2.2	0.4	0.2	.	.	7.1	0.3	8.6	13	0.2	0.1	.	.
Canoe	6.6	18	3.7	1.5	0.5	0.5	7.5	0.3	22	23	7.4	7.6	0.1	5.1
Cattle	16	3.0	9.9	4.7	11	25	25	27	17	51	15	46	2.3	6.6
Goats	17	15	17	23	8.5	23	5.4	27	.	5.1	2.1	47	15	6.1
Sheep	0.8	0.7	0.5	0.7	5.0	0.8	0.6	.	.	.	.	0.1	0.0	.
Pig	9.3	9.0	6.6	15	4.6	16	7.3	7.6	1.5	3.2	0.5	8.2	5.4	.
Donkey	0.5	0.2	0.5	0.2	.	0.7	.	0.3	1.6	0.8	.	2.2	0.1	1.1
Chicken	64	63	64	65	68	67	59	58	45	58	65	70	66	72
Ducks and geese	4.4	5.6	2.5	1.8	8.7	6.0	1.7	4.9	7.0	3.2	0.8	7.3	0.6	3.1
Guinea fowls	2.2	0.8	0.8	1.9	1.6	5.9	0.7	1.5	.	2.2	.	3.9	0.9	2.3
Turkey	0.1	.	.	.	0.3	.	.	.	.	.	.	.	.	.
Rabbits	0.3	0.3	0.8	.	0.9	0.1	.	.	.	.	.	.	.	.
Pigeons	1.6	0.7	0.2	1.9	9.3	2.9	.	2.1	0.3	2.0	2.0	1.1	0.9	6.3

CONCLUSION AND POLICY IMPLICATIONS

The FHANIS Survey conducted in August 2003 came up with important findings on the Food Security, health and Nutrition situation in all the 13 Livelihood zones in Zambia.

Food Security

The indicators on food security show that 34 percent of the households in rural communities were reported to have already run out of food stocks, 20 percent had stocks to last them for one (1) month while 22 percent reported to have stocks that will last for 2 – 3 months. Zone 11, which comprises Gwembe, Siavonga and Sinazongwe districts, reported the highest proportion of vulnerable households. As at August 2003, 58 percent of households in this zone had already run out of staple food stocks. The situation in zone 8 covering Kalabo and Lukulu districts was equally bad with 56 percent of household reporting that they had run out of staple stock.

Zone 8 (Kalabo and Lukulu west) and Zone 11 (Gwembe, Siavonga and Sinazongwe districts) reported the lowest proportion of households that had own produce as a major source of food. These zones are characterized by poor rainfall (zone 11) and low crop production (Zone 8) and thus should be targeted for food security programmes. Zone 8 raises much concern because it recorded the second lowest proportion of communities reporting presence of food security programmes (25 percent) as compared to Zone 11, which recorded (60 percent), a proportion much higher than the National Average.

Maize as a commodity was readily available for purchase in more than half of the 165 communities. However 32 percent indicated that maize was not readily available for purchase (scarce) while 10 percent had no maize at all. The most notable is Zone 8 (Kalabo and Lukulu West) where availability of Maize for purchase stood at 0 percent. The average stocks for cereals were reported at 590.4 kgs. The Zones that fell far below the National average were Zone 8 – 64 kgs, Zone 10 – 149 kgs and zone 11 – 158 kgs.

Twenty four (24) percent of rural households in Zambia were reported to be relying on various coping strategies. Zones 11 and 8 reported the highest proportion of households relying on coping strategies. Zone 11 (Gwembe, Sinazongwe and Siavonga) recorded the highest percentage of households relying on reduction in the number of meals per day as a coping strategy. It also recorded the highest percentage of households relying on Reducing on the use of other household items, such as soap (85%). Zone 11 also recorded a high proportion of households relying on asking from friends as a coping strategy. Zone 12 -Mambwe South and Luangwa also had a high proportion of households relying on asking from friends, at 69 percent.

Health

Generally the survey showed that on health about 21 percent of the population reported illness in the two weeks prior to the survey. Malaria was the most commonly reported illness in both rural and urban areas. Zone 7 (Kazungula, Livingstone, Sesheke, Chongwe(west), Luangwa (north) and Nyimba North), which is in the driest areas of the country showed the highest proportion of persons reporting malaria. After Malaria coughs/colds was the most commonly reported illness. Zone 4 (Chama, Lundazi, Itezhi tezhi,(north), Mambwe (valley) and Mumbwa) had the highest proportion of persons reporting coughs/colds. However this zone recorded the lowest proportion of the Malaria. About 10 percent of households reported to have had Chronically ill persons. Kalabo and lukulu (Zone 8) showed the highest proportion of households reporting to have chronically ill persons at 24 percent.

Child Health and Nutrition

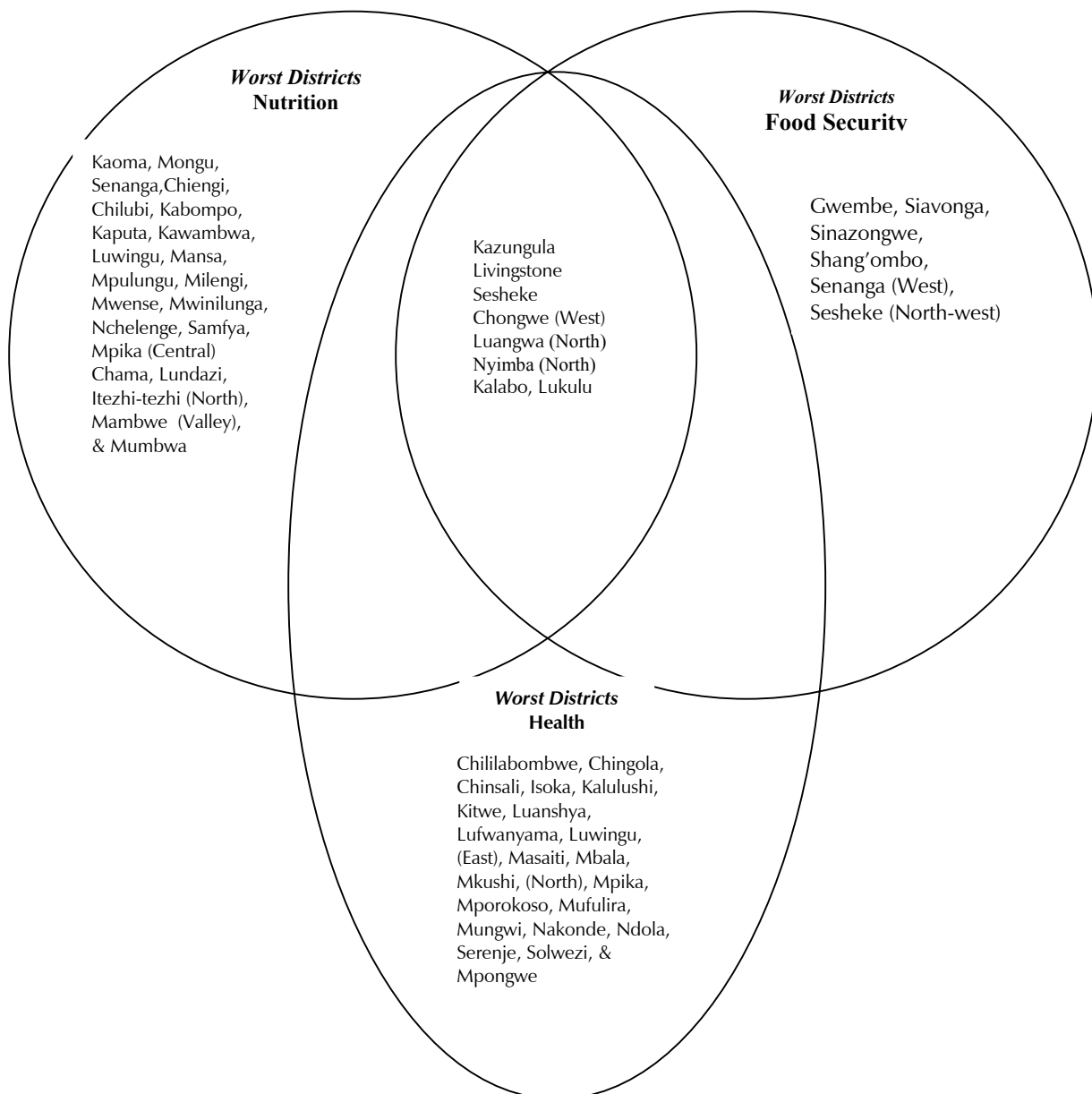
Indicators on nutrition show that at the time of the survey about 53 percent of the children aged between 3-59 months were stunted while 5 and 24 percent were wasted and underweight respectively. About 4.7 percent of the children were found with oedema. Zone 2 recorded the highest proportion of children (8 percent) with oedema while the lowest proportion recorded was in zone 12, (1.8 percent)

Stunting and underweight by age distribution were higher among children in the older age groups between 12 to 59 months. Wasting was highest in the age group 10 to 23 months.

Only a quarter of children in the age group 0 to 3 and 7 percent in the age group 4 to 6 months were exclusively breast-fed. This suggests an influence of maternal factors to childhood nutrition. In Zambia infants are stunted by 3-5 months and wasting peaks between 12 – 24 months, Therefore programmes should be aimed at maternal health and nutrition (reproductive health and safe motherhood) and growth promotion in infancy (Exclusive breast feeding in the first six months of life). Results on child vaccination showed that 90 percent of all the children below the age of five years had received the DPT, BCG and Polio vaccines. This shows that the immunization campaigns embarked on by the ministry of health are having a positive effect.

It is there important to note that Zone 8 and 11 which rank amongst the lowest in terms of percentages of - own produce, average stocks of cereal, and highest amongst households reporting chronically ill persons requires more attention as compared to other zones.

Below is the diagrammatical representation of the most affected areas in terms of health, Nutrition and food security.



Annex 1: Reference

Caldwel Richard (2003), C-safe: Zambia Baseline Survey; Tango International, Lusaka, Zambia

Central Statistical Office (1998) Living Conditions Monitoring Survey, CSO, Lusaka, Zambia

Maxwell Simon and Frankenberger Timothy (2000), Household Food Security Concepts, Indicator Measurements; A Technical Review, United Nations Children Fund, New York.

World Bank (1986) Poverty and Hunger: issues and options for food security in Developing Countries; World Bank Policy Study, Washington DC.

World Bank (1990) Symposium on Household Food Security and the Role of Women; Harare, January 21- 24, 1990

Riley Barry (1993) Towards improved food Security in Zambia; University of Oxford, 1993, Oxford.

Annex 2: Summary of Rural and Urban SEA's by Province

Province	Urban SEAs	Rural SEAs	Total
Central	5	22	27
Copperbelt	21	9	30
Eastern	2	26	28
Luapula	2	14	16
Lusaka	23	8	31
Northwestern	1	18	19
Northern	3	22	25
Southern	5	21	26
Western	2	36	38
Total	64	176	240

Annex 3: Detailed Sample Selection and Estimation Procedures

In order to facilitate reasonable comparison between stratum estimates and also obtain stratum estimates at acceptable levels of sampling errors, a disproportionate method of allocation referred to as the “Power Allocation” Method was used.

The 2003 FHANIS sample was selected using a stratified two-stage cluster design. Once the households were allocated to each zone in the rural stratum and to the urban stratum, the number of clusters was calculated based on an average cluster take of 20 completed interviews of all respondents. Clusters were selected systematically with probability proportional to the number of households.

2.5 Selection of clusters

The procedure for selecting clusters (i.e. SEAs) in each stratum (zone) consisted of:

- (i) Calculating the sampling interval, I , for each zone (or stratum)

$$I_h = \frac{\sum_{i=1}^{N_h} M_{hi}}{a_h}$$

(1)

where M_{hi} is the number of households in SEA (or cluster) i and zone (stratum) h , $\sum_{i=1}^{N_h} M_{hi}$ is the size of the stratum (total number of households in the stratum/zone according to the 2000 census) and a is the number of clusters (SEAs) to be selected in the stratum.

- (ii) Calculating the cumulated size of each SEA.

- (iii) Calculating the sampling numbers

$$R, R+I, R+2I, \dots, R + (a-1)I,$$

(2)

where R is a random number between 1 and I .

- (iv) Comparing each sampling number with the cumulated sizes of the SEAs.

The first SEA (or cluster) whose cumulated size was equal to or greater than the random number generated was selected. The next SEA to be selected was the one with cumulated size equal to or greater than $R+I$. The rest of the SEAs were selected using the same procedure, making sure to add I to each subsequent selection (see Equation 2).

2.6 Selection of households

A frame of households was determined by listing all the households in all the selected SEAs. Upon completion of the household listing, the household lists were carefully checked and given new household numbers, which is a sampling serial number assigned to each household in the cluster. In urban areas sampling numbers were assigned sequentially within each cluster starting from 1. The total number of households in the cluster was equal to the last serial number assigned. A sample of 20 households from each cluster was taken.

However, in rural areas because of the required further stratification, assignment of the sampling numbers was done within each stratum. The strata referred to are large scale, medium scale, small scale and non-agricultural households in rural areas. This stratification was done during listing in each selected cluster. The sampling numbers were therefore assigned sequentially within each stratum starting from 1. The total number of households in the stratum was equal to the last serial number assigned. The number of households that were selected in each stratum was worked out by

allocating the total number of households to be selected in the cluster (SEA) proportionally to the strata. Large scale farming households were covered on a 100% basis in the selected SEAs. However, the sample ‘takes’ (number of households selected) from the other strata were; 10 from the small scale, 7 from the medium scale and 3 from the non agriculture. At least 20 households overall were selected in rural clusters.

In summary, the following steps were used to select the households:

1. Allocation of the number of households to be selected from each stratum proportionally to the size of the stratum.
2. Calculation of the sampling interval for each stratum

$$l = \frac{B}{b} \quad (3)$$

where B is the number of households listed in the selected SEA and b is the number of households that were selected in the selected SEA.

3. Generation of a random number (R) between 1 and the Interval l ; the first selection was hence R
4. Addition of the interval to the random number to get the next selection
5. Addition of the interval repeatedly to get the desired sample size.

2.7 Estimation Procedure

Weights

Due to the non-proportional allocation of the sample to the different strata (zones), sampling weights were required to ensure actual representativeness of the sample at national level. The sampling probabilities at first-stage selection of SEAs and probabilities of selecting the households, were used to calculate the weights. The weights of the sample are equal to the inverse of the probability of selection. Therefore, all estimates from the household survey component are weighted expressions. The weights have been derived as follows;

The probability of selecting cluster i was calculated as

$$P_{hi} = \frac{a_h M_{hi}}{\sum_{i=1}^{N_h} M_{hi}} \quad (4)$$

The weight or boosting factor is, thus, given as

$$w_{hi} = \frac{1}{P_{hi}} \quad (5)$$

where: p_{hi} is the first stage sampling probability of (SEA), a_h is the number of SEAs selected in stratum h , M_{hi} is the size (households according to the Census frame) of the i^{th} SEA in stratum h , and $\sum M_{hi}$ is the total size of stratum h .

The selection probability of the household was calculated as:

$$p_h = \frac{n_h}{N_h} \quad (6)$$

where n_h =the number of households selected from stratum h , N_h =the total number of households in stratum h .

Let y_{hij} be an observation on variable Y for the j^{th} household in the i^{th} SEA of the h^{th} stratum. Then the estimated Total for the h -th stratum is:

$$y_h = \sum_{i=1}^{a_h} \sum_{j=1}^{n_h} w_{hi} y_{hij} \quad (7)$$

where, y_h is the estimated total for the h -th stratum., w_{hi} is the weight for the j^{th} household in the i -th SEA of the h -th Zone or stratum, $j=1-a_h$ is the number of selected clusters in the stratum, $j=1-n_h$ is the number of sample households in the stratum. The national estimate is given by:

$$y = \sum_{h=1}^H y_h \quad (8)$$

where, y is the national estimate, $h=1, \dots, H$ is the total number of strata. For our purposes, $H = 14$ (13 livelihood zones in as separate strata in the rural domain and the urban taken as a separate strata).

Annex 4: Survey Personnel

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Mr. Peter Mukuka (ECON.)
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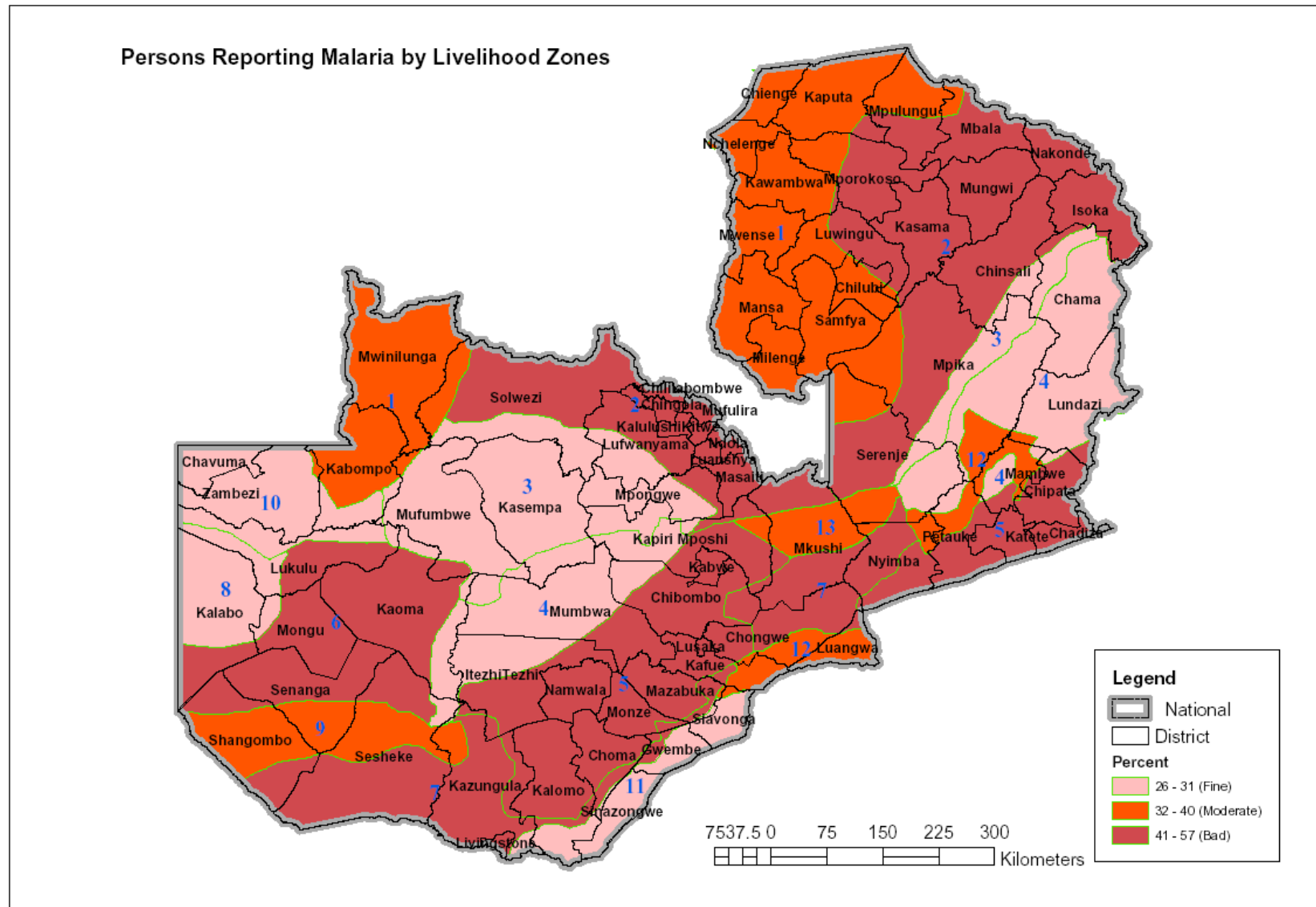
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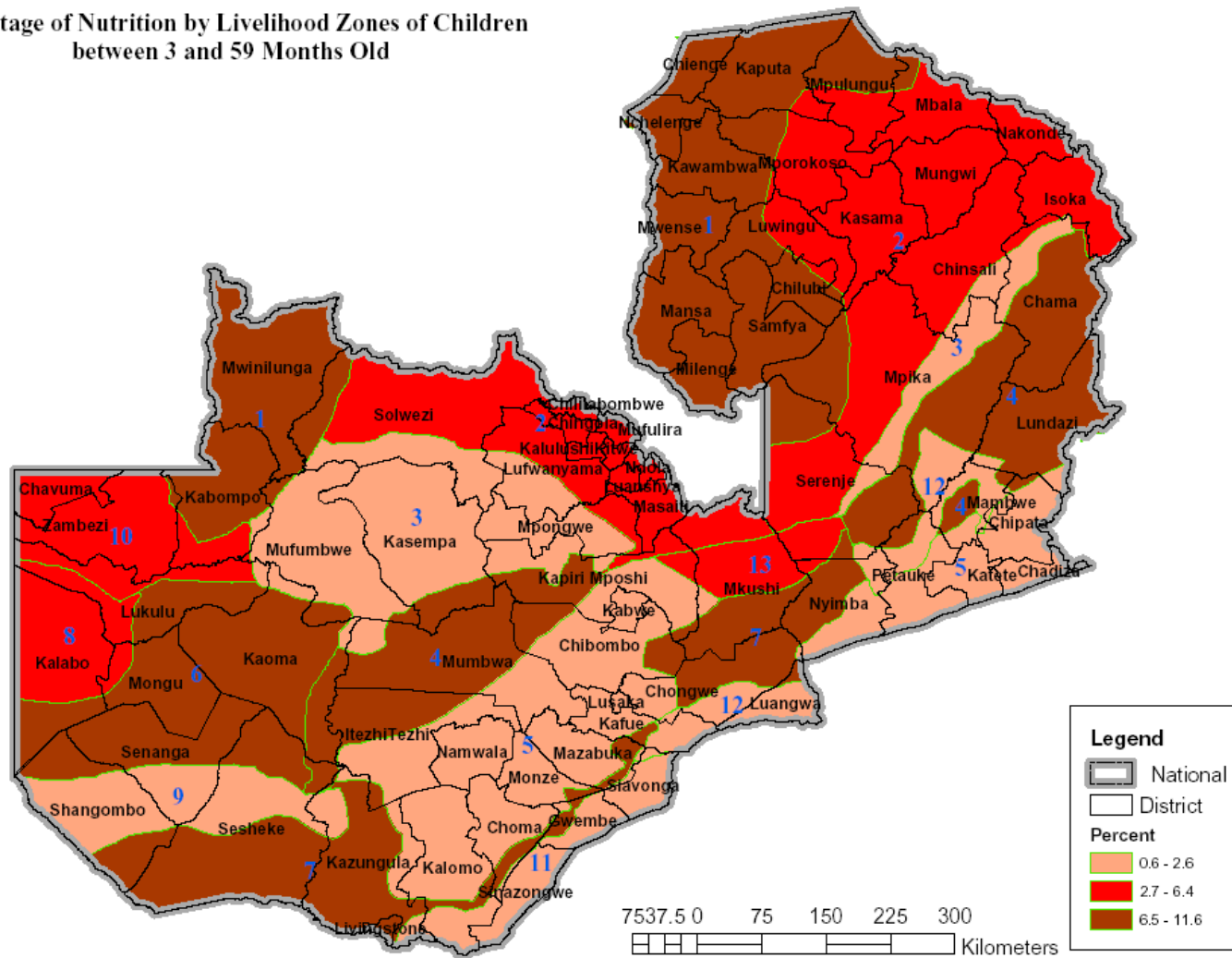
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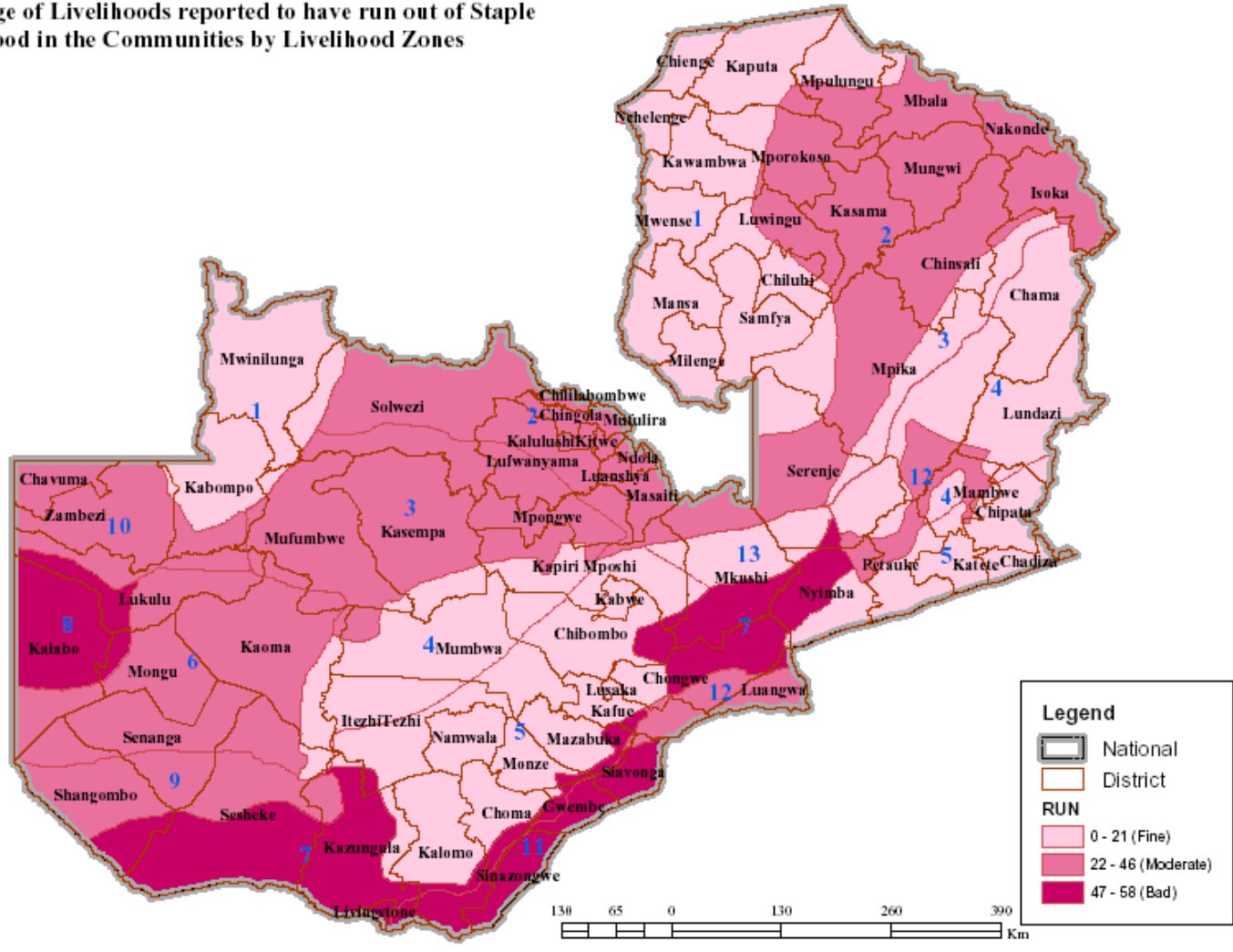
Annex 5: Maps



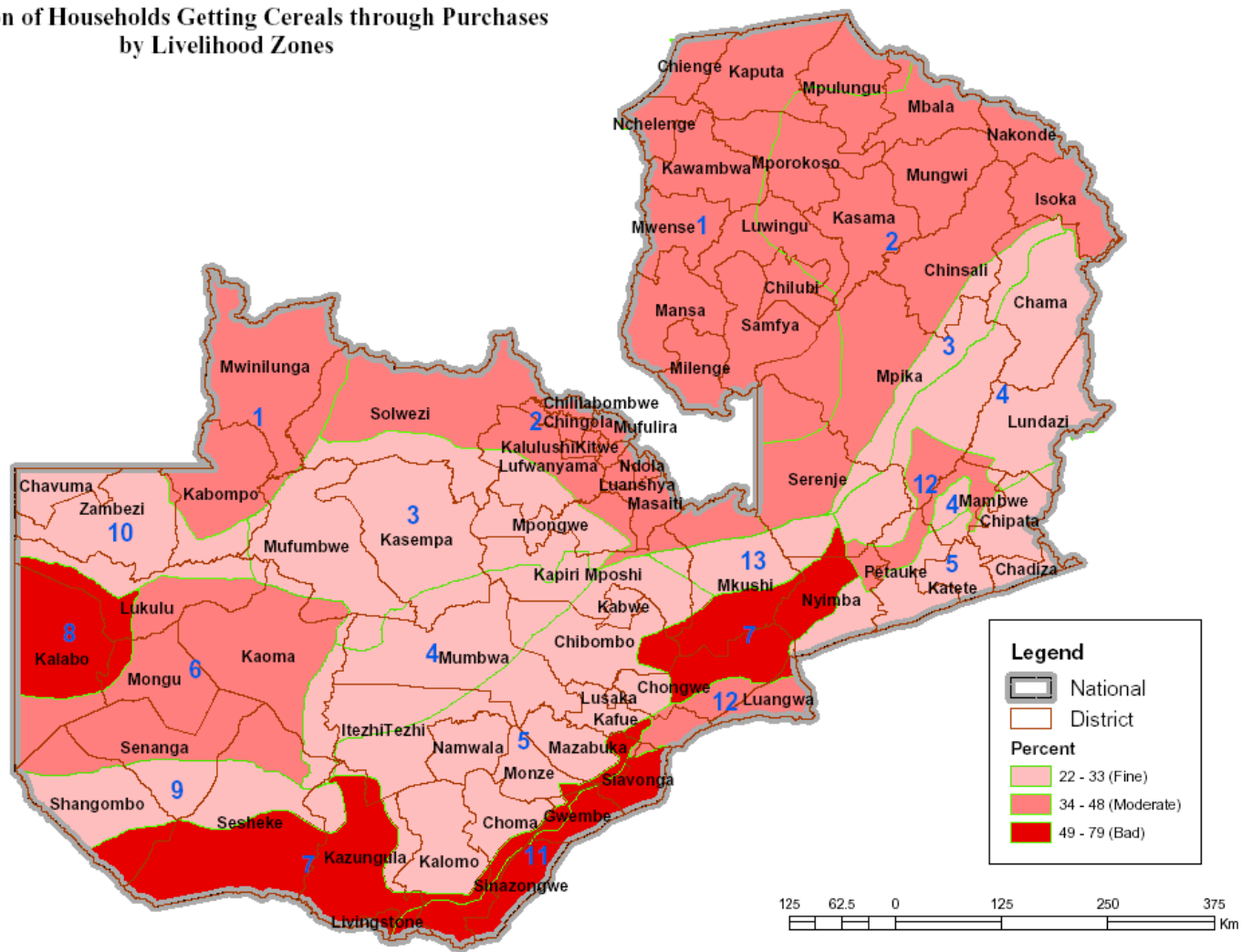
Percentage of Nutrition by Livelihood Zones of Children between 3 and 59 Months Old



Percentage of Livelihoods reported to have run out of Staple Food in the Communities by Livelihood Zones



Proportion of Households Getting Cereals through Purchases
by Livelihood Zones



Average Stocks of Cereals per Household by Livelihood

