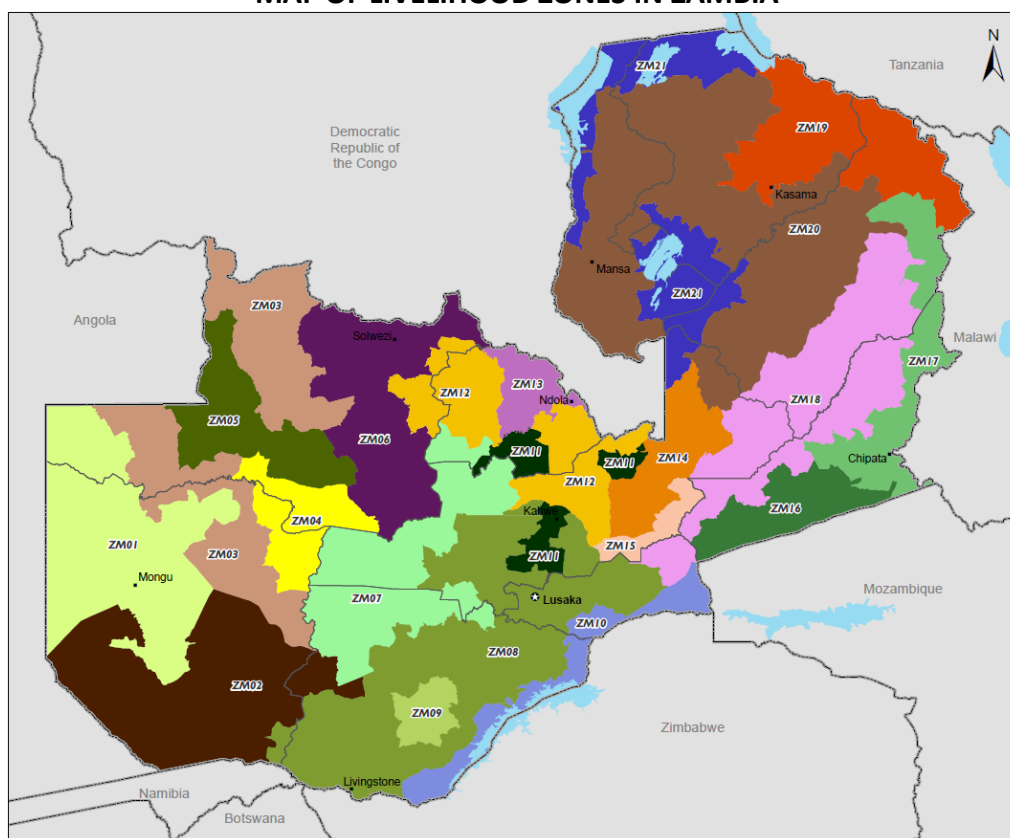


THE GOVERNMENT OF THE REPUBLIC OF ZAMBIA

ZAMBIA Livelihood Zones and Descriptions

July 2014

MAP OF LIVELIHOOD ZONES IN ZAMBIA



- | | |
|---|---|
| ZM01 - Zambezi Plain Rice, Livestock, and Fishing | ZM12 - Central Copperbelt Maize, Cassava, and Sweet Potato |
| ZM02 - Southwestern Cereal, Livestock, and Timber | ZM13 - Copperbelt Labor and Trade |
| ZM03 - Western and Northwestern Cassava, Maize, and Cattle | ZM14 - Mkushi and Serenje Maize, Sweet Potato, and Horticulture |
| ZM04 - Kaoma Smallholder Food Crop and Tobacco | ZM15 - Luangwa Valley Informal Mining, Fishing, and Hunting |
| ZM05 - Northwestern Timber and Honey | ZM16 - Eastern Plateau Maize, Cotton, and Groundnut |
| ZM06 - Solwezi and Kasempa Mining Labor and Agriculture | ZM17 - Eastern Plateau Maize, Groundnut, Tobacco, and Trade |
| ZM07 - Kafue Plain Maize, Cattle, and Fishing | ZM18 - Luangwa Valley Subsistence Farming, Hunting, and Tourism |
| ZM08 - Commercial Rail Line Maize, Livestock, and Cotton | ZM19 - Northern Border Maize, Beans, Livestock, and Trade |
| ZM09 - Southern Plateau Cattle, Maize, and Tobacco | ZM20 - Muchinga, Northern, and Luapula Cassava, Groundnut, and Millet |
| ZM10 - Zambezi Valley Agro-fisheries | ZM21 - Mweru, Bangweulu, and Tanganyika Fisheries |
| ZM11 - Mkushi, Chisamba, and Mpongwe Commercial Farming Block | |

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This report will form part of the knowledge base for GoZ, ZVAC and FEWS NET's livelihood and food security monitoring activities in Zambia.

ACRONYMS AND ABBREVIATIONS

CSO	Central Statistical Office
DMMU	Disaster Management and Mitigation Unit
DRC	Democratic Republic of the Congo
FAO	Food and Agriculture Organization of the United Nations
FEWS NET	Famine Early Warning Systems Network
G	Gathering, usually for wild foods or products
GoZ	Government of Zambia
ha	Hectare
HEA	Household Economy Approach
IK	Payment for services in kind
ITCZ	Intertropical convergence zone
MP	Market-purchased food
mm	millimeters
OP	Own produced crops
RVAA	Regional Vulnerability Assessment and Analysis Program
SADC	Southern African Development Community
USAID	United States Agency for International Development
USG	United States Government
UN	United Nations
WFP	World Food Programme
ZVAC	Zambia Vulnerability Assessment Committee

LIVELIHOOD ZONING AND DESCRIPTION METHODOLOGY

The Livelihood Zoning “Plus” product resemble the Household Economy Approach (<http://www.feg-consulting.com/resource/practitioners-guide-to-hea/practitioners-guide-to-hea/>). It includes a traditional livelihoods zoning component (<http://www.feg-consulting.com/resource/practitioners-guide-to-hea/2%20Livelihood%20Zoning.pdf>). In addition, some key characteristics of socioeconomic status explore the juxtaposition of the relatively poorer and relatively better-off households. The Livelihood Zoning Plus product also provides a certain minimum amount of information about all livelihoods, such as food sources and main income sources for each group in each zone. A brief description of general characteristics is also included in the product, along with seasonal and food access calendars for each zone. Finally, the zones most vulnerable to food insecurity have been identified.

HEA defines a livelihood zone as a geographic area in which households obtain their basic survival needs, notably food and cash income, in relatively similar ways. This means that they also typically have similar socio-economic groupings with similar asset bases, as well as relatively similar consumption patterns. These similarities apply to both good and bad years in that, coping strategies in response to shocks within the same livelihood zone are relatively similar.

Livelihood zone maps and descriptions form part of the knowledge base for FEWS NET’s food security monitoring activities. These tools, however, have not been designed as a comprehensive analysis of food security or as a complete monitoring tool, but rather to provide points of reference and indicate whether the conditions reported at a given time justify a more in-depth study. The results presented in this report describe how households may be affected by various shocks. They provide a geographic context for interpreting existing monitoring data on production, prices, and other indicators in order to identify potential problems. Rapid assessment teams may be able to use the zoning as a basis for sampling in their studies.

The methodology for elaborating the livelihood zone maps and descriptions in this document consisted of the following steps:

1. FEWS NET researched available secondary information regarding geography, climatology, demographics, agriculture, livestock, markets, etc. The specific reports of particular interest include: 2004 livelihood zoning and baselines, which had 27 livelihood zones defined for the entire country; 2010 Livelihood and farming systems review in 2010 by the Farming Systems Association of Zambia in collaboration with FAO, which defined 18 zones; the CSO household living condition and census report for 2010; and Zambia VAC and FEWS NET’s previous food security reports in Zambia.
2. A preliminary livelihood zone map with 19 zones and small descriptions for each zone contained the review of secondary information. This exercise provided broader perspective of livelihood patterns in Zambia, helping to facilitate the zoning workshops. The zoning at this stage consists of building homogeneity in rainfall patterns, topographical features, soil and vegetation types, river systems, cropping patterns, livestock and population density and other relevant socio-economic data.
3. Two regional workshops performed the zoning of the region in which district representatives from each province came together to divide the country into livelihood zones. These workshops took place from February 2-14, 2014. In addition, the participants documented key characteristics of livelihoods, seasonal calendars, and salient market characteristics for each zone that form the basis of the information in the descriptions.

Please note that the seasonal calendars that follow refer to the peak lean season. For FEWS NET, the lean season or peak lean season, refers to the following:

- The lean season is time of the year when household access to food and particularly to cash income is lowest.
 - In a bad year, one would see during the lean season the most severe coping strategies and the worst acute food security outcomes of the consumption year.
 - Given the above definition and example, dependance on markets is not sufficient to define a lean season.
 - A lean season may begin early or end late in an atypical year.
 - A zone with very little intra-annual variation in food access, most commonly characterized by urban areas, may not have a lean season.
4. FEWS NET and partners engaged in a rapid field verification exercise of one zone for each zoning workshop based on informal key informant and focus group interviews to validate the accuracy of zone outputs and follow up on

outstanding questions raised during the workshops. The Commercial Rail Line Maize, Livestock, and Cotton and the Mkushi, Chisamba, and Mpongwe Commercial Farming Block were the two zones verified in the field.

5. The map produced as a result of the two regional workshops was compared with the initial draft map based on the secondary data to identify similar zones that could be merged. Where necessary, analysts also adjusted livelihood zone boundaries or descriptions to address discrepancies and to fit as much as possible the lowest-level administrative boundary available to FEWS NET (Ward, administrative level 4). This final livelihood zone map in this document reflects these adjustments.
6. An initial version of the report circulated to the participants for comment between April 4 and April 25, 2014, led to this final version of the report, published in July 2014.

For more information about Household Economy Approach principles and analysis, visit the livelihood pages at <http://www.fews.net> or download "[Application of the Livelihood Zone Maps and Profiles for Food Security Analysis and Early Warning](#)."¹

¹ http://v4.fews.net/docs/Publications/Guidance_Application%20of%20Livelihood%20Zone%20Maps%20and%20Profiles_final_en.pdf

RURAL LIVELIHOODS IN ZAMBIA

Zambia is a landlocked country in Southern Africa. Zambia covers a total area of 752,612 km² including borders, and lies between 8° and 18° south latitudes and longitudes 22° and 34° east. Zambia borders Zimbabwe, Botswana, Namibia in the South, Angola in the West, DRC and Tanzania in the North, and Malawi and Mozambique in the East. The country is carved into 10 administrative provinces, 103 districts, and 1421 wards used for subdistrict administration and decision-making. The total population was approximately 13.1 million at the time of the 2010 census, growing at about 2.8 percent per year.

With some of the largest copper and cobalt deposits in the world, the national economy is heavily dependent on mining; however, agriculture is the mainstay of livelihoods for a majority of rural population, who constitute 65 percent (1,631,000 households) of the population. The sector has great growth potential with over 50 percent of the total 39 million hectares of land classified as medium-to-high potential for crop production. Less than half of arable land is cultivated due to limited investment in mechanized agriculture. Most agricultural production for subsistence uses traditional technology. With relatively favorable climatic conditions coupled with good agriculture policy, Zambia has become a net exporter of food, particularly maize. Maize marketing takes place both through private traders and the Food Reserve Agency (FRA). Livestock rearing provides a source of food and income for households with slightly more than 50 percent of households owning different types of livestock including cattle, goats, pigs, or chickens. More than 66 percent of the population is employed in the agriculture, forestry, and fisheries sectors². In addition to agriculture, additional common sources of food and income are related to natural resource exploitation including, timber, charcoal production, fishing, honey production, hunting, and mining. Overall gains in agriculture output, however, are not well correlated with reductions in poverty. About 60 percent of the total population lives below the national poverty line, with almost 80 percent of the rural population below the national poverty line.

Zambia is broadly divided into three agro-ecological regions (Figure 1): low-potential, semiarid and arid plains and valleys, high-potential plateaus, and the northern high-rainfall areas.

Region I: The southern part stretching to the east along the Zambezi and Luangwa valleys is Region I, sitting on a valley and plains less than 1000 meters above sea level with major rivers passing through it. Due to poor, sandy soils, the region has limited production potential for agriculture. The growing season is short, annual rainfall is less than 800 mm per annum, and temperatures tend to be higher than elsewhere in the country. These conditions are most suitable for subsistence farming of drought-tolerant, short-season crops such as pearl millet, sorghum, sesame, and cotton. Maize production potential is low, but households grow it as it is the most preferred staple food. Landholdings are low, but conditions are favorable for keeping of small ruminants, mainly goats. The valleys are a habitat for Tsetse flies, especially in areas with national parks, which limits the keeping of cattle. Livelihoods in the region emphasize cereal production, fishing along main rivers, and tourism in parks and lakes located within the region. The zones in this region are prone to droughts and flooding, resulting in significant variation in agricultural production. The quantity and quality of market infrastructure and general physical access within the zone are generally less well developed than in other parts of the country.

Figure 1. Agro-ecological regions of Zambia



Region	Annual Rainfall
I	Less than 800 mm
IIa	800 - 1000 mm
IIb	800 - 1000 mm
III	More than 1000

Source: Commonwealth Forestry Association, [FAO](#)

Region II: Region II crosses the center of the country from west to east with plains, plateaus, and a mountain range. Altitudes range from 1000-1400 meters above sea level. The region receives about 800-1000 mm of rainfall and has a 120-160 day growing season, which supports growth of medium- and long-term crop varieties. This agro-ecological zone is divided into two.

² [Living Conditions Monitoring Survey 2006-2010](#) [Living Conditions Monitoring Survey 2006-2010](#)

Region IIa: The central, southern and eastern plateaus are considered to have the best agricultural potential in the country. The land is suitable for the growing of a diversified base of primarily rainfed food and cash crops and livestock production. Livelihoods in this part of the region are dominated by cereal, cash crop, and livestock production. The soils are fertile and support the production of maize, tobacco, cotton, wheat, soybean, and groundnut, which are usually produced in surplus. While most households practice relatively more traditional, subsistence, rainfed production techniques, commercial farming is widespread in this area. The presence of abundant, perennial water sources enables irrigation, particularly in commercial farming areas, which further increases production potential of the zones.

Region IIb: While rainfall patterns in Regions IIa and IIb are similar, Region IIb is characterized by less fertile sandy plains. The soils in Region IIb are mostly sandy and less fertile with high temperatures that reduce production potential for maize. The Zambezi River and surrounding plains are major features in the region, providing fishing opportunities and wetlands suitable for rice production. The poor soils and high temperatures are also suitable for cassava production. The zone is prone to flooding and livestock diseases. The market infrastructure is poorly developed and characterized by a poor road network and undeveloped water transport across Zambezi River connecting most areas with main markets.

Region III: This northern agro-ecological region high rainfall Region III borders Angola, DRC and Tanzania. It consists of plateaus punctuated by hills and mountains ranging between 1000-1500 meters above sea level. The soils are moderately fertile with occurrences of strong acidic soils in some parts that are moderately suitable for production of all types of cereals, legumes, tubers, and cassava. The high rainfall (>1000mm per year) and long growing season of over 160 days makes coffee, sugar cane, rice, and pineapple cultivation possible. The mineral-rich copper belt in this region drives a strong labor and trade economy around the mining areas significant enough to influence the name of the province (Copperbelt Province). The vast forest resources and plantations also contribute to an active timber industry. The population is most concentrated around the copper belt mining areas. The border areas provide opportunities for cross-border trade. A number of lakes located in the eastern part of the region offer opportunities for fishing. Livelihoods in this region vary, but depend primarily on cereal and cassava production, mining and employment, and trade and fishing.

The three broad agro-ecological regions described above and knowledge based judgment of participants regarding how people tend to take advantage of opportunities made available by geography led to the identification of 21 livelihood zones named as follows:

1. Zone1: Zambezi Plain Rice, Livestock, and Fishing
2. Zone 2: Southwestern Cereal, Livestock, and Timber
3. Zone 3: Western and Northwestern Cassava, Maize, and Cattle
4. Zone 4: Kaoma Smallholder Food Crop and Tobacco
5. Zone 5: Northwestern Timber and Honey
6. Zone 6: Solwezi and Kasempa Mining Labor and Agriculture
7. Zone 7: Kafue Plain Maize, Cattle, and Fishing
8. Zone 8: Commercial Rail Line Maize, Livestock, and Cotton
9. Zone 9: Southern Plateau Cattle, Maize, and Tobacco
10. Zone 10: Zambezi Valley Agro-fisheries
11. Zone 11: Mkushi, Chisamba, and Mpongwe Commercial Farming Block
12. Zone 12: Central Copperbelt Maize, Cassava, and Sweet Potato
13. Zone 13: Copperbelt Labor and Trade
14. Zone 14: Mkushi and Serenje Maize, Sweet Potato, and Horticulture
15. Zone 15: Luangwa Valley Informal Mining, Fishing, and Hunting
16. Zone 16: Eastern Plateau Maize, Cotton, and Groundnut
17. Zone 17: Eastern Plateau Maize, Groundnut, Tobacco, and Trade
18. Zone 18: Luangwa Valley Subsistence Farming, Hunting, and Tourism
19. Zone 19: Northern Border Maize, Beans, Livestock, and Trade
20. Zone 20: Muchinga, Northern, and Luapula Cassava, Groundnut, and Millet
21. Zone 21: Mweru, Bangweulu, and Tanganyika Fisheries

Zambia is generally a food-secure country. Over the past five years, the prevalence of food insecurity has not exceeded 2 percent of the total population. It is important to note, however, that pockets of chronically acutely-food-insecure populations may exist, as well as larger, chronically food-insecure populations.³

In general, natural disasters such as excessive rains, flooding, and droughts or prolonged dry spells drive agricultural production failures that are the most common cause of food insecurity. The occurrence of these adverse events often affects poor households, whose production levels and purchasing power are already low, especially in the semiarid areas. Furthermore, in semiarid areas, opportunities to engage in viable coping activities are relatively more limited. The zones considered most at risk of food insecurity include:

Zambezi Valley Agro-fisheries (Zone 10): This zone generally has low annual rainfall totals, infertile soils, and high temperatures. Arid conditions and recurrent floods constrain ability of poor households in particular to cope with and recover from hazards.

Western and North-Western Cassava, Maize, and Cattle (Zone 3): This zone is located in areas characterized by poor soils with low production potential. While rainfall is good, the frequency of severe flooding and dryness, results in highly variable agricultural production, particularly over the past five years.

Luangwa Valley Informal Mining, Fishing, and Hunting (Zone 15): This zone is located in the Luangwa semiarid valley area with poor soils. The zone is prone to recurrent droughts and intermittent flooding in some years. Incomes in the zone are predominantly related to unlicensed, and therefore illegal, artisanal mining and hunting. The variability in income from these sources occasionally constrains access to food by individual households at unpredictable times. It is important to note that of the 13.1 million inhabitants of Zambia, fewer than 8,000 people inhabited this zone in 2010. The significance of this area as a distinct, separate livelihood zone with respect to Luangwa Valley Subsistence Farming, Hunting, and Tourism (Zone 18) should be verified in the field.

Luangwa Valley Subsistence Farming, Hunting, and Tourism (Zone 18): In addition to the high rainfall variability in this semiarid valley, wildlife is a common hazard for agricultural production. Production losses due to drought occur every three to four years. Consecutive drought years pose the most significant hazard.

³ FEWS NET uses definitions of chronic and acute food insecurity of the Integrated Phase Classification System (IPC). See www.ipcinfo.org for more information.

RECENT EVENTS AFFECTING FOOD SECURITY AND LIVELIHOODS

The following table summarizes recent events affecting the food security.

Year	Events	Population at risk of acute food insecurity ⁴
2013/14	Below-average rainfall and an early end of season in 2013, particularly in several surplus maize-producing districts resulted in below-average agricultural production. The prevalence of food insecurity was above average, especially in Southern, Central, Western and some parts of the Eastern Provinces.	209,498
2012/13	Favorable rainfall with good agricultural production especially of staple foods, and improved livestock conditions resulted in a relatively low prevalence of food insecurity.	62,842
2011/12	Above-average rainfall caused floods in some areas. National crop production was average to above average in most areas.	74,804
2010/11	The government agricultural support program and favorable rainfall led to a bumper harvest across the country. The prevalence of food insecurity in 2010/11 reflects pockets of chronically food-insecure populations concentrated in the south.	53,629
2009/10	Average rainfall contributed to normal production in that year with a surplus national maize production. The good pasture supported livestock with favorable pricing for rural farmers.	110,000

⁴ Figures extracted from Zambia Vulnerability Assessment reports

ZAMBEZI PLAIN RICE, LIVESTOCK, AND FISHING (ZONE 1)

Food security risk	
Recurrence of flooding results in some risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <1 ha Goats and chickens Hand tools (hoes, axes) Fishing equipment: dugout canoes, fishing rods, and homemade nets	Land >1 ha Cattle, goats, local pigs Draft power (oxen, plow) Fishing equipment: manufactured canoes, fishing nets, and rods
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Cassava (OP) Rice (OP) Vegetable (OP) Fish (C)	Maize (OP) Rice (OP) Fish (C) Meat (OP) Milk (OP)
Main income sources	
Poor	Better-off
Crop sales (rice) Agricultural labor Beer brewing Fishing Charcoal production	Crop sales (rice, maize) Livestock sales Hiring services (tillage) Fishing
Main source markets	
Mongu, Senanga, and Kaoma	
Main hazards, timing, and approximate frequency	
Flooding	January-July
Prolonged dry spells	January-March
Livestock disease	November-May
Main coping strategies for poor households	
Increase cultivation of off-season maize Intensify search for local labor opportunities	

The zone is located in the low-lying Zambezi Plains covering the districts of Senanga, Mongu, Kalabo, Lukulu, the western part of Zambezi, and Chavuma in the western part of the country. The average rainfall is between 800 and 1000 mm, and the average temperature varies between 10 degrees Celsius in July to 34 degrees Celsius in October. Miombo woodland and grassland predominates the vegetation in the zone with moderately fertile soils. The major natural resources include wildlife (game), thatching grass (*mwange*), and timber. The Zambezi River, offering opportunities for fishing and water transport, bisects the area.

The dominant ethnic groups include Kwangwa, Nyengo, Mwenyi, Mbunda, Lwalange, Lozi, Luvale, Nkoya, Chokwe, Lunda, Shango Mashi, Mulonga, Mbukushu, and Fwe. The population density is low at about 10 inhabitants per square kilometer.

Rainfed agricultural and wetland farming is the predominant livelihood. Landholdings and cattle ownership (with associated plows) for draft power and for sale are the major determinants of wealth in this zone.

The average landholding is about 1-2 ha per household for food crop production. The poor cultivate by hand, while the better-off use animal tillage. The main, rainfed growing season is 110-150 days from November to March. The zone is a surplus rice-producing area, but people also grow maize, cassava, and millet for household consumption. Poor households mitigate low maize yields by producing two crops of maize per year, a rainfed crop and another season using flood recession and wetland moisture. The rivers are fished using nets and lines.

All households keep a few livestock, but the high cost of purchasing and maintaining cattle and oxen makes them unsuitable for poor households. Instead, poor households raise goats and pigs. Livestock are mainly sold for cash; slaughtering is usually reserved for festivals and important functions such as

funerals and weddings. Local chickens and pigs are secondary sources of food and income throughout the zone.

The better-off earn their income through the following: the sale of rice during the entire year, the sale of cattle and hiring of tillage services, and trade and transportation. Sources of income for the poor are primarily seasonal, forcing them to diversify their income base. The main income sources for the poor include the sale of own-produced rice, agricultural labor, beer brewing, fishing, and the sale of charcoal. The poor spend most of their cash on maize meal and school fees, particularly for primary education.

Own-produced rice is available for consumption throughout the year, even for the poor, while maize stocks typically last only for four months after harvest in April and May for the poor. Cassava is generally available throughout the year with fresh cassava mostly accessed from May to October and dry cassava November to April. Access to agricultural labor opportunities, the main source of income for the poor, is available when agricultural activities intensify, during the January to February, the May to July, and the October to December periods.

Access to local markets is generally fair with most areas having access roads to the main, district service centers where traders and the FRA purchase rice and maize. During rainy season, access to markets is poor, particularly for areas west of the Zambezi. Movement of goods and people are limited during river flooding. Rice and cattle transactions dominate trading in

the zones. Zambef, a major cattle and meat company, and the Food Reserve Agency (FRA) are the main market stakeholders. The largest markets for beef and rice produced in this zone are in urban areas, particularly Lusaka and Copperbelt Province.

The most common hazards are flooding and livestock diseases, which occur once in three years, and prolonged dry spells, which occur at least once in five years. To mitigate the impact of negative production shocks, poor households tend to increase off-season cultivation of maize, particularly for households located close to the flood plain, and to increase the search for casual labor to improve access to food and cash income.

Zone 1: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Livestock sales												
Vaccinations												
Hazards:												
Flooding												
Livestock disease outbreak												
Legend												

Zone 1: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Rice												
Income												
Rice												
Casual labor												
Beer brewing												
Fish												
Charcoal sales												
Expenditures												
Health care												
Education												
Legend												

Stripped legend in graphics represent periods when access is from a combination of two sources

SOUTHWESTERN CEREAL, LIVESTOCK, AND TIMBER (ZONE 2)

Food security risk	
Frequent hazards result in moderate food security risk	
Main productive assets	
Poor	Better-off
Land <1 ha Hand tools (hoes, axe, machete) Sledge Homemade canoes Poultry, pigs, and goats	Land >1.5 ha Cattle, goats, poultry, and pigs Ox drawn plow, harrow, and/or cart Canoes and gill nets
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Millet/sorghum (OP) Fish (C) Milk (MP/G) Vegetable (OP)	Maize (OP) Rice (MP) Fish (C) Milk (OP) Vegetable (OP)
Main income sources	
Poor	Better-off
Agricultural labor Beer brewing Construction labor Livestock sales	Cattle Fish Equipment hire Milk
Main markets	
Sesheke, Shang'ombo, Senanga, and Kazungula	
Main hazards, timing, and approximate frequency	
Prolonged dry spells	January-March
Flooding	December-March
Livestock diseases (foot and mouth, lumpy skin)	November-June
Main coping strategies for poor households	
Increased search for labor opportunities	

The zone is located in Shang'ombo, Sesheke, and parts of Kazungula and Senanga Districts within the low-lying grassland and wetland across the Zambezi River in Western Province. The zone falls within agro-ecological Region I, with an annual average rainfall of <800 mm falling between November and March. The alluvial soils are fertile with aerosols, greysols, and planosols, especially along the Zambezi river basin. The climate is generally semiarid: hot and dry from August to October and cool and dry from April to July. These conditions support forests with Baikaea and Miombo woodlands important for supporting timber production and a number of species of wild animals. The environment provides a wide range of opportunities for local crafts, lumber, and tourism.

The inhabitants are mainly Mbunda, Shanjo, Mashi, Mulonga, Mbukushu Fwe, Lozi, Totela, Subiya, Toka, Nkoya, and Chokwe ethnic groups. The population density is moderate with about 10 inhabitants per square kilometer. The main economic activities include crop and livestock production, formal employment related to timber and tourism, timber, handicrafts related to tourism, fishing, and the sale of wild fruits.

The main rainfed growing season is short (from 90-120 days); during which most households grow pearl millet, sorghum, maize, and some cassava. Households with access to lowlands or wetlands around the Zambezi produce off-season maize and vegetables using mostly residual moisture. The average arable landholding is estimated at 1 ha per household lower than the national average of 1.5 ha. The amount of land cultivated, the number and type of livestock owned, and the range of productive assets determine differences in wealth in this livelihood zone. Better-off households with animal traction and ploughs are able to cultivate more land compared to poor households who rely mostly on hand hoes. This enables better-off households to

generate more income and food compared to the poor households.

The better-off households own cattle for sale and to provide milk, manure, and draft power. The cattle are kept in communal grazing areas. Households slaughter cattle for meat during special occasions, such as weddings and funerals. Fishing thrives, especially along the Zambezi River and its tributaries and lagoons. The fishermen from poor households use gill nets, baskets, spears, and dugout canoes for fishing.

The poor obtain their food from own production supplemented by market purchases and payment in kind for labor, whereas the better-off produce most of their food. The income sources for the poor are mainly labor in timber production and casual agricultural or construction labor/thatching, sale of small livestock, and brewing. The poor may sell crops in good years. The better-off on the other hand earn their income through the sale of surplus crops, sale of livestock, fishing, hiring out equipment such as carts and ploughs, and milk sales.

Access to major markets is generally satisfactory owing to the good road infrastructure network, with the exception of feeder roads linking main roads and interior areas located further from main roads making market access difficult. The zone sells timber produced to urban areas outside the zone. The zone transports the timber to Livingstone and Lusaka by rail. The main handicraft market is in the Kazungula tourist area.

Common hazards include flooding and livestock disease outbreaks, which occur once in three years. Drought or prolonged dry spells occur once every five years, lowering crop yields. In response, poor households increase the search for casual labor opportunities either locally or in towns or the nearby Commercial Rail Line Maize, Livestock, and Cotton Zone.

Zone 2: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Kidding/calving												
Milking												
Vaccinations												
Other												
Timber extraction												
Hazards												
Flooding												
Livestock disease outbreak												
Legend												

Zone 2: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Sorghum												
Millet												
Income												
Agricultural labor												
Beer brewing												
Construction labor												
Livestock												
Expenditures												
Education												
Health care												
Legend												

WESTERN AND NORTHWESTERN CASSAVA, MAIZE, AND CATTLE (ZONE 3)

Food security risk	
The high frequency of drought results in high food insecurity risk	
Main productive assets	
Poor	Better-off
Land <1ha Goats, pigs, chicken Bicycles Hand tools	Land >1 ha Cattle, goats, chicken Ox-carts, plows Hand tools
Main foods consumed and sources	
Poor	Better-off
Cassava (OP) Maize (OP/MP) Groundnuts (OP) Vegetables (OP) Cowpea (OP) Caterpillar (C) Rice (OP)	Maize (OP) Cassava (OP) Meat- (OP) Groundnuts Vegetables (OP) Cowpeas (OP) Rice (OP/MP)
Main income sources	
Poor	Better-off
Labor (logging, agriculture) Cassava Charcoal production Thatching grass Wild food (mushroom, caterpillar) Beer brewing	Cassava and maize Livestock Livestock products Timber products
Main markets	
Lusaka, Kaoma, Mongu, Solwezi and Mwinilunga	
Main hazards, timing, and approximate frequency	
Drought or prolonged dry spell	Once in 3-4 years December-March
Main coping strategies for poor households	
Increase search for local and migrant labor opportunities in neighboring zone ZM 4 Increase sale of charcoal Increase sale of livestock	

The zone is located in the highland area of Kaoma, Zambezi, Mwinilunga, Ikelenge, and parts of Lukulu, Kabombo, and Mufumbwe Districts. It lies across agro-ecological Region II and III, receiving annual rainfall between 800 to 1,200 mm between October and April. Temperatures range from an average minimum of 6 degrees Celsius in July associated with some frost to an average maximum of 33 degrees Celsius in October. The soil is sandy in the South, the central (Luampa), and the northwestern areas, verging on sandy loams in the northeast and northern areas. Soils are moderately fertile, favoring agriculture. Local natural resources include timber, game, grassy wetlands (*dambos*), and thatching grass (*mwange*). Woodlands dominate the area with grasslands in the northwest.

The dominant ethnic groups are Lozi, Lunda, Luchazi, Luvale, Chokwe, Nkoya, and Mbundus. The moderately populated zone has a population density of about eight inhabitants per square kilometer. Landholding for cultivation is relatively low due to presence of forest and game management areas, with an average of one ha per household, used primarily for food crop production.

Cassava, maize, and cattle are the major sources of food and income in the zone. The major production system is rainfed agriculture, with a long growing season of 140-160 days. The long growing season and sandy soils are particularly good for cassava production. The zone is a cassava-surplus and maize-deficit area. Other common crops include beans, cowpeas, groundnuts, rice, sweet potatoes, and pineapples. The cattle in the zone provide both cash through sale and provide manure, draft power, and milk for consumption.

Access to draft power is the main determinant of wealth in this zone. With draft power, better-off households can own and cultivate larger land areas than are accessible to the poor households. The production of draft power also provides benefits of livestock sales, milk sales, and access to manure for fertilization. Better-off households are, therefore, self-sufficient in staple food production. Poor households, however, cultivate using manual labor and retained seed. As they cannot afford cattle, they raise

poultry, goats, and pigs. As a result of these constraints, poor households cannot meet their food needs through own production; they also purchase food on markets and receive food as in-kind payments for laboring on behalf of the better-off. The poor wealth group relies on several, relatively smaller income-earning sources, while better-off rely on a few, high-yielding income-earning sources, including the crop sales, timber, and livestock.

Physical access to major markets is fair to poor mainly because of poor road and communication infrastructure. Cassava, maize, livestock, and timber are the major commodities traded in the zone, destined primarily for urban service centers in the districts under this zone. Poor households buy maize grain from FRA and private traders when stock has run out. Consumers and retailers buy and sell cassava roots and cassava chips both in local markets and outside the zone, especially in Lusaka. Farmers and traders sell cattle through local butcheries and main abattoirs. Households buy and sell maize and cassava on local markets. Timber is transported to Lusaka and sold to private buyers.

Prolonged dry spells and/or droughts are a major hazard in the zone, leading to below-average maize yields. In these bad years, poor households respond by increasing local and migrant casual labor, charcoal sales, and small livestock sales to earn

additional income to purchase more food, often at above-average prices. Increased charcoal production may cause environmental damage in the long run.

Zone 3: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Livestock												
Lambing/kidding/calving												
Milking												
Vaccinations												
Hazards												
Prolonged dry spells												
Legend												

Zone 3: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Cassava												
Maize												
Income												
Labor (timber/agriculture)												
Cassava												
Sale of natural resources (charcoal/grass)												
Mushrooms												
Expenditures												
Education												
Clothing												
Legend												

KAOMA SMALLHOLDER FOOD CROP AND TOBACCO (ZONE 4)

Food security risk	
Low risk of food insecurity due to diversified livelihoods	
Main productive assets	
Poor	Better-off
Land <1.5 ha Goats, pigs, chickens Bicycles Hand tools	Land >2 ha Cattle, goats, chickens Plow or cart Tractors or motorized transport Hand tools
Main foods consumed and sources	
Poor	Better-off
Cassava (OP) Maize (OP/MP) Sorghum/millet (OP) Vegetable (OP) Chicken (OP)	Maize (OP) Cassava (OP) Rice (MP) Meat (OP/MP) Milk (OP/MP) Vegetable (OP/MP)
Main income sources	
Poor	Better-off
Farm labor Beer brewing Charcoal production Thatching grass sales Banana sales Sweet potato sales	Crop sales Livestock sales Petty trade Transportation Tillage
Main markets	
Kaoma and Mufumbwe	
Main hazards, timing, and approximate frequency	
Livestock disease outbreaks	December-April
Main coping strategies for poor households	
Increase search for labor opportunities outside the zone and in towns	

The smallholder farms of Kaoma and Mufumbwe Districts dominate the lowland and plateau grassy wetlands (*dambos*) and some mountainous areas. The soils are generally fertile, sandy and loamy. The zone lies within agro-ecological Region II with an average rainfall of 800 to 1000 mm, falling between November and April. The long growing period of 120-160 days makes the area suitable for long-cycle maize production. Local temperatures range from an average minimum of 6 degrees Celsius in July to an average maximum of 33 degrees Celsius in October. The vegetation, characterized by Miombo woodlands, has sparse grasslands. Natural resources include game, thatching grass, forests, and *dambos*.

The main ethnic groups found in the zone include Lozi, Nkoya, Luvale, Mbunda, Luchazi, Chokwe, and Kaonde tribes. The population density is moderate, with an average of 8 inhabitants per square kilometer. Landholding averages 2.5 ha per household used for the cultivation of multiple staple foods, as well as cash crops.

Hired labor and oxen are key to cultivation in this zone. The Nkeyema and Kalumwange parts of the zone use primarily animal tillage and tractors. Crop production is mainly rainfed, with some irrigated and wetland farming in isolated parts of the zone. The zone is a surplus-growing area for maize, tobacco, and sweet potato, although other crops including cassava, groundnut, cowpea, sorghum and millet are grown, usually with manual labor for household consumption. The bulk of the tobacco is grown on an out-grower scheme basis. The Dwarf Cavendish banana is commonly grown in the central and southern part of zone, in the Litoya area.

The main productive asset is land for both the poor and the better-off, followed by tractors/light trucks and cattle for the better-off, and bicycles and hand tools for the poor. Given that the poor cannot access animal traction or mechanization to cultivate larger land areas, they rely on markets for food part of the year. They rely on

labor and self-employment (beer brewing, harvesting thatching grass, and selling charcoal) for income. The better-off are self-sufficient in staple food and earn income through selling of tobacco, surplus maize, petty trade, and transportation.

Road conditions are generally poor in the zone, posing a challenge for smaller-scale traders, particularly over long distances. Maize trade is highest from June to September when the Food Reserve Agency (FRA), the largest buyer of maize in the country, buys maize at designated satellite depots. Private retailers also buy maize at local markets within the zone to supply neighboring zones. For tobacco, the same companies that sponsor tobacco production buy the harvest between March and June and export to foreign countries from Lusaka markets. Other locally-traded commodities of significance in the zone are sweet potato and groundnuts. This zone is a net importer of labor, particularly from Western and Northwestern Cassava, Maize and Cattle Zone, with most people coming to work on tobacco fields.

Livestock disease outbreaks are the major hazard in the zone, caused by its proximity to Kafue national park. In response to poor agricultural production, poor households increase casual work activities locally and migrate to nearby urban areas like Kaoma to seek work.

Zone 4: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Tobacco curing												
Livestock												
Lambing/kidding/calving												
Milking												
Animal training												
Livestock sales												
Hazards												
Livestock disease outbreak												
Human/wildlife conflict												
Legend												

Zone 4: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Income												
Agricultural labor												
Beer brewing												
Charcoal sales												
Thatching grass sales												
Crop sales												
Expenditures												
Shelter repair												
Education												
Health care												
Legend												

NORTHWESTERN TIMBER AND HONEY (ZONE 5)

Food security risk	
The zone is at low risk of food insecurity	
Main productive assets	
Poor	Better-off
Less land (traditional) Goats, pigs, and sheep Hand tools (hoes, axes)	More land (titled) Timber machinery Cattle and small stock Plows, carts
Main foods consumed and sources	
Poor	Better-off
Cassava (OP) Maize (OP/MP/IK) Sweet potatoes (OP) Beans (OP/IK) Groundnuts (OP) Vegetable (OP)	Cassava (OP/MP) Maize (OP/MP) Rice (MP) Sweet potatoes (OP) Milk/meat (OP/MP) Irish potatoes (MP)
Main income sources	
Poor	Better-off
Crop sales Casual labor Honey Timber products Charcoal production	Timber products Honey Crop sales Livestock sales
Main markets	
DRC, Solwezi, Copperbelt, and Lusaka	
Main hazards, timing, and approximate frequency	
Drought	January-April
Livestock disease outbreak	August-December
Main coping strategies for poor households	
Increased collection of wild foods Increased sale of livestock Migration in search of labor opportunities	

The zone lies on a plateau with an altitude ranging from 1000-1500 meters above sea level in Mufumbwe, Kabompo, and parts of Mwinilunga Districts, bordering Angola to the west. The zone lies in agro-ecological Region III, characterized by moderately fertile, sandy and loamy soils. Rainfall is relatively high, ranging between 1000 to 1500 mm per annum falling between November and April. Climatic conditions are typical of the savannah with minimum temperatures of 10-20 degrees Celsius during the dry months of May-July. The hot, dry season has maximum temperatures of 20-32 degrees Celsius. Covered by dense forest and savannah grasslands, the zone is suitable for hardwood timber production and rangelands.

This sparsely-populated zone has a population density of about 4 inhabitants per square kilometer and average cultivated land area of 1-1.5 hectares per household. The main ethnic groups include Lozi, Nkoya, Luvale, Mbunda, Luchazi, Chokwe, and Toka tribes.

Forest products are important sources of food and income, particularly game, timber, charcoal, and honey. Mineral resources in the zone include copper, quartz, tourmaline, and amethyst, with new mines expected to open in the coming years.

The climatic conditions in the zone are suitable for the production of cassava, maize, groundnuts, and beans. The zone has a long growing period of 140-160 days that enables growing of long-cycle crop varieties. Better-off households in the zone keep some cattle, while poor households keep some small livestock.

The size of land a household is able to cultivate, the ownership of livestock, and productive assets are key wealth determinants in the zone and effectively influence food and income strategy options. Poor households use family or hired labor for manual cultivation as they lack access to draft power or funds to hire enough labor. They

are unable to produce enough maize to be self-sufficient, so they also purchase maize, particularly between November and March. The better-off are able to obtain their staple foods entirely from own production throughout the year. Both the poor and better-off derive much of their income from timber production, honey production, and crop sales. Additional income sources for the poor include on-farm casual labor, while the better-off earn most income from livestock sales and equipment rental, particularly carts for transportation.

Market access is relatively poor in the zone as most of the markets are located outside the zone with long distances and poorly developed road networks. Households unable to buy or sell in markets outside the zone face higher prices on local markets dominated by private traders. Most agricultural goods from this zone flow either within the zone or to the Democratic Republic of the Congo (DRC). Traders market timber and honey, however, toward Solwezi District and Copperbelt and Lusaka Provinces.

Poor households have been able to cope relatively well with shocks in the past through intensifying wild food consumption and sale, migrating in search of labor income, and selling livestock. However, as the frequency of shocks increases and livestock ownership declines, the ability of households to mitigate food security risks without external support may also decline. The demand for unskilled labor during the cropping season is high, providing good opportunities for poor households to earn income.

Zone 5: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Vaccinations												
Deworming												
Other												
Timber extraction, charcoal production												
Beekeeping												
Hazards:												
Flooding												
Livestock disease outbreak												
Legend												

Zone 5: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Cassava												
Maize												
Beans												
Income												
Crop sales												
Casual labor												
Honey products												
Timber products												
Charcoal												
Expenditures												
Agricultural inputs												
Education												
Legend												

SOLWEZI AND KASEMPA MINING LABOR AND AGRICULTURE (ZONE 6)

Food security risk	
The zone is at low risk of food insecurity	
Main productive assets	
Poor	Better-off
Less land Hand tools Less labor units	More land Cattle, goats Oxcart, plow Bicycles More labor units
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP/IK) Cassava (OP) Sorghum (OP) Vegetables (OP) Fish (C)	Maize (OP/P) Cassava (OP) Rice (P) Meat (P/OP) Fish (P/OP)
Main income sources	
Poor	Better-off
Crop sales Hunting/Fishing Labor (domestic)	Mining labor Trading Crop sales Livestock sales
Main markets	
Copperbelt Province, Solwezi, Kipushi (DRC), and Kasempa	
Main hazards, timing, and approximate frequency	
Livestock disease outbreak	February-April
Main coping strategies for poor households	
Increased sale of livestock Increased search for labor beyond usual areas	

The zone covers communal areas in and around new copper mining areas of Solwezi and Kasempa Districts in the Northwestern Province bordering DRC in the north. The land is flat to gently undulating slopes with an altitude of 900-1500 meters above sea level. The zone falls within agro-ecological Region III. The zone receives 1000-1500 mm of rainfall per annum between November and April. Maximum temperatures peak at 32 degrees Celsius between September and December. During the winter months of May-July, average minimum temperatures fall between 16 and 18 degrees Celsius with a slight risk of frost, especially in wetland/*dambo* areas and particularly damaging to horticulture crops. The well-drained soils consist of deep, strong red, acidic, clayey and coarse, sandy soils. In some parts of the zone, shallow, moderately-to-imperfectly-drained and loamy soils exist. Vegetation is mainly composed of Miombo woodlands and open savannah grasslands. Exploitation of copper, iron, zinc, and nickel began in recent years. The Kafue and Lunga game reserve and management areas provide hunting opportunities.

Kasempa is sparsely populated with about three people per square kilometer; Solwezi has about 8 people per square kilometer. The average land cultivated in the zone ranges from 1 to 1.5 hectares per household. The Kaonde are the main ethnic group in the zone.

Mining activities that are increasingly gaining prominence provide an important source of employment and market for local agricultural produce. Trade in agricultural produce and other basic non-food items is an important additional livelihood activity in the zone.

Mining activities have shifted the livelihoods in the area. Employment in the mines, particularly among men, is becoming an

important source of household income. Agriculture, however, remains an important livelihood activity. Rainfed agriculture supports production of cassava, maize, sorghum, beans, and sweet potatoes, which are grown using traditional farming systems using slash and burn (*chitemene*) techniques. The growing season is medium-to-long, ranging from 130 to 180 days, which is suitable for the crops grown in the zone. The success of each season is determined by a timely start of season and good distribution of rainfall over the season to sustain optimal crop growth. Long dry spells at the start of the season or during the growing season will likely diminish crop yields.

The main determinants of wealth are the number of household members able to work, landholding, and livestock ownership. The poor obtain most of their food through own production and market purchase while the better-off are able to produce most of their food. While both the poor and better-off rely on labor in the mines, the poor mostly provide domestic services and casual labor, while better-off are employed in mines on a more permanent basis. Trade, crop, and livestock sales are additional income sources for the better-off, while the poor groups engage in beer brewing and illegal hunting for additional income.

The decent road, proximity to the DRC border, and communication infrastructure connecting districts' headquarters within the zone and outside, facilitate good market access despite poor-quality feeder roads. The largely localized labor markets attract labor from outside the zone for mining activities.

Coping strategies in the zone are limited to expanding existing livelihood strategies. Livelihoods are strong given that hazard events are relatively infrequent.

Zone 6: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land Preparation												
Sowing												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Kidding/calving												
Milking												
Hazards												
Hail storms, wind												
Poultry disease outbreak												
Legend												

Zone 6: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Sorghum												
Vegetables												
Income												
Maize												
Cassava												
Vegetables												
Hunting												
Labor												
Expenditures												
Agricultural inputs												
Education												
Health care												
Legend												

KAFUE PLAIN MAIZE, CATTLE, AND FISHING (ZONE 7)

Food security risk	
The zone is at moderate risk of food insecurity due to frequent dry spells and floods	
Main productive assets	
Poor	Better-off
Less land Goats, chickens Hand tools Bicycles	More land Cattle Plows, carts Hand tools
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP) Sweet potatoes (OP) Beans, groundnut (OP)	Maize (OP) Rice (MP) Meat (MP/OP) Milk (OP) Beans, groundnut (OP)
Main income sources	
Poor	Better-off
Crop sales Fishing Livestock Beer brewing Casual labor Bush products (honey, fruits, tubers)	Crop sales Livestock Trading Transportation Remittances
Main markets	
Namwala, Itezhi-tezhi, Kazungula, and Lusaka	
Main hazards, timing, and approximate frequency	
Drought/prolonged dry spells	December-February
Livestock disease outbreak	November-March
Flooding	February-March
Main coping strategies for poor households	
Increase sale of goats and chicken Increase of local and migrant casual labor Increase collection and consumption of wild foods	

National Park.

This zone covers western Mpongwe, going through western Mumbwa, Itezhi-tezhi, and parts of Namwala and Mazabuka Districts. The zone stretches along the Kafue River plains and neighboring lowlands with isolated highlands. The zone falls in agro-ecological Regions II and III with between 800 to 1200 mm of rain per year between November and March. The minimum temperatures between May and July range between 8 and 15 degrees Celsius with a slight frost risk. The soils are moderately leached, clayey and loamy, as well as some Kalahari sandy soils, generally suitable for the production of most crops; soils around wetlands/*dambos* in the Kafue flood plains are poorly drained and clayey. The land cover is predominantly forested areas with game management reserves and grasslands. The Kafue River passes through the zone, providing opportunities for fishing, and the Kafue National Park provides tourism and hunting activities.

The population is sparsely settled with an average density of about 3 people per square kilometer. Land available for cropping ranges from 1-3 hectares per household. The main ethnic groups in the zone are the Kaonde-, Ila-, Lamba-, and Tonga-speaking people.

This zone consists of smallholder agropastoralists, whose chief livelihood revolves around cattle rearing, crop production, and fishing. Rainfed agriculture using animal traction or manual labor dominates for both food and cash crops. Livestock management is based on a communal grazing system. The growing season in the zone is medium, ranging from 110-120 days during which households grow a wide variety of crops. The main crops grown are maize, sorghum, beans, sweet potatoes, and sunflower. Other crops grown include groundnuts, Bambara nuts, and vegetables. Livestock is important both to sell and for milk and draft power. Most households also keep goats, chickens, guinea fowl, and pigs, which are mainly sold or slaughtered.

Fishing along the Kafue and nearby swamps provides an additional source of livelihood, together with illegal hunting activities in forests and the Kafue National Park. An important feature of this zone is its great potential for tourism, especially in areas close to the Kafue

Landholdings, livestock type, and livestock numbers owned as well as ownership of productive assets, are key factors that determine wealth in the zone. Poor households cannot afford the plows and carts necessary to cultivate enough land or market enough produce to survive more than nine months on own-produced staples. The poor earn the income for food purchases and other expenditures through a variety of sources other than sale of crops and livestock. The better-off, who produce a marketable surplus, obtain most of their income from agricultural production and livestock sales, supplemented by petty trade and remittances.

The markets in main district centers are well linked to Lusaka by road. Urban service centers provide a market for local produce that households sell locally to traders. Traders market local fish to Lusaka and Copperbelt outside the zone. Labor markets are predominantly local and mostly related to agricultural production.

Some have expressed concern that increasing exploitation of honey, wild fruits, and tubers, may be unsustainable and detrimental to the local ecology.

Zone 7: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Other												
Fishing												
Hunting												
Hazards												
Livestock disease outbreak												
Flooding												
Legend												

Zone 7: food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Sorghum												
Sweet potatoes												
Income												
Maize												
Fish or game												
Livestock												
Beer brewing												
Casual labor												
Wild fruits												
Expenditures												
Agricultural inputs												
Education												
Transportation												
Legend												

COMMERCIAL RAIL LINE MAIZE, LIVESTOCK, AND COTTON (ZONE 8)

Food security risk	
Food security risk is moderate	
Main productive assets	
Poor	Better-off
Land <3 ha Goats and poultry Hand tools	Land >3 Cattle, goats, pigs, poultry Plow
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP) Sweet potatoes (OP) Groundnuts (OP)	Maize (OP) Rice (MP) Meat (OP) Milk (OP)
Main income sources	
Poor	Better-off
Livestock Casual labor Charcoal production Beer brewing Wild fruits	Crop sales Livestock Milk
Main markets	
Lusaka, Kabwe, and Livingstone	
Main hazards, timing, and approximate frequency	
Drought/prolonged dry spell	December-March
Crop pests (armyworm, stalk borer)	December-February
Livestock disease outbreaks	November-March
Main coping strategies for poor households	
Increase search of labor in towns Increase sale of goats Increased collection and consumption of wild foods Gifts	

households subsist from own crop production and market purchase while the better-off, who have better production capacity, rely on own food production throughout the year. The poor obtain their income primarily from the sale of small livestock, labor, and charcoal, as well as from homemade beer and wild food sales. The better-off mainly sell crops, livestock, and livestock products for income.

The zone has generally good physical infrastructure, facilitating market access and trade. Access to markets is good and primarily concerns the big towns of Lusaka, Livingstone, and Kabwe. These markets are located within the zone and provide outlets for most commodities produced in the zone, as well as a steady supply of non-food items. Good infrastructure and proximity to urban areas generate a strong demand for labor; local laborers work primarily on local farms or as casual labor in urban areas within the zone.

Significant climatic shocks occur within the zone once every two-to-three years. Though the climatic shocks usually occur during the rainy season, their impacts are usually felt through below-average harvests. During the lean period from December-February, poor households rely on food purchases while income-generating opportunities are limited and staple food prices are at seasonal highs. Consecutive shocks are most difficult for households to cope with.

The zone is located in the central plateau with an altitude ranging between 900-1200 meters above sea level and stretching across the districts of Kazungula, Kalomo, Choma, Monze, Mazabuka, Namwala, and eastern parts of Lusaka, Kafue, Chongwe, Chibombo, and Kapiri Mposhi along the main rail line and the well-developed road linking Livingstone through Lusaka to the Copperbelt. The zone falls within agro-ecological Regions I and II. It receives an annual rainfall of 700–1000 mm per annum with good soils suitable for agriculture. The soils are moderately to highly fertile sandy loam and clay that are well drained and suitable for a wide range of crops. The temperatures are high towards the start of rains between September and November, with highs ranging from 30-35 degrees Celsius. The dry months of May to July are coolest, with average low temperatures of 16-17 degrees Celsius. Open savanna grasslands and mopane, munga, and miombo woodlands cover the zone. Forest reserves and rivers in the zone provide opportunities for charcoal production and fishing.

This densely-populated zone contains about 19 inhabitants per square kilometer. Land cultivated for food and cash crops averages from 1-3 hectares per household. The Lenje and Tonga are the main ethnic groups.

Rainfed and irrigated agriculture using manual labor or animal traction are the primary livelihood activities, though a number of commercial, mechanized farms dot the zone. The main crops grown include maize, cotton, groundnuts, sweet potatoes, and beans, with minor production of millet and sorghum, primarily for household consumption. The growing season is medium to long, ranging from 100-140 days, which is suitable for maize. Cattle are mostly kept for sale and used as draft power. Other livestock in the zone include goats, pigs, and poultry, and are kept for sale or household consumption.

The amount of land cultivated, livestock ownership, and productive assets are key factors that determine wealth groups. The poor

Zone 8: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Kidding/calving												
Milking												
Hazards												
Crop pest/disease outbreak												
Flooding												
Livestock disease outbreak												
Legend												

Zone 8: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Sorghum												
Sweet potatoes												
Income												
Casual labor												
Charcoal sales												
Livestock												
Beer brewing												
Wild fruits												
Expenditures												
Agricultural inputs												
Education												
Legend												

SOUTHERN PLATEAU CATTLE, MAIZE, AND TOBACCO (ZONE 9)

Food security risk	
Low risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <2 ha Goats, chickens Hoes and axes	Land >5 Cattle, goats, sheep Plow
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sweet potatoes (OP) Meat (OP)	Maize (OP) Rice (MP) Sweet potatoes (OP) Meat (MP/OP) Milk (OP)
Main income sources	
Poor	Better-off
Crop sales Livestock Casual labor Charcoal sales Beer brewing Wild fruits (<i>masuku</i>)	Tobacco and maize Livestock Milk Petty trade
Main markets	
Choma, Kalomo, Lusaka, and Livingstone	
Main hazards, timing, and approximate frequency	
Drought/prolonged dry spell	January-March
Livestock disease outbreak	November-March
Main coping strategies for poor households	
Increase search of labor in towns Increase sale of livestock Increased collection and consumption of wild foods Gifts	

The zone is located in the districts of Kalomo and Choma. The zone lies on a highland over 1000 meters above sea level bordered by low-lying areas moving towards Gwembe to the east and plains of the Kafue basin in the north. The zone is located within agro-ecological Region II, and receives an annual rainfall of 800-1,000 mm per annum falling between November and April. The average high temperatures are highest towards the start of rains between September and November, ranging from 30-35 degrees Celsius. Temperatures are lowest during the dry months between May and July with an average low ranging from 16-17 degrees Celsius. The soils are moderately to highly fertile, sandy loam that are well drained to moderately leached, which is good for tobacco production. The main vegetation consists of Miombo woodland forests and open-grasslands that are good for pasture.

The zone is moderately populated with 13 people per square kilometer, and land cultivated averages 8 hectares per household. Most land is used for growing of food and cash crops on a commercial scale. The main ethnic group in the zone is Tonga.

The high prevalence of large landholdings for commercial production cultivated using draft power or by tractor and the production of tobacco instead of cotton distinguish this zone from the surrounding Commercial Rail Line Maize, Livestock, and Cotton Zone (Zone 9). Rainfed and irrigated, commercial cropping using draft power or mechanization drives the economy of the zone. The main crops grown include maize, tobacco, groundnuts, and beans. The growing season ranges from 100-140 days during the rainy season from November-April. Households keep some livestock in the zone for sale or for draft power.

The amount of land cultivated, livestock owned, and productive assets are key factors that differentiate the wealth groups. The poor households rely on own crop production and market purchase while the better-off, who have better production capacity, rely on own

production throughout the year. The poor obtain their income primarily from the sale of small livestock, selling their labor, charcoal production, and, to a lesser extent, brewing and wild foods sales. The better-off mainly rely on crop, livestock, and livestock product sales.

The zone has generally good infrastructure for markets and trade. Access to markets is good and mostly localized with the big towns located within the zone providing markets for most commodities produced in the zone and as supply markets for nonfood items. The largely localized labor market is either on farm or in urban areas within the zone.

The main hazards are climate-related with at least one year in every three years being a bad year. Because coping strategies of poor households are relatively successful at mitigating any production or income losses, the risk of food insecurity in the zone is relatively low.

Zone 9: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Tobacco curing												
Livestock												
Calving												
Milking												
Hazards												
Livestock disease outbreak												
Crop pest/disease outbreak												
Legend												

Zone 9: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Sweet potatoes												
Income												
Crop sales												
Livestock												
Casual labor												
Charcoal sales												
Beer brewing												
Wild fruits												
Expenditures												
Agricultural inputs												
Education												
Legend												

ZAMBEZI VALLEY AGRO-FISHERIES (ZONE 10)

Food security risk	
The high frequency of floods or drought over poor soils result in high food insecurity risk	
Main productive assets	
Poor	Better-off
Land <1 ha Fishing nets Homemade canoes Goats, pigs, chickens	Land >2 ha Boats, canoes, nets Cattle, goats, pigs, sheep, chickens
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP) Millet (OP) Sweet potatoes (OP) Meat (OP) Fish (C)	Maize (OP) Sorghum (OP) Rice (MP) Sweet potatoes (OP) Meat (OP) Fish (OP)
Main income sources	
Poor	Better-off
Fishing Charcoal burning Beer brewing Wild foods	Fishing Livestock Crop sales Trading
Main markets	
Lusaka, Sinazongwe, Siavonga, and Gwembe	
Main hazards, timing, and approximate frequency	
Drought	Once in 10 years
Flood	December- February
Armyworm outbreak	December- February
Livestock disease outbreak	Once in 2 years
Main coping strategies for poor households	
Increased collection of wild foods Increased search for casual work outside the zone Increased sale of livestock	

sorghum, pearl millet, maize, and sweet potatoes. The environment is not suitable for maize, whose production is limited. Cotton is an important cash crop in suitable parts of the zone. The zone has a relatively shorter growing period of 80 to 100 days between the rainy months of November-March. During this period, dry spells are a common hazard with the potential to negatively affect crop production. This zone is within the tsetse control zone, making it less suitable for cattle, though some better-off households may own a limited number for draft power and sale. Rather, goats are the most common livestock asset in the zone and they constitute an important income source for poor households.

Land ownership and utilization, livestock ownership, and ownership of fishing equipment define the wealth of the zone. The poor survive from crop production and the purchase of food on the market while the better-off are able to produce most of their food, only purchasing the food they do not produce. Both the poor and better-off obtain their income through sale of fish, crops, and livestock. The poor additionally do casual work, sale of charcoal, beer brewing, and sale of wild fruits to supplement their incomes while the better-off engage in trade activities.

Poor infrastructure makes this zone relatively remote. As a food deficit area, the zone depends on supply of staples from FRA and private traders from neighboring zones. On the other hand, this zone supplies most of Zambia with fresh and dry fish via middlemen and private traders who deliver to most towns and rural areas of Zambia.

This zone covers districts of Luangwa, Kafue, Gwembe, Siavonga, and Sinazongwe along the Zambezi River valley and the Kariba lakeshore. Steep, mountainous terrain flanks this low-lying zone of 400-600 meters above sea level. The mountainous slopes and cascading rocky terrain makes some parts of the zone highly erosive. The zone is located within agro-ecological Region I, which is drought prone, receiving between 400-800 mm precipitation per annum. The temperatures in the zone are generally high and unfavorable for most crop production with maximum temperatures reaching 35-40 degrees Celsius during the dry, hot months of September-October. The winter is generally warm, with an average temperature of about 20 degrees Celsius from May-August. Relatively poor, shallow, loamy, sandy soils with low water retention and vulnerable to erosion dominate the valley. The Kariba lakeshore and lower Zambezi, however, have localized fertile alluvial soils well suited for agriculture. The zone is scattered with Mopane, Munga, and Miombo trees, as well as wild fruit trees (baobab/*mabuyu* and tamarind/*busiika*), and fruit is collected both for sale and consumption. Shrubs and short grass found in the zone and are good for grazing goats. The zone has coal and uranium mineral deposits, fish, and wild fruits as natural resources.

The population density is high with 26 persons per square kilometer with most people settled along seasonal rivers as well as the Zambezi River. Land area for cultivation is relatively low in this zone with 0.5-1 hectare per household. The Tonga, Goba, and Chikunda are the major ethnic groups in the zone.

The importance of fishing in this zone distinguishes it from neighboring zones. Most fishing concerns natural fisheries, though both commercial and artisanal aquaculture are up-and-coming. Illegal fishing techniques diminish breeding potential in natural fisheries and reduce potential catches.

Agriculture and livestock production, though important, are complementary activities in the zone. The main crops include

The relatively frequent floods, drought or dry spells, and crop damage by wildlife pose a challenge for resilience in the zone. Opportunities for mitigating the effects of shocks on food and income are limited, leaving poor households in particular with limited room for livelihood expansion in bad years.

Zone 10: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Kidding/calving												
Milking												
Other												
Fishing												
Hazards												
Flooding												
Crop pest/disease outbreak												
Livestock disease outbreak												
Legend												

Zone 10: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Sorghum, millet												
Wild foods, fish												
Income												
Fishing												
Charcoal sales												
Beer brewing												
Wild fruits												
Expenditures												
Education												
Clothing												
Legend												

MKUSHI, CHISAMBA, AND MPONGWE COMMERCIAL FARMING BLOCK (ZONE 11)

Food security risk	
Very low risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <1 ha Goats, few cattle, chickens Household labor Hand tools	Land >10 ha Plows, tractors Cattle
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Vegetables (OP) Fish (MP) Meat (MP)	Maize (OP) Meat (OP) Fish (MP) Vegetables (OP) Milk (OP)
Main income sources	
Poor	Better-off
Farm labor Petty trade Crop, melon sales Goats, chickens Beer brewing Wild fruits	Crop sales Livestock Small business, trade
Main markets	
Lusaka, Kabwe, Ndola, Kitwe, and DRC	
Main hazards, timing, and approximate frequency	
Drought	Once in 5 years
Crop pest outbreak	Once in 10 years
Main coping strategies for poor households	
Increase search for casual work	

This zone consists of commercial farming blocks with medium- to large-scale farms in Mkushi, Kabwe, Chisamba, and Mpongwe Districts. It is a high plateau with undulating plains whose monotony is broken by isolated hills at an altitude of 1000-1200 meters above sea level. The zone is located within agro ecological Region II with fertile land and rainfall of 800-1000 mm per annum, which makes it a high-potential area for both crop and livestock production. The temperatures are relatively moderate with an average minimum of 15-17 degrees Celsius during winter and an average maximum of 35-38 during October-March. Miombo woodland and savannah grasslands cover a large portion of the zone.

This moderately-populated zone is home to about 16 people per square kilometer. However, the average landholding is the largest in the country at over 30 hectares. The main ethnic groups in the zone are the Swaka, Lala, and Lenje.

Livelihoods in the zone depend on commercial crop and livestock production, as well as labor on larger farms. Given the large land areas owned and cultivated, most cropping is done using animal and tractor traction. Given the high degree of mechanization, labor demand is not particularly high, and the local people provide the main source of labor. Though rainfed cropping is most common, many households also irrigate where possible. While the major crops are maize, wheat, cotton and tobacco, this zone is also a major source of tomatoes, bananas and potatoes, which are sold in Lusaka and Copperbelt Provinces. Cattle are the predominant livestock. It is notable that even poor households may own at least one cow or ox.

Land area cultivated, livestock owned, and the number of productive household members determines household income. The

poor households, although they do cultivate small pieces of land, obtain most of their income from farm employment and casual work, the sale of small livestock, the sale of local beer, and petty trade activities. The better-off, on the other hand, largely depend on crop and livestock sales. Some also engage in small and medium-scale trade businesses.

Despite the long distance to the major markets in Lusaka, Kitwe, Ndola and DRC, the road infrastructure linking producers with purchasers is quite good in comparison to most zones. The main railway line and highway linking Lusaka and the Copperbelt Province pass through the zone, therefore facilitating movement of goods in and outside the zone. The zone is a net exporter of agriculture produce supplying major towns of Zambia.

This zone produces a surplus even in years of shocks. In a shock year, poor households have enough own production and enough additional income from increased search for casual labor to meet their food and livelihood protection needs. The agriculture and trade provide stable income-generating opportunities throughout the year, even in a poor year.

Zone 11: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Kidding/calving												
Milking												
Hazards												
Crop pest/disease outbreak												
Legend												

Zone 11: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Vegetables												
Fish												
Meat												
Income												
Labor												
Petty trade												
Crop sales, particularly horticulture												
Wild fruits												
Expenditures												
Agricultural inputs												
Education												
Legend												

CENTRAL COPPERBELT MAIZE, CASSAVA, AND SWEET POTATO (ZONE 12)

Food security risk	
Low risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <1 ha Goats, poultry Hoes and axes Bicycles	Land <1.5 ha Cattle, goats, poultry Plows, carts Bicycles
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Cassava (OP) Vegetables (OP) Sweet potatoes (OP) Groundnuts (OP) Fish (C)	Maize (OP) Vegetables (OP) Sweet potatoes (OP) Groundnuts (OP)
Main income sources	
Poor	Better-off
Charcoal sales Wild foods Beer brewing Construction material Crop sales Agriculture casual labor	Crop sales Livestock Construction material Remittances
Main markets	
Ndola, Kitwe, Solwezi, Kabwe, and DRC	
Main hazards, timing, and approximate frequency	
Crop pests/disease	Once in 10 years
Main coping strategies for poor households	
Increase search for labor opportunities Increase collection of wild foods for sale and consumption	

This zone is located on a flat plateau about 1000-1500 meters above sea level, covering the districts of Lufwanyama, the eastern part of Solwezi, Mpongwe, Masaiti, and Kapiri Mposhi. It lies within agro-ecological Regions II and III and receives 800-1000 mm of rainfall annually between November and April. The temperatures are relatively moderate with an average minimum of 15-17 degrees Celsius during winter and an average maximum of 35-38 during October-March. The soils are moderately fertile, sandy, loamy, yellow-red soils that are prone to leaching with moderate potential for crop production. The vegetation is mostly savannah grasslands and Miombo woodlands, which provide fuel. Forest reserves and some rivers make up the natural resources in the zone.

The moderately populated zone contains 14 people per square kilometer mainly inhabited by Kaonde, Lamba, and Lala ethnic groups. Average landholding per household ranges from one to two hectares, used mainly for food production. In the eastern part of the zone, the demand for agricultural land is particularly high due to the influx of retrenched, retired, and unemployed people from the mining areas in the Copperbelt Province.

Rainfed, manual crop production drives the economy of the zone. Some households, however, use animal traction to cultivate, creating opportunities for livestock production. The rains typically last between November and April, and the growing season ranges from 110 to 150 days. Though the season is long, dry spells are common. The main crops grown in the zone include cassava, sorghum, groundnuts, sweet potatoes, and maize.

Most households keep some goats and poultry, whereas better-off households tend to keep more cattle. Livestock tend to be sold for income. Private beef companies are the main buyer for local cattle. Other sources of livelihoods include the sale of charcoal and wood poles for construction. Fishing is a minor source of food and income for households located on the river.

Land ownership and livestock are the main determinants of wealth in the zone. The better-off depend on the crop and livestock sales and trade for income, while the poor obtain cash through the sale of firewood and charcoal as well as selling construction materials such as crushed stones. The poor consume both own-produced maize and purchased maize, while better-off households typically produce enough maize for their own consumption and sell a surplus.

The zone has a good road network and rail system, linking local producers and consumers with markets Lusaka, Copperbelt, and Solwezi. Food crops are mainly sold to urban areas within the zone and outside the zone. Roadside marketing of fresh produce is common on the main highways passing through the zone.

Crop production and sale, exploitation of natural resources, and strong labor demand offer sufficient opportunity for poor households to mitigate most deficits to agricultural production in the recent past. The low frequency of hazards and stable income sources contribute to strong coping capacity among poor households.

Zone 12: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Hazards												
Crop pest/disease outbreak												
Legend												

Zone 12: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Sweet potato												
Groundnut												
Income												
Charcoal sales												
Wild foods												
Beer brewing												
Construction material												
Maize												
Sweet potato												
Casual labor												
Expenditures												
Agricultural inputs												
Education												
Legend												

COPPERBELT LABOR AND TRADE (ZONE 13)

Main productive assets	
Poor	Better-off
Unskilled labor Land Poultry	Semi-skilled labor Land Goats, pigs, chickens Marketing stalls/shops
Main foods consumed and sources	
Poor	Better-off
Maize (MP/OP) Cassava (OP) Vegetables (OP)	Maize (MP) Rice (MP) Meat (MP/OP) Vegetables (MP)
Main income sources	
Poor	Better-off
Informal employment Vegetables Petty trade Charcoal sales Fish	Formal employment Trade Masonry Vegetables
Main markets	
Ndola, Kitwe, Kalulushi, and DRC	
Main hazards, timing, and approximate frequency	
Company closures/retranchments	Unpredictable
Border closure with DRC	Unpredictable
Main coping strategies for poor households	
Increase charcoal production	

mines in the southern and eastern parts of the zone.

This zone is located in the highly-urbanized, highland areas of the old copper-mining areas covering Ndola, Mufulira, Chingola, Kitwe, Kalulushi, Luanshya, and Chililabombwe Districts. The main livelihood options of wage employment for most people in the zone include mining, timber, trade, and the manufacturing industry. Staple food production is minimal, mostly done on small pieces of land and by less well-off households; rather, cultivation of higher-value and perishable products like vegetables is an option available to most households. The zone falls within agro-ecological Region III, which receives an annual average rainfall of 1000-1300 mm and experiences a long growing season of 130-160 days during the October-April rainy season. The winter period of May-July has a slight risk of frost with average minimum temperatures of 17-18 degrees Celsius. The vegetation is mainly Miombo woodlands and vetiver and *Hyparrhenia* grasses, which are suitable for thatching. Mineral resources in the zone include copper, emerald, malachite, amethyst, and cobalt. Additional resources in the zone include timber and fish.

The zone has a high population density of more than 30 people per square kilometer. In urban areas, the population density is relatively higher with mixed ethnicities. Lamba/Lima ethnic groups dominate rural areas of the livelihood zone.

Copper mining is the main economic activity in the zone. However, with privatization of mines in the late 1990s, companies retrenched (laid-off) a number of people; these people tended to buy land to pursue agriculture in other, neighboring zones or to move to new

Given the high population density, the strength of the non-agricultural sector, and poor soils with high acidity due to chemical leaching from the mines, agriculture is limited, making this zone unique compared to most others. However, poor, rural or peri-urban households do tend to cultivate small plots of about 0.5 hectares to grow vegetables, cassava, maize, sorghum, and millet. In this zone, food purchased on markets is generally preferred. For this reason, the poor obtain some food through own production as well as markets, whereas the better-off obtain most if not all staple food from markets.

The number and skill level of economically-active individuals in a household is a key determinant of wealth in the zone. Labor and trade activities provide income for all wealth groups. The main distinction between wealth groups is the scale of trade and employment type. Income-generating activities are suited to support urban demand. For example, charcoal and hybrid chicken production for sale on urban markets are key sources of income for poor households. The poor obtain additional cash from the sale of wild foods and fish from nearby rivers. Distinguished as a labor and trade based zone, there is not much seasonality of income sources, with a household having at least three options at any time of the year. There are some concerns that the high demand for charcoal and wooden poles for construction poses a threat to the environment.

The zone has well developed infrastructure and urban centers that provide a platform for movement of goods within and outside the zone. The zone is a net importer of food from other zones given the high population and low production of crops. It is the main transit area for goods and produce sold to and from DRC. The proximity of the zone to the DRC border provides opportunities for trade activities mostly done through export of agriculture produce. Urban areas supply the non-food items.

Poor households rely heavily on markets for unskilled labor, for which the greatest determinants are the mining sector and labor related to trade with DRC. Therefore, changes in these factors may significantly influence food security in the zone through labor markets. Because of limits to agricultural production, alternative labor markets within the zone are limited. Without employment, poor households tend to change livelihoods in favor of agricultural production outside the zone.

Zone 13: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Other												
Timber extraction												
Hazards												
Unusually high retail prices												
Legend												

Zone 13: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Vegetables												
Income												
Casual labor												
Vegetables												
Petty trade												
Charcoal sales												
Fish or game												
Expenditures												
Education												
Health care												
Legend												

MKUSHI AND SERENJE MAIZE, SWEET POTATO, AND HORTICULTURE (ZONE 14)

Food security risk	
The zone is at low risk of food insecurity as it is self-sufficient	
Main productive assets	
Poor	Better-off
Land <2 ha Goats, poultry Hoes, axes Bicycles	Land >3 ha Cattle, goats, pigs Plows, ox-carts Hoes
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Vegetables (OP) Meat (OP/MP) Groundnuts (OP)	Maize (OP) Rice (MP) Meat (OP) Milk (OP) Vegetables (OP) Groundnuts (OP)
Main income sources	
Poor	Better-off
Crop sales Livestock Charcoal/firewood sales Masonry Casual work	Crop sales Livestock Trading Transportation
Main markets	
Mkushi and Serenje	
Main hazards, timing, and approximate frequency	
Crop disease or pest outbreak	Once in 10 years
Main coping strategies for poor households	
Increased sale of livestock Increased search for casual work Increased collection of wild foods	

The zone lies on a high plateau with undulating plains at an altitude of 1000-1300 meters above sea level covering Mkushi and Serenje Districts. The zone lies in agro-ecological Region III, receiving annual rainfall above 1000 mm per annum from November to April. The average high temperatures range from 25-29 degrees Celsius during summer and drop to around 18-20 degrees Celsius in winter. Soils are fertile, sandy and clayey, and loamy with very good production potential. They support predominantly of Mopane, Miombo, and Munga woodlands with some grassy savannah. The natural resources endowments include forests and vast grasslands that are good for livestock grazing.

The moderately-populated zone consists of about 15 people per square kilometer, and the average landholding is 3-5 hectares per household. The main ethnic groups are Lala and Swaka.

Crop production and livestock rearing are the main livelihoods of the zone. The main crops grown are maize, groundnuts, and cassava using the *chitemene* (slash and burn) system of cultivation. The long growing season (120-160 days) is suitable for most crops. The livestock are kept under a communal management system. Better-off households use cattle for draft power and for sale, whereas all other livestock are kept for sale and home consumption.

The ownership of livestock and farming equipment determines the amount of land households are able to cultivate. Poor households do not have access to draught power and, therefore, cultivate less land. As a result, poor households are not self-sufficient in staple food production, and they rely on market purchase or in-kind payment for labor for food. The better-off typically produce all their annual food needs. The incomes sources of both wealth groups include the sale of crops and livestock. The poor also sell firewood and charcoal and engage in agricultural labor and masonry, while the better-off do some trade and transportation business.

Market access in the zone is relatively fair around local trade centers. Mkushi and Serenje are the major markets, and the Great North Road facilitates movement of goods within and outside the zone. Households tend to sell livestock to private traders, who, in turn, sell them on major markets in Kabwe, Lusaka, and Copperbelt. In areas away from towns and the main highway, poor households are not able to travel up to 300 km to access a major market with any frequency. The better-off, on the other hand, do have access to these larger markets for sale or purchase through their own transportation and trade networks.

The zone is not prone to significant hazards and is generally self-sufficient. In years of poor production, usually due to poor weather conditions, poor households increase the sale of goats and the search for casual labor opportunities between December and February to increase income. These strategies are usually sufficient to meet their needs.

Zone 14: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Hazards												
Crop pest/disease outbreak												
Drought or dry spell												
Legend												

Zone 14: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Vegetables												
Meat												
Income												
Crop sales												
Livestock												
Charcoal/firewood												
Masonry												
Agricultural labor												
Expenditures												
Agricultural inputs												
Education												
Legend												

LUANGWA VALLEY INFORMAL MINING, FISHING, AND HUNTING (ZONE 15)

Food security risk	
High frequency of flood and drought poses a high risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <0.5 ha Goats and poultry Hand tools (mining) Fishing rods	Land >1 ha Cattle, goats, poultry Mechanized mining tools Handmade guns Canoes
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Meat (OP/C) Vegetables (OP/MP) Groundnuts (OP) Fruits (OP/C)	Maize (OP/MP) Rice (MP) Meat (OP/C) Vegetable (OP/MP) Groundnuts (OP) Fruits (OP/C)
Main income sources	
Poor	Better-off
Game Fish Minerals Gifts	Game Fish Minerals Remittances
Main markets	
Kabwe, Mkushi, Serenje, and Lusaka	
Main hazards, timing, and approximate frequency	
Civil insecurity	7 of the past 10 years
Armyworm outbreak	Once in 10 years
Main coping strategies for poor households	
Increased sale of goats Increased search for casual work Increased collection of wild foods	

In the Mkushi District, the altitude varies from 600 to 1000 meters above sea level between lowlands and mountains along the edge of the Luangwa Valley and the Central Plateau. The zone falls within the agro-ecological Region I, receiving 400-800 mm of rain between November and April. Average maximum temperatures range from 25-35 degrees Celsius, and average minimum temperatures are 15-25 degrees Celsius during winter. Most soils are moderate to heavy clays with poor drainage, quite prone to flooding during the rainy season. However, along the riverine plains, alluvial soils exist. Miombo woodland and savannah grasslands cover the zone, supporting a significant wildlife population. Mineral resources include gold, mercury, copper, manganese, and tourmaline. The Lunsemfwa River passes through the zone, providing fishing opportunities.

The population density in the zone is moderate at about eight people per square kilometer, mostly among the Lala and Swaka ethnic groups.

Livelihoods here rely primarily on natural resources unique to the zone through small-scale formal and artisanal mining, hunting, and fishing. Poor households use simple hand tools to mine, whereas the better-off use grinders and sieves. Poor households hunt using snares, knobkerries, and dogs hunting, whereas the better-off have basic guns; regardless, game is an important source of cash and food for all households in the zone. Households sell fish to urban areas and institutions (schools, health centers) within the zone.

Artisanal mining and hunting activities are unlicensed and regarded as “illegal”. These sources are somewhat unreliable, and their illegality contributes to marketing challenges. There are concerns that without the management and control offered by licensing, these activities may be unsustainable in the long term. In principle, a more sustainable management of these activities would limit their use, and viable, alternative income sources would be needed to

maintain food access.

Agriculture and livestock raising are supplementary activities in this zone. The average landholding is around 1 hectare per household and is mostly used for crop cultivation. Livestock is kept under a communal grazing system.

Land, livestock, and productive asset ownership, particularly the presence of male labor, determine food and income earning capacity for different household groups. The poor households typically have fewer laborers available and own fewer assets. They depend on crop production, market purchases, and in-kind payments in exchange for agricultural labor for subsistence. The better-off mostly produce their own food but also buy staples during seasonal lean periods.

Income sources for both groups include mining, hunting, and the sale of fish with differences only in the quantity of items sold based primarily on the number of household members available to engage in these activities. Livestock represent savings and are sold to meet household expenditures, school fees, serious health conditions, or funeral or wedding celebrations. Goats and chickens may also be used for home consumption.

Market access is generally poor due to poorly maintained poor road networks. Roads are difficult during the dry season and all but impassable during the rainy season. Local contacts maintain relationships with established private traders from outside the zone for game meat and minerals. The zone is a food-deficit area and obtains its staple food supply through local retail

shops supplied by individual private traders from outside the zone. The main towns are source markets for most of the goods sold in the zone.

Options for coping with shocks to food or income sources are limited. The high frequency of shocks depletes coping capacity, limiting the effectiveness of coping strategies. In recent years, poor households have been receiving food assistance almost annually.

Zone 15: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Other												
Hunting												
Fishing												
Artisanal mining												
Hazards												
Flooding												
Crop pest/disease outbreak (armyworm)												
Legend	Land preparation			Sowing			Weeding			Harvest		

Zone 15: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Game meat												
Vegetables												
Income												
Hunting												
Mining												
Fishing												
Expenditures												
Education												
Clothing												
Legend	Own production			Market purchase			In-kind			Gathering		

EASTERN PLATEAU MAIZE, COTTON, AND GROUNDNUT (ZONE 16)

Food security risk	
Low risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <2 ha	Land >3 ha
Goats/sheep, pigs, some cattle	Cattle, goats/sheep, pigs
Hand tools	Plows, ox carts
Main foods and sources	
Poor	Better-off
Maize (OP/MP)	Maize (OP/MP)
Meat (OP)	Rice (MP)
Groundnuts (OP)	Meat (OP)
	Groundnuts (OP)
Main income sources	
Poor	Better-off
Crop sales	Crop sales
Vegetables	Formal employment
Wild foods	Trade (groceries, transport hire)
Handicrafts (reed mats and baskets)	
Beer brewing	
Main markets	
Chipata, Pataude, and Katete	
Main hazards, timing, and approximate frequency	
Drought or prolonged dry spell	November-January
Flooding	February
Crop pests/disease outbreaks	January-March
Main coping strategies for poor households	
Increased search for labor opportunities	
Increased sale of livestock	
Increased collection of wild foods	

The zone covers Northern parts of Nyimba, Petauke, Katete, and parts of Chadiza Districts along the eastern plateau on the border with Mozambique. It is a highland zone with an altitude measuring 1000-1200 meters above sea level. The zone is located within agro ecological Region II and receives an annual rainfall of 800-1000 mm falling between November and mid-April. Temperature extremes range from an average minimum of 15 degrees Celsius during the winter months of May to July, to an average maximum of 35-40 degrees Celsius during the hot, summer months of September and October. The generally sandy, loamy, strong clay soils are fertile and suitable for crops and growth of pasture for livestock grazing. Miombo woodlands, bush shrubs, and savanna grassland make up the vegetation in the zone. Important natural resources include forest reserves, seasonal and perennial rivers, and thatching grass. The zone also contains green tourmaline and emeralds.

Population density is high in the zone with 23 people per square kilometer and average landholding of 3-5 ha per household used for cropping. The main ethnic groups include Chewa, Ngoni, Nsenga, and Kunda. Livelihoods in this zone are based on rainfed agriculture using manual labor and draft power, supplemented by livestock rearing and petty trade.

Land ownership, livestock ownership, and access to productive equipment are the basis for differences in how households obtain their food and cash in a year. Maize and groundnuts are the most common crops, and contract-farming arrangements with cotton companies support cotton production. Goats are the main livestock reared, though pigs are also common. Cattle may be available not only to better-off households but also to the poor. Livestock is kept on free range. Other sources of livelihoods include limited activities in timber, handicrafts, and fish trade with Mozambique.

Own-produced maize is the primary source of food for all households, lasting between seven and nine months out of the year depending on wealth. Therefore, all households purchase maize on

the market for the remainder of the year. Market purchases of rice also play an important role for better-off households throughout the year, with both groups supplementing their diets with products from goats, pigs, and chickens – most of which comes from own production.

The most important source of cash for all households is the sale of crops. Better-off households also engage in formal employment, trading, and/or services (transport hire, etc.). Poor households earn additional income from vegetable sales, selling wild food and handicrafts, and brewing beer.

Road and communication infrastructure in this zone are good. For example, the Great East Road linking Lusaka and Chipata passes through the zone, linking markets and providing opportunities for roadside marketing. The proximity to Mozambique border offers a variety of opportunities for cross-border trade and labor exchange. A significant share of agricultural production in this zone is destined for large-scale or commercial trade. Most households sell maize to FRA, which then supplies the zone during the lean season. COMACO is the main buyer for groundnuts. NWK Agri-Services, Cargill, and Olam buy cotton.

Zone 16: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Restocking												
Hazards												
Flooding												
Livestock disease outbreak												
Crop pest/disease outbreak												
Legend												

Zone 16: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Income												
Crop sales												
Wild foods												
Crafts												
Beer brewing												
Expenditures												
Agricultural inputs												
Education												
Health care												
Legend												

EASTERN PLATEAU MAIZE, GROUNDNUT, TOBACCO, AND TRADE (ZONE 17)

Food security risk	
Low risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <1 ha Hoes and axes Chicken	Land >1.5 ha Ox-drawn plow, cart Cattle Motorcycle Bicycle
Main foods and sources	
Poor	Better-off
Maize (OP/MP/IK) Groundnuts (OP) Sweet potatoes (OP) Pumpkins (OP) Cassava (OP)	Maize (OP) Rice (MP) Groundnuts (OP) Pumpkins (OP) Sweet potatoes (OP) Cassava (MP)
Main income sources	
Poor	Better-off
Agricultural labor Livestock Off-farm, casual labor Beer brewing	Crop sales Trade Livestock
Main markets	
Chipata, Lundazi, Chama, and Malawi	
Main hazards, timing, and approximate frequency	
Prolonged dry spell, drought	Once in 5 years January-March
Main coping strategies for poor households	
Increased sale of livestock Increase search for local and migrant labor	

This highland (1000-1500 meters above sea level) zone on the eastern plateau covers Chipata, Lundazi, southern parts of Chama, and parts of Chadiza Districts along the border with Malawi. The zone lies in agro-ecological region II, with average annual rainfall ranging from 800-1,000 mm per year, falling from November-April, the main growing season. Temperatures range from an average minimum of 11-19 degrees Celsius in June to an average maximum of 25-30 degrees Celsius in October. The sandy loam and clay loam soils are good for crop production and support open Miombo woodland vegetation. The zone also has aquamarine and emerald deposits.

The population is more concentrated along the main roads than in the interior parts of the zone. The average population density for the zone is about 24 people per square kilometer with relatively moderate landholding averaging two ha per household. The main ethnic groups include Chewa, Tumbuka, Ngoni, Senga and Kunda.

Livelihoods in the zone are predominantly based on crop and livestock production. Agriculture is mainly rain-fed, with animals used for draught power. Mechanized agriculture is insignificant in this zone. The high rainfall, long growing season (100-150 days), and the fertile soils are favorable for production of maize, tobacco, cotton, and groundnuts. Beans are grown at a small scale. Dams and rivers provide the main source of water for communal livestock that includes goats and cattle. Trade with Malawi is important as it provides opportunities for exchange of agriculture products and labor.

Land and livestock are the main wealth determinants. Better-off households own a wide range of livestock, including cattle, goats, pigs, chickens, and domesticated doves. Poor households' livestock

ownership is limited to some goats and chickens. In addition to crop and livestock sales, the better-off also obtain income through trade. The poor rely primarily on the sale of their labor, some livestock sales, and beer sales for cash. The better-off households rely on their own production of maize throughout the year, as well as groundnuts and sweet potatoes seasonally. Poor households rely on own-produced maize from March-August and purchases or in-kind payments for the rest of the consumption period.

Market access is good due to a good road network linking Chipata and Chama with a number of secondary roads connecting to the main road and Malawi border, facilitating an easy movement of goods. Households sell tobacco to private companies, maize to FRA, and groundnuts mainly to COMACO and some private traders. Trade with Malawi mainly concerns tobacco, maize, fish, and livestock.

In bad years, poor households usually intensify the search for casual labor opportunities, providing labor to richer households within the zone or migrating to towns. In bad years, poor households may prioritize working to earn cash or food in kind, over working in their own fields, thus potentially reducing area planted or yields compared to average.

Zone 17: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Sowing												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Hazards												
Crop pest/disease outbreak												
Livestock disease outbreak												
Legend												

Zone 17: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Sweet potato												
Income												
Casual labor (agricultural and non-agricultural)												
Livestock												
Beer brewing												
Expenditures												
Agricultural inputs												
Education												
Health care												
Legend												

LUANGWA VALLEY SUBSISTENCE FARMING, HUNTING, TOURISM (ZONE 18)

Food security risk	
Highly variable climate and agricultural production results in high food insecurity risk	
Main productive assets	
Poor	Better-off
Land <0.75 ha	Land >1 ha
Goats and chicken	Cattle, goats, chickens
Hoes and axes	Plows, carts
Bicycles	Hoes and axes
Hunting equipment	Bicycle or motorcycle
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP)	Maize (OP/MP)
Rice (OP)	Rice (OP/MP)
Sorghum (OP)	Vegetables (OP)
Vegetables (OP)	Fish
Fish	
Main income sources	
Poor	Better-off
Crops (mostly cotton)	Staple food, cash crops
Casual labor	Trade
Livestock	Livestock
Wage employment	Vegetables
Handicrafts	Honey
Beer brewing	
Main markets	
Chipata, Chama, Mpika, and Serenje	
Main hazards, timing, and approximate frequency	
Drought	Once in 5 years
Crop pest outbreaks	December-February
Livestock disease outbreak	December-March
Flooding	November-March
Main coping strategies for poor households	
Search for labor opportunities for longer	
Increase livestock sales	
Increase wild food consumption and sales	

carts) used for agricultural production. This is a food-deficit zone; no wealth group is self-sufficient in staple food production and virtually all households rely on markets to meet food needs at least part of the year. Most of the incomes for both groups come from the sale of cotton or, among the better-off, some staple foods. Livestock sales and employment in the tourism sector are also potential cash sources for all wealth groups. Casual labor is a significant source of cash for poor household and the sale of local beer is a minor source of income. There are few income-generating options to turn to between December and March, which constrains the ability of poor households to meet cash needs for food, education, and health care costs. The better-off engage in trade, vegetable sales, and honey production.

Most of the secondary roads linking to the Chipata-Mfuwe and Great East Highways are in poor condition and difficult to pass during the rainy season. The zone obtains most of its maize through FRA and private traders during the lean periods.

Dry spells, drought, and flooding are common hazards. Poor households in this zone receive food assistance about once every three years.

The zone stretches along the Luangwa valley covering eastern parts of the districts of Mpika and Serenje, western parts of the districts of Chama, Lundazi, Mambwe, Nyimba, and Petauke, and northwestern Chongwe. The zone is typically a hot, lowland area with an altitude of less than 810 meters above sea level. It lies within the agro-ecological region I, characterized by sandy, loamy, alluvial soils of poor to moderate fertility. The zone receives an annual rainfall of less than 800 mm per annum that is relatively more variable than in other parts of the country. The growing season is short at 90 to 130 days. Average maximum temperatures are high for agriculture at 35-40 degrees Celsius during the dry summer, cooling slightly during the rainy season to an average of 28-35 degrees Celsius from November-April. The vegetation mainly consists of Mopane, Munga, and Miombo forests used in some parts of the zone for timber production. Forests and game provide opportunities for tourism and hunting for communities but also present a challenge as wildlife may damage crops. The Luangwa River passes through the zone providing fishing opportunities.

The zone is moderately populated with about 14 inhabitants per square kilometer. Landholdings average about 1 hectare per household, mostly used for cultivation of food and cash crops. The main ethnic groups in the zone include Kunda, Bisa, Chikunda, Nsenga, Lala, and Swaka.

The major livelihood activities are subsistence agriculture, fishing, hunting, and tourism-related employment. The relatively poorer climatic conditions limit most cropping activities to the riverbanks, which exposes them to the risk of flooding. Poor households use household or hired manual labor for crop production, while better-off households use some draft power with their few cattle. The main crops are rice, sorghum, maize, and cotton. Most households in each wealth group keep some goats and poultry, which are both sold and consumed. Other livelihood activities include hunting, handicrafts, and wild food gathering.

Key determinants of wealth in the zone include the size of landholdings and ownership of productive assets (cattle, plows,

Zone 18: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Lambing/kidding/calving												
Milking												
Other												
Fishing												
Hazards												
Flooding												
Crop pest/disease outbreak												
Livestock disease outbreak												
Legend												

Zone 18: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Rice												
Sorghum												
Income												
Maize												
Cotton												
Rice												
Casual labor												
Livestock												
Casual labor (tourism)												
Crafts												
Beer brewing												
Expenditures												
Agricultural inputs												
Education												
Health care												
Legend												

NORTHERN BORDER MAIZE, BEANS, LIVESTOCK, AND TRADE (ZONE 19)

Food security risk	
This zone is at low risk of food insecurity	
Main productive assets	
Poor	Better-off
Land <1 ha Goats and chicken Hoes and axes	Land >1ha Cattle, goats, pigs Chickens Plows, carts Retail shops/stalls
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Cassava (OP) Millet (OP) Potatoes (MP) Beans (OP) Meat (OP/P)	Maize (OP) Rice (MP) Meat (MP/OP) Vegetables (MP) Potatoes (MP) Beans (OP)
Main income sources	
Poor	Better-off
Crop sales Petty trade Casual labor Livestock	Crop sales Trade, transportation Livestock
Main markets	
Nakonde, Mafinga, and Tanzania	
Main hazards, timing, and approximate frequency	
Livestock diseases	November-March
Crop pests	December-March
Main coping strategies for poor households	
Increased livestock sales Increase the search for local labor opportunities	

The zone is located in a mixed terrain of lowland and highland plateau areas along the border of Tanzania, covering the districts of Mafinga, Isoka, Nakonde, Mungwi, Mbala, and part of Kasama. The zone is 700-1500 meters above sea level. It falls in agro-ecological region III, with an average rainfall of above 1000 mm, typically falling from October to mid-April, and a long growing season of 140-170 days. Temperatures range from 18-25 degrees Celsius from May to August and 25-35 degrees Celsius from September-February. The soils are well drained and loamy, moderately fertile, supporting Miombo woodland and savannah grassland and favoring cereal and pulse production. The main natural resource is forest woodland, which is good for timber.

The zone is highly populated with about 20 inhabitants per square kilometer of mainly Mambwe and Namwanga ethnic groups. The average landholding size is relatively small due to population pressure averaging 1 hectare per household, which excludes the communal pastureland used for livestock grazing.

Crop production, livestock keeping, and cross-border trade in agricultural commodities are the main livelihood activities in the zone. Crop production is mainly rain-fed with cultivation mostly done by hand and some animal draft power. The main crops grown in the zone include maize, beans, millet, and vegetables, which are traded within the zone and outside with Tanzania. Cattle are kept mostly for sale and use as draft power. Poor households also sell some charcoal.

Household wealth is determined by the amount of land cultivated, livestock type and numbers owned, and household labor. The poor depend on their own production, payments in kind, and purchases for food, while the better-off rely mostly on their own production.

Both wealth groups earn cash through crop and livestock sales with the poor additionally relying heavily on casual labor and petty trade, while the better-off engage in small business and larger-scale trade.

Physical access to most major markets is generally satisfactory with most parts of the zone having access to a road that leads to a border point, where formal and informal export and import of commodities with Tanzania take place. Maize, beans, and cattle are the major commodities sold in Tanzania in exchange for general goods, clothes, and utensils for resale within the zone. The TAZARA rail line linking the north with Central, Copperbelt, and Lusaka passes through the zone.

This zone is a key transit point between areas within Zambia and also toward Tanzania; conflict and crime are frequent and may reduce trade temporarily. The intensification of labor and livestock sales are important coping strategies that are normally sufficient to enable poor households to meet their food and livelihood needs even in bad years.

Zone 19: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Main harvest/threshing												
Green harvest												
Livestock												
Kidding/calving												
Milking												
Cattle vaccinations												
Hazards												
Crop pest/disease outbreak												
Livestock disease outbreak												
Legend												

Zone 19: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Sorghum/millet												
Income												
Crop sales												
Petty trade												
Casual labor												
Livestock												
Expenditures												
Agricultural inputs												
Education												
Legend												

MUCHINGA, NORTHERN, AND LUAPULA CASSAVA, GROUNDNUT, AND MILLET (ZONE 20)

Food security risk	
Low to moderate risk to food insecurity.	
Main productive assets	
Poor	Better-off
Land <1 ha Goats, pigs and chicken Hoes, axes	Land >1 ha Cattle, goats, pigs and chicken Ox-drawn implements Hand tools Bicycle
Main foods consumed and sources	
Poor	Better-off
Maize (MP/OP) Cassava (OP) Vegetables (OP) Sweet potatoes (OP) Fish (C/MP) Dry fish (Kapenta) (MP)	Maize (MP/OP) Cassava (OP/MP) Beans (OP/MP) Vegetables and fruits (OP) Fish (MP) Eggs (MP) Meat (OP/MP)
Main income sources	
Poor	Better-off
Maize Beans Cassava Casual labor Mopane worms	Maize Beans Cassava Mopane worms Hiring out draft power
Main markets	
Chinsali, Mpika, Mporokoso, Kawambwa, Mansa, and Milenge	
Main hazards, timing, and approximate frequency	
Flooding	February-April
Crop pests	Once in ten years
Livestock disease outbreak	Once in five ten years
Main coping strategies for poor households	
Increase consumption and sale of wild foods Increase search for labor opportunities outside the zone	

The zone is located in the northern highland and plateau areas at 700 to 1600 meters above sea level. It covers the districts of Mpika, Chinsali, Kasama, Luwingu, Mporokoso, Kawambwa, Mwense, Mansa, and Milenge, including the valley basins and wetlands in Kaputa and Mungwi Districts. The zone lies in the high rainfall Region III with an average rainfall of 900-1600 mm per annum, typically falling from October to April. Temperatures range from 9-15 degrees Celsius from May to July and 25-35 degrees Celsius from September to October. The soils are well drained and clayish. However, fertility is low due to high acidity, making productivity low, particularly for maize. The vegetation mainly consists of savannah woodland (Miombo and Chipya forests) with shrubs and grass. The main natural resources are hardwood and softwood timber and fish.

The zone is moderately populated with a population density of about 14 inhabitants per square kilometer. The average landholding size is about 1.5 ha per household, used for crop production. The main ethnic groups include Bemba, Chishinga, Lunda, Aushi, and Ng'umbo.

Livelihoods are based on subsistence crop production, limited livestock keeping, and trading in agricultural products. Agriculture is mainly rainfed, while some localized areas practice irrigated and wetland farming. The growing season is long, ranging from 140 to 200 days, which is good for production of cassava and other crops. The main crops include finger millet, cassava, beans, and groundnuts, cultivated primarily using *chitemene* (slash and burn) and using manual labor. Only about 10 percent of households use animal draft power, and mechanization is almost nonexistent. Most households consume some fish they catch along the perennial rivers that pass through the zone. Other categories of livelihoods sources include livestock rearing, casual labor, and trade within the zone.

The main factors that determine wealth include land ownership and area cultivated, and the ownership of productive implements and livestock. The poor group cultivates smaller pieces of land and produces fewer crops for sale and consumption than the better-off. Nonetheless, poor households have access to own-produced

cassava year-round; market purchases and in-kind payment for labor are other major sources of staple food. Both better-off and poor households rely heavily on crop sales (cassava, millet, beans, groundnuts, and maize) in nearby markets for cash. The poor, however, also rely on casual labor and mopani worm sales for income, while the better-off sell transportation via bicycle and ox-drawn cart and hire out draft power.

Physical access to most major markets is generally satisfactory. Maize, beans, cassava, millet, and mopani worms are the major commodities that are traded throughout the year and are destined primarily toward semi-urban service centers within the zone. Fish and fish products are available for sale along the Chambeshi River. Cross-border trade with Tanzania and DRC is high.

Poor households cope with shocks through the increased search for labor opportunities outside the zone and the increased consumption and sale of wild foods. These strategies are generally sufficient to allow them to meet minimum needs.

Zone 20: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Cropping												
Land preparation												
Planting												
Weeding												
Harvest/threshing												
Livestock												
Lambing/kidding/calving												
Milking												
Other												
Mopane worm gathering												
Hazards												
Flooding												
Livestock disease outbreak												
Crop pest/disease outbreak												
Legend												

Zone 20: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Maize												
Cassava												
Millet												
Income												
Maize												
Beans												
Cassava												
Casual labor												
Mopane worm												
Expenditures												
Agricultural inputs												
Education												
Legend												

MWERU BANGWEULU TANGANYIKA FISHERIES (ZONE 21)

Food security risk	
Low-to-medium risk of food insecurity	
Main productive assets	
Poor	Better-off
Hand-dug canoes Fishing hooks, mosquito nets, poison Local chickens (8-10) Goats (1-5)	Motorized boats Ring nets Cold rooms Goats, pigs, cattle (10-15) Local chickens (20-22) Sheep (5)
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Cassava (OP/MP) Millet (OP/MP) Fish (C) Groundnuts (OP) Fruits (OP) Sweet potatoes (P)	Maize (OP/MP) Rice (MP/OP) Cassava (MP) Milk, meat (MP/OP) Beans (MP) Vegetables, fruit (MP) Fish (C)
Main income sources	
Poor	Better-off
Fish Casual labor	Fish Transportation of fish
Main markets	
Kaputa, Mansa, Chiengi, Nchelenge, Kawambwa, Samfya, Chilubi, Copperbelt Province, DRC, and Tanzania	
Main hazards, timing, and approximate frequency	
Flooding	December-January
Main coping strategies for poor households	
Increase search for agriculture labor in neighboring zones	

The zone is located in predominantly lowland, lakeshore, and wetland areas of Tanganyika, covering Mpulungu, Kaputa, Chiengi, Nchelenge, Mwense, Samfya, Chilubi, and small parts of Serenje Districts. It borders the DRC and Tanzania. The high-altitude areas in the zone are about 700-1600 meters above sea level. The zone lies within agro-ecological region III with high rainfall above 1000 mm per year, typically falling from October-April. Temperatures range from 9-15 degrees Celsius from May-July and 25-35 degrees Celsius from September-October. The soils mainly consist of poorly-drained, deep, dark-grey soils, including permanent swamps. The soils in Mpulungu and Mweru are deep, fine, loamy to clayey soils with poor drainage and poor to moderate production potential. The vegetation mainly consists of savannah woodlands, Miombo forest swamps, and wetlands in the southern part of the zone. The main natural resources are fish, timber, and game. Lakes Tanganyika, Bangweulu, Mweru Wantipa, and Lubansenshi are located in the zone with Luapula and Chambeshi River also passing through the zone providing sources of fishing.

This moderately-populated zone has about 14 inhabitants per square kilometer. The main ethnic groups include Ng'umbo, Mambo, and Makulu in Samfya and Lunda and Aushi in Nchelenge and Chiengi Districts.

The primary livelihood activities include fishing and subsistence farming. Fishing across this zone includes both fish farming and lake/river fishing using motorboats, canoes, ring nets, and beach seines. Motorboats are primarily used for fishing in the lakes around Kaputa and Mpulungu. Crops produced on a small scale in the zone include cassava, maize, and rice. The average landholding size is small at about 0.75 ha per household, primarily used for crop production. Although not widespread, livestock kept for sale include cattle, pigs, and goats.

The main productive assets for the better-off households include motorized boats, ring nets, and cold rooms, while the poor households rely on hand-dug canoes, fishing hooks, and non-conventional or illegal fishing gear (mosquito nets, poison). The poor consume own-produced cassava, bartered cassava, caught fish, and staple food purchases. The better-off mainly consume own-produced and purchased maize, rice, caught fish, and purchased cassava, beans, vegetables, fruits, and livestock products. While the main income sources among all wealth groups are the same, the scale varies due to differences in catches because of capture methods employed. The poor also provide labor to better-off households obtain more cash, while the better-off engage in lucrative fish trading and transportation outside the zone made possible through access to cold storage.

Physical access to most major markets is generally satisfactory. *Buka buka* (sleek lates perch), *kapenta* (finger fish or Tanganyika sardine), and *Bream* (tilapia) are the most-traded varieties, bought by several fishing companies and traders who sell the fish outside the zone, mainly to Copperbelt region, Lusaka, and the DRC. The proximity of the DRC and Tanzania provides opportunities for cross-border trade in fish and maize. Households in the zone may barter or sell fish and maize for second-hand clothes and other petty commodities.

Zone 21: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Seasons												
Rainy season												
Dry season												
Peak lean season												
Fishing												
Fishing												
Fish trading and marketing												
Fishing ban (breeding time)												
Cropping												
Land preparation												
Planting												
Weeding												
Harvesting												
Livestock												
Lambing/kidding/calving												
Hazards												
Human diseases												
Flooding												
Legend												

Zone 21: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Staple foods												
Cassava												
Maize												
Fish												
Income												
Fish												
Casual labor												
Vegetables												
Expenditures												
Fishing inputs												
Education												
Health care												
Legend												

ADMINISTRATIVE AREAS AND DEMOGRAPHICS

Livelihood zone	Province	District/ward	2010 Population estimate
ZM01: Zambezi Plain Rice, Livestock, and Fishing	Northwestern	Chavuma	9,514
		Solwezi	16,518
	Western	Kalabo	132,968
		Kaoma	7,271
		Lukulu	63,490
		Mongu	178,454
		Senanga	86,964
Total 2010 population (% of national population)			495,179 (4%)

ZM02: Southwestern Cereal, Livestock, and Timber	Southern	Kazungula	8,641
	Western	Senanga	40,010
		Sesheke	86,600
		Shangombo	85,288
Total 2010 population (% of national population)			220,539 (2%)

ZM03: Western and Northwestern Cassava, Maize, and Cattle	Northwestern	Chavuma	23,081
		Ikelenge	13,485
		Kabompo	1,666
		Kasempa	26,590
		Mufumbwe	118,902
		Mwinilunga	7,668
		Solwezi	74,522
	Western	Kaoma	90,113
		Lukulu	20,412
Total 2010 population (% of national population)			376,439 (3%)

ZM04: Kaoma Smallholder Food Crop and Tobacco	Northwestern	Kasempa	5,084
	Western	Kaoma	81,942
Total 2010 population (% of national population)			87,026 (<1%)

ZM05: Northwestern Timber and Honey	Northwestern	Ikelenge	52,266
		Kabompo	26,868
		Kasempa	18,177
		Mufumbwe	18,136
Total 2010 population (% of national population)			115,447 (1%)

ZM06: Solwezi and Kasempa Mining Labor and Agriculture	Northwestern	Chavuma	8,368
		Kabompo	61,304
		Mwinilunga	166,883
		Solwezi	23,539
Total 2010 population (% of national population)			260,094 (2%)

Livelihood zone	Province	District/ward	2010 Population estimate
ZM07: Kafue Plain Maize, Cattle, and Fishing	Central	Kapiri Mposhi	19,260
		Mumbwa	55,299
	Copperbelt	Mpongwe	5,662
	Southern	Itezhi-tezhi	57,019
		Mazabuka	2,750
		Namwala	24,404
Total 2010 population (% of national population)			164,394 (1%)

ZM08: Commercial Rail Line Maize, Livestock, and Cotton	Central	Chibombo	225,703
		Kapiri Mposhi	17,313
		Mumbwa	145,294
	Lusaka	Chongwe	166,688
		Kafue	231,938
		Lusaka	1,742,979
	Southern	Choma	132,067
		Gwembe	28,342
		Itezhi-tezhi	7,574
		Kalomo	149,991
		Kazungula	89,651
		Livingstone	118,339
		Mazabuka	258,518
		Monze	195,921
		Namwala	77,185
		Siavonga	15,907
		Sinazongwe	18,199
	Western	Sesheke	8,012
Total 2010 population (% of national population)			3,629,621 (27%)
Note: Removing the urban population of Lusaka from these figures would leave a relatively rural population of approximately 1,886,642 people, or 15% of the total national population, in this zone.			

ZM09: Southern Plateau Cattle, Maize, and Tobacco	Southern	Choma	109,835
		Kalomo	95,818
Total 2010 population (% of national population)			205,653 (2%)

ZM10: Zambezi Valley Agro-fisheries	Lusaka	Kafue	10,816
		Luangwa	25,294
	Southern	Gwembe	24,369
		Kalomo	8,402
		Siavonga	73,880
		Sinazongwe	84,008
Total 2010 population (% of national population)			226,769 (2%)

Livelihood zone	Province	District/ward	2010 Population estimate
ZM11: Mkushi, Chisamba, and Mpongwe Commercial Farming Block	Central	Chibombo	70,058
		Kabwe	202,434
		Mkushi	52,758
	Copperbelt	Mpongwe	54,568
Total 2010 population (% of national population)			379,818 (3%)

ZM12: Central Copperbelt Maize, Cassava, and Sweet Potato	Central	Kapiri Mposhi	204,278
		Mkushi	15,905
	Copperbelt	Chingola	14,716
		Luanshya	34,443
		Lufwanyama	38,989
		Masaiti	90,184
		Mpongwe	33,602
		Ndola	13,020
		Northwestern	Mwinilunga
	Solwezi		2,231
Total 2010 population (% of national population)			458,633 (3.5%)

ZM13: Copperbelt Labor and Trade	Copperbelt	Chililabombwe	90,530
		Chingola	195,357
		Kalulushi	94,785
		Kitwe	522,092
		Luanshya	130,828
		Lufwanyama	36,553
		Masaiti	12,319
		Mufulira	161,601
		Ndola	442,174
Total 2010 population (% of national population)		1,686,239 (13%)	

ZM14: Mkushi and Serenje Maize, Sweet Potato, and Horticulture	Central	Mkushi	75,399
		Serenje	92,794
Total 2010 population (% of national population)			168,193 (1%)

ZM15: Luangwa Valley Informal Mining, Fishing, and Hunting	Central	Mkushi	7,745
Total 2010 population (% of national population)			7,745 (<0.1%)

ZM16: Eastern Plateau Maize, Cotton, and Groundnut	Eastern	Chadiza	37,312
		Lundazi	233,880
		Nyimba	81,295
		Petauke	327,804
Total 2010 population (% of national population)			680,291 (5%)

Livelihood zone	Province	District/ward	2010 Population estimate
ZM17: Eastern Plateau Maize, Groundnut, Tobacco, and Trade	Eastern	Chadiza	68,025
		Chipata	59,987
		Katete	436,525
		Lundazi	6,938
		Mambwe	286,490
		Mpika	14,027
Total 2010 population (% of national population)			871,992 (7%)

ZM18: Luangwa Valley Subsistence Farming, Hunting, and Tourism	Central	Serenje	21,955
	Eastern	Chadiza	11,403
		Chipata	27,179
		Mambwe	27,791
		Mpika	57,047
		Nyimba	4,389
		Petauke	8,884
	Lusaka	Chongwe	21,281
	Muchinga	Chama	15,694
		Mpika	16,232
Total 2010 population (% of national population)			211,855 (2%)

ZM19: Northern Border Maize, Beans, Livestock, and Trade	Muchinga	Chinsali	29,451
		Isoka	84,388
		Mafinga	82,865
		Nakonde	112,161
	Northern	Kasama	174,263
		Mbala	218,217
		Mporokoso	21,184
		Mungwi	95,872
		Mpulungu	56,336
Total 2010 population (% of national population)		874,737 (7%)	

Livelihood zone	Province	District/ward	2010 Population estimate
ZM20: Muchinga, Northern, and Luapula Cassava, Groundnut, and Millet	Central	Serenje	33,719
	Luapula	Chienge	5,614
		Kawambwa	93,584
		Mansa	210,363
		Milenge	42,502
		Mwense	32,544
		Nchelenge	1,508
		Samfya	42,550
	Muchinga	Chama	No population reported
		Chinsali	112,004
		Mpika	162,825
	Northern	Chilubi	15,694
		Kaputa	35,043
		Kasama	68,409
		Luwingu	139,346
		Mporokoso	65,923
Mungwi		23,296	
Mpulungu		31,618	
Total 2010 population (% of national population)			654,158 (5%)

ZM21: Mweru, Bangweulu, and Tanganyika Fisheries	Central	Serenje	12,684
	Luapula	Chienge	139,335
		Kawambwa	26,713
		Mansa	6,991
		Mwense	85,446
		Nchelenge	109,436
		Samfya	149,430
	Muchinga	Mpika	21,903
	Northern	Chilubi	74,897
		Kaputa	92,164
		Luwingu	21,312
		Mpulungu	8,368
Total 2010 population (% of national population)		748,679 (7%)	

LIST OF PARTICIPANTS

No.	NAME	PROVINCE	DISTRICT	INSTITUTION	POSITION
1	Stain Mwanakayaya	Central	Mumbwa	Mumbwa District Council	District Planning Officer
2	Hambamba Justine		Kabwe	Central Statistics Office	Cartographer
3	Malindi Mubita		Kapiri Mposhi	Forestry Department	District Forestry Officer
4	Christopher Chibuye		Mkushi	District Administration	District Commissioner
5	Chisha Sikazwe		Itezhi - Tezhi	Ministry of Agriculture and Livestock	District Agricultural Coordinator
6	Francis Chimpangu		Chibombo	World Vision	Manager – Keembe ADP
7	Francis Mpiyana		Serenje	District Council	District Planning Officer
8	Peter Funda	Lusaka	Lusaka	Lusaka District Health Office	Health Information Officer
9	Ngoni Moyo		Kafue	Kafue District Administration	District Administrative Officer
10	Charles Simulunda		Chongwe	Ministry of Agriculture and Livestock	District Agricultural Coordinator
11	Ernest Munthali		Luangwa	Ministry of Agriculture and Livestock	District Agricultural Coordinator
12	Simon Masenga	Western	Lukulu	Ministry of Agriculture and Livestock	Acting District Agricultural Coordinator
13	Milimo Mudenda		Kaoma	Ministry of Agriculture and Livestock	Senior Agricultural Officer
14	Mubiana Likando		Shangómbo	Ministry of Agriculture and Livestock	District Agricultural Coordinator
15	Mutau		Kalabo	Zambia Meteorological Department	Officer in Charge
16	Ntanda Ngwelela		Senanga	Zambia Meteorological Department	District Meteorological Officer
17	Henry Mwale		Mongu	Ministry of Lands, Natural Resources and Environmental Protection	District Forestry Officer
18	Inambao Nalumino		Sesheke	Ministry of Lands, Natural Resources and Environmental Protection	District Forestry Officer
19	Kashweka Mukabi	Southern	Mazabuka	Ministry of Community Development Mother and Child	District Community Development Officer
20	Choongo Katapa		Siavonga	Ministry of Agriculture and Livestock	District Agricultural Coordinator
21	Justin Ngosa		Monze	Ministry of Agriculture and Livestock	District Agricultural Coordinator
22	Stanley Banda		Namwala	Forestry Department	District Forestry Officer
23	Charles Maimbo		Gwembe	Water Affairs Department	District Water Officer
24	Meckson Machilika		Choma	Social Welfare Department	District Social Welfare Officer
25	Steven Chikate		Livingstone	Ministry of Community Development Mother and Child	District Community Development Officer
26	Gisford Muleya		Kazungula	Kazungula Council	Community District Officer

No.	NAME	PROVINCE	DISTRICT	INSTITUTION	POSITION
27	Alfred Mungazi		Sinazongwe	Ministry of Agriculture and Livestock	Acting District Agricultural Coordinator
28	Gilbert Junza		Kalomo	Ministry of Agriculture and Livestock	Technical Officer
29	Juliet Mutwale	Copperbelt	Ndola	Ministry of Agriculture and Livestock	Agric Supervisor
30	Francis Mukoma		Luanshya	Ministry of Agriculture and Livestock	Agriculture Supervisor
31	Susan Kamoya		Mpongwe	National Assembly Office	Administrative Assistant
32	Bvunzayi Rutsito		Masaiti	Ministry of Agriculture and Livestock	District Agricultural Coordinator
33	Michael S. Muyoba		Kitwe	Ministry of Community Development Mother and Child Health	Acting District Administrative Officer
34	Misheck Chiwele		Mufulira	Ministry of Agriculture and Livestock	District Agricultural Coordinator
35	Obby Banda		Kalulushi	Ministry of Agriculture and Livestock	Principal Agricultural Supervisor
36	Lwiza Chisola		Chingola	Municipal Council	Environmental Planner
37	Daniel Lumbwe		Lufwanyama	Ministry of Agriculture and Livestock	Acting District Agricultural Coordinator
38	Christopher Mukatasha		Chililabombwe	Ministry of Agriculture and Livestock	Technical Officer
39	Floridah Chirwa	Eastern	Nyimba	Ministry of Community Development	District Community Development Officer
40	Gertrude Zulu		Petauke	District Administration	District Administrative Officer
41	Nelson Banda		Chipata	Ministry of Community Development	District Community Development Officer
42	Blastone Thole		Mambwe	District Administration	District Administrative Officer
43	Philimon Lungu		Lundazi	Ministry of Agriculture and Livestock	District Agriculture Coordinator
44	Moses Katundu		Chadiza	Ministry of Agriculture and Livestock	District Agriculture Coordinator
45	Kalaluka Mwitelela		Katete	Katete District Council	Director Of Works
46	Gestone Moyo	Muchinga	Chama	Ministry of Health	District Public Health Officer
47	Alex Sinkala		Isoka	Ministry of Community Development Mother and Child Health	District Social Welfare Officer
48	Morris Kabanda		Nakonde	District Administration	District Administrative Officer
49	Seuka Mutale		Chinsali	National Assembly	Professional Assistant
50	Amideus Mwango		Mpika	Ministry of Community Development Mother and Child Health	District Social Welfare Officer
51	Godfrey Mwansa	Northern	Kasama	Ministry of Community Development Mother and Child Health	District Community Development Officer

No.	NAME	PROVINCE	DISTRICT	INSTITUTION	POSITION
52	Dr. Joseph Banda		Mbala	Ministry of Agriculture and Livestock	District Veterinary Officer
53	Dr. Gelly Chikuni		Mpulungu	Ministry of Agriculture and Livestock	District Veterinary Officer
54	Fenstone Katai		Kaputa	MCDMCH/Platform for Social Protection	Project Manager
55	Patrick C. Chewe		Mporokoso	District Administration	District Administrative Officer
56	Deodatus Munsungwe		Luwingu	District Administration	District Administrative Officer
57	Deogracious Mwamba		Chilubi	District Administration	District Administrative Officer
58	Jacob Shawa		Mungwi	Ministry of Agriculture and Livestock	District Agriculture Coordinator
59	Evans Sikabbuba	Luapula	Mansa	Department of Forestry	District Administrative Officer
60	Benadette Ngulube		Mwense	Ministry of Agriculture and Livestock	District Agriculture Coordinator
61	Jackson Mwale		Milenge	Ministry of Community Development Mother and Child Health	District Community Development Officer
62	Dawson Ngize		Nchelenge	Ministry of Agriculture and Livestock	Cooperative Inspector
63	Rabson Witika		Samfya	Ministry of Agriculture and Livestock	District Market Development Officer
64	Chrispine Mutine		Chiengwe	Department of Forestry	District Forestry Officer
65	Hendrix Nthalasha		Kawambwa	Ministry of Agriculture and Livestock	Chief Technical Officer
66	Francis Mwansa	Northwestern	Solwezi	Ministry of Agriculture and Livestock	District Agriculture Coordinator
67	Sylvester Lumbwe		Mufumbwe	Education	Deputy Head Teacher
68	Ponga Bwalya		Mwinilunga	Ministry of Agriculture and Livestock	District Agriculture Coordinator
69	Vernon Chilimunda		Kasempa	Education	Head of Section- Civic Education
70	Abraham Kaumba		Kabompo	Agro-solutions	Director
71	Lewis Chiwele		Zambezi	Ministry of Agriculture and Livestock	District Agriculture Coordinator
72	Peter Zulu		Chavuma	Social Welfare Department	Assistant Social Welfare Officer
73	Evans Kapekle	Lusaka	Lusaka	DMMU	Principal Research and Planning Officer
74	Lenganji Sikaona		Lusaka	DMMU	Principal Research and Planning Officer
75	Yande Mwape		Lusaka	DMMU	Head Research and Planning
76	Ambukege Lusajo		Lusaka	DMMU	Systems Analyst GIS
77	Edwin Peteli	Southern		DMMU	Regional Coordinator
78	Pumulo Mubita	Western		DMMU	Regional Coordinator

No.	NAME	PROVINCE	DISTRICT	INSTITUTION	POSITION
79	Edwin Muyunda	Copperbelt		DMMU	Regional Coordinator
80	Titus Ng'andu	Lusaka		DMMU	Regional Coordinator
81	Boyd Siyanga	Central		DMMU	Regional Coordinator
82	Ingribet Bondo	Eastern		DMMU	Regional Coordinator
83	Paul Muyongo	Northern		DMMU	Regional Coordinator
84	Hambayi Mweetwa	Luapula		DMMU	Regional Coordinator
85	Peter Kabaso	Northwestern		DMMU	Regional Coordinator
86	Agness Ngolwe	Lusaka		FEWS NET	Assistant National Technical Manager
87	Chansa Mushinge	Lusaka		FEWS NET	National Technical Manager
88	Daison Ngirazi	Harare		FEWS NET	Regional Food Security Specialist-Livelihoods
89	Tahirou Yahaye	South Africa		FEWS NET	Consultant
90	Tiffany Imes	Washington, DC		FEWS NET	Food Security Analyst
91	Tim Hoffine	Washington, DC		FEWS NET	Food Security Analyst