

ZAMBIA FOOD SECURITY BRIEF



DECEMBER 2013



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FROM THE AMERICAN PEOPLE

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ABOUT FEWS NET

Created in response to the 1984 famines in East and West Africa, the Famine Early Warning Systems Network (FEWS NET) provides early warning and integrated, forward-looking analysis of the many factors that contribute to food insecurity. FEWS NET aims to: inform decision-makers and contribute to their emergency response planning; support partners in conducting early warning analysis and forecasting; and provide technical assistance to partner-led initiatives.

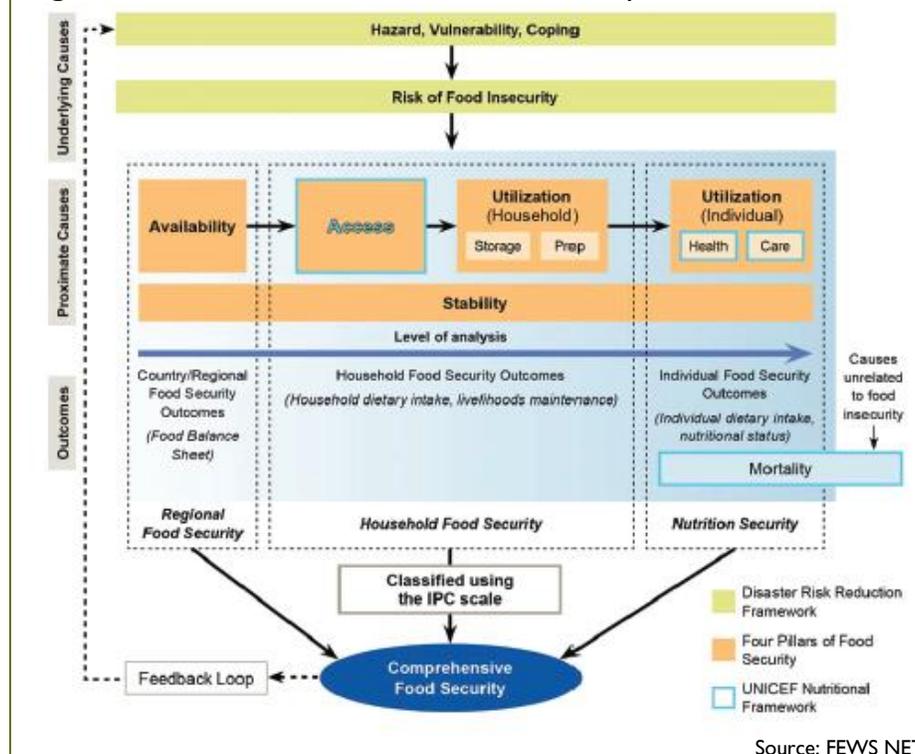
Introduction

This Food Security Brief is a starting point for anyone seeking a deep understanding of the range of factors influencing food security in Zambia. It draws on decades of FEWS NET data and information on livelihoods, household vulnerability, nutrition, trade, and agro-climatology, as well as an array of other sources. It provides an overview of the food security context, the main determinants of chronic and acute food insecurity, and areas at most risk of food insecurity.

The brief is organized around the FEWS NET Household Livelihoods Analytical Framework (Figure 1), which looks at underlying and proximate causes of food insecurity as a means to anticipate outcomes at regional and household levels. FEWS NET’s approach integrates aspects of the Disaster Risk Reduction Framework, the Four Pillars of Food Security, and the UNICEF nutritional framework.

At the core of this analysis is an understanding of livelihoods—that is, the means by which households obtain and maintain access to essentials such as food, water, shelter, clothing, health care, and education—both in good years and in bad. Using the Household Economy Approach, or HEA, FEWS NET brings a livelihoods perspective to its analysis of household vulnerability to shocks and coping capacity.

Figure 1. FEWS NET Household Livelihoods Analytical Framework



The following definitions guide the analysis of the Food Security Brief:

- *Food security*: a situation where all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.¹ These conditions are underpinned by the “four pillars” of food security: availability, access, utilization, and stability. Availability, access, and utilization are hierarchical, in that food availability is necessary but not sufficient for access, and access is necessary but not sufficient for utilization.² Chronic food insecurity is typically due to a complex combination of some or all of the four pillars, resulting in long-term lack of sufficient food in quantity or quality.
- *Food availability*: The supply side of food security, food availability refers to the physical existence of food, from a household’s own production or from markets, including commercial food imports and food aid. Adequate availability is a prerequisite for people to meet basic food needs, but often the mere presence of food does not ensure access to “sufficient, safe, and nutritious food.”
- *Food access*: Related to demand, food access refers to a household’s ability to obtain foods for a nutritious diet through a combination of production, purchase, gifts, and transfers. Access is influenced by physical access (infrastructure), sociopolitical access (e.g., traditional rights to common resources), and economic access (ability to generate income, purchasing power, and the evolution of real incomes and food prices). Additional factors include access and control of productive resources, such as land, seed and water; governance; legal and regulatory frameworks; the macroeconomic environment; gender dynamics; HIV/AIDS and other diseases; and emergencies and conflicts.³
- *Utilization*: refers to how well individuals utilize the food they access, including sufficient energy and nutrient intake and the ability to absorb nutrients. These factors are influenced by care and feeding practices, food preparation, the diversity of the diet, and intra-household distribution of food. Nutrient absorptive capacity can be influenced by factors including sanitation and hygiene conditions and disease.
- *Stability*: underpins the other three pillars and captures the level of uncertainty or vulnerability to future disruptions in food security. Risks to stability include climatic change, conflict, price shocks, and disease, among other factors.

Most sections of this report identify related “Key FEWS NET Resources.” For additional FEWS NET resources on Zambia, including FEWS NET Outlook reports and Outlook updates, visit www.fews.net/zambia.

Executive Summary

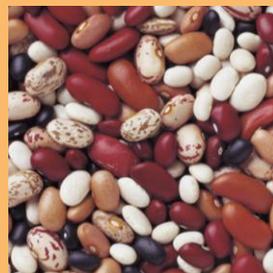
The food security dynamic in Zambia is strongly related to agricultural production, climatic events, nutrition patterns and practices, deeply-rooted poverty, complex public health issues, and the government's role in food markets. Zambia has faced no major acute food security crises in the past five years, with some Acute IPC Phase 2 and Phase 3 outcomes occurring within the past 10 years. Despite the relatively good production years that have supported food security in recent years vulnerability related to poverty, continuing issues related to nutrition, and the annual possibility that weather hazards could impact Zambia's mostly rain-fed crop production, suggest that continued monitoring is necessary. This Brief explores some of the major factors impacting the key food security pillars of availability, access, utilization, and stability.

In an average year, Zambia produces a surplus of its major staple (maize), and is self-sufficient in other secondary crops and commodities (cassava, wheat, groundnuts, among others) that support food security in the country. As a result, average years are characterized by minimal or no acute food insecurity. Since 2009, Zambia has seen record maize production of more than 2 million tons per year, and may become an important exporter in the region. Prior to 2009, parts of southern, western and northern Zambia saw isolated areas of Phase 2, and much more rarely, Phase 3 outcomes.

Due to Zambia's overwhelming reliance on rain-fed agriculture, poor production years are typically caused by poor or excessive rainfall. During these years, the Government of Zambia typically organizes the importation of maize from South Africa. Crop pests, livestock disease, and poor soils also frequently constrain production in localized areas of the country.

Poverty is a major barrier to food access, with almost two-thirds of the country living below the poverty line, and half living in extreme poverty. While maize production is a common livelihood for many smallholder farmers (by far the largest industry in Zambia), the overwhelming majority are net buyers of maize and farm on less than one hectare of land. The top 2 percent of smallholders produce 50 percent of the maize, meaning that there is substantial stratification in income from maize production. Poor rural households rely on income from other sectors to meet their food needs, and are vulnerable to price shocks. The urban poor tend to be completely market dependent and even more vulnerable to price shocks. Furthermore, the government of Zambia typically purchases large quantities of maize from its domestic market at above-market prices as a way to stabilize prices and ensure the farming income of some producers. However, studies have shown that these policies also tend to increase the average price level by as much as 20 percent, harming the poorest households.

Widespread nutritional and health issues also complicate food security in Zambia. Only one third of all infants and young children (under five years of age) are fed in accordance with all three major acceptable feeding practices, and stunting rates for children under five years have hovered near or above 50 percent since the early 1990s. Moreover, recent vulnerability studies have pointed to poor vitamin and nutrient intake due to monotonous diets consisting overwhelmingly of one or two staple foods. These issues are likely related to poverty and a lack of vitamin and nutrient rich foods. Yet, major public health



SELECTED FEWS NET ZAMBIA RESOURCES

[FEWS NET Zambia Outlook reports and Outlook Updates](#)

[Zambia Livelihoods Zone Map](#)

[Zambia Livelihood Map Rezoning and Baseline Profiling](#)

[FEWS NET Zambia Price Bulletin](#)

[FEWS NET Zambia Production and Trade Flow Map: Maize](#)

[Southern Africa Seasonal Monitor](#)

[Southern Africa Informal Cross Border Trade reports](#)

issues, such as high HIV/AIDS, tuberculosis rates, and (moderately decreasing) malaria rates put further strain on the nutritional and economic status of households, and render them at risk of acute food insecurity, as well as potentially morbidity or mortality.

Planned or recently conducted studies of livelihoods and food consumption should be useful for further articulating food security dynamics at the livelihood zone and household level. In 2012, a nationwide survey on household-level food consumption was conducted by the Zambian National Food and Nutrition Commission in partnership with UNICEF, and the results of that study are still pending. In addition, FEWS NET is planning conduct a livelihoods rezoning for Zambia, since the most recent livelihoods product was produced in 2004, and is likely outdated.

Country Context

GEOGRAPHIC AND DEMOGRAPHIC CONTEXT

Zambia is a landlocked country located among several high maize production countries in southern Africa (Figure 2). Zambia's main urban areas lay along the Line of Rail, a densely populated corridor along the major rail line connecting Zambia with its neighbors and ports outside its borders.

Zambia's population is estimated to be 14.2 million⁴, and with an average growth rate of 2.6 percent in the last five years. As is the case in most Sub-Saharan countries, this fast population growth puts considerable pressure on service provision. The high growth rate has been attributed to the high fertility rate estimated at 5.8 percent and ranked the 7th in the world. The country's population is young, with more than half (66 percent) below the age of 25. Of the total population, 46 percent are below the age of 15 while only 2.4 percent are above the age of 65.

With an estimated 40 percent of the population living in urban areas, Zambia is one of the most urbanized sub-Saharan countries. Most of the population is concentrated in the low cost-of-living areas, making them densely populated with limited access to water and sanitation.

Figure 2. Zambia, national map (cities, major roads, rail lines).



Source: Nations Online Project, 2013

Other than the urban areas of Copperbelt and Lusaka, most of the population resides in Eastern, Northern and Southern Provinces, which are predominately rural. Western and North-Western Provinces are the most sparsely populated among the ten provinces.

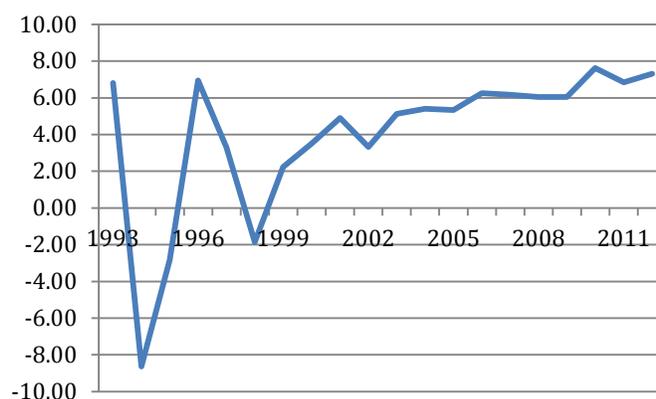
Orphanhood is a major demographic issue, with the national orphanhood rate (for children aged 0-20 years) at 15.8 percent. Among these, 14.8 percent have lost their mother, 56.5 percent have lost their father, and 28.7 percent have lost both parents. Orphanhood rates are highest in Copperbelt province (19.2 percent), and Lusaka and Southern provinces (18.1 percent each).

POLITICAL AND ECONOMIC CONTEXT

Zambia transitioned to multiparty democracy in 1991 after 27 years of one party rule. Since then, it has held five peaceful and democratic elections, with the latest one held in 2011, which saw the bringing into power of a new political party (Patriotic Front-PF) after twenty years under the Movement for Multiparty Democracy (MMD) rule.

The smooth power transition has been viewed as positive and strengthened the country's democratic credentials. The PF government has promised to translate the rapid economic growth into poverty alleviation through prioritizing sectors (agriculture, tourism, manufacturing and infrastructure) which could help create more jobs, improve rural infrastructure and foster the country's more equitable development.

Figure 3. GDP growth, Zambia (percent)



Source: World Bank, 2013

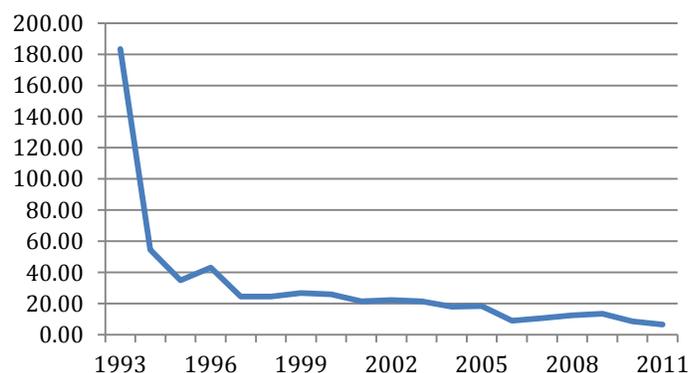
Historically, Zambia has benefitted from an abundant supply of copper that drove major economic growth following independence from the United Kingdom in 1964.

The country adopted a Structural Adjustment Program regime in the early 1990s after a steep drop in international copper prices and increase in oil prices (during the 1970s) drove the country into dire economic circumstances.⁵ This regime involved decontrol of agricultural prices and liberalization of maize marketing, trade liberalization, removal of exchange controls and the floating of the Zambian kwacha (ZMW). The biggest food security-related outcome was the state reducing its intervention in agricultural markets. Nevertheless, the state still plays a significant role in the agricultural sector, largely through the Food Reserve Agency.

Since 2003, Zambia has experienced stable GDP growth higher than 5 percent per year, which has been driven in part high global copper prices and investment in the construction, telecommunications, retail and manufacturing sectors. Zambia's economy saw dramatic fluctuations in GDP growth in the post structural reform period (Figure 3). In 1993, the economy grew by nearly 7 percent, contracted by nearly the same amount the following year, which was then followed by yet another year of approximately 7 percent growth. Since 2003, GDP growth has stabilized and stayed above 5 percent per year.

Inflation has declined significantly since 1993, when it was near 180 percent (Figure 4). Since 1995, inflation has remained under 50 percent, and averaged 10 percent/year during the 2006-2011

Figure 4. Inflation Rate, Zambia (percent)



Source: World Bank, 2013.

period, with a maximum of 13.4 percent in 2009, and minimum of 6.4 percent in 2011.

The country's two main economic sectors include a modern, urban sector following the rail line, and a large, rural agricultural sector.⁶ Sixty-five percent of Zambia's approximately 14 million people live in rural areas, and 90.5 percent of rural households have at least one family member who is engaged in growing of crops, livestock/poultry owning, and/or fish farming.⁷ Zambia sits among several countries in southern Africa (including Malawi and South Africa) that produce a large share of the region's maize.

Although the mining sector remains key in Zambia 's economic growth generating an estimated 75 percent of the export earnings, contribution to the GDP only stands at 2.2 percent having dropped from 4.7 percent recorded in 2007. In an effort to increase earnings from this sector, the government has put in place systems to monitor and account for minerals produced and exported by introducing Statutory Instrument 55, which empowers the Bank of Zambia to monitor inflows, outflows and international transactions.

Poverty and Development

Economic growth has basically remained at the macro level and failed to translate into meaningful reduction of poverty for the majority (66 percent) of the population. Poverty levels are alarmingly high in the agricultural based rural areas, estimated at 78 percent, with little change in the past five years and much lower (28 percent) in the urban areas. Overall, 42 percent of the population remains in the extremely poor category (Figure 5).

Several challenges and barriers contribute to poor households' inability to escape poverty in Zambia.

These include little irrigation, lack of money for agricultural inputs (seeds, fertilizer, etc.), limited public service provision in health and education, and poor infrastructure.⁸ The illiteracy rate remains high at 30 percent, which could hinder poverty reduction as illiteracy and lack of education are known to reduce earning capacity and contribute directly to hunger and poverty.⁹ Zambia also has the 7th highest HIV/AIDS prevalence rate in the world, a major public health concern that increases the vulnerability of households to economic and health shocks, and is a serious burden on Zambia's health system.

Figure 5. Poverty indicators

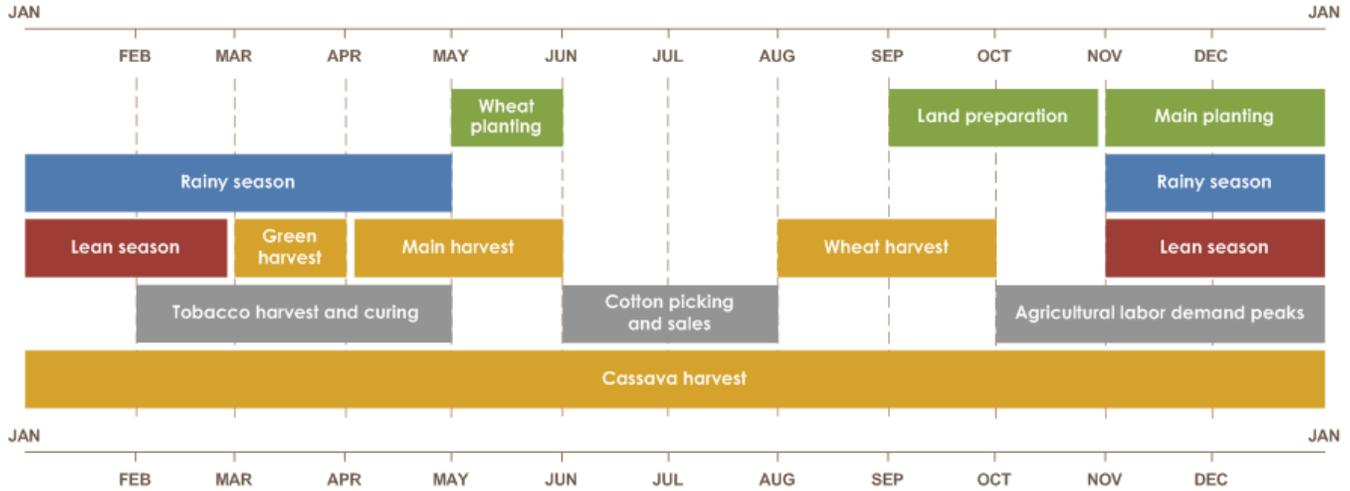
National poverty rate (of total pop.)	60.5 percent
National extreme poverty rate (of total pop.)	42.3 percent
Rural poverty rate (of total rural pop.)	77.9 percent
Rural extreme poverty rate (of total rural pop.)	57.7 percent
Undernourished proportion of total population (2010-12)	47.4 percent
Unemployment as a percent of total labor force	13 percent

Source: Zambia Living Conditions Monitoring Survey, 2010.
Food and Agricultural Organization, 2010-12 avg.

Zone III – (High Rainfall Area-1000mm) covers the Northern plateau part of the country, including areas of Northern, Luapula, Northwestern, and Copperbelt provinces. This is a high cassava growth and consumption region. Due to the nature of the rainfall pattern, soils here are to a large extent acidic limiting the production potential.¹²

Seasonal calendar

The major rainy season, harvest periods, and lean season are presented below.

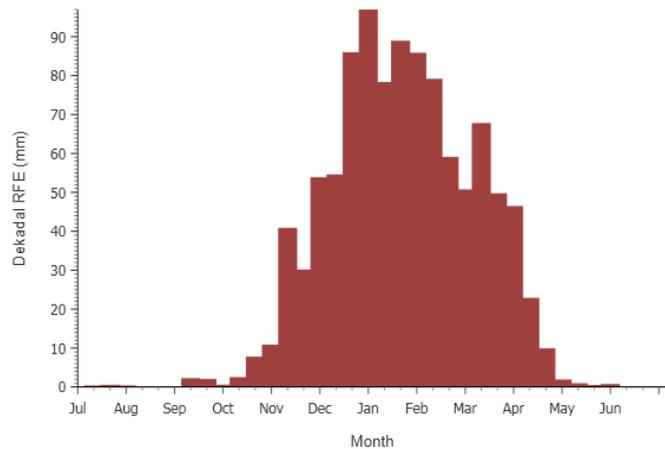


Rainfall and temperature patterns

Zambia has two main seasons, the rainy season (November-April) and the dry season (May-October). The dry season can be further subdivided into the cool dry season (May-August) and the hot season (September-October).

Annual rainfall totals range from 600-1,400mm, depending on the area of the country, though inter-annual rainfall totals can vary substantially (Figure 7). Flooding and drought are both serious concerns, and are frequently the source of variation in annual crop production totals.

Figure 7. Average dekadal rainfall, northern Zambia

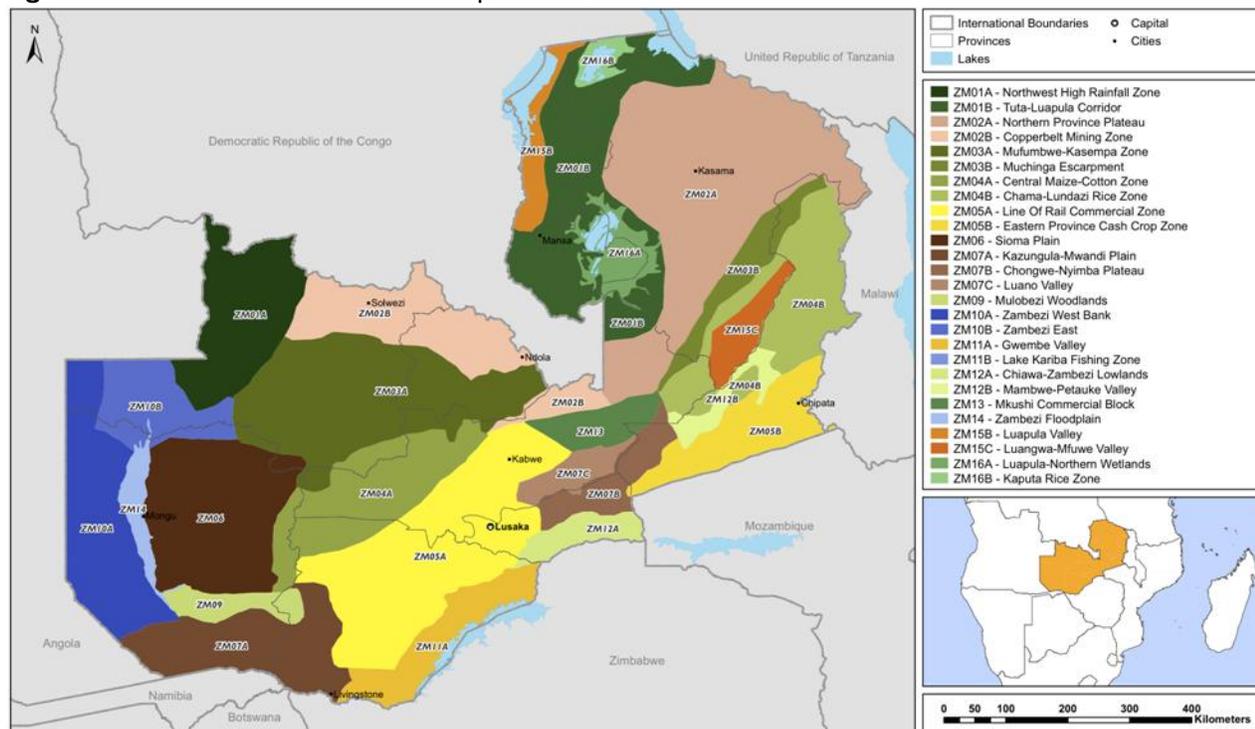


Source: USGS

Major Livelihood Zones

The 2004 ZVAC/FEWS NET Zambia Livelihoods Zoning Map divides Zambia into 27 livelihood zones, presented below.

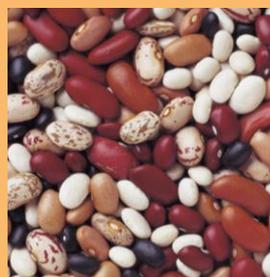
Figure 8. Generalized Livelihood Zone Map, Zambia, 2004



Source: FEWS NET/ZVAC/UNICEF, 2004

The most recent livelihood zoning map, produced in 2004 by the Zambia Vulnerability Assessment Committee, FEWS NET and UNICEF, identified 27 distinct livelihood zones. To complement this map, profiles were written to describe the livelihoods patterns, wealth groups, sources of caloric intake, potential hazards, and coping strategies in key areas. The final report from this activity includes four profiles covering parts of 17 livelihood zones that were considered historically to be the most affected by food insecurity. FEWS NET has tentatively scheduled to update this livelihoods information in early 2014.

To simplify the characterization of major livelihoods patterns in Zambia, this brief divides the various livelihoods zones into four clusters. These clusters were organized on the basis of geographic location, agro-ecological zoning, agricultural production and crops, and major consumption patterns. Cluster 1 includes zones in southern and south-eastern Zambia that consume primarily maize, have low production areas, and are particularly prone to weather-related hazards. Cluster 2a includes major maize production zones in central Zambia, while Cluster 2b includes remote, low production areas of western Zambia. Cluster 3 includes zones in northern Zambia where most of the country's cassava is produced and consumed.



KEY FEWS NET ZAMBIA LIVELIHOODS RESOURCES

[Zambia Livelihoods Zone Map](#)

[Zambia Livelihood Map Rezoning and Baseline Profiling](#)

The section below includes a list of the zones in each cluster, along with a description of two zones that represent specific patterns and characteristics in each cluster. For more detailed information on livelihoods patterns in Zambia, please refer to Zambia Livelihood Map Rezoning and Baseline Profiling [final report](#). The Zambia Livelihood Zones Map can also be found [here](#) on the FEWS NET website.

MAJOR LIVELIHOODS PATTERNS

Livelihood Zones Cluster 1, Southern regions.

- **Staple food consumption is primarily maize in this cluster of southern and southwestern zones.**
- **With the exception of the Chongwe-Nyimba Plateau, this is a cluster known for low production and much subsistence farming.** In addition to maize, agricultural products include cotton, vegetables, tobacco, groundnuts, sorghum, millet, sweet potatoes, pumpkins and cassava. Livestock is raised as an income source, and includes cattle, goats, poultry and pigs.
- **The semi-arid to arid climate and low-lying geography make this cluster particularly prone to droughts and floods.**
- **Most zones in this cluster have moderate to good access to transportation networks, which facilitates cross-border trade (which can have both positive and negative consequences).** In some areas, prostitution is also common and facilitated by access to high-risk areas near Livingstone.
- **Zones in this cluster include:** Kazungula-Mwandi Plain (Zone 7A), Chongwe-Nyimba Plateau (Zone 7B), Luano Valley (Zone 7C), and Gwembe Valley (Zone 11A).

Chongwe-Nyimba Plateau (Zone 7B): Compared to many other parts of the country, the Chongwe-Nyimba Plateau has good access to markets and is highly productive in terms of crops and livestock. This livelihood zone is serviced by an all weather road, the Great East Road, which leads to Chipata, the provincial capital. Normal rainfall is about 800 mm per year. The Plateau is a smallholder farming zone, with maize produced as the staple crop, sweet potatoes and pumpkins, and groundnuts as supplements. Contract farming of cotton has become the most important cash crop. In an average year, farmers in the Chongwe-Nyimba Plateau produce a surplus of maize. However, due to the poor feeder road infrastructure, households have difficulties accessing the main markets to sell their crops and livestock at economic prices.

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

Livelihood Zones Cluster 2a, Major producing region.

- **Staple food consumption in this cluster is primarily maize.** This is also highly productive agricultural cluster, with maize production common on both a commercial and smallholder scale. Important agricultural activities include also include growing, cotton, tobacco, sugarcane, grain legumes, wheat, tomatoes, bananas, potatoes, and raising livestock.
- **Most zones in this cluster have moderate-to-good access to markets and transportation linkages (roads, railways, airports), leading to good opportunities for commerce in petty trade and tourism.**

- **Several zones in this cluster are prone to drought and/or floods.** These include Chama-Lundazi Rice Zone (Zone 4B), Line-of-Rail Commercial (Zone 5A), and Luangwa-Mfuwe Valley (Zone 15C). Remaining zones in this cluster include: Muchinga Escarpment (Zone 3B), Central Maize-Cotton Zone (Zone 4A), Eastern Province Cash Crop (Zone 5B) and Mkushi Commercial Block (Zone 13).

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

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

Livelihood Zones Cluster 2b, Western regions.

- **These are sparsely populated, remote zones that typically have poor infrastructure and for which livelihoods are largely subsistence-based.**
- **Weather hazards, such as excessive rainfall, are a threat to agricultural production and market access in several of these zones.**
- **Zones in this cluster include:** Sioma Plain (Zone 6), Mulobezi Woodlands (Zone 9), Zambezi West Bank (Zone 10A), and Zambezi Floodplain (Zone 14).

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

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

Livelihood Zones Cluster 3, Northern areas where most cassava is produced and consumed.

- **Most cassava in Zambia is produced and consumed in this cluster.** Fishing and labor are also important economic activities, with additional crops including maize, rice, and soya beans. Some forestry activities are also practiced here.
- **Several zones in this cluster are characterized by significant cross-border trade, particularly with the**

Democratic Republic of the Congo and Tanzania.

- **Tita-Luapula Corridor (Zone 1B) and Copperbelt Mining (Zone 2A) are the most densely populated zones in this cluster, with the rest considered sparsely populated.** The Copperbelt Mining zone is somewhat of an anomaly in this cluster, as it is the site of minimal staple food production, with wage employment in mining, manufacturing and banking representing the main livelihood options for most people.

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

Copperbelt Mining (2A): This zone is highly urbanised, with wage employment (in mining, manufacturing, banking, etc) and trading representing the main livelihood options for most people. Staple food production is minimal. Copper mining is the main economic activity in the zone, although due to the recent sale of mines, a number of people have been retrenched and have migrated to other zones, however new buyers of the mines are increasing operations in the southern and eastern parts of the zone.

Availability



KEY FACTS

- Zambia has good availability of staple foods, compared to the full range of FEWS NET presence countries. At the national level, food availability is supported first and foremost by domestic agricultural production, supplemented by livestock production. However, significant constraints on the agriculture industry limit its current output and potential.
- Crop production, with maize as the dominant staple crop, underpins food security for much of the country. The second most important crop is cassava, followed by wheat. Production of staple food commodities differs by region – a fact that is also reflected in different composition of consumption baskets. Maize production is highest in central, southern and eastern Zambia. North and northwestern Zambia produce roughly equal amounts of maize and cassava.
- Food availability within a given year is determined largely by the timing and performance of Zambia's seasons, which interacts significantly with the country's reliance on rain-fed agriculture. In a normal year, the peak lean season begins in November and lasts until February, when the first harvests begin. A variety of factors, including floods, droughts, irregular rainfall patterns and expectations or uncertainty about government policies can lead to inter-annual variation in agricultural production, particularly for maize.

NATIONAL FOOD SUPPLY

Domestic agricultural production

Domestic agricultural production provides the vast majority of food consumed in Zambia, with staples such as maize and cassava underpinning food security in the country.

Several secondary crops are intercropped with maize, providing households with additional sources of food and/or income. Groundnuts, beans, sweet potatoes, and cowpeas are the major secondary crops that are important for households. Cotton is an additional source of income for some wealthy households, while poor households may also grow fresh fruits and vegetables (tomatoes, oilseeds) for sale.

Rain performance is the main determinant of crop performance in any given year. Since 2008, Zambia has experienced generally good rainfall and climatic conditions, which has been one contributor to consistently good maize production during the past 3-4 years.

Maize

National-level maize production in Zambia during the last three years (2010-2012) has been considered particularly good (Figure 9). This has led to an improvement in national cereal availability and has provided a basis for Zambia to become a net exporter of maize in the region.

Several factors may be responsible for increased maize production figures since 2009. These factors include good rainfall performance, improved level and access to production inputs (Farmer Input Support Programme), as well as improvements to survey methodologies for calculating national production.

Small and medium holders produce a far greater share of national maize production than large scale commercial farmers (Figure 10). There is considerable variation within the literature on what constitutes a “smallholder” farmer. The largest share of smallholders has less than 1 ha of land. This has significant implications for farmer income, which are discussed in the access section of this report.

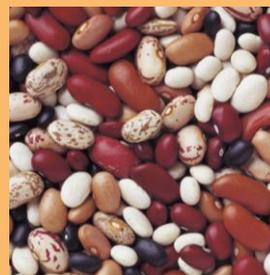
More than 80 percent of rural smallholder farmers grow maize, which accounts for more than 25-30 percent of the gross value of smallholder crop output.¹³ In 2009/10, Zambian smallholders planted 1,182,217 hectares of land in maize, or roughly 51 percent of the total cultivated land in the country.¹⁴ Between 2006-10, maize yields within the smallholder sector averaged 1.54 metric tons (MT)/ha, well below the global average of 4.47 MT/ha. During this time, 45 percent of smallholder farmers produced 1 MT/ha or less, while 72 percent produced 2 MT/ha or less.¹⁵

The provinces which account for the highest shares of maize production are Southern province (22 percent in 2011/12), Eastern province (21 percent) and Central province (16 percent). These proportions are in line with production figures for the past five years.

Cassava

National production of cassava has maintained a steady increase from just over 900,000 MT in 2002, to more than 1.2 million MT in 2012 (Figure 11). This consistency of production stands in contrast to substantial inter-annual variation in production of maize, to which cassava has become a dependable alternative in some areas, due to cassava’s relative resistance to climatic shocks, such as dryness and excessive rainfall.

In 2009/10, more than one-third (37.9 percent) of the total Zambian smallholder population produced cassava, with production highly concentrated in a few specific regions of the country. Consumption of cassava is similarly concentrated in these areas. Ninety-two percent of the smallholder population in the Luapula Province (157,885 producers) produced



KEY FEWS NET ZAMBIA MARKETS AND TRADE RESOURCES

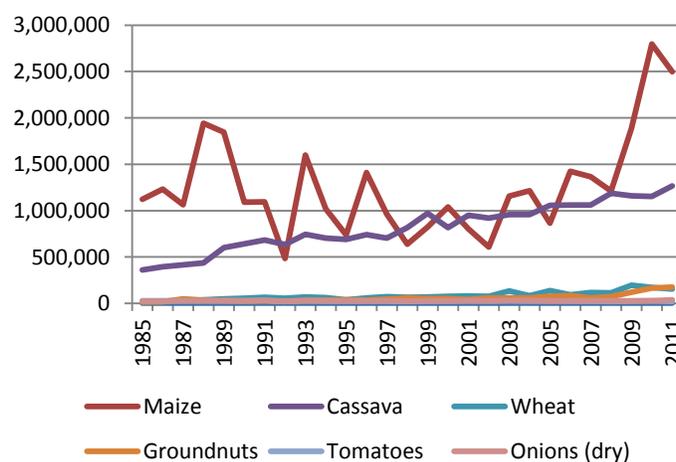
[FEWS NET Zambia Price Bulletin](#)

[FEWS NET Price Watch](#)

[FEWS NET Zambia Production and Trade Flow Map: Maize](#)

[Southern Africa Informal Cross Border Trade reports](#)

Figure 9. Production of major food commodities, 1985-2011 (MT)



Source: FAOSTAT, 2013

cassava, with 80 percent producing in the Northern Province, and 68 percent producing in the Northwest Province. In national terms, these provinces alone accounted for 78.8 percent of all cassava producers in Zambia.¹⁶

In Zambia, traditional cassava yields average 1 MT/ha, while improved varieties average 2-3.5 MT/ha. On-farm yields are closer to the lower end of this range, since many households cannot afford, or cannot obtain credit, to purchase improved varieties.

Most cassava production is for home consumption.

In 2009, only 7.8 percent of the 400+ million kg of cassava chips were sold, with the rest devoted to home consumption. The most important province in terms of cassava commercialization is Northern Province.¹⁷

Wheat

Wheat production has increased since 2002, reaching more than 250,000 MT in 2012. In Zambia, wheat producers tend to benefit from a variety of protectionist measures, including import tariffs on wheat grain and flour, as well as import bans in recent years.¹⁸

Recent nationwide surveys of agricultural statistics have not included figures on wheat production by small and medium holder farmers.

Legumes

Though production of legumes is much lower than maize and cassava, groundnuts and beans are important supplemental foods at the household level.

Groundnuts

In the 2002-2012 period, 35-49 percent of small and medium scale farmers grew groundnuts nationally, making it a very important secondary crop for households. Rates of groundnut production are typically highest in Eastern province (46-70 percent, depending on the year), and Northern province (46-66 percent). The lowest rates were found in Western province (7.5-19.5 percent).¹⁹

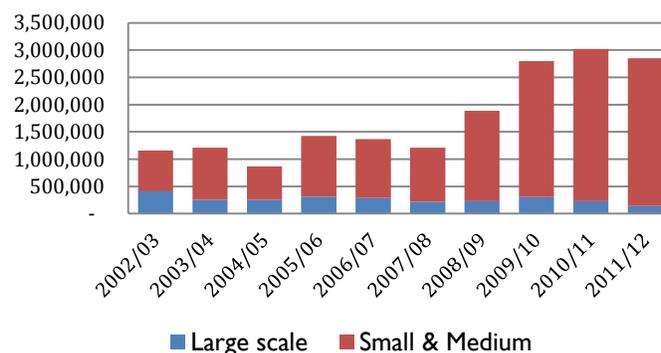
Groundnut production has varied widely during the past ten years, bottoming out at 68,012 MT in 2006/07, and peaking at 163,738 MT in 2009/10. Eastern and Northern province are typically produce the highest quantities of groundnuts, with each producing 28 percent and 17 percent of total production in 2011/12. Groundnut production in Zambia is characterized by low yields, averaging .5 MT/ha from 2000-2008.²⁰

Beans

In the 2002-2012 period, 12-16 percent of small and medium scale farmers grew beans nationally. Rates of bean production are consistently the highest in Northern province, where between 37-54 percent of small and medium scale farmers grew beans in the 2002-2012 period. North-western province also has significant soybean production, with 9.5-29 percent of households producing beans, depending on the year. Western province had the lowest production, with between .04 and 6.07 percent producing beans in any given year.²¹

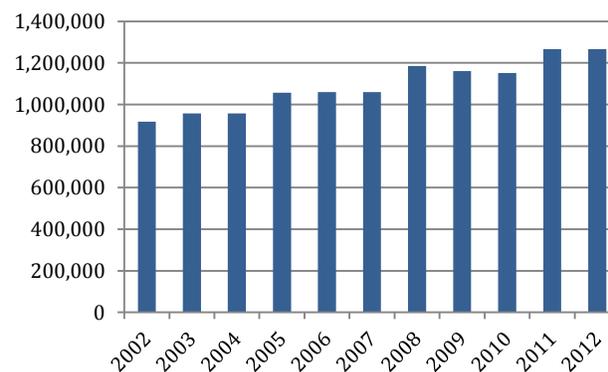
In the 2002-2012 period, bean production ranged from 36,454 MT in 2002/03 to 95,333 in 2009/10. In line with figures on the percent of farmers growing beans, Northern province also accounts for the greatest share of bean production in metric

Figure 10. Contribution to National Maize Production by Category of Farm Holding, 2002-2011 marketing years



Source: CFS, LCMS

Figure 11. Cassava production, 2002-2012 (MT)



Source: FAO, CSO, 2013.

tonnes. In 2011/12, 63 percent (37,746 MT) of Zambia's beans were grown in Northern province.²² Western province, the lowest producer, grew 2,080 MT of beans. In 2010, the last year for which information was available, 17.8 percent of total production in 2009/10 was sold, with the rest retained for household consumption.²³

Horticulture – Fresh Fruits and Vegetables (FFV)

Production of fresh fruits and vegetables is an important source of food and income at the household level, particularly for the most land-constrained farmers. In 2009/10, more than 80 percent of smallholder farmers grew FFV, with most located in Eastern and Luapula provinces.²⁴ For those with the least land, vegetable sales account for up to 42 percent of farm income that comes from crop sales.

However, in terms of total gross farm income, HVF accounts for only 4 percent of total gross farm income for the lowest landholding quintile. This source comes behind: maize retained (35 percent), Other Staple Food Crops Retained (18 percent), High Value Food Crops Retained (14 percent), Agricultural wage labor (13 percent), and Livestock Products (12 percent).²⁵

Livestock production

Livestock are an important source of income, food, and asset for many households in the various wealth groups found in Zambia. Many poor households engage in livestock raising, in which they raise and profit from the use or sale of livestock products (milk), and then sell animals once they mature. Eighty percent of the total livestock population is held by the smallholder sector, while the commercial sector holds the remaining 20 percent.²⁶ Livestock accounts for between 6 percent and 45 percent of smallholder household income sales and consumption, depending on the livestock owned, and accounts for 20 percent of smallholder productive assets.²⁷

On a national level, the most important livestock include cattle, goats, chicken, pigs, and sheep. Chicken ownership is nearly universal with household ownership rates at 98.4 percent, though poor households' ownership of other livestock may either be limited or non-existent.

Data on numbers of livestock can vary greatly by source. For instance, data on numbers of sheep range from 49,063 (IAPRI, 2012) to 225,000 (FAO, 2011), to 600,000 (Zambia Development Agency, 2011). The 2010 Living Conditions Monitoring Survey conducted by the Zambian Central Statistical Office serves as a useful reference for household ownership rates.

Cattle

In 2010, household cattle ownership was 52.6 percent nationally, with 7 of the 9 provinces near or above 50 percent ownership. The highest cattle ownership rates are found in Western (87.1 percent), Southern (66.6 percent), Central (61.2 percent), and Eastern (60.6 percent) provinces. The lowest rates are in Luapula province (8.9 percent).²⁸ These figures are in line with total cattle production figures from the Central Statistical office, which show Southern, Eastern, Western and Central provinces with the highest cattle populations in Zambia.²⁹

The number of cattle in Zambia has fluctuated significantly over the years, though the total numbers in 2010 reflect about the same level as in 1992. The number of cattle dropped significantly in 1996, 2004 and 2008 due to major disease outbreaks. Loss of cattle represents a serious economic loss for rural households, which underscores the importance of robust control measures.³⁰

Goats, Chicken, Pigs and Sheep

Goats are important for many households, although exact numbers of goats can vary greatly between sources. Low estimates suggest there are approximately 1,000,000 goats in Zambia (Zambia Development Agency, 2011), compared to higher estimates of 2,073,000 and 2,300,000 (IAPRI, 2012; FAO, 2011, respectively). A recent, comprehensive survey of agricultural activity in Zambia estimates that goat numbers have increased from 500,000 in 1992 to 2.2 million in 2010.³¹ In 2010, household goat ownership was 57.9 percent nationally, with 7 of the 9 provinces near or above 50 percent ownership. The highest rates were found in North-Western province (85.7 percent), and lowest in Western province (12.4 percent).³²

Village chicken (as opposed to commercial broilers) ownership is nearly universal, with 98.4 percent of households owning chicken nationally. All provinces have ownership rates at or above 97.2 percent.³³ Thirty percent of households in Zambia own pigs (60.8 percent in Eastern province), and about three percent own sheep.^{34 35}

Constraints and opportunities in agricultural production

Policy-related

Government policies, including input price subsidies, above-market pricing for FRA purchases, and export bans all reduce profitability in the farming sector, and serve as a negative incentive for farmers to produce large surpluses. Other factors include unclear policy signals, low producer prices in relation to input costs, poor distribution of inputs, disparity between costs of subsidized and unsubsidized production and late payment to farmers by the FRA.³⁶

Non policy-related

Low yields are also due to poor production practices, including bad timing, low input levels, inappropriate tillage techniques, and the use of recycled seeds.³⁷ Poverty is another constraint on production, as many small-scale farmers lack the money or credit to purchase inputs for crop production. Moreover, maize is vulnerable to drought and floods, both of which are common occurrences in Zambia.

Constraints on livestock

In the smallholder sector, which accounts for 80 percent of livestock ownership, there are limited disease controls and bio-safety management, which result in high animal mortality and low productivity. Moreover, there are slow growth rates for livestock (1.2 percent for cattle, and 7.7 percent for goats).³⁸ Other constraints include poor pasture management leading to poor feeding practices, and the high costs of feed for poultry production.^{39,40}

STAPLE FOOD TRADE

In a normal year, Zambia is self-sufficient in staple production. During normal-to-good years, production from Zambia's central maize/cassava belt can be exported northward to markets in the DRC.⁴¹ In bad years, the government of Zambia imports maize from South Africa. Tanzania also plays a role in supplying some Zambian markets.⁴² Since the government arranges most of the imports, private formal trade tends to be less important.

Formal Trade

The Government of Zambia plays a much more important role than private traders in terms of formal exports and imports. This is largely due to the fact that the government preserves this role for itself by instituting tariffs and bans on cross-border trade.

For the past five years, Zambia has averaged exportable surpluses of 841,000 MT of maize per year, while actually exporting approximately 236,000 MT each

Figure 12. Cereal Supply/Demand Balance Sheet for the 2013/2014 Marketing Year (October/September) (thousand tonnes).

	Wheat	Rice	Coarse grains	Total
Average production, incl. paddy rice (2008/2009-2012/2013)	209	44	2,468	2,721
Average imports (2008/9-2012/2013)	13	16	29	58
2013/14 Domestic Availability	274	30	2,618	2,922
2013 Production (incl. paddy rice)	254	45	2,929	3,228
2013/14 Utilization	276	52	2,619	2,947
Food use	201	51	1,364	1,615
Non-food use	15	1	706	722
2013/2014 Import requirements	2	22	1	25
Anticipated commercial imports	1	22	1	24
Food aid needs	1	0	0	1

Source: FAO/GIEWS

year (Figure 12). This leaves a remaining surplus of approximately 400,000 MT. In recent years, The World Food Programme has purchased maize from the Zambian government, ranging in amount from 4,500 MT in 2009/10 to 63,800 MT in 2012/13.

Informal Cross-Border Trade

Maize is the most important food commodity in terms of informal cross-border trade, and Zambia is typically a net exporter. However, Informal cross-border trade plays a minor role in terms of aggregate supply and demand within Zambia, though it may play an import role for select border production areas and markets. Although exact data on informal cross-border trade to and from Zambia can be limited or of limited reliability, the data available serves as a useful indicator for the nature, scale, and sources/destination of this trade. Since 2004, informal cross-border exports of maize peaked at approximately 36,000 MT in 2007/08, which represents about 2 percent of maize produced in Zambia that year. DRC, and to a much less extent Zimbabwe, are the primary recipients of informal cross-border exports, while Tanzania and Mozambique are the primary sources of supply for cross-border imports in maize. Zambia also tends to be a net exporter of rice and beans, both to DRC and Zimbabwe, while receiving informal cross-border imports in both commodities from Tanzania and Malawi.

FOOD RESERVES

Through the Food Reserve Agency, the Government of Zambia conducts annual purchases and stocking of maize for its Strategic Grain Reserves. Established in 1996 with the mandate to help ensure food availability by building strategic food reserves, the FRA has been an active, albeit unpredictable, participant in Zambian maize markets.

In 2005, the Food Reserve Act expanded the role and reach of the FRA. The FRA operates more than 600 buying depots, purchases approximately 25 percent of the national maize harvest, and holds carry-over stocks totaling between 100,000 and 250,000 tons.⁴³

The FRA usually announces its national buy price and target quantities in May, starts buying in June/July, and stops buying at the end of September/October. Studies suggest that price and quantity announcement this late in the production year introduces uncertainty in the market, because it does not allow producers the opportunity to make strategic decisions about quantities harvested and sold. Moreover, there are often long delays in between when farmers sell to the FRA and when they are actually paid, at a time when smallholders need cash for expenses such as school fees.

The FRA purchases at pan-territorial, pan-seasonal prices that are typically higher than average wholesale prices. This is particularly true for major maize production areas such as Choma, Kabwe, Chpata and Kasama, and makes it difficult for the FRA to export maize unless treasury funds are available to subsidize exports.⁴⁴

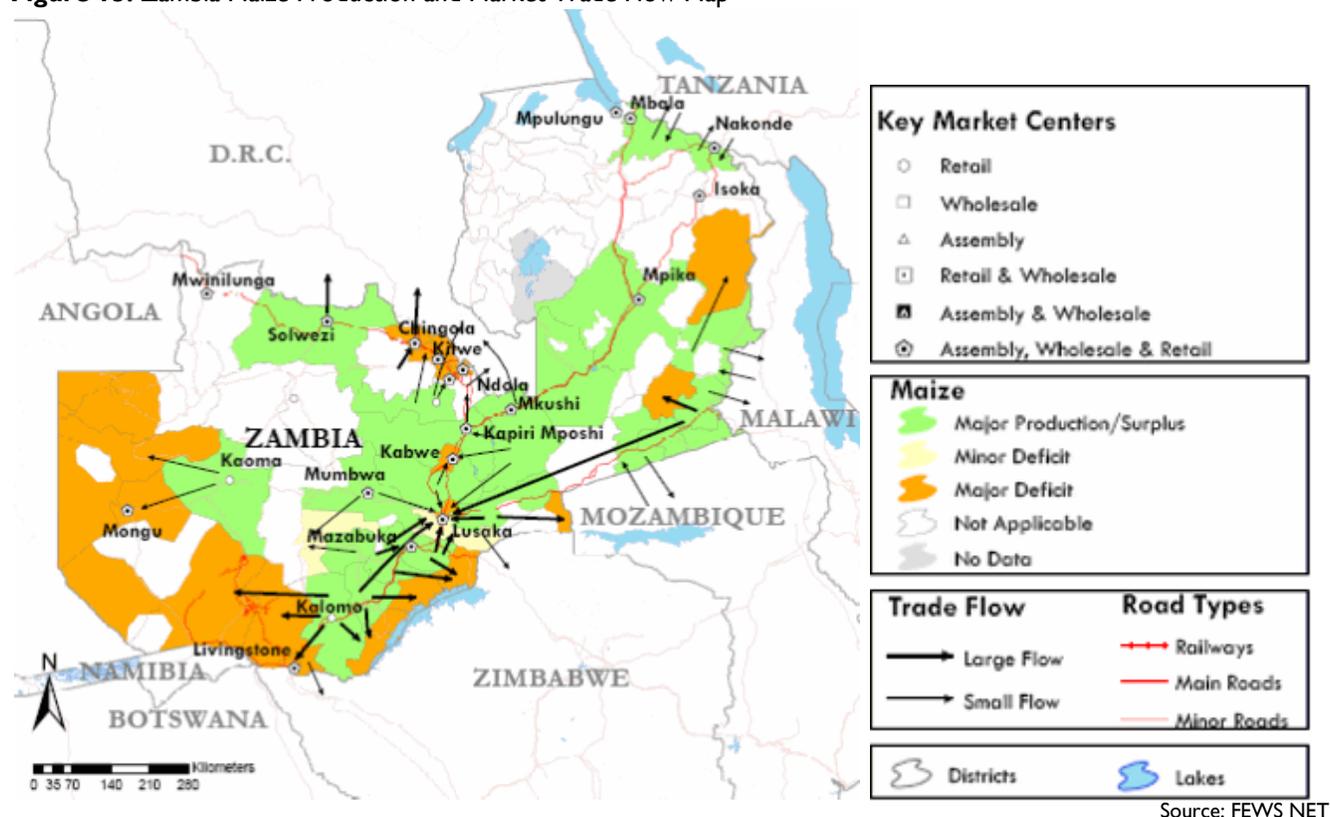
Most FRA sales occur during the lean season, from December through March. Major maize purchases include large industrial millers and trading firms. On occasion, the GRZ Disaster Management and Mitigation Unit, the World Food Programme, cooperative unions, and consumers also buy maize from the FRA.⁴⁵

Sale prices are sometimes pan-territorial, while other times they vary depending on the sale mechanism. Occasionally, the FRA sells maize at a pan-territorial price determined in consultation with the Zambia National Farmers Union, the Grain Traders Association of Zambia, and the Millers Association of Zambia. Beginning in October 2010, the FRA started selling small quantities of maize (20,000 MT) through an auction-like mechanism on the Zambia Agricultural Commodity Exchange. Though purchasing at above-market rates, the FRA does sometimes sell maize at below-market prices.⁴⁶

Studies suggest that while FRA's activities may be stabilizing maize price levels, its activities are also resulting in retail maize prices that are 20 percent higher than they would be without FRA involvement. Since the smallest smallholders tend to be net-buyers of maize, these policies may be supporting higher-producing households, and harming the ability of the poorest households to meet their food needs.⁴⁷ More on this can be found in the Access section of this document.

NATIONAL FOOD SYSTEM

Figure 13. Zambia Maize Production and Market Trade Flow Map



Cereal markets

Key surplus-producing maize markets are mostly located in the central regions of the country, along the Line-of-Rail corridor, as well as in some areas in the north, northeast, south, and southeast (Figure 13). At the administrative level, key production markets are found in the following provinces: Central, Eastern, Southern and North-Western provinces.

Major maize deficit areas are located in the western, far southern, and isolated northern areas of the country. These areas include large swaths of Western Province, areas near Chingola, Kitwe, Ndola in Copperbelt Province, the southeastern strip of Southern Province bordering Lake Kariba, and isolated areas in Eastern Province.

Livestock markets

Livestock sector divided into two distinct and poorly coordinated channels: the commercial livestock sector and the traditional or smallholder livestock sector. The smallholder sector accounts for 80 percent of total livestock, but suffers from numerous constraints that limit productivity, such as limited disease controls and bio-safety management, which result in high animal mortality and low productivity. Marketing systems are poorly integrated, and many producers do not have the capacity to comply with sanitary and phytosanitary regulations.⁴⁸ The commercial sector, which accounts for 20 percent of livestock, has much better infrastructure, inputs and practices, which facilitates better and more stable production.⁴⁹

Village chicken markets are highly informal, with most farmers selling small numbers of chickens to meet immediate cash needs. As a result, intermediary traders are important for connecting farmers to major consumer markets.⁵⁰

The principal importers of livestock (both carcasses and live animals) are Angola and the DRC, with cattle representing the majority of Zambia's livestock exports.⁵¹ Zambia cannot currently export to the European Union, because it does not meet EU livestock standard requirements.



ADDITIONAL RESOURCES

[Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review](#). Food Security Research Project. (2011).

[Living Conditions Monitoring Survey Report 2006 and 2010](#). Central Statistical Office, Republic of Zambia. (2012).

[Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia](#). Indaba Agricultural Policy Research Institute. (2013).

[Staple Food Value Chain Analysis: Country Report – Zambia](#). COMPETE. (2009).

Access



KEY FACTS

- The food security context in Zambia is closely tied to poverty, which has a major impact on household-level food access. About two-thirds of the population is in poverty, with half considered to be in extreme poverty.
- In Zambia, most households access a substantial proportion of their food through own production and market purchases. In rural areas, the poorest households tend to be net buyers, even with their livelihoods focused on agricultural production. Urban households access an even greater share of food through markets, since much of their livelihoods involves wage or salaried labor.
- Major factors influencing access include the amount of own production for consumption, household income, price levels, price seasonality, and market structure.

HOUSEHOLD-LEVEL ACCESS

Income Sources and Employment

At the national level, agriculture is the largest source of employment for most Zambians (67 percent), followed by wholesale/retail trade and repairs (approximately 10 percent). However, rural areas have a much higher share of people working in agriculture (86 percent) compared to urban areas (approx. 14 percent). Employment in urban areas is much more centered on wholesale/retail trade and repairs (32 percent) and community, social and personal services (22 percent). (Refer to Figure 14.)

Smallholder farming

Smallholder maize farming can be divided into three tiers (Figure 15):

- The top 2 percent of smallholders, who produce 50 percent of smallholder maize sales. On average, these households have more than 4 hectares of land per household, with maize comprising more than 60 percent of their total crop sales.

- The next 26 percent of smallholders, who produce the next 50 percent of maize sales. For these households, who own 1.6 ha/household, maize represents half of their total crop sales.
- **The bottom 72 percent, who produce maize, but sell none.** In this category, there are more than 900,000 households, who own less than 1 ha/household on average, have a lower total crop sales than the top two tiers, and earn no income from the sale of maize. As such, these households are net buyers of maize and rely on a small amount of income from sources other than own production to meet their food needs.
- The rural households most vulnerable to food insecurity are the bottom 72 percent of smallholder farmers.

Livestock

In the smallholder sector, livestock sales and consumption account for 6 percent of incomes on average, rising to as much as 45 percent depending on the species of animal kept.⁵²

Cash crops

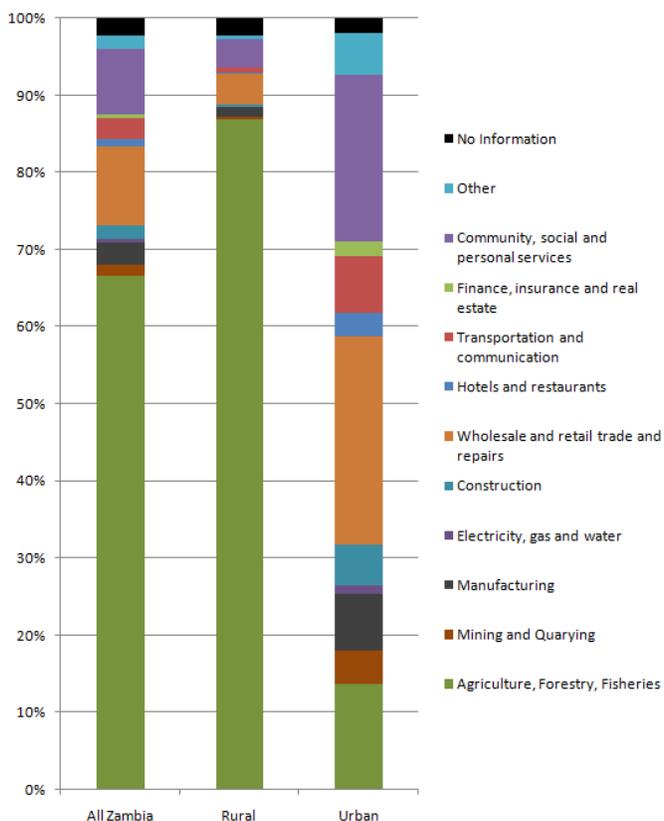
Cash cropping activity by poor households mostly involves vegetable production. Studies in East and Southern Africa suggest that vegetable production constitutes a much higher proportion of household income for households in the lowest quintiles than in the higher ones. However, wealthier cash cropping households do provide labor opportunities for some poor households, though this is more likely for the production of cash crops other than FFV (such as cotton).

MARKET STRUCTURE AND CONDUCT

Maize grain and maize meal are the most important food commodities and indicators of food security in Zambia. All of the markets tracked in the [FEWS NET Zambia Price Bulletin](#) – with the exception of Kitwe – are in provincial centers and thus provide a geographic representation. Chitapta and Choma are both areas of high maize production, while Mansa and Mongu are indicative of low production areas. Kabwe, Kitwe and Lusaka are all urban areas where demand for these commodities is high. Solwezi is a new mining town with an increasing demand for food commodities.⁵³

Most major maize production areas are found near the center of the country, particularly along the Line of Rail region north of northeast of Livingstone, along the major eastern road network northeast toward Mpika, and in small areas in the northeast along the border with Tanzania. Major flows of trade in maize from these areas are directed toward the

Figure 14. Percentage distribution of employed persons aged 12 years and above by industry and rural/urban, 2010, Zambia



Source: Central Statistical Office, Government of Zambia, 2010.

Figure 15. Characteristics of Smallholder Farmers, Zambia 2006/7

	Top 50 percent of Maize Sales	Rest of Maize Sales	Households Not Selling Maize
N=	31,328 (2 percent)	328,561 (26 percent)	907,255 (72 percent)
Farm Size (ha)	4.3	1.6	0.9
Asset Value (US\$)	1,132	316	231
Gross Rev. Maize vs. Total Crop Sales (US\$)	720/1,163	88/193	0/97
Total HH Income (US\$)	2,232	634	415

Source: Food Security Research Project, 2011, pg. 26

urban centers of Lusaka, Kabwe, and Kitwe, as well as deficit areas in the west, southwest, and smaller areas in northeast Zambia.

Cross-border trade occurs with nearly every one of Zambia's neighbors, though in certain years the government of Zambia places restrictions or outright bans on cross-border trade of certain commodities, particularly maize. Nevertheless, as examined in the Availability section of this document, there are significant informal importations of maize that reach Zambia, particularly from Tanzania and Mozambique. While the FRA is a major player in the maize market, small and medium-scale traders dominate trading.

Cassava, which is Zambia's second most important staple and a major component of diets in northern and central areas of the country, is grown mostly for own consumption. Sale of cassava, when it occurs, is mostly through informal markets.⁵⁴ As a result of these two factors, prices for this commodity are not tracked in the FEWS NET Price Bulletin.

The majority of groundnuts, which are an important source of protein, are also sold through informal markets.⁵⁵ Beans, which similar to groundnuts serve as an important source of protein, are typically sold via informal markets, with data difficult to find.⁵⁶

Market Channels

Smallholder maize producers have a broad range of market channels available to them (Figure 16). Assembly traders, wholesalers, grain processors, and the marketing board each serve as the channel for at least 14 percent of smallholder maize sales in both accessible and remote parts of the country. This may be due in part to Zambia's large and competitive commercial grain processing sector, and investment in grain assembly and wholesaling in support of this sector, which in itself expands smallholders' marketing options.⁵⁷ Wholesalers purchase the largest share (39 percent) of smallholder maize in accessible areas, while assembly traders purchased the largest share (36 percent) in remote areas.

Figure 16. Percent of smallholder maize sales by market channel

Market Channel	Accessible	Remote
Assembly trader	21%	36%
Wholesaler	39%	27%
Grain processor	18%	14%
Household in village	4%	6%
Household in another village	2%	0%
Marketing Board	14%	15%
Cooperatives	1%	0%
School	1%	0%
Total	100%	100%

Source: Sitko and Jayne, 2014

Above-market purchasing by the FRA hinders private trader activity, and may be harming poor households who sell small amounts of maize. Only 21 percent (in accessible areas) and 36 percent (in remote areas) of smallholder maize is purchased by assembly traders in Zambia, compared to rates higher than 50 percent in Kenya, Malawi and Mozambique. Studies suggest that the above market purchasing by the FRA makes it unprofitable for traders to participate in the market. By reducing the number of assemblers who purchase at the village level, the FRA may be harming small-scale farmers by cutting off their access to markets.⁵⁸

More than 50 percent of farm-gate smallholder maize sales occur within 5 kilometers from the point of production. In addition, most farmers traveling more than 20 kilometers to the point of sale are producing sufficient quantities of maize to achieve economies of scale to cover their transportation costs.⁵⁹

Market infrastructure

Road networks

Due to poor road networks and maintenance, households in rural areas are the least likely to have physical access to markets, or for markets in their localities to be supplied from other production areas of the country. Despite a high level of government investment, and resulting good conditions of paved road networks in and between major urban areas, rural areas have not benefited from similar levels of investment. Although Zambia has one of the highest ratios of paved primary and secondary road networks among low-income African countries (75 percent), only 17 percent of Zambians who

depend on agriculture for their livelihood live with within 2km of an all-season road.⁶⁰ Moreover, only 21 percent of existing rural road networks are considered to be in good or fair condition.⁶¹

Mills

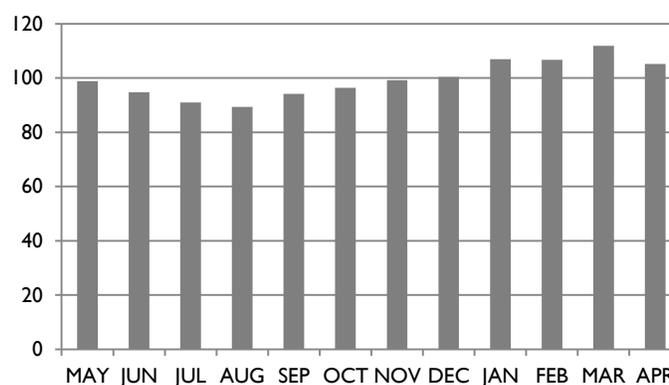
The maize meal market can be divided into two sectors: the formal sector that employs roller mills to make refined breakfast meal, and the informal sector that is characterized by hammer mills spread throughout rural areas to make less-refined “mugaiwa.”⁶² The expansion of informal maize processing since the reform period of the 1990s has provided effective competition against the formal industrial milling sector, particularly for low and middle-income consumers.⁶³ Prices for hammer-produced mugaiwa tend to be approximately 60-80 percent of those for roller meal, which may signal increased incentive for this industry to continue expanding in the future.⁶⁴

Price trends – levels and variability

There is significant seasonal fluctuation in maize throughout the year. Maize prices typically reach their peak in March following the November-February lean season, then decline to their lowest point in August following the April-June main harvest. As Figure 17 demonstrates, prices in March are approximately 20 percentage points higher than they are at the low point in August.

Studies suggest FRA purchasing is having the dual effect of somewhat stabilizing maize prices throughout the year, while raising the price level as much as 20 percent higher than they would otherwise be. The effects of price stabilization do not tend to sufficiently offset the increases in price, which may serve as a significant barrier to poor households, who are typically net buyers of maize. In addition, the government’s sale of maize at below-market prices during the lean season serves as a negative incentive for traders to stock for the next lean season, given their inability to sell at below-market prices.⁶⁵

Figure 17. Index of maize price seasonality, monthly five-year average, 2007-2012



Source: FEWS NET, 2013

Prices for the next major staple, cassava, are a less useful indicator of household access, since 92 percent of cassava is grown by households for own consumption.

Import, Exports and Governmental Policy

Time lags between government announcements and implementation of policy have unintended consequences that may cause price spikes and harm consumers. In the past, the Zambian government has announced its intention to import maize or waive import duties, only for the imports or waivers to be delayed. With the announcements come the understanding that the government will sell the subsidized imports directly to millers, thus undercutting private participation in the market. When the imports or waivers are delayed, the domestic stock levels eventually run out, and resulting in supply shortages and other behaviors that have caused dramatic price increases, such as in 2002, 2003 and 2008/09.⁶⁶ Price increases as high as 24 percent have been felt in Lusaka, 30 percent in Kabwe, and 22 percent in Choma and Chipata as a result of these delays.⁶⁷



ADDITIONAL RESOURCES

[FAO GIEWS Food Price Data and Analysis Tool](#)

[Staple Food Value Chain Analysis: Country Report – Zambia](#). COMPETE. (2009).

[Effects of Maize Marketing and Trade Policy on Price Unpredictability in Zambia](#). Food Security Research Project. (2009).

[The Effects of the Food Reserve Agency on Maize Market Prices in Zambia](#). Food Security Research Project. (2011).

Utilization



KEY FACTS

- At the national level, maize accounts for 60-85 percent of staples consumed. Cassava is the second most important food staple, though as will be discussed below, it actually represents a higher share of caloric consumption in a few key regions.
- The prevalence of undernourishment in Zambia has gradually increased from 34.3 percent in 1990-92 to 47.4 percent in 2010-12.
- Due to a lack of dietary diversity, the high prevalence of diseases such as malaria and HIV/AIDS, infant and young child feeding (IYCF) and caring practices, micronutrient deficiencies, and hazards that intensify such issues, malnutrition continues to be a serious problem in Zambia. However, a lack of information impairs characterization below the national level of analysis, particularly for rural areas.

NATIONAL-LEVEL FOOD CONSUMPTION

At the national level, maize accounts for 60-85 percent of staples consumed. Cassava is the second most important food staple, though as will be discussed below, it actually represents a higher share of caloric consumption in a few key regions. Wheat is the third most important staple food commodity, and has taken increasing importance in urban areas, where it “accounts for higher budget share than maize.”⁶⁸

However, the importance of each staple food commodity differs based on region. These regional differences in consumption follow regional production patterns. In broad terms, the composition of staple food consumption can be organized geographically into three main regions.

- **Maize belt:** Maize is the dominant staple food in the maize belt of central, southern, and eastern Zambia, which are also the most densely populated regions.
- **Northern, Luapula and western regions:** In parts of this region, cassava dominates staple food consumption over maize.
- **Maize/cassava transition zone:** In parts of northern and northwestern Zambia, households consume varying combinations of maize and cassava-based foods, depending on the year and the season.

HOUSEHOLD FOOD CONSUMPTION

There are significant information gaps concerning household-level consumption in Zambia. In 2012, the Zambia Food and Nutrition Commission and UNICEF conducted a national household-level consumption survey, but at the time of publication, the results of this survey have not yet been released. Previous to this, the last consumption survey of that scale was conducted in the 1970s.

Dietary patterns

Dietary patterns in Zambia likely differ substantially based on socio-economic status. Households in the poorer wealth groups and in rural areas are understood to rely on maize, and for northern and central parts of the country, a combination of maize and cassava. Beans and groundnuts are common, and serve as an important source of protein. Moreover, chickens are common even in the poorest households, while wealthier households may have access to cattle, goats, pigs, and sheep, the products from which offer some dietary diversity. Finally, diets are supplemented with homegrown and informally marketed fresh fruits and vegetables, the most common of which are sweet potatoes, tomatoes, rape and onions. However, not all poor households will have access to all of these sources, and monotonous diets are considered as a prime factor for malnutrition rates and dietary deficiencies in Zambia.⁶⁹

Undernourishment

The prevalence of undernourishment in Zambia has gradually increased from 34.3 percent in 1990-92 to 47.4 percent in 2010-12. This trend is also characterized by a peak level of 49.4 percent in 2005-07, before slightly declining to its current level.

The dietary energy gap in Zambia was 345 kcal per person per day in 2012. This compares to a 20-year trend which the food deficit peaked at 365 kcal in 2007, up from the lowest point of 229 kcal in 1992. These figures represent the number of calories required to lift the undernourished from their status, with all other factors being held constant.

Undernutrition

Overview

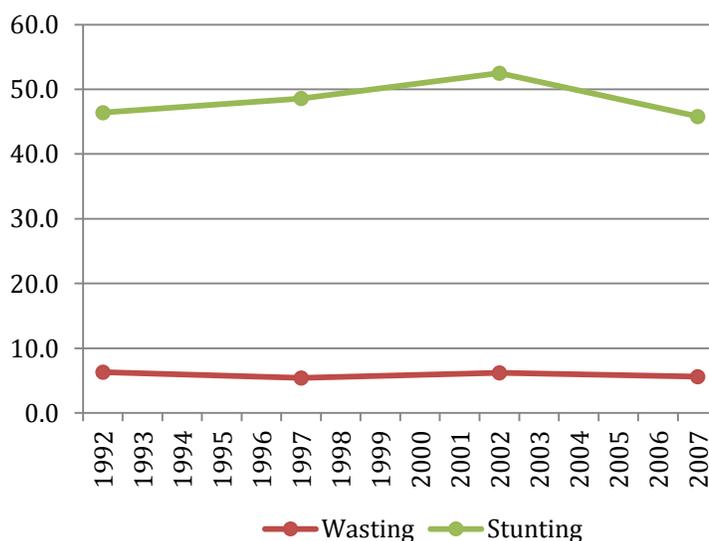
Seasonality in crop production and climate make undernutrition a chronic issue for Zambians. “The nutritional status of [the] entire population (most particularly rural inhabitants) deteriorates during the pre-harvest season, when the supply of food is most limited and transmission of disease is highest due to heavy rains.”⁷⁰ However, “limited access to health services, poverty and food insecurity are the main determinants of malnutrition in children.”⁷¹

Nutritional status of children under 5

Stunting (low height-for-age)

- Stunting rates in Zambia are exceptionally high. Figure 18 shows that since 1992, stunting rates among children under five have hovered near or above 50 percent since the early 1990s. According to the Living Conditions Monitoring Survey, the highest prevalence of stunting in 2010 occurred in Northern and Eastern provinces (52.5

Figure 18. Stunting, wasting and underweight rates for children under five, 1992-2007



Source: 2007 ZDHS.

percent, and 51.7 percent, respectively). Eastern province also has the highest total number of stunted children.⁷² The lowest prevalence was found in Southern province (39.5 percent).⁷³

Wasting (low weight-for-height)

- **The prevalence of wasting has remained relatively constant at 5-6 percent over the past 20 years.** In 2010, the highest prevalence of wasting occurred in Central province (10.6 percent), and the lowest prevalence was found in Copperbelt province (2.2 percent).⁷⁴

Micronutrient deficiencies

According to the 2007 Zambia Poverty and Vulnerability Assessment, monotonous diets of 1-2 staples and supplemental foods lead to poor dietary diversity and a lack of micronutrients for many Zambians.⁷⁵ These deficiencies in iodine, Vitamin A, and iron have impacts food production capabilities, and make populations more vulnerable when shocks occur.

Anemia. According to the most recent, 2007 Zambia Poverty and Vulnerability Assessment, the prevalence of anemia, which is caused by iron deficiency in approximately half of all cases, in Zambia is high. As of 1999, half of pregnant women, 40 percent of all women, and 82 percent of children ages 6-18 months were anemic.⁷⁶ Malaria, which is the leading cause of death in Zambia, can also contribute to anemia. The effects of anemia can include “poor birth (low birthweight, prematurity, etc.) and maternal outcomes (e.g. mortality).”⁷⁷ Further, “severe anemia caused by iron deficiency and malaria can increase the risk of mortality in young children.”⁷⁸

Vitamin A. The ZVPA points to a need for distant, rural households to be better targeted with marketing programs for Vitamin A-enriched Zambian sugar, which form the basis of a national campaign to combat Vitamin A-deficient diets. While nearly 50 percent of urban households reported having sugar at the time of the survey, only 13 percent of rural households had sugar. With the availability of sugar alternatives, such as honey, and poor market access, the study suggest that many rural households may never benefit from this enriched sugar, and may have serious Vitamin A deficiencies. Such deficiencies, the study notes, can interfere with normal functioning of the vision system, growth and development, resistance to disease, and the reproduction process.⁷⁹

Iodine. A 1993 study, which revealed 32 percent of schoolchildren to be iodine deficient, spurred legislation requiring all salt imported or produced in Zambia to be iodized. However, targeting households with iodized salt has also turned to be problematic. Compared to Zambian sugar production, which is both sufficient for the whole country and conducted in a single factory, the sources of salt for Zambians are much more diverse, and from countries whose legislation may require less or no iodine enrichment. Also, “cheaper non-iodized salt, or salt derived from non-iodized stock-feed salt, are both readily available.”⁸⁰ The 2001-02 ZDHA found that only 77 percent in households was iodized, with 10 percent and 20 percent of urban and rural households, respectively, having no salt.⁸¹ Iodine deficiencies are “associated with poor birth outcomes (prematurity, stillbirth, low birth-weight) and severe mental retardation (cretinism).”⁸²

Infant and Young Child Feeding (IYCF) and Caring practices

Breastfeeding

In 2010, breastfeeding rates for children directly after birth were 95 percent, with rates remaining high in both urban and rural ages until the age of 12 months (Figure 19).⁸³ In recent years, breastfeeding rates have increased across the board, particularly for the 0-3 month age group, which increased from 87 percent (2006) to 96 percent (2010) in urban areas, and from 93 percent (2006) to 96 percent (2010) in rural areas.⁸⁴ Similar trends occurred for ages 4-6 months, with trends going from 85 to 94 percent in urban areas, and 93 to 96 percent in rural areas.⁸⁵ After 12 months, breastfeeding rates then decline significantly more quickly in urban households than rural ones. The 2007 ZDHS notes that although high breastfeeding rates are an important contribution to early child development, supplementary feeding patterns are an important component that is lacking in Zambia, due to poor availability of other foods and inexperienced or poor mothering/parenting practices.

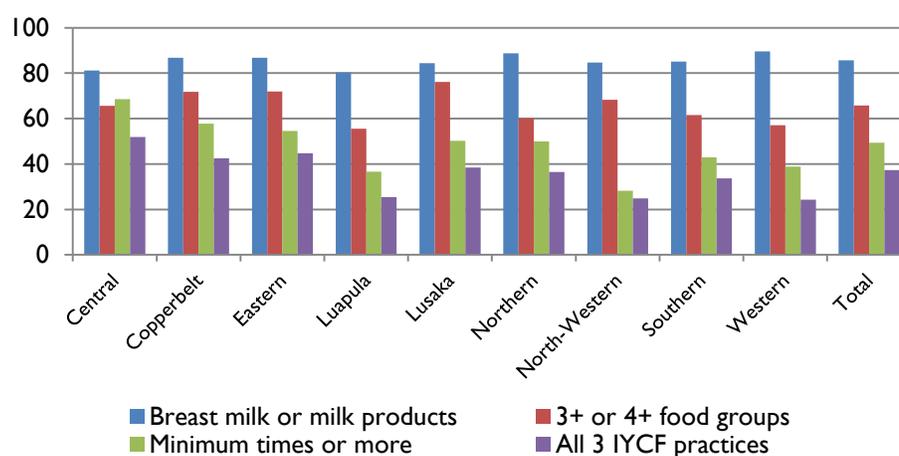
Feeding Practices

Only 37 percent of infants and young children are fed in accordance with all three IYCF practices in Zambia (Figure 19). While 80 percent or more of infants and young children are fed milk and milk products in all provinces, feeding from 3-4+ food groups reaches 70 percent in only two provinces, and only Central province crosses 60 percent for feeding the minimum number of times per day.

Feeding practices appear to be best in Central province, with barely more than 50 percent

of children are fed in according with all three practices (Figure 19). North-western, Western and Luapula provinces have the lowest rates (30-35 percent) of children being fed according to all three practices.

Figure 19. Infant and Young Child Feeding Patterns, by percent, 2007



Source: Zambia DHS, 2007.

MORBIDITY AND MORTALITY

Adult mortality rates in Zambia have seen significant increases and declines during the past 20 years. The 2011 mortality rate (the chance of a 15-year-old dying before age 60), was 312.8/1,000 for women and 358.4/1,000 for men. This is a substantial decline from their year 2000 levels of 636.8 and 624.2 for women and men, respectively. Prior to that, mortality rates for women and men in 1990 were 519.9 and 552, respectively.

As of 2011, life expectancy at birth in Zambia was 55 years, and life expectancy at age 60 is 16 years. Life expectancy at birth has increased since 1990, when it was 43 years. However, life expectancy at age 60 remains nearly the same as in 1990 (15 years).⁸⁶

The major causes of death in Zambia are fever/malaria (21.7 percent of deaths), cough/cold/chest infection (7.1 percent), tuberculosis (7.0 percent), and cerebral malaria (5.2 percent). It should be noted that the Living Conditions Monitoring Survey did not include HIV/AIDS as a cause of death in its final report, which may be a contributor to the morbidity and mortality data described above.⁸⁷ Fever/malaria deaths were most prevalent in Central and North-Western provinces, where they accounted for 26.5 percent and 26.0 percent of deaths, respectively. The lowest fever/malaria rates were found in Lusaka (13.8 percent).⁸⁸

Zambia's maternal mortality rate was 400 per 100,000 live births in 2010⁸⁹ is one of the highest in the world, with only 47 percent of deliveries are attended by a skilled health worker.⁹⁰ Data on causes of maternal mortality were not available.

Infant and Child Mortality

Between 1950 and 2010, the Under 5 Mortality rate has declined by more than half, in line with trends in neighboring countries (see Figure 20).⁹¹ Since the 1990-1995 period, the Under 5 Mortality Rate has declined from 182 deaths/1,000 live births to 122/1,000 in 2005-2010. UNICEF data shows an even larger decline, from 193/1,000 in 1990 to 83/1,000 in 2011.⁹²

According to the most recent Zambia DHS (2007), the major causes of child mortality (see Figure 21) include acute lower respiratory infections (14 percent of child deaths), malaria (13 percent), prematurity (13 percent), and HIV/AIDS (11 percent).

Malaria

Though affected by widespread malaria infections, Zambia has in recent years seen significant decreases in mortality due to malaria. However, Zambia remains reliant on intervention programs, without which significant spikes in malaria incidence and mortality remain possible.

Malaria patterns are related both seasonally and geographically to rainfall/proximity to water. With the increase in the mosquito population as the rainy season begins in September-November, malaria rates tend to peak in April-May, falling off once the rains stop in June-July.⁹³

Malaria remains a significant health issue, averaging approximately 4 million cases/year (between 2001 and 2010).⁹⁴ However, since 2000, intensified prevention and curative efforts have significantly reduced incidences of malaria-mortality (see Figure 22). Malaria deaths for children under 5 years old dropped by approximately 65 percent between 2001 (5,513 deaths) and 2009 (1,924 deaths). Malaria deaths for all ages dropped by approximately 59 percent between 2001 (9,369 deaths) and 2009 (3,862 deaths).

Intervention programs during this time include: Introduction and expansion of indoor residential spraying (up to 90 percent coverage), scale-up and coverage of long-lasting insecticide-treated nets in households from 50 percent to 70 percent, and use of artemisinin-based combination therapies nationwide.⁹⁵

Despite improvements in malaria mortality rates, studies indicate that a recent surge in malaria cases in 2009-10 is due to the disruption of funding for vector control interventions (Figure 23). This suggests that Zambia remains vulnerable to increases in incidences of malaria infection and mortality if control programs fail or are not adequately supported.⁹⁶

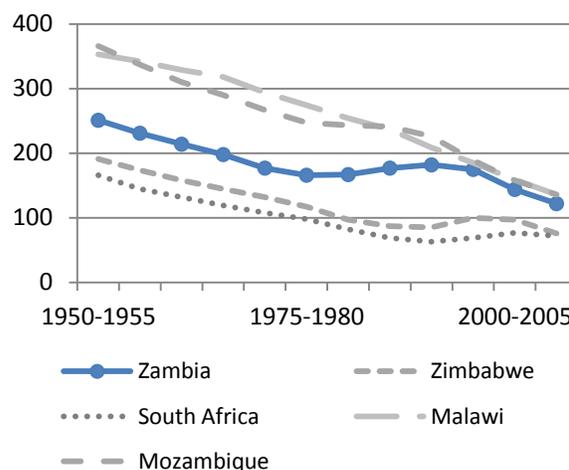
HIV and Tuberculosis

The dual burden of HIV/AIDS and tuberculosis is a significant public health problem in Zambia, and one that indirectly increases the vulnerability of affected households to food insecurity. HIV infection significantly increases the risk that a person infected with TB bacteria will develop TB disease.⁹⁷ Expenses for medication, loss of labor productivity, increased nutrition requirements, and potentially the loss of household members all serve to reduce the ability for households to meet their livelihood needs, and to cope with any shocks to their food security situation.

HIV/AIDS

With one of the highest HIV/AIDS prevalence rates (approximately 13-14 percent⁹⁸) in the world, Zambia is particularly vulnerable to shocks to household food security. HIV/AIDS can contribute to household and individual-level vulnerability to

Figure 20. Zambia Under 5 Mortality Rate, compared to several neighboring countries in southern Africa, 1950-2010



Source: World Bank, 2010

Figure 21. Causes of child mortality, by percent, 2010

Acute lower respiratory infections	14 %
Malaria	13 %
Prematurity	13 %
HIV/AIDS	11 %
Birth asphyxia and birth trauma	9 %
Diarrheal diseases	9 %
Sepsis and other infectious conditions of the newborn	6 %
Congenital anomalies	4 %
Injuries	4 %
Measles	4 %
Other diseases	15 %

Source: WHO, 2010.

food insecurity by reducing productivity and reducing the ability for infected persons to meet their nutritional needs, through reduced food intake, nutrient mal absorption, and increased energy needs.⁹⁹ Moreover, HIV/AIDS can reduce household members' income and availability for labor, increase health-care related costs, and reduce savings and productive assets.¹⁰⁰

Though a major contributor to morbidity and mortality in Zambia, HIV/AIDS prevalence rates have seen declines in recent years. Studies estimate the prevalence at between 20-28 percent in the late 1980s, 15-16 percent in 2001, 14.3 percent in 2007, and 13.5 percent in 2009.^{101 102}

Urban areas have higher infection rates than rural ones. Urban areas, along with border towns and localities along major transportation routes, have the highest HIV infection prevalence at 20 percent, while the prevalence in rural and less densely populated areas is 10 percent.¹⁰³

HIV/AIDS prevalence is higher among women than men. On a national level, the prevalence rate among women is 16 percent, compared to 12 percent for men.¹⁰⁴ For women, the peak prevalence rate is found in the 30-34 year age group, while for men the peak rate is in the 35-39 age group.¹⁰⁵

Tuberculosis

At 352 cases per 100,000 people, Zambia's tuberculosis prevalence is 20 percent higher than the regional average (293/100,000), and more than twice the global average (170/100,000).¹⁰⁶ Between 1990 and 2004, notifications of tuberculosis cases rose from 16,863 to 58,070, followed by a drop to 48,408 in 2010.¹⁰⁷ Studies note that the increase in tuberculosis notifications coincided with the increased prevalence of HIV/AIDS, and that increasing urbanization may have created the overcrowding and poor housing conditions that are conducive to the spread of tuberculosis. Increased investment and implementation of anti-tuberculosis measures may have caused the more recent decline, though poor record-keeping may also be a factor in the reduced number of case notifications.¹⁰⁸

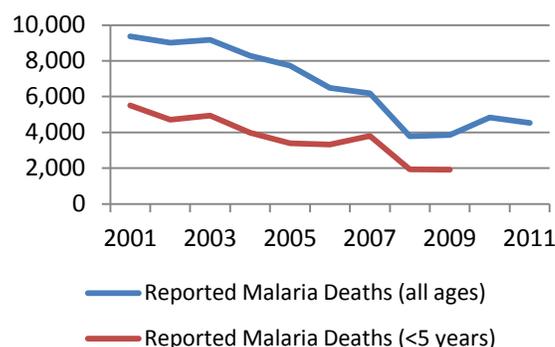
Access to basic social services

Access to basic social services is an important indicator for how much of the population has access to adequate/good quality services that are important for maintaining health and security among the population. In terms of food security, services such as improved water supply and sanitation facilities are important for reducing the incidence of water-borne illness that may make populations more vulnerable to illness or death should a shock to the food system occur.

Water

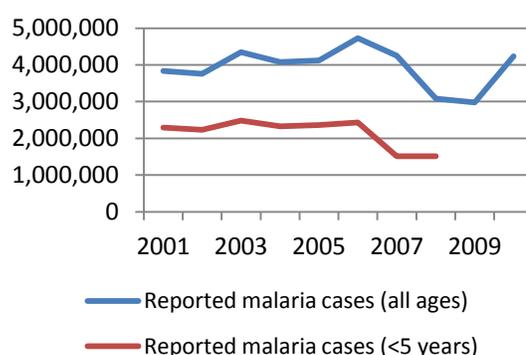
In Zambia, rural and poor population groups are more vulnerable than urban and non-poor groups to water-borne diseases due to a lack of access to safe water sources. The percentage of rural households that have access to safe water sources (49.2 percent) is significantly lower than it is for urban households (83.6 percent).

Figure 22. Reported malaria deaths (number of persons), all ages and under 5 years old



Source: WHO, 2010; WHO 2012

Figure 23. Reported malaria cases (number of persons), all ages and under 5 years old



Source: WHO, 2010; WHO 2012

Figure 24. Percentage of population with access to safe water source, by total population, rural/urban, and poverty group, 2010

Population Group		Percentage
All Zambia		61.6 percent
Rural/Urban	Rural	49.2 percent
	Urban	83.6 percent
Poverty	Extremely poor	48.1 percent
	Moderately poor	54.7 percent
	Non-poor	75 percent

Source: Living Conditions Monitoring Survey, 2010.

There is also a significant divide between poor and non-poor households in terms of access to safe water sources, with only 54.7 percent of even moderately poor households having access to safe water sources, compared to 75 percent of non-poor households (Figure 24). These trends can be further broken down by province, where 89.2 percent of households in Lusaka (a mostly urban province) have access to safe water. Northern and Luapula provinces have the lowest percentage of household access to safe water sources, at 26.9 percent and 28 percent, respectively.¹⁰⁹

Sanitation

In Zambia, rural and poor populations have less access to sanitary facilities than their urban and non-poor counterparts (Figure 25).

Only 14.1 percent of rural households have access to adequate toilet facilities, compared to two-thirds of urban households. The highest concentration of households with access to adequate toilet facilities (69.7 percent) could be found in Lusaka province, and with the lowest (7.4 percent) in Western province. There are also households that have no toilet facilities at all. In 6 of 9 provinces, these rates were 4 percent of the population, or lower. In the other 3 provinces, however, these rates were 25.1 percent (Eastern), 28 percent (Southern), and 43.9 percent (Western) of the population.¹¹⁰

Figure 25. Percentage of population with adequate/improved toilet facilities, 2010

Population Group		Percentage
All Zambia		32.7 percent
Rural/Urban	Rural	14.1 percent
	Urban	66 percent
Poverty	Extremely poor	10.4 percent
	Moderately poor	18.3 percent
	Non-poor	56 percent

Source: Living Conditions Monitoring Survey, 2010.



ADDITIONAL RESOURCES

[Zambia Demographic and Health Survey 2007](#). Central Statistical Office, Republic of Zambia. (2009).

[Living Conditions Monitoring Survey Report 2006 and 2010](#). Central Statistical Office, Republic of Zambia. (2012).

[Zambia Poverty and Vulnerability Assessment](#). The World Bank. (2007).

[Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission’s Feed the Future Strategic Review](#). Food Security Research Project. (2011).

[Review of the malaria epidemiology and trends in Zambia](#). Masaninga F., et al. (2013).

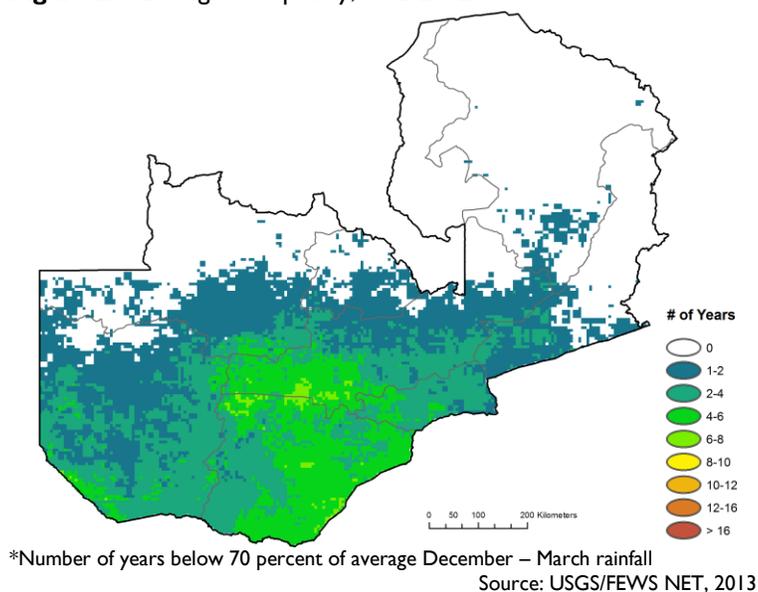
Stability

Flooding and drought

Due to Zambia's reliance on rain-fed agriculture, the country is particularly vulnerable to inter- and intra-annual variations in rainfall, the result of which are floods and droughts that impact the food production on which Zambia relies (Figure 26). In 2009, the International Food Policy Research Institute (IFPRI) concluded a study on climate variability and its impacts on agriculture in Zambia. That study, which analyzed rainfall totals across the country's five agro-ecological zones, found that during the 32-year study period between 1976 and 2007, 'Normal' weather was never observed in more than three of the five¹¹¹ agro-ecological zones at any given time. Additional bottom-line findings included:

- It is very likely that at least one agro-ecological zone will experience an "abnormal weather event" in any given year.¹¹²
- Central and Southern Zambia (Zones I, IIa1 and IIb) and most prone to both droughts and floods. By contract Zone III had no severe droughts during the study period, and only experienced one season (i.e. 1978/79) classified as "very wet."¹¹³
- Droughts are becoming more frequent. All of the severe droughts observed during the study took place within the last 18 years of the study.¹¹⁴

Figure 26. Drought Frequency, 1982-2012*



In the period of 1997-2007, notable droughts have occurred during the rainy seasons of 2000-01, 2001-02, 2004-05, with floods occurring in 2005-06 and 2006-07.¹¹⁵ Food security, livelihoods, and agricultural production can all be negatively the consequences of excessive rainfall, which can include waterlogging of soils, erosion, changes in the length of the growing season, and flash floods. In terms of flooding, the Zambian Ministry of Tourism, Environment and Natural Resources, indicates that impacts of these hazards include widespread crop failure/loss, outbreaks of human and animal diseases, dislocation of human populations and destruction of property and infrastructure.¹¹⁶ Due to Zambia's reliance on rainfed agriculture, floods can be a major shock to food security in Zambia.

Caution should be exercised when referring to flooding as chronic "hazards," since it can also have positive consequences. For instance, floods in the Zambezi West Bank Livelihood Zone are both a threat and an advantage, and it is difficult to distinguish between these two. While on the one hand floods damage crops, grazing areas and houses and block communications, they also bring fish/*kakeya*, which are a major source of income and food in this zone.¹¹⁷

Livestock disease

Crop pests, livestock disease, and poor soils also frequently constrain production in at least localized areas of the country. Livestock diseases that affect Zambia include Contagious Bovine Pleuro Pneumonia (CBPP), African Swine (pigs), Newcastle (chickens), and Corridor (cattle) diseases. CBPP tends to be a chronic hazard that reduces cattle numbers in several parts of the country each year, while the remaining diseases are more periodic in nature. Several factors influence the scale and severity of these diseases, including the severity of flood, and levels of informal trade of livestock from countries that may not have robust phyto- and sanitary control measures.¹¹⁸

Food Security Outcomes

RECENT ACUTE FOOD INSECURITY

Acute food insecurity in Zambia is typically driven by excessive rains, flooding, droughts and/or dry spells that disrupt crop production seasons in localized areas. When they occur, these shocks often most critically affect poor households by reducing their already meagre production and/or causing price spikes that prevent these households from accessing food.

Phase 1: None/Minimal Acute Food Insecurity and Phase 2: Stressed are the most common food security outcomes identified in Zambia. In the past five years, there has been little severe acute food insecurity, though some chronic issues remaining problematic. Flooding and drought is possible throughout the entire country, with Southern, North-Western, Western, Eastern, and Northern Provinces being the most often affected by **Phase 2: Stressed** levels of food insecurity.

Phase 3: Crisis outcomes have been classified once since FEWS NET adoption the Integrated Food Security Phase Classification scale in 2007. These outcomes were estimated to have occurred in districts in northwest Zambia in March/April 2007 due to the combined effects of floods and deficit rainfall.

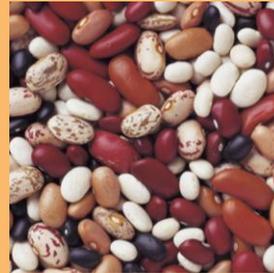
Phase 4: Emergency and Phase 5: Famine level outcomes have not been identified in Zambia since FEWS NET adoption of the Integrated Food Security Phase Classification Scale.

For more information about how FEWS NET classifies acute food insecurity using the IPC, visit our website [here](#).

Typical Areas of Concern

The typical areas of concern in Zambia are three livelihood zones located in the southern and southwestern part of the country. These zones include Kazungula-Mwandi Plain (Zone 7A), Luano Valley (Zone 7C), and Gwembe Valley (11A). The four zone in this southern cluster – Chongwe-Nyimbe Plateau (7B) – is relatively high producing and less vulnerable to these shocks.

People living in these zones rely primarily on low-producing subsistence agriculture. In addition to maize, agricultural products include cotton, vegetables, tobacco, groundnuts, sorghum, millet, sweet potatoes,

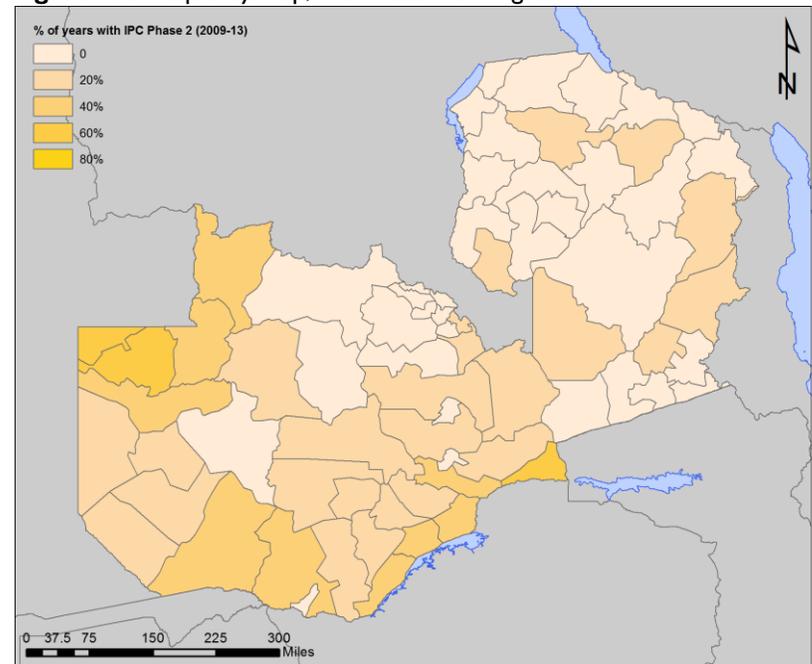


KEY FEWS NET ZAMBIA OUTCOMES RESOURCES

[FEWS NET Zambia Outlook reports and Outlook Updates](#)

[FEWS NET Zambia Special Reports](#)

Figure 27. Frequency Map, IPC Phase 2 or Higher



Source: FEWS NET, 2013

pumpkins and cassava. Livestock is raised as an income source, and includes cattle, goats, poultry and pigs.

The semi-arid to arid climate and low-lying geography makes this cluster particularly prone to droughts and floods, which constitute the main driver of acute food insecurity for households already vulnerable due to low production and livestock diseases.

For more information on these zones, consult the Livelihoods section of this document.

Endnotes

- ¹ Food and Agriculture Organization, World Food Summit, 1996
- ² Measuring Household Food Insecurity: Why It's So Important and Yet So Difficult to Do. Patrick Webb, Jennifer Coates, Edward A. Frongillo, Beatrice Lorge Rogers, Anne Swindale, and Paula Bilinsky. 2006. American Society for Nutrition.
- ³ [National Food and Nutrition Security Policy](#). 2011. Government of Kenya.
- ⁴ Central Intelligence Agency, "The World Fact Book: Zambia." <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html> (Accessed December 2013).
- ⁵ Central Statistical Office, Republic of Zambia. (2009). "Zambia Demographic and Health Survey 2007." pp. 2.
- ⁶ Central Statistical Office, Republic of Zambia. (2009). "Zambia Demographic and Health Survey 2007." pp. 1
- ⁷ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 128.
- ⁸ The World Bank. (2007). "Zambia Poverty and Vulnerability Assessment." (Report No. 32573-ZM). pp. vi. Retrieved from <https://openknowledge.worldbank.org/handle/10986/7863>. (November 12, 2013).
- ⁹ Food and Agricultural Organization of the United Nations. (2004). "The State of Food Insecurity in the World 2004." Retrieved from <ftp://ftp.fao.org/docrep/fao/007/y5650e/y5650e00.pdf>. (October 4, 2013).
- ¹⁰ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 26. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ¹¹ Ibid.
- ¹² Famine Early Warning Systems Network (2004). "Zambia Annual Harvest Assessment Report." Retrieved from <http://v4.fews.net/docs/Publications/1000538.pdf>. (October 2, 2013).
- ¹³ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 45. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ¹⁴ Ibid.
- ¹⁵ Ibid.
- ¹⁶ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 78-79. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ¹⁷ Mason, N. et al. (2012). "Wheat Consumption in Sub-Saharan Africa: Trends, Drivers, and Policy Implications." *MSU International Development Working Paper* (No. 127), pp. 24. Retrieved from <http://fsg.afre.msu.edu/papers/idwp127.pdf>. (November 8, 2013).
- ¹⁸ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 73. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ¹⁹ Indaba Agricultural Policy Research Institute. (2013). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia." (Working Paper 76), pp. 62. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/working-papers>. (November 30, 2013).
- ²⁰ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 73. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ²¹ Indaba Agricultural Policy Research Institute. (2013). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia." (Working Paper 76), pp. 62. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/working-papers>. (November 30, 2013).
- ²² Ibid.
- ²³ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 84. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ²⁴ Ibid.
- ²⁵ ACTESA/COMESA. (2010). "Smallholder Marketing Behavior and Urban Consumption Patterns in Eastern and Southern Africa." (Policy Synthesis No. 3), pp. 2. Retrieved from http://fsg.afre.msu.edu/gisama/GISAMA_PS_3.pdf. (December 5, 2013).

- ²⁶ Lubungu, M. and Mofya-Mukuka R. (2013). "The Livestock Sector in Zambia: Production, Marketing and Constraints." Presentation to SIDA & FINNIDA, IAPRI Conference in Lusaka, Zambia. January 23, 2013. Slide 3.
- ²⁷ Ibid.
- ²⁸ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 137.
- ²⁹ Lubungu, M. and IAPRI Team. (2013). "Smallholder Livestock Production and Challenges in Zambia." Indaba Agricultural Policy Research Institute. Presentation to the High Level Government Policy Meeting, Chaminuka Lodge, Lusaka, Zambia. April 13, 2013. Slide 5. Retrieved from http://fsg.afre.msu.edu/zambia/3_livestock_status_in_Zambia_High_level_meeting.pdf. (December 17, 2013).
- ³⁰ Indaba Agricultural Policy Research Institute. (2013). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia." (Working Paper 76), pp. 21. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/working-papers>. (November 30, 2013).
- ³¹ Ibid.
- ³² Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 137
- ³³ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 139
- ³⁴ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 137
- ³⁵ Ibid.
- ³⁶ The Competitiveness and Trade Expansion Program (COMPETE). (2009). "Staple Food Value Chain Analysis: Country Report – Zambia." pp. 18. Received from http://pdf.usaid.gov/pdf_docs/Pnadw640.pdf. (December 2, 2013).
- ³⁷ Ibid.
- ³⁸ Lubungu, M. and Mofya-Mukuka R. (2013). "The Livestock Sector in Zambia: Production, Marketing and Constraints." Presentation to SIDA & FINNIDA, IAPRI Conference in Lusaka, Zambia. January 23, 2013. Slide 10.
- ³⁹ Ibid.
- ⁴⁰ Ibid.
- ⁴¹ Food Security Research Project. (2010). "Spatial and Regional Dimensions of Food Security in Zambia." (Policy Synthesis No. 38), pp. 7. Retrieved from <http://fsg.afre.msu.edu/zambia/ps38.pdf>. (October 23, 2013).
- ⁴² Ibid.
- ⁴³ The Competitiveness and Trade Expansion Program (COMPETE). (2009). "Staple Food Value Chain Analysis: Country Report – Zambia." pp. 16. Received from http://pdf.usaid.gov/pdf_docs/Pnadw640.pdf. (December 2, 2013).
- ⁴⁴ Food Security Research Project. (2011). "The Effects of the Food Reserve Agency on Maize Market Prices in Zambia." (Policy Synthesis No. 50), pp. 3. Retrieved from http://fsg.afre.msu.edu/zambia/ps_50.pdf. (October 9, 2013).
- ⁴⁵ Food Security Research Project. (2011). "The Effects of the Food Reserve Agency on Maize Market Prices in Zambia." (Policy Synthesis No. 50), pp. 5. Retrieved from http://fsg.afre.msu.edu/zambia/ps_50.pdf. (October 9, 2013).
- ⁴⁶ Food Security Research Project. (2011). "The Effects of the Food Reserve Agency on Maize Market Prices in Zambia." (Policy Synthesis No. 50), pp. 3. Retrieved from http://fsg.afre.msu.edu/zambia/ps_50.pdf. (October 9, 2013).
- ⁴⁷ Food Security Research Project. (2011). "The Effects of the Food Reserve Agency on Maize Market Prices in Zambia." (Policy Synthesis No. 50), pp. 5. Retrieved from http://fsg.afre.msu.edu/zambia/ps_50.pdf. (October 9, 2013).
- ⁴⁸ Indaba Agricultural Policy Research Institute. (2012). "The Status of the Smallholder Livestock Sector in Zambia." Indaba (Technical Report No. 1), pp. 3. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/technical-reports>. (October 24, 2013).
- ⁴⁹ Indaba Agricultural Policy Research Institute. (2012). "The Status of the Smallholder Livestock Sector in Zambia." Indaba (Technical Report No. 1), pp. 2. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/technical-reports>. (October 24, 2013).
- ⁵⁰ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 88. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ⁵¹ Indaba Agricultural Policy Research Institute. (2012). "The Status of the Smallholder Livestock Sector in Zambia." Indaba (Technical Report No. 1), pp. 2. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/technical-reports>. (October 24, 2013).
- ⁵² Indaba Agricultural Policy Research Institute. (2012). "The Status of the Smallholder Livestock Sector in Zambia." Indaba (Technical Report No. 1), pp. 3. Retrieved from <http://www.iapri.org.zm/index.php/research-reports/technical-reports>. (October 24, 2013).
- ⁵³ Famine Early Warning Systems Network. (2013). "Zambia November 2013 Price Bulletin – Market Description."

- ⁵⁴ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 80. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ⁵⁵ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 73. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ⁵⁶ Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 85. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ⁵⁷ Sitko, N. and Janye, T.S. (2014). "Exploitative Briefcase Businessmen, Parasites, and Other Myths and Legends: Assembly Traders and the Performance of Maize Markets in Eastern and Southern Africa." *World Development*. 54, pp. 60.
- ⁵⁸ Sitko, N. and Janye, T.S. (2014). "Exploitative Briefcase Businessmen, Parasites, and Other Myths and Legends: Assembly Traders and the Performance of Maize Markets in Eastern and Southern Africa." *World Development*. 54, pp. 61.
- ⁵⁹ Sitko, N. and Janye, T.S. (2014). "Exploitative Briefcase Businessmen, Parasites, and Other Myths and Legends: Assembly Traders and the Performance of Maize Markets in Eastern and Southern Africa." *World Development*. 54, pp. 63.
- ⁶⁰ Foster, V. and Dominguez C. (2010). "Zambia's Infrastructure : A Continental Perspective." Africa Infrastructure Diagnostic Country Report. pp. 9. Retrieved from <http://www.ppiaf.org/sites/ppiaf.org/files/publication/AICD-Zambia-country-report.pdf>. (December 2, 2013).
- ⁶¹ Ibid.
- ⁶² The Competitiveness and Trade Expansion Program (COMPETE). (2009). "Staple Food Value Chain Analysis: Country Report – Zambia." pp. 25. Received from http://pdf.usaid.gov/pdf_docs/Pnadw640.pdf. (December 2, 2013).
- ⁶³ Jayne, T.S. et al. (2010). "Patterns and Trends in Food Staples Markets in Eastern and Southern Africa: Toward the Identification of Priority Investments and Strategies for Developing Markets and Promoting Smallholder Productivity Growth." *MSU International Development Working Paper*. (No. 104), pp. 67. Retrieved from <http://fsg.afre.msu.edu/papers/idwp.htm>. (November 11, 2013).
- ⁶⁴ The Competitiveness and Trade Expansion Program (COMPETE). (2009). "Staple Food Value Chain Analysis: Country Report – Zambia." pp. 25. Received from http://pdf.usaid.gov/pdf_docs/Pnadw640.pdf. (December 2, 2013).
- ⁶⁵ Food Security Research Project. (2009). "Effects of Maize Marketing and Trade Policy on Price Unpredictability in Zambia." (Working Paper No. 38), pp. vi. Retrieved from <http://fsg.afre.msu.edu/zambia/wp38.pdf>. (Accessed November 29, 2013).
- ⁶⁶ Food Security Research Project. (2009). "Effects of Maize Marketing and Trade Policy on Price Unpredictability in Zambia." (Working Paper No. 38), pp. vii. Retrieved from <http://fsg.afre.msu.edu/zambia/wp38.pdf>. (Accessed November 29, 2013).
- ⁶⁷ Ibid.
- ⁶⁸ Chapoto, A. et al. (2010). "Staple food prices in Zambia." pp. 2. Retrieved from http://ageconsearch.umn.edu/bitstream/58556/2/AAMP_Maputo_23_Zambia_ppr.pdf. (December 2, 2013).
- ⁶⁹ Food and Agricultural Organization of the United Nations. (2010). "Zambia Nutrition Country Profile." Retrieved from http://www.fao.org/ag/AGN/nutrition/ZMB_en.stm. (December 2, 2013).
- ⁷⁰ The World Bank. (2007). "Zambia Poverty and Vulnerability Assessment." (Report No. 32573-ZM). pp. 209. Retrieved from <https://openknowledge.worldbank.org/handle/10986/7863>. (November 12, 2013).
- ⁷¹ Food and Agricultural Organization of the United Nations. (2010). "Zambia Nutrition Country Profile." Retrieved from http://www.fao.org/ag/AGN/nutrition/ZMB_en.stm. (December 2, 2013).
- ⁷² Food Security Research Project. (2011). "Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in Support of the USAID Mission's Feed the Future Strategic Review." (Working Paper No. 52), pp. 101. Retrieved from <http://fsg.afre.msu.edu/zambia/wp52.pdf>. (December 1, 2013).
- ⁷³ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 257
- ⁷⁴ Ibid.
- ⁷⁵ Zambia Nutrition Country Profile. FAO. http://www.fao.org/ag/AGN/nutrition/ZMB_en.stm
- ⁷⁶ The World Bank. (2007). "Zambia Poverty and Vulnerability Assessment." (Report No. 32573-ZM). pp. 218. Retrieved from <https://openknowledge.worldbank.org/handle/10986/7863>. (November 12, 2013).
- ⁷⁷ Ibid.
- ⁷⁸ Ibid.
- ⁷⁹ The World Bank. (2007). "Zambia Poverty and Vulnerability Assessment." (Report No. 32573-ZM). pp. 215. Retrieved from <https://openknowledge.worldbank.org/handle/10986/7863>. (November 12, 2013).

- ⁸⁰ The World Bank. (2007). "Zambia Poverty and Vulnerability Assessment." (Report No. 32573-ZM). pp. 218. Retrieved from <https://openknowledge.worldbank.org/handle/10986/7863>. (November 12, 2013).
- ⁸¹ Ibid.
- ⁸² Ibid.
- ⁸³ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 249
- ⁸⁴ Ibid.
- ⁸⁵ Ibid.
- ⁸⁶ Central Statistical Office, Republic of Zambia. (2009). "Zambia Demographic and Health Survey 2007." pp. 2.
- ⁸⁷ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 38
- ⁸⁸ Ibid.
- ⁸⁹ Central Intelligence Agency, "The World Fact Book: Zambia." <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html> (Accessed December 2013).
- ⁹⁰ UNICEF. "Zambia: Maternal, Newborn and Child Health." Retrieved from http://www.unicef.org/zambia/5109_8457.html. (November 4, 2013).
- ⁹¹ World Bank. (2013). "Zambia." World Development Indicators Databank. Retrieved from <http://data.worldbank.org/country/zambia>. (December 2, 2013).
- ⁹² UNICEF. (2011). "Basic Indicators: Zambia." Retrieved from http://www.unicef.org/infobycountry/zambia_statistics.html. (December 17, 2013).
- ⁹³ Masaninga F., et al. (2013). "Review of the malaria epidemiology and trends in Zambia." *Asian Pacific Journal of Tropical Biomedicine* (3)2, pp. 89. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23593585>. (November 8, 2013).
- ⁹⁴ This data was collected from the 2008-2012 WHO Annual World Malaria Reports, which includes historical data back to 2000. This 10-year average was calculated by the author of this profile, with the lowest reported suspected and confirmed cases for this period found in 2009 (2,976,395), and the highest in 2006 (4,731,338).
- ⁹⁵ Masaninga F., et al. (2013). "Review of the malaria epidemiology and trends in Zambia." *Asian Pacific Journal of Tropical Biomedicine* (3)2, pp. 89. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23593585>. (November 8, 2013).
- ⁹⁶ Masaninga F., et al. (2013). "Review of the malaria epidemiology and trends in Zambia." *Asian Pacific Journal of Tropical Biomedicine* (3)2, pp. 92. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23593585>. (November 8, 2013).
- ⁹⁷ Centers for Disease Control and Prevention. (2012). "Tuberculosis." Retrieved from www.cdc.gov/tb/topic/basics/default.htm. (August 15, 2013).
- ⁹⁸ Central Statistical Office, Republic of Zambia. (2009). "Zambia Demographic and Health Survey 2007." pp. 228.
- ⁹⁹ Regional Centre for Quality of Health Care/Food and Nutrition Technical Assistance Project. (2008). "Nutrition, Food Security and HIV: A Compendium of Promising Practices." pp. 1. Retrieved from <http://www.fantaproject.org/focus-areas/infectious-diseases/nutrition-food-security-hiv-compendium>. (October 14, 2013).
- ¹⁰⁰ Ibid.
- ¹⁰¹ Kapata, N. et al. (2011). "Scale-up of TB and HIV program collaborative activities in Zambia – a 10-year review." *Tropical Medicine and International Health*. 17(6), pp. 760-766.
- ¹⁰² Drinkwater, M. et al. (2006). "The Effects of HIV/AIDS on Agricultural Production Systems in Zambia: A Restudy 1993-2005." IFPRI/RENEWAL. pp. vii. Retrieved from <http://www.ifpri.org/publication/effects-hiv-aids-agricultural-production-systems-zambia>. (December 17, 2013).
- ¹⁰³ Central Statistical Office, Republic of Zambia. (2009). "Zambia Demographic and Health Survey 2007." pp. 228.
- ¹⁰⁴ Ibid.
- ¹⁰⁵ Drinkwater, M. et al. (2006). "The Effects of HIV/AIDS on Agricultural Production Systems in Zambia: A Restudy 1993-2005." IFPRI/RENEWAL. pp. vii. Retrieved from <http://www.ifpri.org/publication/effects-hiv-aids-agricultural-production-systems-zambia>. (December 17, 2013).
- ¹⁰⁶ World Health Organization. (2011). "Zambia Health Profile." Retrieved from <http://www.who.int/countries/zmb/en/>. (December 2, 2013).
- ¹⁰⁷ Kapata, N. et al. (2011). "Trends in Zambia's tuberculosis burden over the past two decades." *Tropical Medicine and International Health*. 16(11), pp. 1405.
- ¹⁰⁸ Ibid.
- ¹⁰⁹ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 221.
- ¹¹⁰ Central Statistical Office, Republic of Zambia. (2012). "Living Conditions Monitoring Survey Report 2006 and 2010." pp. 236.
- ¹¹¹ Conventional agro-ecological zone maps of Zambia include 3 zones (I, II, and III), with Zone II broken down into IIa and IIb. Thurlow et al have further broken down Zone IIa into two sub-groups on the basis of rainfall differences, making a

total of 5 agro-ecological zones in all. For more on their reasoning, see Thurlow et al., IFPRI Discussion Paper 00890, August 2009, pg. 5.

¹¹² International Food Policy Research Institute. (2009). "The Impact of Climate Variability and Change on Economic Growth and Poverty in Zambia." (IFPRI Discussion Paper No. 00890), pp. 12. Retrieved from <http://www.ifpri.org/publication/impact-climate-variability-and-change-economic-growth-and-poverty-zambia> (October 25, 2013).

¹¹³ Ibid.

¹¹⁴ Ibid.

¹¹⁵ Republic of Zambia. (2007). "Formulation of the National Adaptation Programme of Action on Climate Change – Final Report." Ministry of Tourism, Environment and Natural Resources. pp. 8. Retrieved from <http://unfccc.int/resource/docs/napa/zmb01.pdf>. (October 23, 2013).

¹¹⁶ Ibid.

¹¹⁷ Zambia Vulnerability Assessment Committee, FEWS NET, UNICEF. (2004). "Zambia Livelihood Map Rezoning and Baseline Profiling." Final Report, pp 24. Retrieved from http://www.fews.net/docs/Publications/zm_baseline_rural_en.pdf. (December 17, 2013).

¹¹⁸ Ibid.