South Africa Livelihood Zone Profile

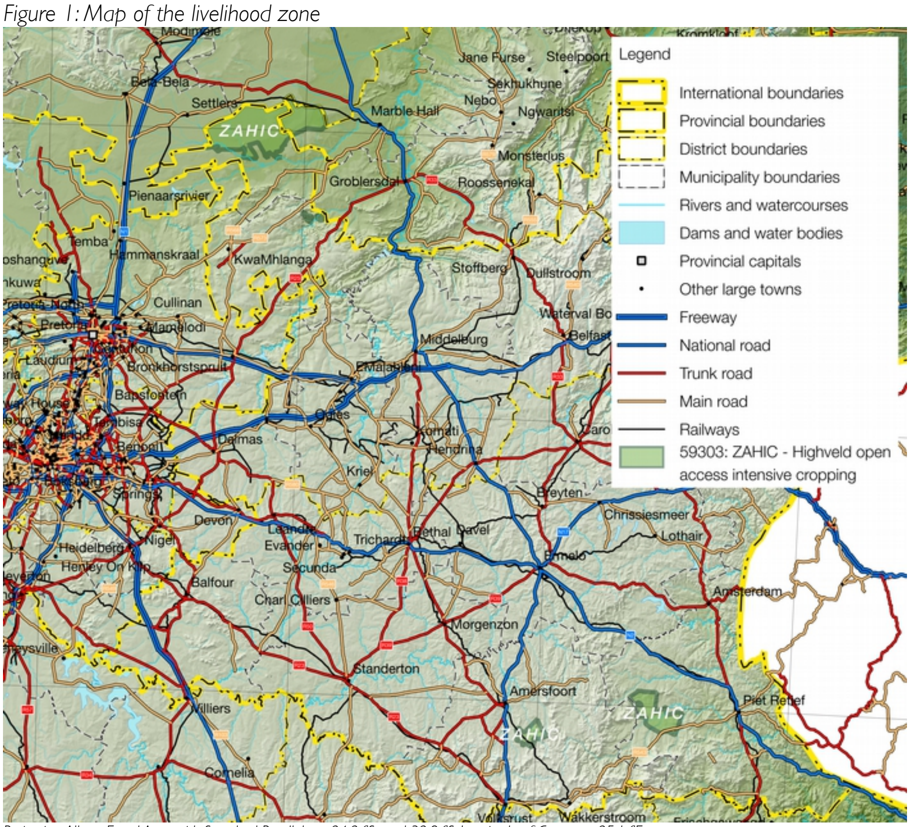
59303 – Highveld Open Access Intensive Cropping (*ZAHIC*)

Zone Description

This livelihood zone is located in the Highveld in good farming land. It consist of three sections:

- In the north, the largest section is a stretch of flat land straddling Mpumalanga (Dr JS Moroka and Thembisile Municipalities of Nkangala District) and Limpopo (Ephraim Mogale Municipality in Greater Sekhukhune District) to the west of Marble Hall;
- In the south, a section in Mkhondo Municipality, Gert Sibande District, around Saul Mkhizeville in Mpumalanga west of Piet Retief town; and
- A small area south of Amersfoort around Vlakpoort in Pixley ka Seme Municipality in Gert Sibande District.

Figure 1: Map of the livelihood zone



Projection: Albers Equal Area with Standard Parallels at 24.2 °S and 32.8 °S, Longitude of Centre at 25.1 °E..
Sources of data: Open Street Map, Highways (http://wiki.openstreetmap.org/wiki/Planet.osm) for the road lines, Shuttle Radar Topography Mission (SRTM) 3 version 2.1 (http://www2.jpl.nasa.gov/srtm/) for the elevation and relief shading and Agricultural Geo-referenced Information System (AGIS) (http://www.agis.agric.za/agisweb/agis.html) for place names, boundaries and rivers.

The northern section of the zone receives 300 to 600 mm mean annual rainfall, while the two areas in the south receive 300 to 700 mm, while temperatures vary from 7° C to 35° C in the north and –2° C to 33° C in the southern sections. The rainfall is highly variable and the high summer temperatures wither crops from transpiration. Wealthier households keep a few cattle and goats. Households also depend on casual labour, remittances and grants.

Table 1 - 2016 Population breakdown of districts and municipalities covered by the livelihood zone, based on the 2011 Census and annual projections

Province	District	Municipality	Pop. Est. in ZAHIC	% of Admin Level
Limpopo	Greater Sekhukhune	Ephraim Mogale	32,093	23.75%
Provincial Total			**32,093**	**0.55%**
Mpumalanga	Gert Sibande	Mkhondo	30,065	15.96%
		Pixley ka Seme	16,965	18.62%
	Nkangala	Dr J.S. Moroka	50,370	18.14%
		Thembisile	16,437	4.76%
Provincial Total			**113,837**	**2.61%**

Source: Statistics South Africa, Census 2011 small area population data and district population projections

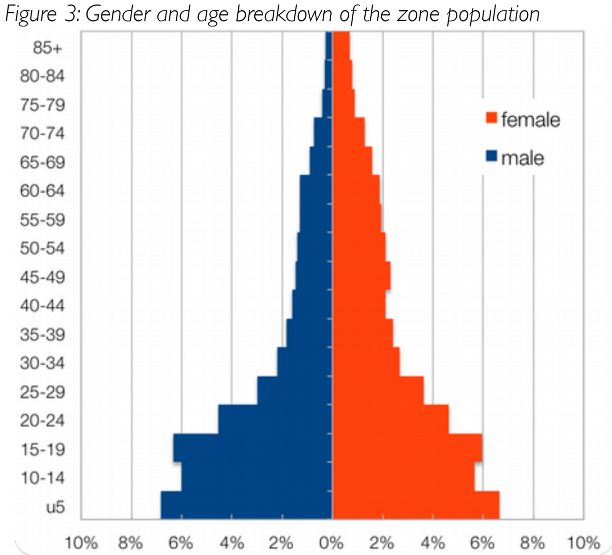
Figure 2: Livelihood zone location

Figure 1 is a map of the zone and **Figure 2** shows the location. The Nkangala/Sekhukhune section is served by feeder roads from the R33 between Marble Hall and Modimole, as well as other feeder roads from the R568 through Siyabuswa and Madubaduba. There is also a railway line that skirts around the northern flank of the section from Marble Hall to Settlers. The Mkhondo section is served by the R543 from Piet Retief to Wakkerstroom or Volksrust. The Pixley ka Seme Section lies close to the N11 between Volksrust and Amersfoort or Ermelo. The Bethel to Volksrust railway also passes through Vlakpoort.

The livelihood zone has been given an alphabetic code (or abbreviation) of 'ZAHIC' and a numeric code of 59303. These codes distinguish the zone both nationally and internationally while permitting name changes if desired (the code should remain the same).

The zone spans six municipalities in three districts across two provinces. However, only a small portion of the populations in each of these six municipalities are included in the zone. The total population in the zone is 145,930 (projected to 2016 from the Census 2011) and the Limpopo portion is 0.55% of the provincial total, while that of Mpumalanga is 2.61%. **Table 1** shows the breakdown for each municipality.

Figure 3: Gender and age breakdown of the zone population



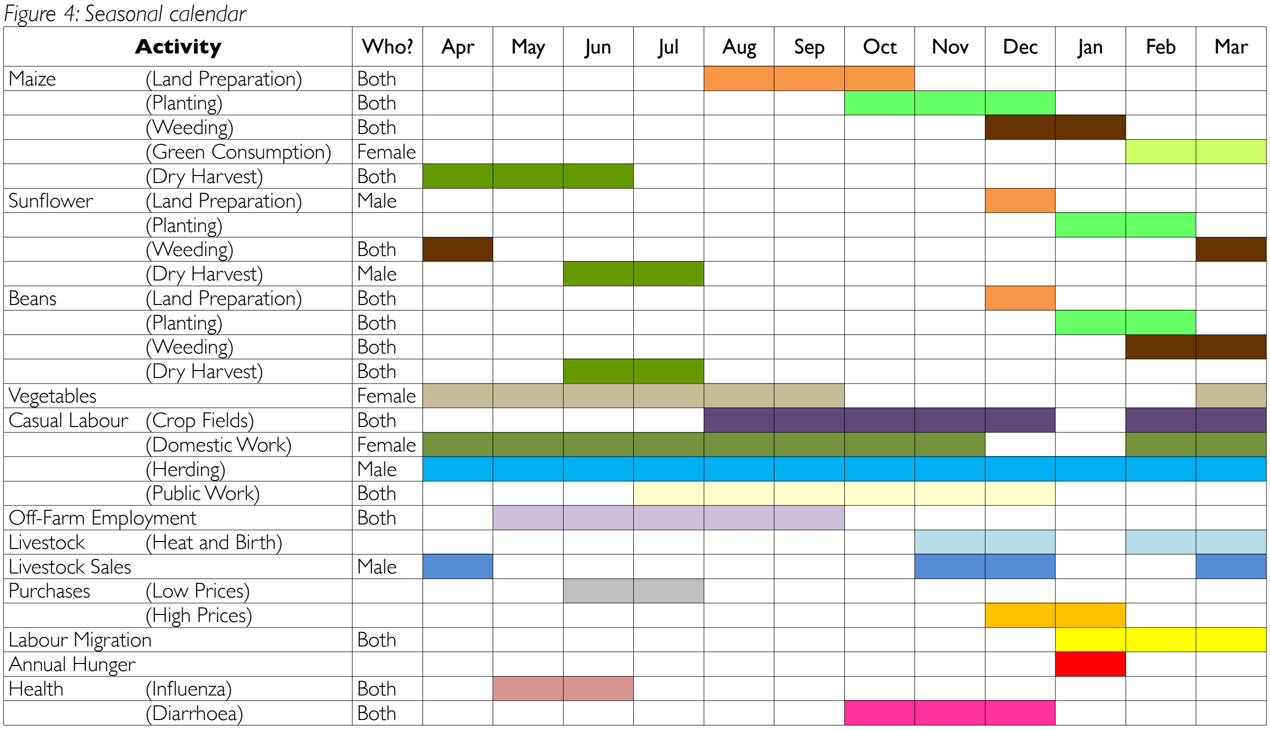
Source: Statistics South Africa, Census 2011 small areas and population database

Figure 3 shows the age and gender breakdown of the livelihood zone. The lower proportion of adult men in the livelihood zone as well as the high proportion of children (younger than 20), an unbalanced gender and dependency ratio, is a consequence of apartheid, that forced men to seek work in the surrounding commercial farms and the urban, industrial and mining areas. The persistence of this pattern has impacts on productivity through to shortages of human capital and reduced labour availability.

Seasonal Calendar

Since this is a rural livelihood zone and rural life is determined by agricultural seasons, the information is organised by *consumption year*, which begins with the start of the main dry harvest and runs through to just

Figure 4: Seasonal calendar



before the next year's main dry harvest. In this zone, the main dry harvest begins in April, so the consumption year begins that month and runs up until the end of the following March. The livelihood strategies presented in this document also apply to a particular year, one that is neither very good nor bad but occurs most frequently, that is, it is 'typical'. This is called the *reference year* and the year chosen by participants was 2013-2014, or April 2013 to March 2014.

The main season for farming begins with land preparation in late winter (August), followed by ploughing and planting in spring, depending on the timing of the rains. Weeding (a period of intense activity and one in which work opportunities increase) takes place from December to April, with the dry harvest (another period for employment) beginning in April. The main crops grown during this period are maize, sunflower and beans.

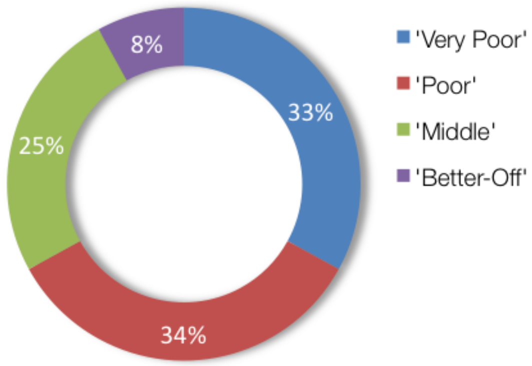
Households strategise keeping up activities all year round, so that income flow can be as smooth as possible. Vegetables are grown off-season during autumn and winter (March to September), while the preferred time for selling livestock is at the beginning and end of the farming season. Casual work is done all year round, with farm work during the main season and public works during the second half of the calendar year (July to December).

Wealth Breakdown

Wealth in this livelihood zone is determined primarily by three factors:

1. Employment, a product education and good social connections;
2. Land holdings; and
3. Livestock, especially cattle.

Figure 5: Wealth breakdown in the lowveld open access irrigated cropping livelihood zone



Category	Item	Wealth Group (typical value in brackets)			
		'Very poor'	'Poor'	'Middle'	'Better off'
Hh Size		5-10 (8)	5-9 (7)	4-9 (7)	4-7 (6)
Land (Ha)	Owned	0.05-1 (¾)	¼-2 (1)	1-2 (1.2)	1-3 (2)
	Cultivated	0-1 (¼)	½-2 (1)	½-2 (1)	1-3 (2)
Livestock (head)	Cattle	0	0-4 (2)	0-15 (10)	5-60 (30)
	Goats	0	0-5 (3)	5-13 (6)	6-20 (10)
Income	Main	Grants	Grants	Formal employ	Formal employ
	Annual (R)	37,700	70,500	96,600	348,200

Source: Survey output, 2016

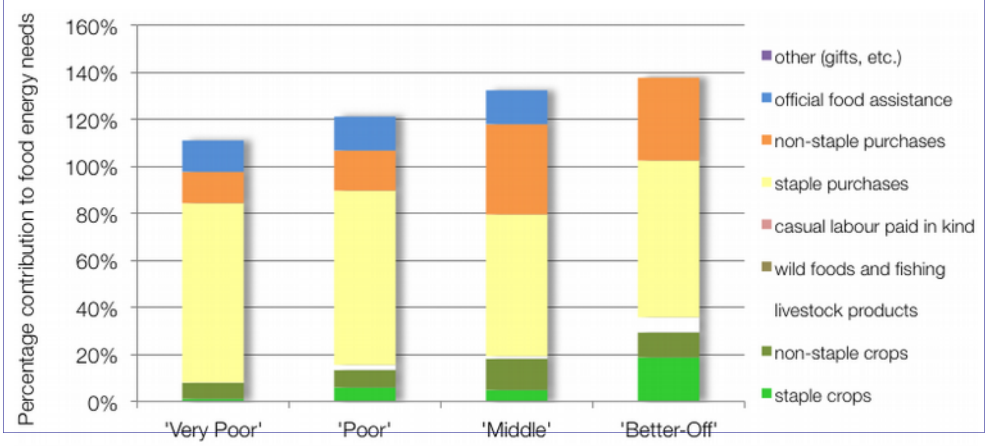
The wealthiest households, described as the 'better-off', are those with permanent work and a salary of around R10,500 per month. Households that have lower-paying or less permanent work, which averages to approximately R3,500 per month, are referred to as the 'middle'. Those who depend primarily on grants are described as 'poor' and 'very poor'; collectively, they are about 67% of households. The 'very poor' and 'poor' supplement their grant income from casual labour and other sources.

Since farming in this zone is important and this requires resources and capital, the amounts of land owned and cultivated vary with wealth. 'Better off' households lever their fixed incomes and assets to develop more land and cultivate farms that are eight times larger than those of 'very poor' households.

During interviews key informants in the villages tended to use larger household sizes compared with those from other surveys such as the census. This was possibly due to key informants referring to family units rather than the stricter definition of household. These family units will certainly share some resources, including grants such as pensions and child grants, cultivated land (shared in terms of labour required and production) or the proceeds from casual labour. They are therefore used in the ensuing calculations on sources of food and income —these can be scaled to the appropriate household size from the census.

Sources of Food

Figure 6: Sources of food (expressed as percentage of minimum average food energy needs) for each wealth group



Despite the irrigation projects and crop farming, purchases still make up the largest portion of people's sources of food. Food purchases contribute 60% to 80% of food energy needs; this is lower than in other livelihood zones in the province (which are 80% to 100%) but is still more than half of requirements. The contribution to food energy from staple food purchase *decreases* steadily from 57% for the 'very poor' to 20% for the 'middle', but then increases again to 47% for the 'better off'. The reason 'better off' households purchase more staple is that they prefer to sell their unmilled own-produced grain rather than eating it, and then purchase milled 'mealie meal' for consumption. This loses money but they are able to afford it.

Conversely, the contribution to food energy from non-staple food purchases *increases* from 11% of energy requirements for the 'very poor' to around 35% for the 'middle' and 'better off'.

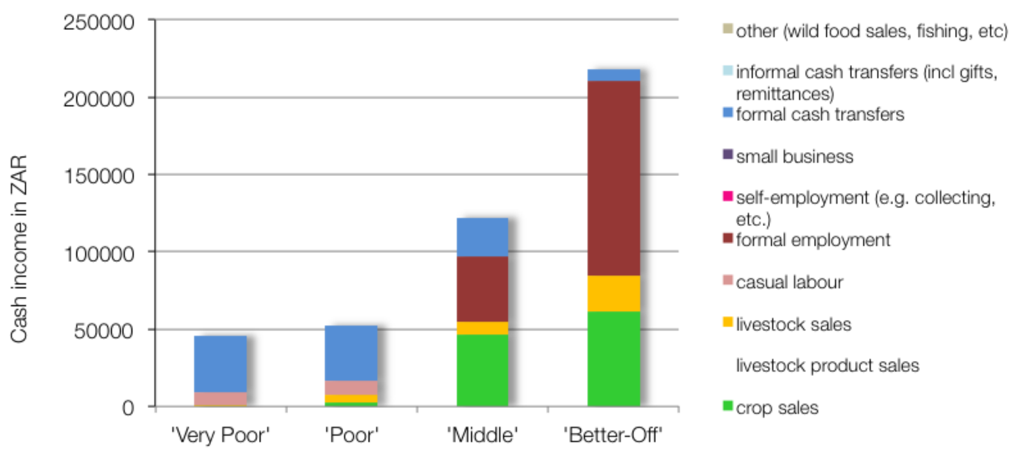
Households and all wealth groups also consume food from their own crop production; the contribution from staples rises significantly from 10% for the 'very poor', to 44% for the middle. 'Better off' households consume less of their own-produced staple, 16%. Own produced non-staples—primarily groundnuts and vegetables (including green maize)—contribute an even amount to household food energy requirements, around 11% to 14%. However, the greater portion of this for 'very poor' households is green maize, which reduces the production of their dry harvest and their food diversity.

The 'poor', 'middle' and 'better off' households obtain food from their livestock; this is from occasional slaughter for meat and, for the 'middle' and 'better off', from cow's milk as well. Dairy production in this zone is not commensurate with herd sizes and livestock ownership. In general, a fraction of lactating cows (about one out of every three) are actually milked for consumption.

The poorest households' children receive additional food from school lunches, which is included as 'official food assistance'. Wealthier households tend to send their children to fee-paying schools that do not offer any kind of meals.

Sources of Cash Income

Figure 7: Sources of annual cash income by wealth group

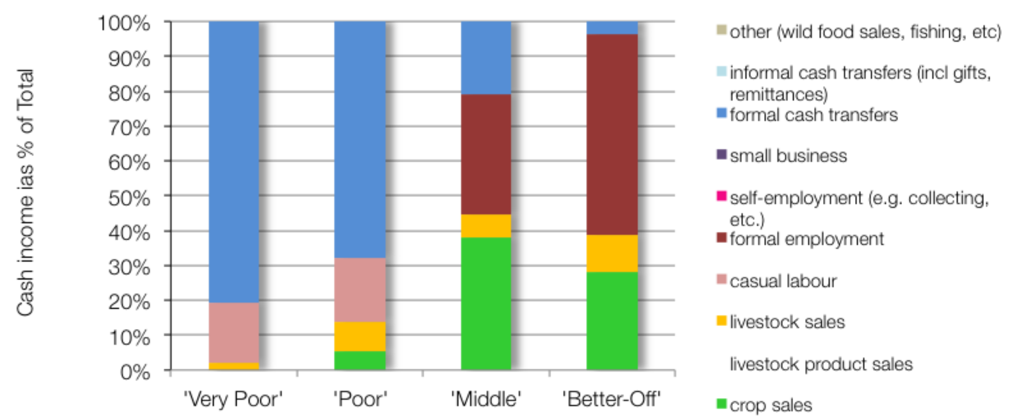


Cash incomes vary considerably across wealth groups, with the 'better off' earning R348,200 per annum, more than nine times as much as the 'very poor', who earn only R37,700 per annum. **Figure 7** shows this distribution—it must be noted that the bars in the figure are not quartiles, they represent wealth groups and wealth groups are *not* distributed evenly (see **Wealth Breakdown**, above).

The main sources of cash income for in the zone are: small business—for the 'better off'—formal employment—for the 'middle' and 'better off'—and cash grants—for the 'poor' and 'very poor'. This is in keeping with most surveys that ask for the main livelihood source.

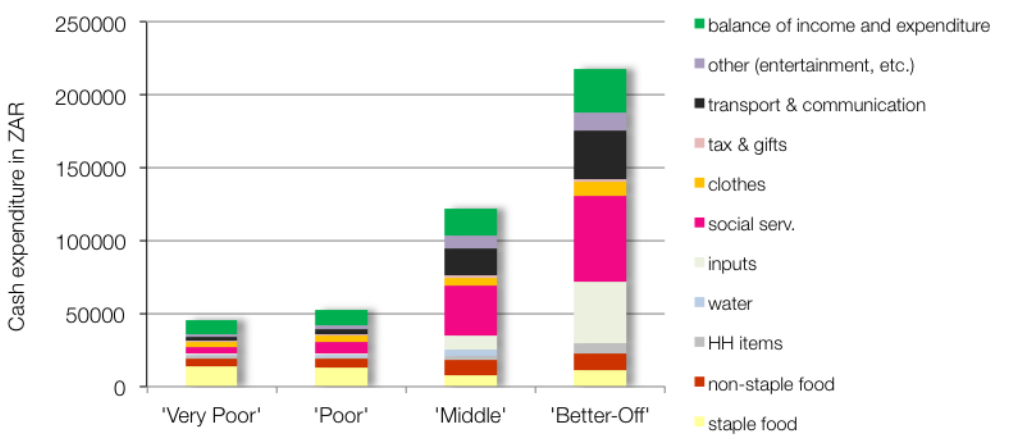
However, the point of this enquiry was to gain understanding of how *all* livelihood sources come together to make up an income. This is essential because it enables practitioners to link a hazard (such as a price change) to outcomes and it enables other users to see potential areas of intervention. By dividing the value of each source by the total income, we can see these proportions and this is presented in the graph in **Figure 8**.

Figure 8: Sources of annual cash income as a percentage of total, by wealth group



For the 'very poor' and 'poor', grants make up 61% and 31% of total cash income, respectively; the remainder comes from casual labour (mostly domestic work, agricultural piece work, construction jobs), self-employment (collecting natural products for sale, weaving, making bricks, etc.), and informal cash transfers (usually remittances). Small amounts of income are earned through sale of wild foods (such as mopane) and sale of animal products (usually meat or eggs).

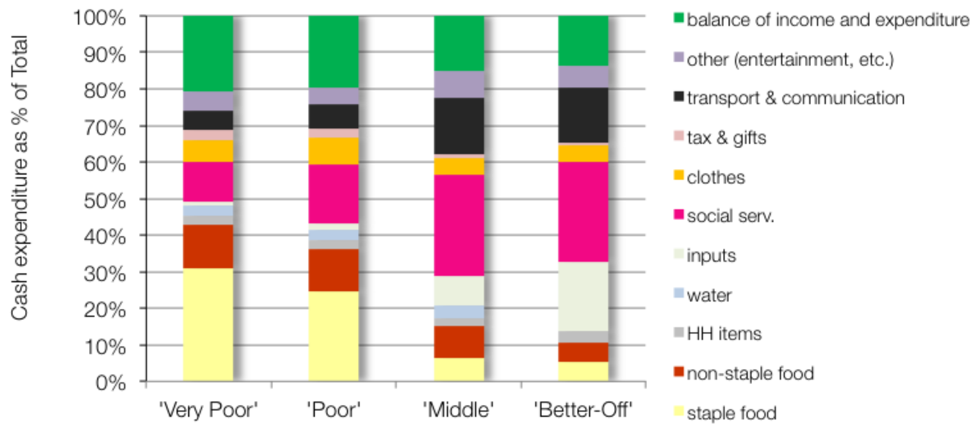
Figure 9: Annual cash expenditure, by wealth group



The 'middle' and 'better off' gain their wealth from a formal wage or salary for the better part of their income. Some 'middle' households may have a member that works seasonally on the commercial farms but earnings typically amount to almost R66,000 per annum, while the 'better off', who may have more permanent work, earn around R100,000 to R300,000 per annum (median R144,000). Households with established businesses also tend to be 'better-off', as these businesses bring in around R100,000 to R300,000 per annum as well (median R144,000), similar to fixed employment. 'Middle' and 'better off' households also gain cash from crop and livestock sales, highlighting potential for farming as proper livelihood, although their earnings are far short of their income expectations. The 'middle' and 'better off' also benefit from grants (for example, the old age and fostering grants are not means-tested and the probability of a household having a pensioner in it is about one in two—see the population pyramid under **Zone Description**).

The numbers of cows that are actually milked compared with those likely to be lactating, is low. This is due to a number of factors: lack of economic incentives for milking, lack of time by the cattle-owners (because they are full-time employed) and minimal herd management.

Figure 10: Annual cash expenditure as a percentage of total income, by wealth group



Hazards, Vulnerabilities and Response Strategies

Since households are dependent on markets for most of their food, households are most vulnerable to market-related shocks. These 'market shocks' may consist of: escalating food prices, eroded grants (for example, when they are not adjusted to match consumer inflation) and job losses.

Drought may have an impact, as it will reduce crop production and affect this source of food and income. However, unless food prices also rise simultaneously, households will manage crop losses by prioritising more cash to food purchases.

Additional response strategies households may engage in under stress are: switching expenditure, seeking more casual work (usually outside of the village) or selling off assets or belongings.

Household Hunger Score

Table 2 - Household Hunger scale indicator

No to Little Hunger		Moderate Hunger		Severe Hunger	
Count	Percent	Count	Percent	Count	Percent
75	70	30	28	2	2

Source: Survey Output 2015

The majority of the households (70 percent) experience no to little hunger and two per cent of households had severe hunger in this livelihood zone. Only 28 per cent of the households reported a moderate hunger situation – see **Table II**.

Dietary Diversity and Food Consumption Score

The largest number, 40 percent of sampled households, have medium dietary diversity scores indicating that they consume four to five food groups during the day before the survey. 29 Percent of households have the highest dietary diversity (at least six food groups) and there are 31 percent of households with the lowest dietary diversity indicating that they consume three or fewer food groups.

The majority of households – 53 percent – were consuming poor diets. While 20 percent of the households were within an acceptable consumption pattern, 15 percent of the households were within borderline consumption pattern.

Figure 11: Dietary Diversity Scores

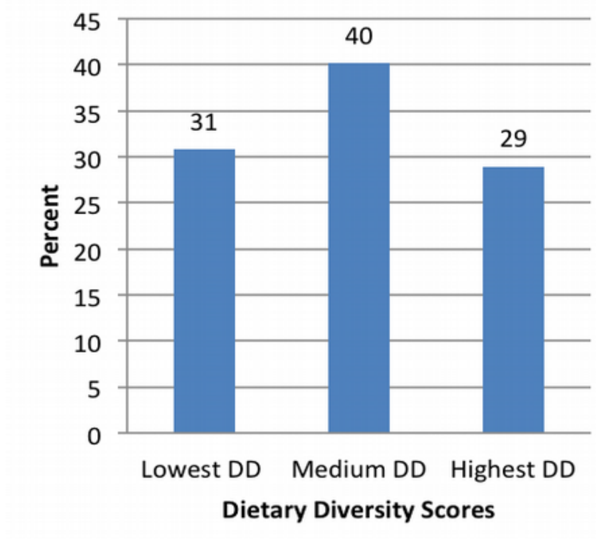
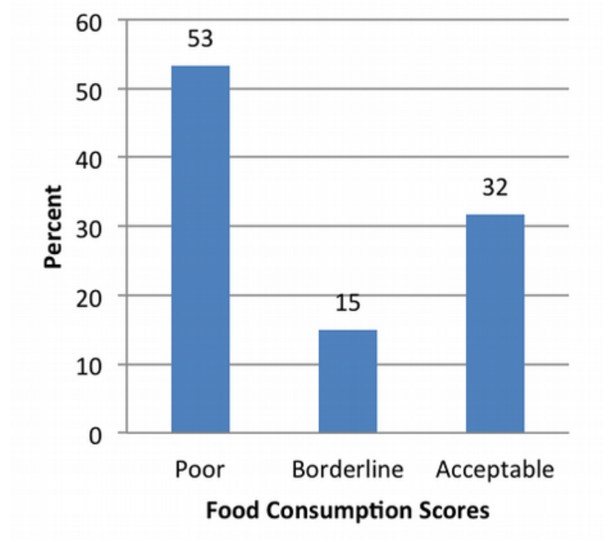
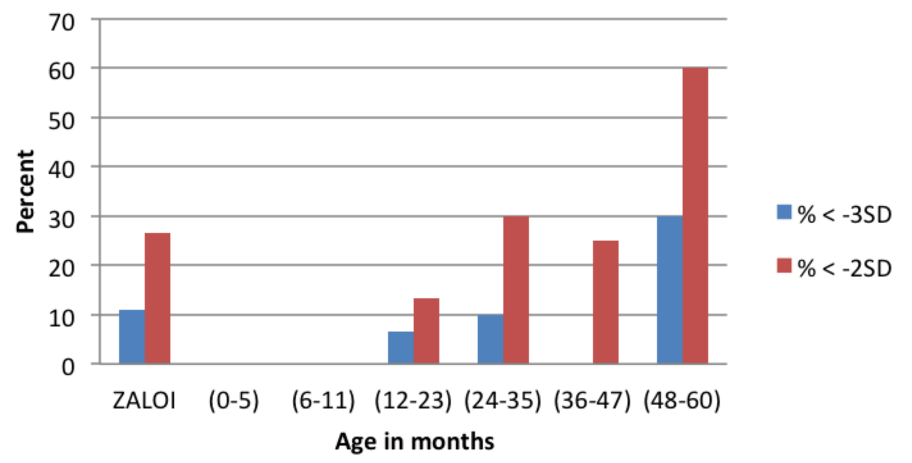


Figure 12: Food consumption scores



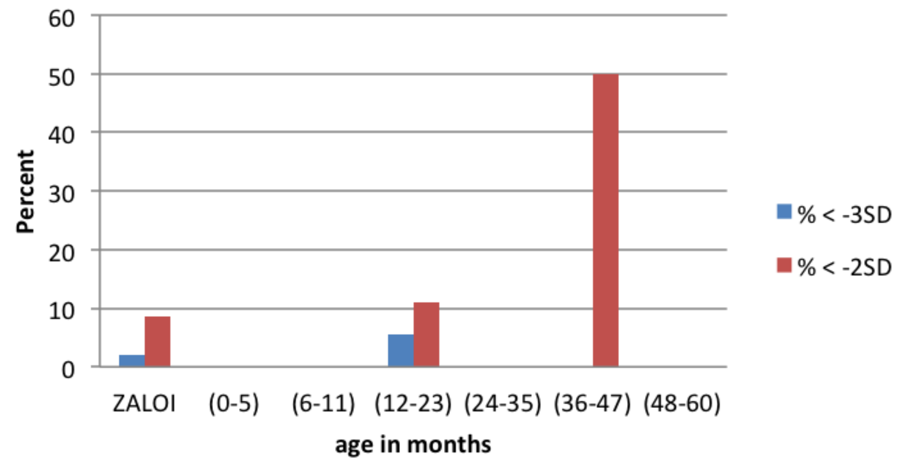
Nutrition and Anthropometry

Figure 13: Prevalence of severe and moderate stunting by age grouping



Acute malnutrition is predominant in the 36-47 months old children in the livelihood zone (Figure 11). About nine percent and two per cent of under-five children were moderately and severely malnourished, respectively in the livelihood zone. The missing of figures in the other age group categories were not picked up in the sample of the livelihood zone.

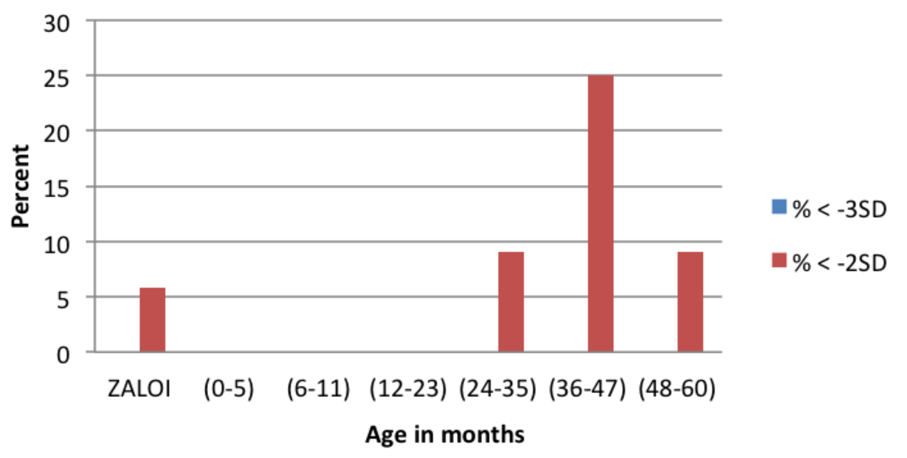
Figure 14: Prevalence of severe and moderate acute malnutrition by age grouping



The prevalence of severe and moderate stunting is 27 per cent and 11 per cent, respectively in the livelihood zone (Figure 12). There is a high prevalence of severe and moderate stunting among under-five children within 48 to 60 months of age seconded by children who are 24 to 35 months old. The trend of moderate and severe stunting is increasing as under-five children increase their ages from 12 months to 60 months. The results also indicate that there were no moderately and severely stunted under-five children with 0 months to 11 months in the livelihood zone.

The prevalence of moderate underweight was six per cent in the livelihood zone (Figure 13). There is a high prevalence of moderate underweight (25%) among under-five children within 36 to 47 months of age seconded by children who are within age categories of 24 to 35 months and 24 to 35 months old. The results indicate that there is a zero prevalence of severe underweight in the livelihood zone. The results also indicate that there were no moderately and severely underweight under-five children with 0 months to 23 months in the livelihood zone.

Figure 15: Prevalence of severe and moderate underweight by age grouping



Conclusions and Recommendations

As already mentioned, food and cash income from livestock products is low for the numbers of animals present. To increase production, herds would need more and better management, an investment that would need to be justified through better returns. These returns could be increased by, for example, support to dairy marketing and greater provision of services and infrastructure to encourage production. Crop farming yields could also be improved through greater service provision and market support, though crops are constrained by environmental factors. This increased productivity will unlikely benefit all but a few households directly, but will create additional new possibilities through increased work opportunities. For many 'poor' and 'very poor' households, grants will remain the main source of income for some time to come.

Figure 16: Detailed map of the Greater Sekhukhune district (Limpopo) and Nkangala district (Mpumalanga) section of the livelihood zone showing the sampled sites, other livelihood zones, administrative areas down to enumeration small areas, and infrastructure.

Figure 17: Detailed map of the Gert Sibande district (Mpumalanga) section of the livelihood zone showing the sampled sites, other livelihood zones, administrative areas down to enumeration small areas, and infrastructure.