LESOTHO Government

United Nations

Nutrition Baseline Survey in Four Districts

A Baseline Report for the Joint Government/UN Nutrition Programme in Thaba-Tseka, Mokhotlong, Qacha's Nek and Berea

Prepared by the Food and Nutrition Coordinating Office
Supported by United Nations World Food Programme

January 2011

Table of Contents

ACKNOWLEDGEMENTS

1. BACKGROUND AND OBJECTIVES

Chronic malnutrition in young children is a health concern in Lesotho. Since 2002, the nutritional status of young children has been unacceptable according to World Health Organisation (WHO) standards with around 40% of children less than five years of age suffering from chronic malnutrition or stunting[1]. The highest levels have been observed in the mountain districts of *Thaba Tseka, Mokhotlong* and *Qacha's Nek.* Malnutrition leads to negative consequences affecting mental and physical growth, compromised immune system and a vicious cycle of intergenerational malnutrition.

Research shows that malnutrition in Lesotho is an interplay of diseases especially diarrhoea and acute respiratory diseases. Widespread persistent chronic poverty, chronic and transitory food insecurity and the effects of HIV and AIDS are noted as significant causes of malnutrition. Nutritional status is normally compromised from 7 months to 24 months of age, a critical stage of rapid biological and psychosocial development. Normally children are not adequately fed during illness and this compromise their health further. Most households rely highly on the diet consisting of staple food of hard porridge or *'papa'* and green leafy vegetable, *'moroho'*. This situation requires careful targeted programmes that are effective and efficient in their implementation to address a wide range of nutritional challenges facing vulnerable groups.

It is in this context that the UN system decided to support the Government of Lesotho (GoL) in its response to high levels of chronic malnutrition in the country. A two-year nutrition programme has been designed to prevent and address malnutrition with specific focus on pregnant women, lactating mothers and young children. The programme will address micronutrient deficiencies and chronic malnutrition among children less than 2 years of age; reduce child mortality due to acute malnutrition; safeguard the health, nutrition and well-being of food insecure People Living with HIV and tuberculosis on antiretroviral and TB treatment; and strengthen surveillance systems for an effective management of nutrition data. The programme will be implemented in the four districts which have the highest levels of chronic malnutrition: *Mokhotlong, Qacha's Nek, Thaba-Tseka* in the mountain area and *Berea* in the lowlands. The prevalence of HIV and AIDS was also considered in the selection of the districts. This programme will be complemented by other joint programmes that are supported by the UN system in those districts.

A baseline survey was commissioned for the four districts where the programme will be implemented. The survey was conducted to provide baseline indicator levels prior to the programme implementation and to be used for monitoring and evaluating programme impact. The objectives of the survey were as follows;

1. To determine the nutritional status of people living with HIV and TB and their adherence to the medication;

2. To determine levels of household food security and their stress as measured by the Food Consumption Score and Coping Strategies Index;

3. To understand livelihoods and income and expenditure patterns of households;

4. To determine the contribution of vegetable gardens to household livelihoods and food security.

---

[1] 2004 LDHS, 2007 NNS and 2009 LDHS

2. LESOTHO CONTEXT

Lesotho is a lower middle-income country ranked at 156 out of 182 countries according to the 2009 Human Development Report, and is completely surrounded by South Africa. It occupies a land area of 30,000 square km and has an estimated population of 1.8 million (2006 population census), of which a significant proportion endures chronic and persistent vulnerability to hunger and poverty. According to the Bureau of Statistics (BoS), about 57% of the population lives below poverty line. This proportion rose from 49% in 1993, to 51% in 1999, and it was estimated to have increased further to 56% by the end of 2004[2].
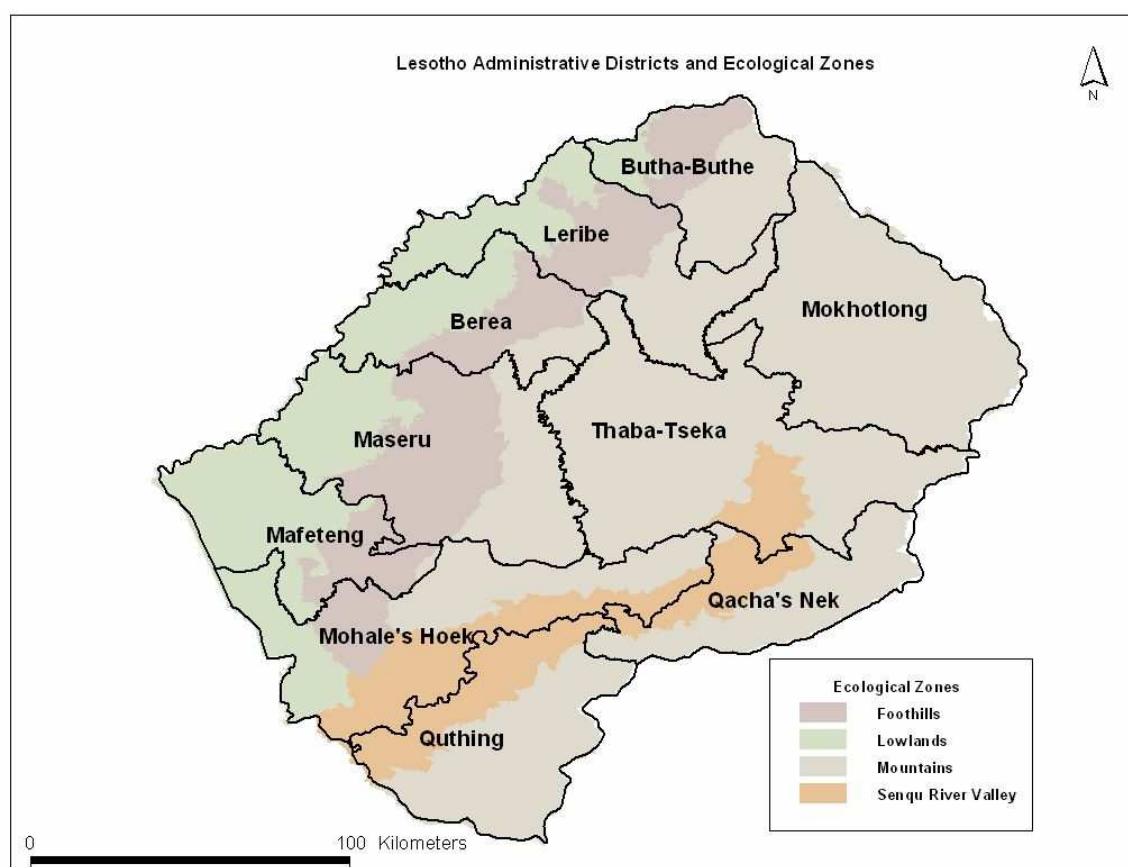
The 2009 Lesotho Demographic and Health Survey (LDHS) estimated that 39% of children below the age of 5 were stunted (chronic malnutrition) with 15% being severely stunted. The districts in the mountainous regions had the highest levels of stunting[3]. Chronic malnutrition is an indication that many households are faced with high level of poverty, chronic food insecurity and high vulnerability. Overall, 200,000 people in rural and peri-urban areas were found to have some varying degree of household food insecurity in 2010/2011 (LVAC, 2010). The very poor and poor households access approximately up to 70% of their annual food requirements from purchase and casual labour. Thus, a combination of high food prices and other commodity prices, constrained casual labour opportunities and reduced crop production result in reduced household capacity to access enough food as well as meet the essential household expenditure.

Although 82% of the population is engaged in agriculture and informal sector activities in rural areas, this only contributes about 10% to GDP (down from over 25% in 1980s). Domestic crop production contributes about 30% of the required cereal, hence high reliance on imports. Services (40%) and manufacturing/industry (44%) are the most important sectors of the

---

[2] MAFS, (2006). National Action Plan for Food Security. Maseru.
[3] LDHS (2009). *Thaba-Tseka* = 51.8%, *Mokhotlong* = 48.2%, *Qacha's Nek* = 47.0%

economy. The textile industry in particular plays a critical role in generating employment and exports. Lesotho also exports diamonds, wool and mohair.

According to the 2009 LDHS, 23 percent of adults age 15-49 in Lesotho are infected with HIV. The prevalence of HIV infection is 27 percent for women age 15-49 and 18 percent for men age 15-49, almost the same HIV prevalence as found in the 2004 LDHS (26 percent for women and 19 percent for men). Findings show that in 2004 and 2009 the prevalence of infection increased with age to peak at age 35-39 for women (43 and 42 percent, respectively) and at age 30-34 for men (41 and 40 percent, respectively).

The coverage of anti-retroviral treatment was estimated at 62,190 people at the end of 2009. HIV and AIDS reduces the capacity to produce, purchase food, it depletes household assets and exhausts social safety nets. The 2007 Human Development Report[4] cites that one of the most disturbing features of the HIV and AIDS pandemic is the disproportionate effect it has on children. This report states that "nearly 10% of all new cases are children less than four years of age and this has implications for malnutrition". There are more than 180,000 orphans in the country and about 100,000 are the result of AIDS.

Progress has been made in achieving some of the Millennium Development Goals (MDGs), such as, education, gender and environment. However, little progress is observed in MDG 1 (eradicate extreme poverty and hunger), MDG 4 (reduce child mortality) and MDG 5 (improve maternal health). The Government is increasingly focusing on service delivery and public service reform, which is likely to have a positive impact on MDGs.

However, the impact of the global economic crisis slowed down the progress to achieve MDGs. The country has experienced reductions in the garment exports; mining resources; and foreign remittances. Thousands of migrant workers have been retrenched from South African mines and many jobs in the textile industries have been lost. This adds to the already high unemployment rate of more than 20%. Loss of incomes and remittances implies loss of livelihoods for many households. In addition, the government is experiencing significant reductions in the Southern Africa Customs Union (SACU) revenue which has been the largest source of government revenue. Its contribution is estimated to decline by 57% in 2010/2011 fiscal year[5]. HIV is cited as "the single most important threat to attaining all the MDGs"[6].

---

[4] UNDP (2007). Human Development Report: The Challenges of HIV and Aids, Poverty and Food Insecurity. (2006).
[5] Central Bank of Lesotho (2009). Annual Report, Maseru.
[6] NHDR 2007

3. METHODOLOGY

A cross-sectional survey was designed to provide reference data for monitoring the outcomes of the nutrition programme in the four districts of *Thaba-Tseka, Mokhotlong*, *Qacha's Nek* in the mountains and *Berea* in the lowlands. The main objectives of the survey were:

- To determine levels of household food security (FCS) and their stress as measured by the Coping Strategies Index.
- To understand livelihoods and income and expenditure patterns of households.
- To determine the contribution of gardens to household livelihoods and food security.
- To determine nutritional status of people living with HIV and TB and their treatment adherence.

3.1 Sampling design

This study was done using a multi-stage probability sampling strategy. Enumeration Areas (EAs) were the primary sampling units (PSU). They were randomly selected within community councils with probability sampling proportional to size, based on the 2006 census by the Bureau of Statistics. Villages were automatically selected with enumeration areas. In each village, random sampling of households with children under fives was done with proportional to size and a total of approximately 800 households were interviewed.

3.2 Study population

The target study population was households with children aged 0-59 months. Households were identified using the list compiled by community health workers. Within the same households, people living with HIV and tuberculosis were also included in the sample.

3.3 Data collection tools

A structured questionnaire was used to collect and store data using Personal Digital Assistants (PDAs). Length boards, MUAC tapes and electronic weighing scales (Uni-scales) were used to collect anthropometric information for people living with HIV and AIDS as well as TB.

3.4 Enumeration

Data was collected by a multi-sectoral team of nutrition and food security practitioners from government, United Nations and National University of Lesotho. Fifteen (15) enumerators were trained on the questionnaire to ensure that they all had the same understanding of the questions and minimise threat to reliability of data. Pre-testing of the questionnaire was done prior to data collection which took place from the 24th October – 16th November 2010 for 20 days.

3.5 Data analysis

Data were cleaned and analysed using SPSS software.

3.6 Indicators from 2009 Demographic Health Survey

The 2009 Demographic Health Survey was used as secondary source of information on nutrition and health indicators. It provided information on nutritional status of children under five, mainly, weight for height, weight for age and height for age. Other indicators were feeding practices, breastfeeding and child illnesses. The health and nutrition indicators derived from this survey on women of child bearing age included Body Mass Indices (BMI), anaemia and maternal health.

4. FINDINGS

4.1 HOUSEHOLD DEMOGRAPHICS

This section presents the profile of household members. Households provided the profiles of each household member in terms of age, sex, educational attainment, illness, and parental status for children. For the four districts, 33% of the households were headed by a woman with the most being found in *Berea* (44%), followed by *Qacha's Nek* (40%). Female headship was lowest amongst households in *Mokhotlong* and *Thaba-Tseka* district samples (26% each). These and other findings are summarised in the chart below.

The percentage of households with an elderly head (60+ years) was highest in *Berea* (31%) and lowest in *Thaba-Tseka* (17%). Overall, 23% of total households were headed by the elderly.

The health status of all household members was checked by asking

Household Vulnerable Groups by District
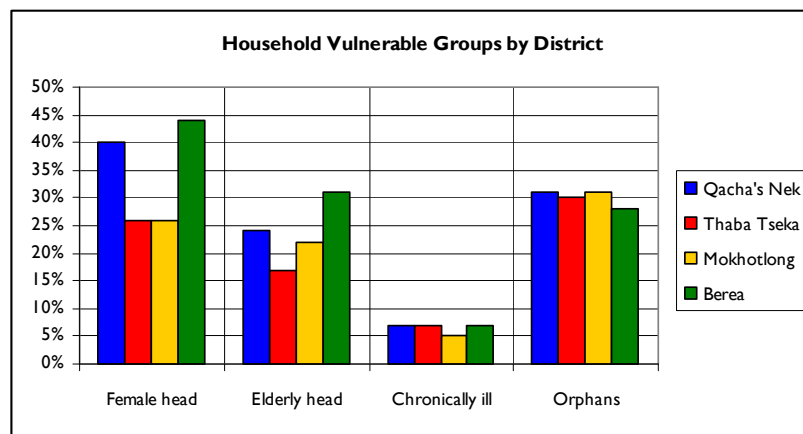
whether they had experienced any recent illness. Six percent of total households reported having chronically ill member (ill for 3 or more months and not able to work). There was not much difference in the presence of chronically ill members between the districts with 7% of households in *Qacha's Nek, Thaba-Tseka* and *Berea* having at least one, while only 5% of the households in *Mokhotlong* reported a chronically ill member. This used to be a good proxy indicator of HIV affected households but with the broader access of ARTs, many HIV infected people are living healthy productive lives.

Households were also asked to indicate the parental status of children to determine if they were hosting any orphans. An orphan is defined as a child less than 18 years of age who has lost one or both of the parents. About 30% of households reported hosting orphans with little difference between the districts with households in *Berea* the least likely to be hosting orphans (28%).

The education status of household heads was considered an important indicator to understand household chances for better income opportunities. Generally, the level of education among household heads was low with about 45% of household heads having never completed primary level and 22% having no education at all. Households in *Berea* were the most likely to have a head with incomplete primary education (54%) while those in *Qacha's Nek* were the least likely (39%). Few household heads had completed COSC and tertiary.

4.2 ASSET OWNERSHIP AND WEALTH

4.2.1 Asset wealth

Asset wealth was calculated based on the number of different assets owned by households. This indicator was used as a proxy to assess the wealth status of households in study area. The wealth categories were created with a range of the 'asset very poor' (0-2 assets), 'asset poor' (3-4 assets), 'asset medium (5-7 assets) and 'asset rich' (8+ assets). These include both productive and non-productive assets. 'Asset medium' and 'asset rich' households were considered not to be poor. The majority of households fell under 'asset medium' ranging from 50% in *Mokhotlong* to 70% in *Qacha's Nek*. 'Asset rich' were few, ranging from 3% in *Thaba-Tseka* to 18% in *Berea*.

The chart below summarises the asset wealth findings by district, highlighting that households in *Thaba-Tseka* and *Mokhotlong* are the most likely to be poor while those in *Berea* are the least likely.

Asset wealth by District

District	very poor	poor	medium	rich
Qacha's Nek	12%	12%	70%	7%
Thaba Tseka	19%	24%	54%	3%
Mokhotlong	18%	27%	50%	6%
Berea	7%	14%	62%	18%
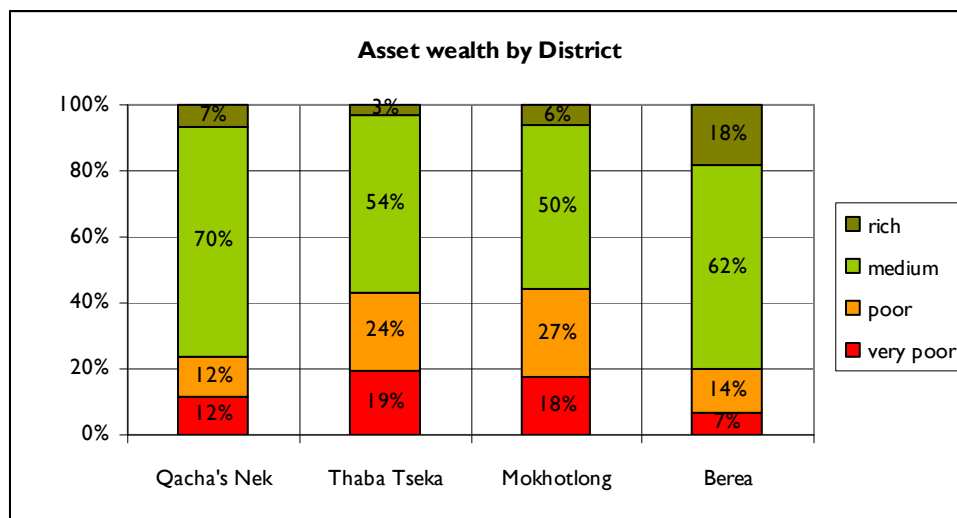
4.2.2 Ownership of agricultural assets

Ownership of agricultural assets was found to be low. The most commonly owned assets were hand hoe (owed by more than 50% of households), followed by a sickle (40%). About 20% of households in each district owned a plough. Ownership of a planter and an oxcart is significant only in *Berea* where 20% of households reported it. This could be because both are not commonly used in the mountain areas (refer to the graph below).

Ownership of Agricultural Assets by District

Asset	Qacha's Nek	Thaba-Tseka	Mokhotlong	Berea
Axe	42%	18%	20%	45%
Sickle	43%	48%	47%	49%
Hoe	59%	58%	54%	74%
Tractor	1%	0%	0%	2%
Harrow	10%	0%	6%	16%
Plough	18%	20%	27%	22%
Planter	4%	2%	4%	19%
Oxcart	2%	10%	3%	18%
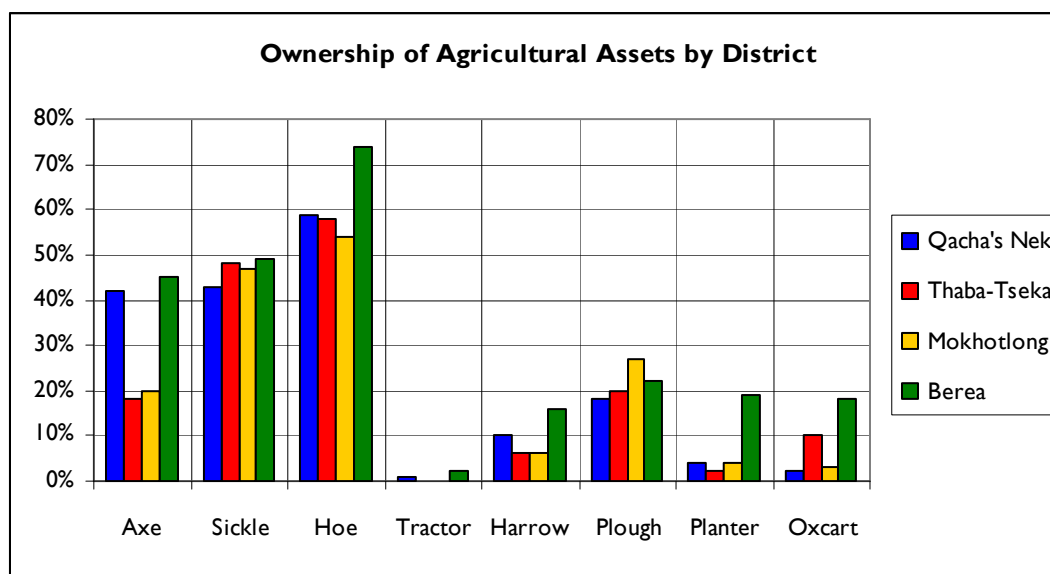
4.2.3 Livestock ownership

About 46% of total households owned cattle, with the majority living in *Mokhotlong*, followed by *Thaba-Tseka, Qacha's Nek* and then *Berea*. Ownership of sheep and goats was found to be more significant in the mountain areas than in the lowlands. At least 42% of households in *Mokhotlong*, 40% in *Thaba-Tseka* and 33% in *Qacha's Nek* had possession of sheep/goats. *Berea* had the lowest possession of 24%. However, *Berea* had the highest possession of pigs (30%), while the mountain district possession ranged from 10% in *Mokhotlong* to 17% in *Qacha's Nek*.

Livestock ownership by District
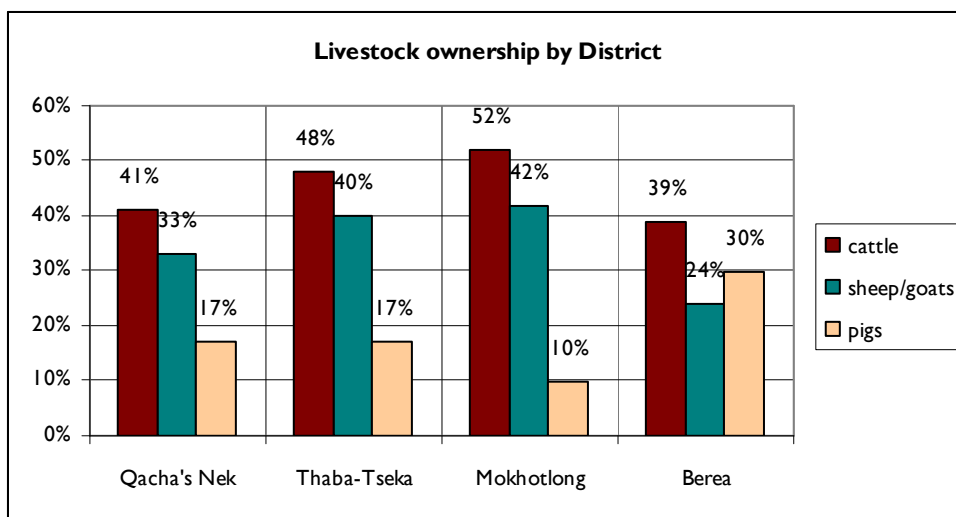
Households were asked whether they sold any livestock in the last three months. About 7% of all households reported having sold livestock with slightly more found in *Thaba-Tseka* (10%) than in the other provinces. The most common reason for livestock sales was to pay for daily expenses (59% of sales), followed by buying food for the household (41%) and paying school costs (28%).

4.3 INCOME SOURCES

Households listed the three most important sources of income. Although a long list of income sources was derived, although this section only focuses on the five frequently mentioned sources. In all the districts except *Qacha's Nek*, more than 50% of households mentioned crop production as a main livelihood source. Even though not done for commercial purposes, many households obtain income through selling part of their produce. Casual labour was also mentioned by many households especially in *Qacha's Nek* where more than 50% cited this income source. Brewing was mentioned by more than 30% of households in *Thaba-Tseka* and *Mokhotlong*, 20% in *Qacha's Nek* and less than 10% in *Berea*. At least about 20% of households in *Qacha's Nek, Mokhotlong* and *Berea* rely on salary/wages; while *Thaba-Tseka* it is about 12 percent.

Main sources of Income by District
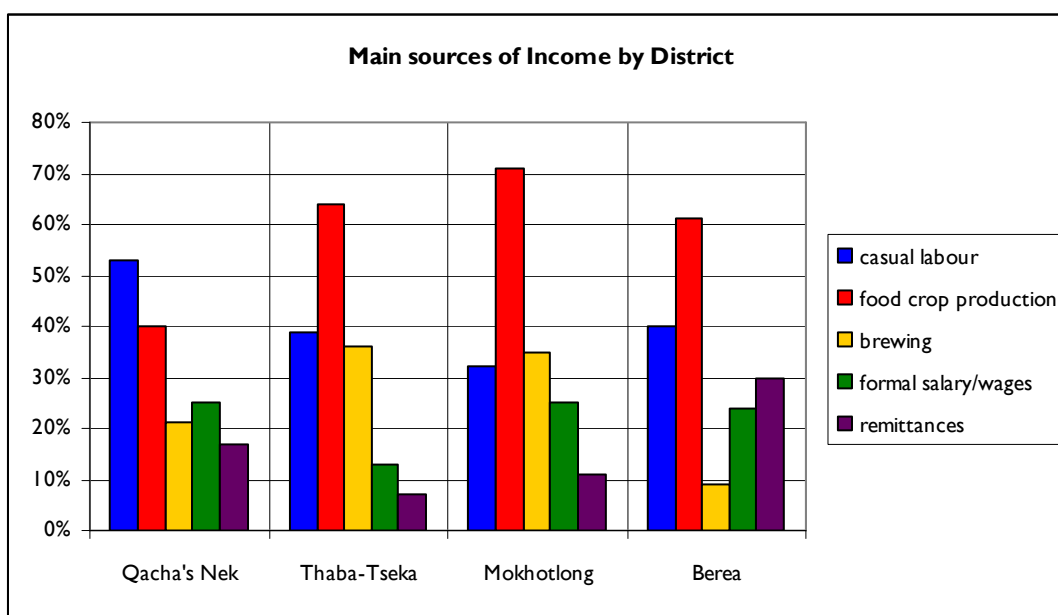
4.3.1 Potential new sources of income

Households were asked whether there are activities which given the resources, they feel they can employ for income generation. More than 40% of households reported having interest in some income generating activities which they could not do due to lack of resources. They listed poultry farming, vegetable production and small businesses as the three most important potential income sources. Small businesses include activities such as selling clothes or setting up 'spaza' shops where they could sell basic commodities such as paraffin, Vaseline etc.
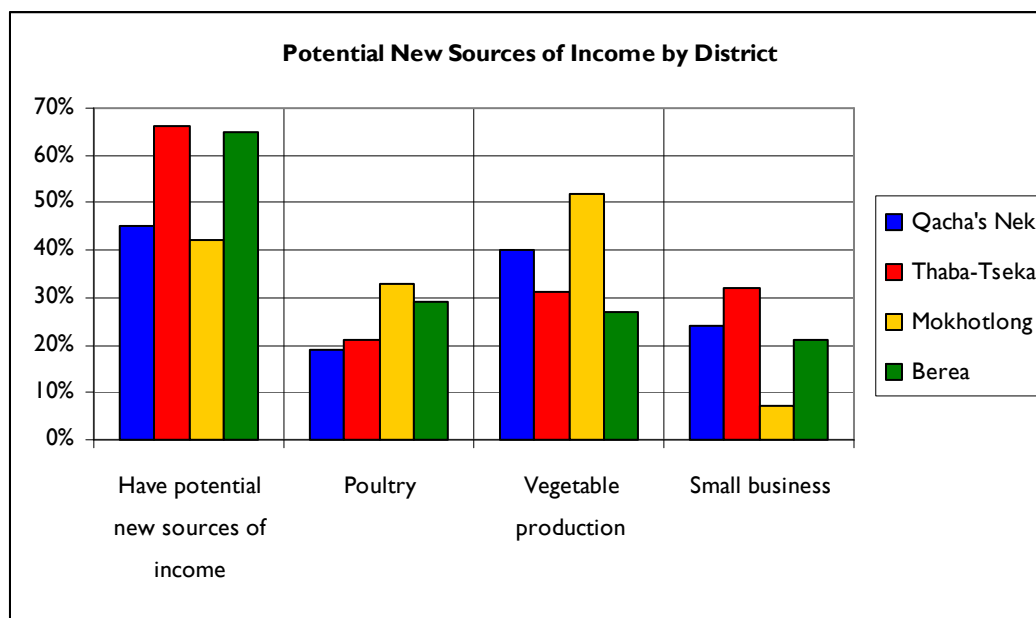
Note: *These percentages reflect those households who said yes to potential new sources of income*

Households were asked to mention the type of assistance required to implement their potential new income activities. Most of the respondents identified training as the most important support requirement, followed by loans, seeds and agricultural implements. Labour was mentioned by few households.
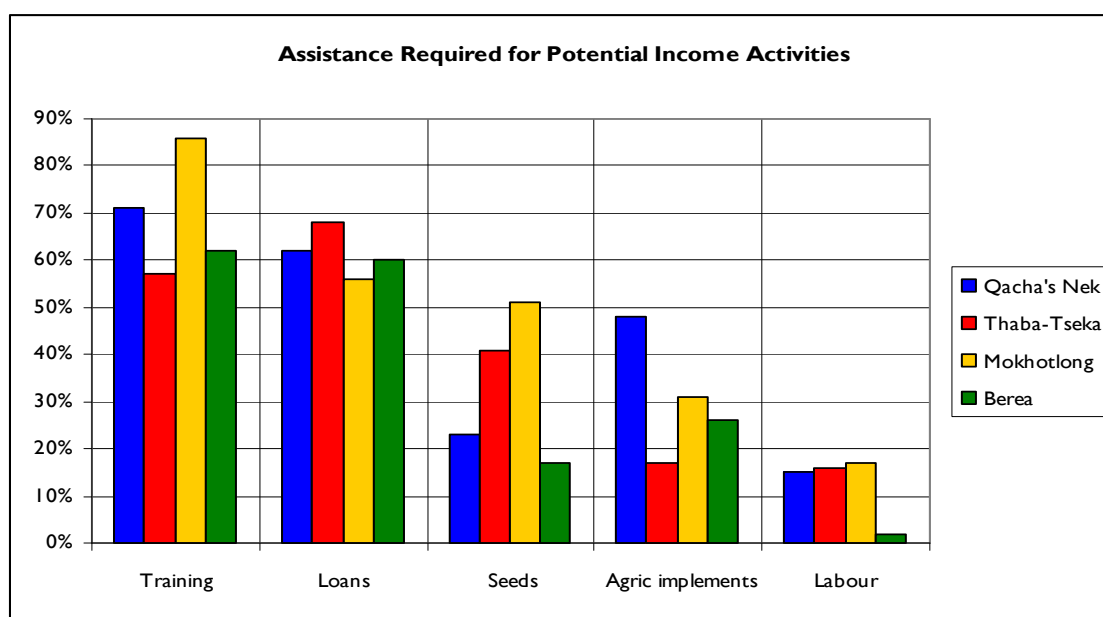
4.4 HOUSEHOLD FOOD CONSUMPTION

4.4.1 Dietary diversity and food frequency

Research has shown that dietary diversity and frequency are a good proxy measures of food consumption and food security at household level dietary diversity—the number of different foods or food groups consumed over a given reference period, can act as an alternative indicator of food security under a variety of circumstances.

Food consumption data was collected and analyzed using the standard WFP methodology: the variety and frequency of different foods and food groups consumed over a 7-day recall period was recorded to calculate a weighted food consumption score. Weights were based on the nutritional density of the foods. Standard cut-points or thresholds were established to enable analysis of trends and to provide a benchmark for success. Households are then classified as having either 'poor', 'borderline' or 'acceptable' consumption based on the analysis of the data.

Households classified as having 'poor' food consumption were eating the equivalent of only maize and vegetables on a daily basis. This is considered a bare minimum and is generally regarded as a sign of extreme household food insecurity. Households with 'borderline' consumption are eating the equivalent of cereals and vegetables on a daily basis plus oils/fats and sugar/sugar products about five and three days per week respectively. Only households classified as having 'acceptable' consumption were having, along with daily intake of cereals, vegetables, oil and sugar, some day consumption of items with high concentration of proteins: animal products (meat, eggs and milk/dairy consumed on average 2 days/week, fish 1day/week) and pulses (avg. two days/week).

Overall, 14% of the sampled households had poor consumption, 29% were on borderline, while 58% had acceptable consumption. As the chart below illustrates, *Thaba-Tseka* and *Mokhotlong* districts had the highest proportion of households with poor consumption at 19% and 18% respectively, while *Qacha's Nek* and *Berea* had the lowest proportion of households at 9% and 5% respectively.

Food Consumption Categories by District
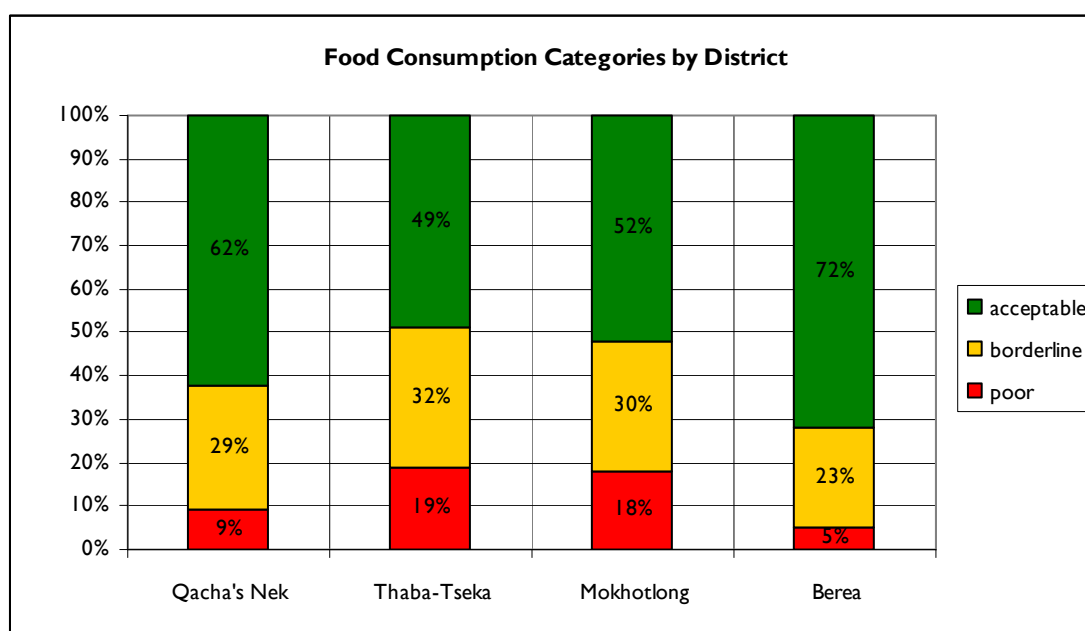
No significant differences were found when food consumption score was compared with most of the households demographics, however, with asset poverty, the 'very poor' asset households were significantly *(p < 0.05)* more likely to have poor consumption when compared to the other asset wealth households as indicated in the chart below.

Consumption and Asset Wealth
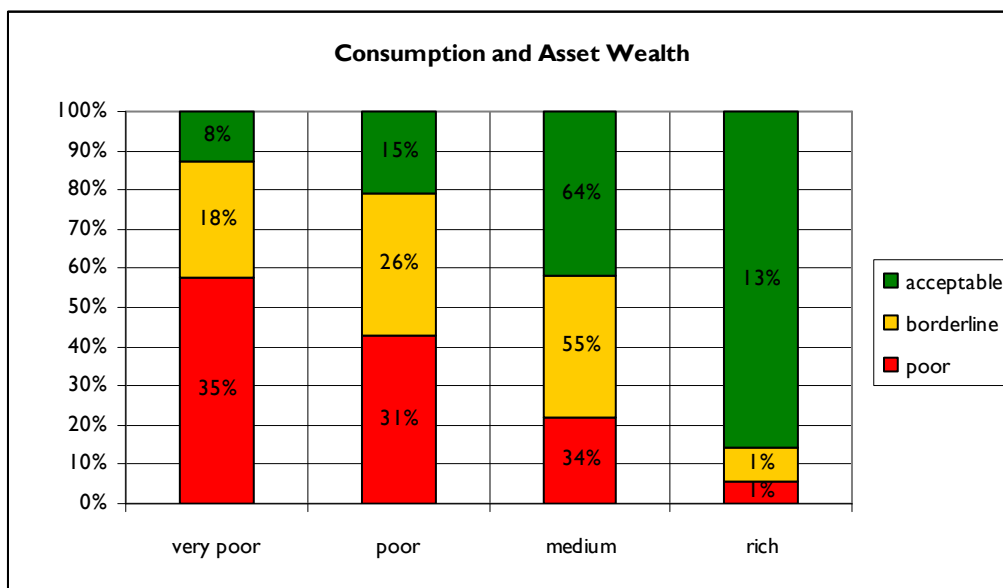
By analysing the type of the food consumed in the past 7 days, cereal was found to be the most likely to be consumed on daily basis by 93% of the households, followed by oil (68%), sugar (42%), vegetables (38%), milk (9%) and beans (8%). Animal proteins (beef/meat) was the least likely food item to be consumed by the households with 72% of the households indicating not having consumed them at all any day in the past seven days. In terms of protein consumption from plant sources, notably beans and peas, 52% had not consumed them at all in the past seven 7 days. Consumption of fruits was also very low, with 86% indicating not having consumed them at all in the last seven days. This is an indication of lack of diversity in the diets of the households. As the chart below indicates, across the districts, the households showed similar patterns in food consumption.

Foods Consumed in Past Week by District
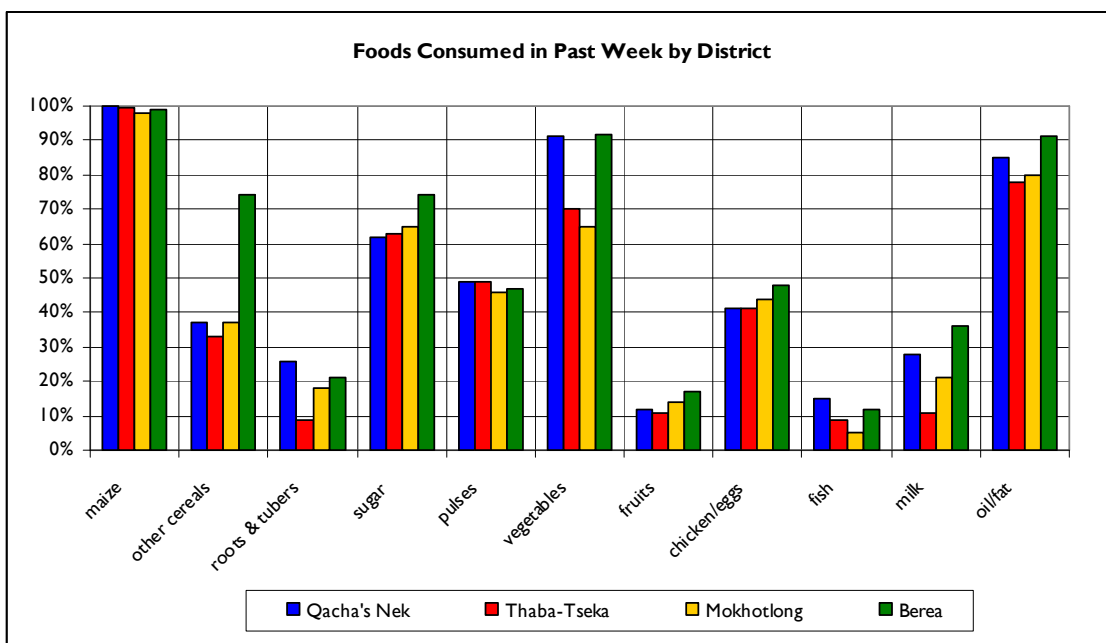
4.4.2 Sources of food consumed

Overall, as illustrated in the chart, households employ a combination of sources for their food needs. The sampled households were more likely to depend on purchases (50%), own production (26%) and transfers (20%) and lastly hunting and gathering (5%) for their food needs. This however varied across the districts with households in *Thaba-Tseka* having the lowest proportion of households depending on purchases at 42%. In the same districts, about 31% of households relied on food production. Households in *Qacha's Nek* district showed the highest proportion of households employing hunting and gathering at 10%. Hunting and gathering mainly refers to gathering of wild vegetables and wild hunt to compliment food from other sources.

Sources of Food Consumed by District
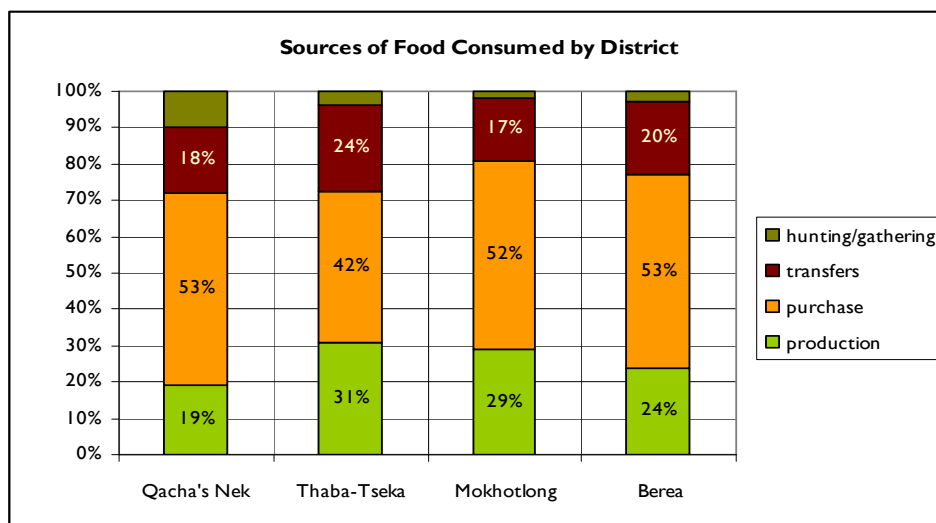
4.5 THE COPING STRATEGIES INDEX (CSI)

The Coping Strategies Index (CSI) measures the frequency and severity of a number of common household coping strategies[7] for addressing shortfalls in food supply and combines the information into a single CSI score. With the CSI, a lower score implies reduced stress on the household ability to meet its food needs and thus, relatively better food security.

The average CSI for sampled households was 51. This varied across the districts, with *Thaba-Tseka* registering the highest CSI mean (61), followed by *Mokhotlong* (57), *Qacha's Nek* (53) and lastly *Berea* (32).

Comparing households with a chronically ill member with households that did not have, the results indicate strongly that households with a chronically ill member were more likely to experience higher levels of stress (a CSI score of 76 and 50 respectively) $(p < 0.05)$.

Mean Coping Strategies Index (CSI) by District

---
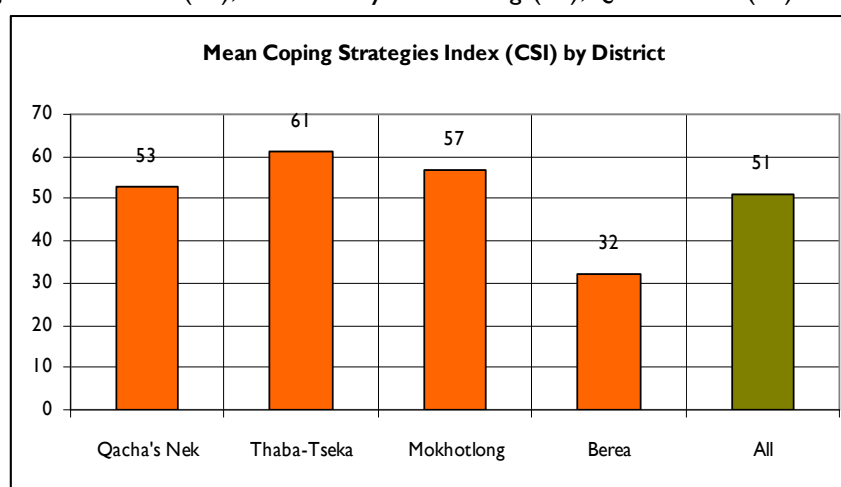
[7] Coping strategies assessed: skipping meals, reducing portion sizes, reducing the number of meals, borrowing food, eating less preferred foods, eating wild foods, eating immature crops, begging and engaging in casual labour.

However with other demographic characteristics such as households hosting orphans, and those that did not have, elderly headed and female headed, no significant differences were found in the level in the CSI, as indicated in the chart below.

Coping Strategies Index (CSI) by HH Characteristics

Characteristic	Value
Elderly head	47
no elderly head	53
Female head	53
no female head	48
HH with chronically ill	76
No chronially ill	50
With orphans	56
with no orphan	50
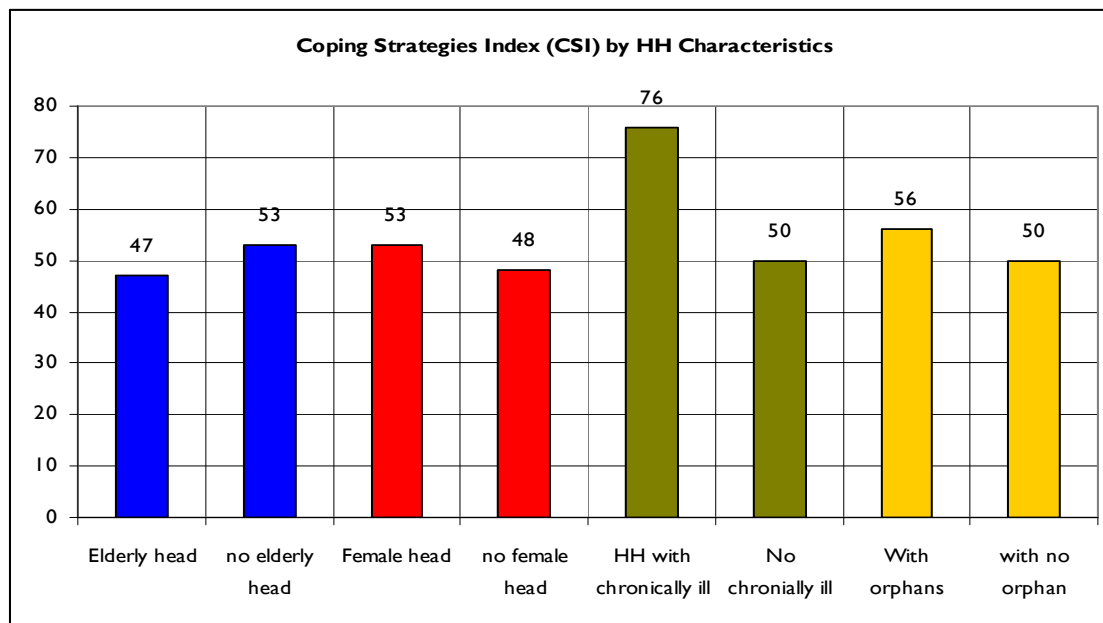
On asset poverty and CSI, the very asset poor were found to have the highest levels of stress (CSI score of 80), followed by asset poor (62), with the asset medium and asset rich with the lowest level (44 and 24 respectively). This is an indication that asset poor are really a vulnerable group. Lastly, on food consumption and as illustrated in the chart, in all the four districts surveyed, a higher CSI mean corresponded with a lower food consumption score, an indication that households experiencing high levels of stress are also having poor consumption. *Thaba-Tseka* is the mostly affected district.

Coping Strategies Index and Food Consumption Score by District

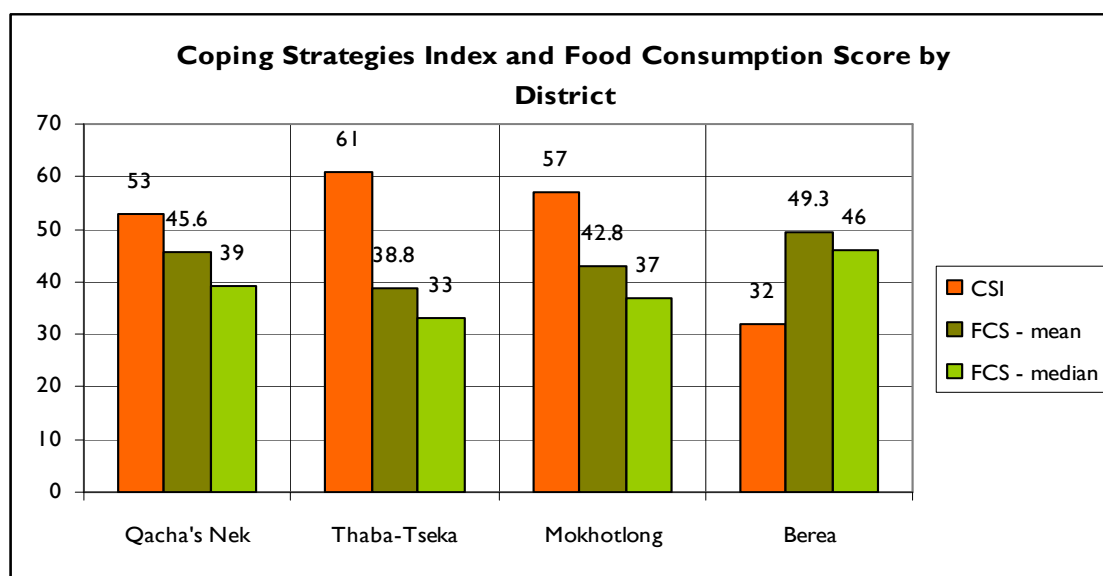| District	CSI	FCS - mean	FCS - median
Qacha's Nek	53	45.6	39
Thaba-Tseka	61	38.8	33
Mokhotlong	57	42.8	37
Berea	32	49.3	46

The most commonly employed coping strategies were: eating less expensive/less preferred foods by 68% of the households, borrowing food and limiting portion sizes (67%), eating wild foods/hunting (66%), adults eating less (58%), reducing meal (56%) and casual labour for food (47%). The least likely employed coping strategies were: harvesting immature crops (19%), sending household members to beg (21%), skipping entire days without eating (22%), sending household members elsewhere to eat and purchasing or borrowing food on credit (32%).

4.6 HOUSEHOLD EXPENDITURE PATTERNS

Detailed information on household expenditure was collected and consisted of certain regular household expenditures were collected for the previous month while those less regular expenditures were collected using a six month recall period. The information was used to construct the monthly per capita expenditure and share monthly expenditure for food, debt, health care, education and funerals. The average monthly per capita income of the sampled households was 157 *Maloti*. As illustrated by the chart, by district, households in *Qacha's Nek* district had the highest mean per capita monthly income at M192, while the other three districts averaged about M145 per capita each month.

Monthly per capita Expenditure and Income by District

Legend: Qacha's Nek, Thaba-Tseka, Mokhotlong, Berea

	P/cap exp food - mean	P/cap exp food - median	P/cap monthly income - mean	P/cap monthly income - median
Qacha's Nek	64	42	192	80
Thaba-Tseka	31	14	145	50
Mokhotlong	35	23	145	60
Berea	40	27	145	75
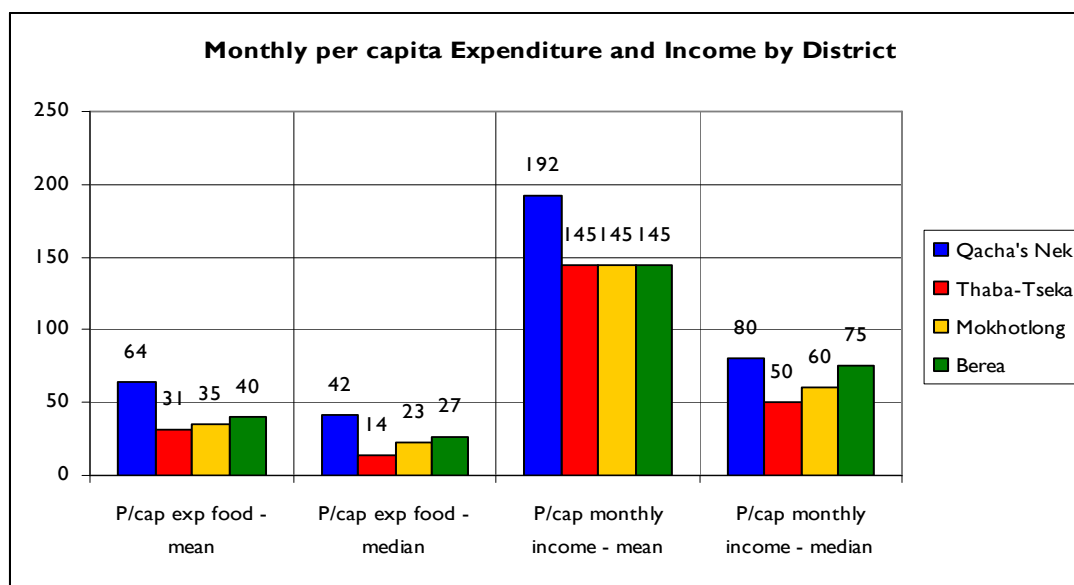
Monthly per capita expenditure on food was M43 for the entire sample with the highest found *Qacha's Nek* at M64, followed by *Berea* (M40), *Mokhotlong* (M35) and lastly *Thaba-Tseka* (M31). Further analysis showed no real differences in share of monthly expenditure for healthcare, debt repayment, education and funerals by district (refer to chart below).

Comparing expenditure and income with asset poverty, the asset 'very poor' had the lowest per capita monthly income at M60, followed by asset 'poor' at M79, while the 'medium' and asset 'rich' had much higher per capita monthly incomes at M179 and M314 respectively *(p < 0.05)*. This was the same

Share monthly Expenditure for Food by District

Qacha's Nek	Thaba-Tseka	Mokhotlong	Berea
40%	31%	41%	35%

pattern with per capita expenditure on food, with the asset 'very poor' and 'poor' also much lower expenditure on food (M21 and M29 respectively), comparted to the asset 'medium' (M45) and the 'rich' (M64).
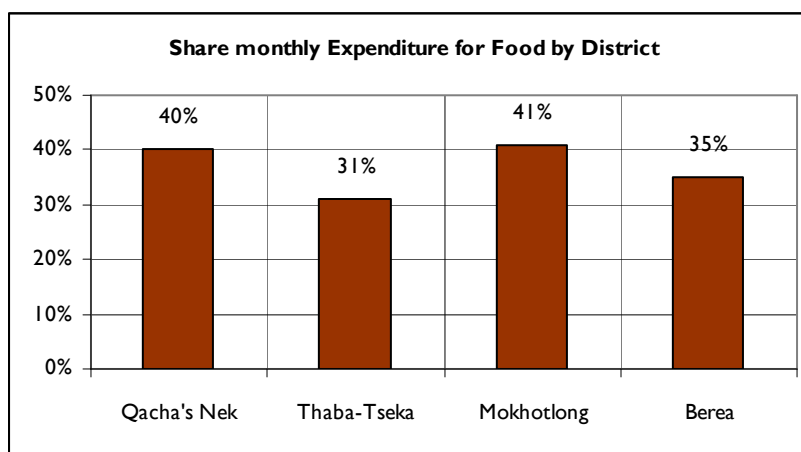
The same pattern was observed with food consumption, where households with poor consumption had both the lowest per capita monthly expenditure and income (M10 and M54 respectively), compared to the households with borderline (M27 and M90) or acceptable (M53 and M207).

As the chart indicates, comparing household demographics with income and expenditure on food showed that households caring for a chronically ill member have lower per capita monthly expenditure for food and lower per capita monthly income than those with no chronically ill member, but the differences are not statistically significant.

Households hosting orphans have a significantly lower *(p < 0.05)* per capita monthly expenditure for food and also a significantly lower *(p < 0.001)* per capita monthly income than those not hosting orphans.

Income and Expenditure by HH Demographics

■ Per capita expnditure on Food   ■ Per capita Monthly income
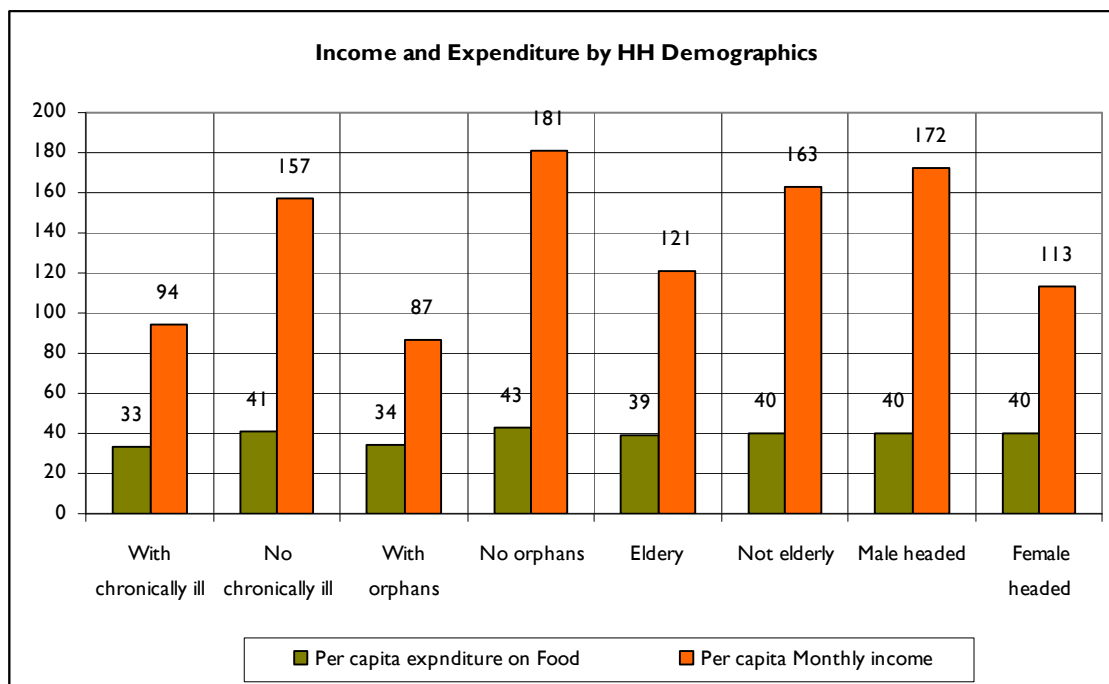
4.7 HEALTH AND NUTRITION

This section reports on the results of the 2009 Lesotho Demographic and Health Survey (LDHS), mainly on health and nutrition indicators of mother and child. Analysis of the nutrition indicators of people living with HIV and tuberculosis, which were collected from primary source, will be presented in this section.

4.7.1 Health and nutrition of young children

Based on WHO standards, **global acute malnutrition** using weight-for-height fell within acceptable levels. A total of 3.8% of children in the country are wasted (weight-for-height z-score < -2.00 SD) which had decreased from 5.0% found in the 2004 LDHS. By districts, wasting was found to be more prevalent in *Thaba-Tseka* (5.9%), followed by *Mokhotlong* (4.0%) and *Qacha's Nek* (3.9%). *Berea* had the lowest prevalence of wasting among the four districts (2.8%).

Global underweight, measured by weight-for-age was estimated at 13.2% nationwide and this is higher than the

Wasting in Children 6-59 months (2009 LDHS)
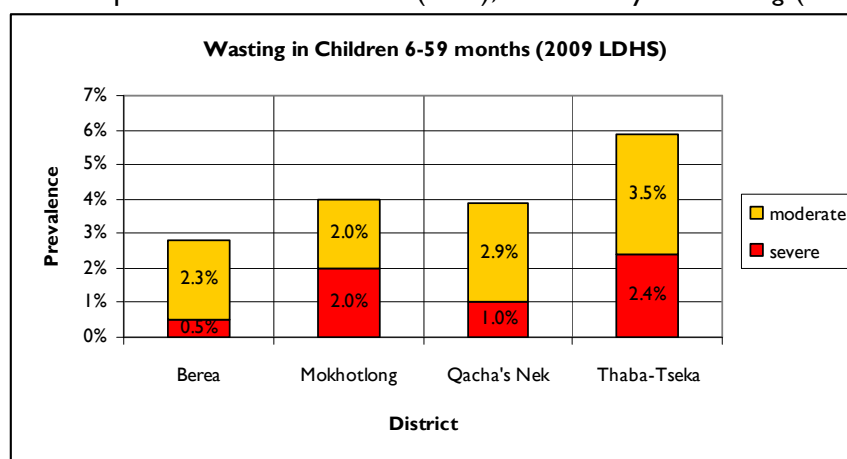
acceptable level of 10 percent. *Mokhotlong* and *Thaba-Tseka* had the highest prevalence of underweight.

Underweight in children 6-59 months (2009 LDHS)

Bar chart showing prevalence of underweight (moderate and severe) by district:
- Berea: moderate 8.9%, severe 1.1%
- Mokhotlong: moderate 8.3%, severe 2.2%
- Qacha's Nek: moderate 13.6%, severe 4.7%
- Thaba-Tseka: moderate 14.4%, severe 2.4%
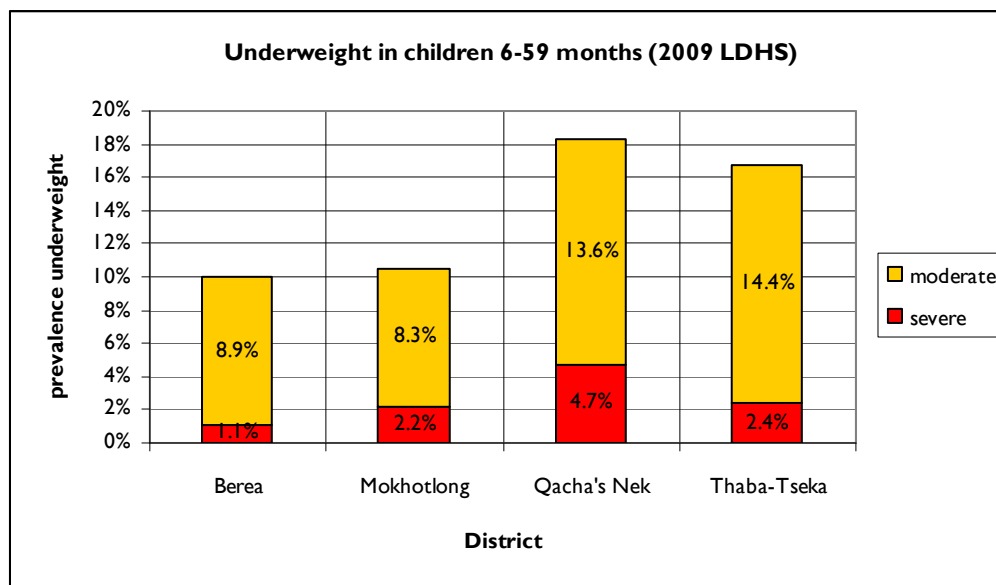
Chronic malnutrition or stunting, (height-for- < -2.00 SD) was found in 39.2% children in the country, with the highest prevalence in *Thaba-Tseka* (51.8%), *Mokhotlong* (48.2%) and *Qacha's Nek* (47.0%). *Berea* also had the lowest prevalence of stunting (35.3%) among the four study districts, yet the level is still a public health concern.

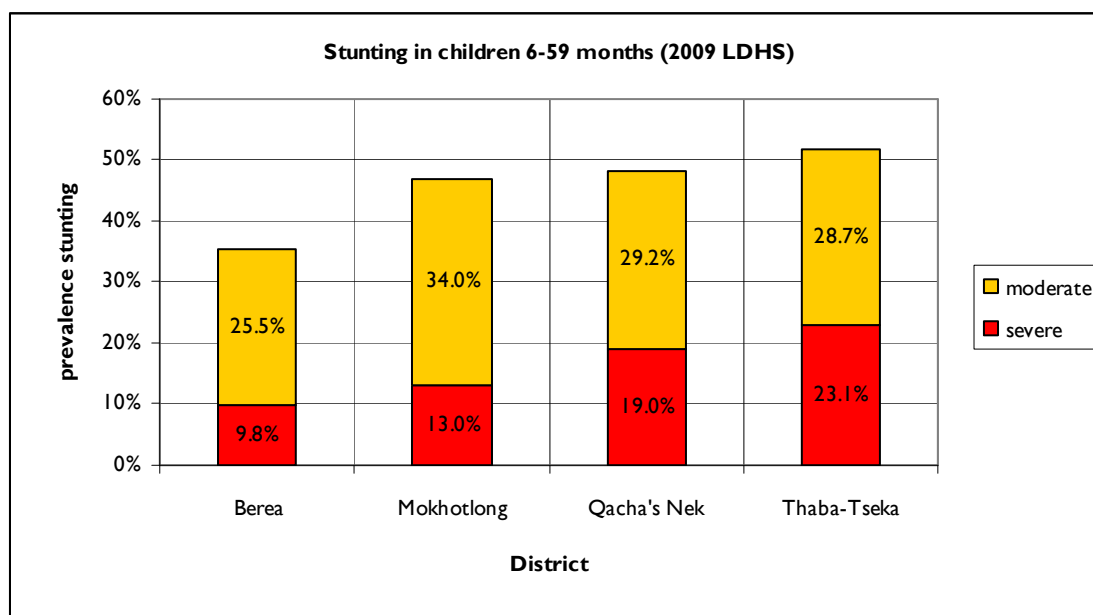**Stunting in children 6-59 months (2009 LDHS)**

Bar chart showing prevalence of stunting (moderate and severe) by district:
- Berea: moderate 25.5%, severe 9.8%
- Mokhotlong: moderate 34.0%, severe 13.0%
- Qacha's Nek: moderate 29.2%, severe 19.0%
- Thaba-Tseka: moderate 28.7%, severe 23.1%

Iron deficiency anaemia

The 2009 LDHS reported anaemia at 47% in children 6 to 59 months of age of whom, 25.0% had mild anaemia, 20.8% had moderate anaemia and 1.3% had severe anaemia. Amongst the four study districts, children in *Qacha's Nek* had the highest prevalence of anaemia with 34.6% of children having moderate anaemia and 5.0% with severe anaemia.

Childhood Illnesses

Childhood illnesses that are common for children in Lesotho include acute respiratory infections (ARI), diarrhoea, and fever. The 2009 LDHS showed that health records identify ARI and diarrhoea as the leading causes of hospital admissions and death in children. Six

percent (6%) of children had symptoms of ARI, 17% fever and 60% of those who had fever were taken to health provider. Diarrhoea was reported in 11% of children and 53% of them were taken to health facilities. Three quarters of children with diarrhoea received ORS, RHF or increased fluids. Early diagnosis and treatment are pivotal in preventing death amongst children. By study districts, children in *Mokhotlong* and *Thaba-Tseka* were more affected compared to others.

Childhood Illnesses

■ Berea ■ Qachas'nek ■ Mokhotlong ■ Thaba Tseka

	ARI	All Diarrhoea	Diarrhoea with blood	Fever
Berea	4.9	9.6	1.6	21.7
Qachas'nek	5.9	11.6	2.3	16.9
Mokhotlong	11.6	13.2	2.9	23.8
Thaba Tseka	9.4	12.8	4	22.1
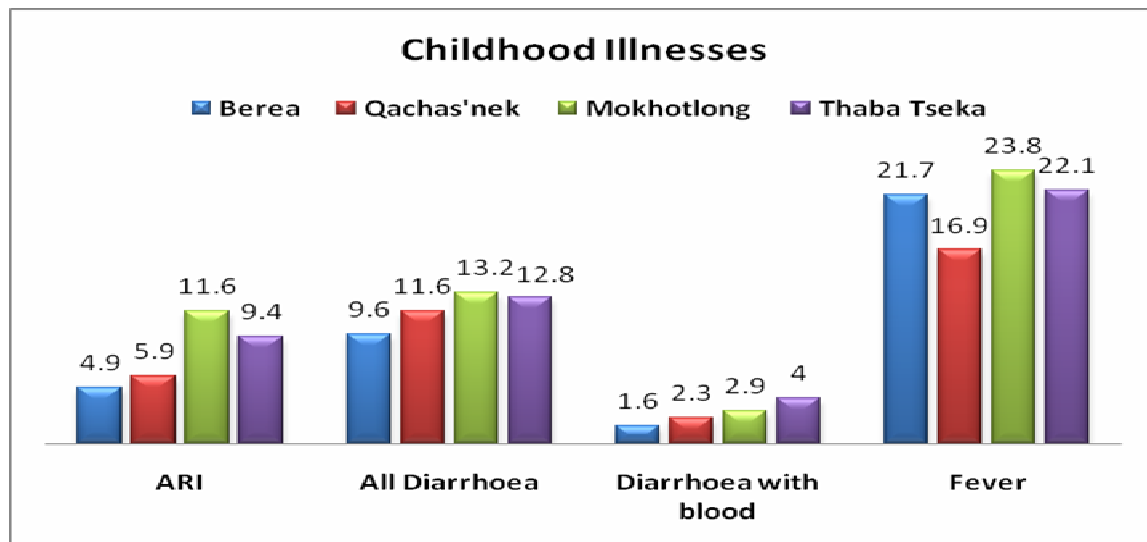
Feeding Practices and breastfeeding

About 92% of children are breastfed. However, only 54% are exclusively breastfed for 6 months as recommended. Low practise of exclusive breast feeding is partly attributable to mixed feeding. Mixed feeding is characterised by giving children who are still breastfed solid or semi-solid foods or infant formula at the age of 4-5 months. This indicates that complementary feeding resumes earlier than recommended. At least 26% of children are fed using bottle with a nipple.

4.7.2 Maternal Health

A total of 26.2% of women have some level of anaemia in the country. The prevalence is higher among pregnant women (30%) and those who smoke cigarette/tobacco (29%). In the study districts, severe anaemia among women was almost non existent. However, 8.3% of women in *Berea* were moderately anaemic while the prevalence of moderate anaemia amongst women in the other districts ranged from 3.5% in *Mokhotlong* to 6.6% in *Qacha's Nek*.

The mean BMI for women age 15-49 is 25 kg/m^2. At the national level, 6 percent of women were found to be moderately or severely thin (BMI < 18.5 kg/m^2). A substantial proportion of women, more than four in ten (42 percent) had a BMI of 25.0 or higher and are considered overweight or obese. Notably, 17 percent of women 15-49 are obese, with a BMI of 30.0 or higher. In the four districts surveyed, *Mokhotlong* had the lowest proportion of overweight or obese women (28 percent), followed by *Thaba-Tseka* (31), while *Qacha's Nek* and *Berea* had the highest (39 and 48 respectively).

Nearly all (92%) women receive antenatal care from a health professional. Out of this, between 91% and 95% of women in the study districts received antenatal care from a health professional in the most recent birth. However, less than 50% of women received iron tablets during pregnancy with proportions ranging from 24% in *Mokhotlong* to 48% in *Qacha's Nek* and 51% in *Berea*.

Compared to other districts, delivery by health professional is lower in *Thaba-Tseka* (43%) and *Mokhotlong* (48%). At least *Qacha's Nek* and *Berea* recorded 64% and 66% respectively. A proportion of 10-23% in the four study districts were assisted by community health workers.

In contrast only 3% of women receive postnatal care within recommended one hour after delivery.

4.7.3 HIV and AIDS

Households were asked whether there was a member who tested positive for HIV. As indicated in the chart below, about 20% of the households in *Berea* had an HIV positive member, followed by *Thaba-Tseka* (18%), *Qacha's Nek* (16%) and *Mokhotlong* (16%). This compares to findings from the 2009 LDHS with 20.6% in *Berea*, 20.1% in *Thaba-Tseka*, 22.7% in *Qacha's Nek* and 21.6% in *Mokhotlong*.

HIV and TB in Sampled HHs
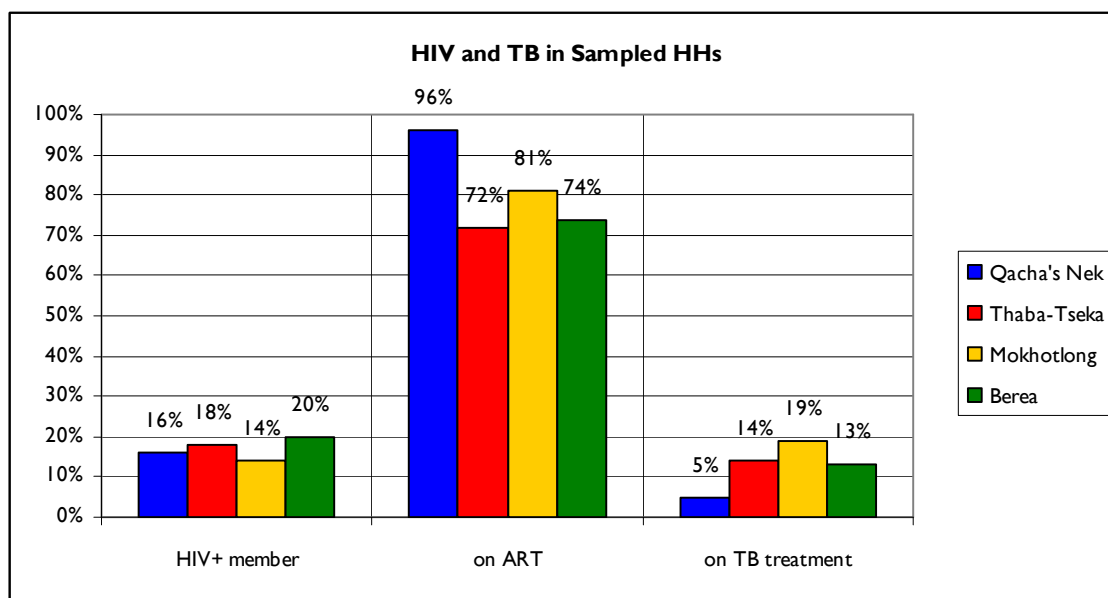
For people testing positive, nearly all were on ART treatment in *Qacha's Nek*, followed by 81% in *Mokhotlong*, 74% in *Berea* and 72% in *Thaba-Tseka*. This is not a clear indication of access to treatment since often people who test positive for HIV do not begin treatment immediately due to relatively low viral loads or high t-cell counts. The study also found that 19% of the people in *Mokhotlong* were on TB treatment compared to only 5% of those in *Qacha's Nek*.

Nutritional status of HIV+ HH members
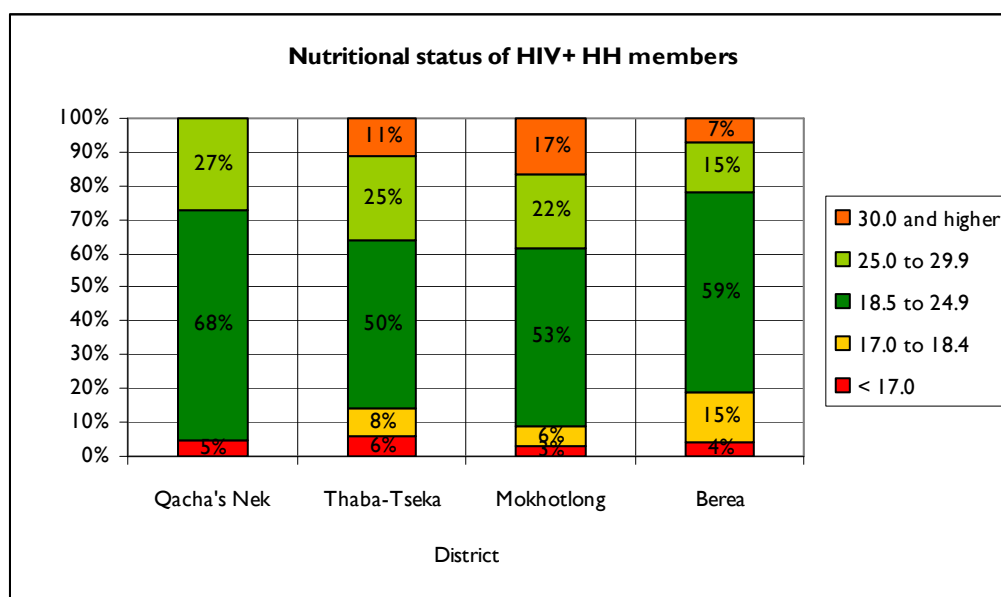
Anthropometric measures were taken on household members who tested positive for HIV and were present at the time of the survey and their nutritional status was assessed. It is

noted from the chart above that a small percentage of people living with HIV and AIDS as well as TB were undernourished. However, more than 20% in each district were overweight or obese, with a BMI of more than 25.0 kg/m². However, despite the fact that generally the proportion of those who were underweight (with BMI below 18.5 kg/m²) was small, a rather large percentage in Berea (19%) had low BMI, a situation that calls for an intervention.

4.7.4 Integrated Management Acute Malnutrition (IMAM)

The intention of the study was to determine the number of facilities providing IMAM services, number of health workers trained on the updated IMAM guidelines, availability of updated IMAM guidelines and number of households with children enrolled on IMAM Programme in the four study districts. However, at the time of the survey, updated guidelines were still under development and therefore these indicators recorded zero at the start of the programme.

4.8 WATER AND SANITATION

Drinking water from an improved source is defined as water coming from piped water into dwelling, yard or plot, public tap, borehole, protected spring and rain water. Access to improved water sources ranged from 69% in *Thaba-Tseka* to 90% in *Qacha's Nek*. Households in *Thaba-Tseka* and *Mokhotlong* are the least likely to have access to water from an improved sources (69% and 77% respectively). The 2009 LDHS shows that eight in ten districts obtain water from improved sources. A wide variation in usage is observed between urban 91% and 74% of rural households. The report further indicates that 32% of rural households take 30 minutes or more to obtain water and only 6% of rural areas have water on the premises.
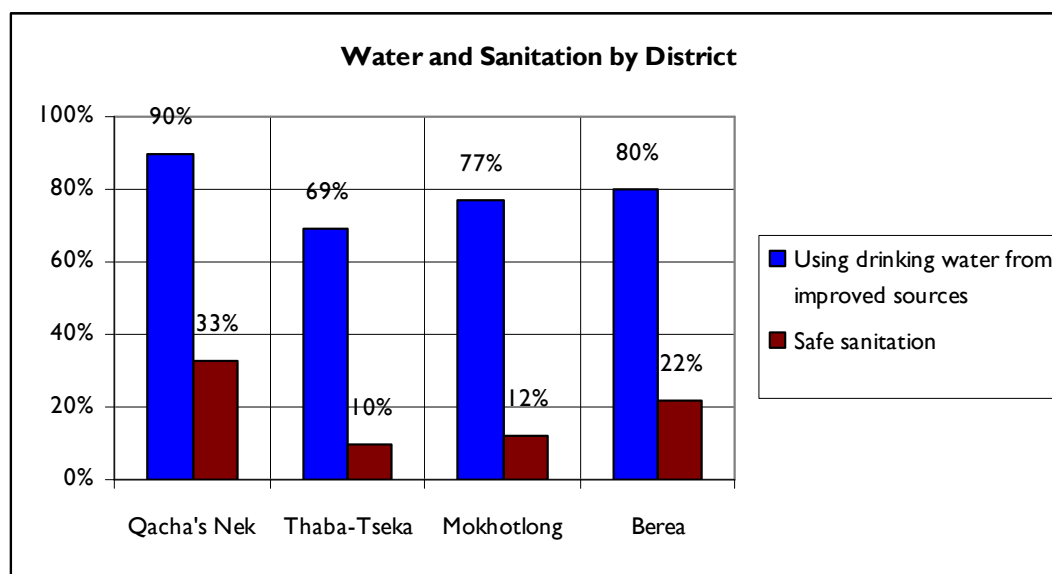
It is well recognized that safe sanitation leads to improved hygiene practices and ultimately low incidence of child mortality. In this study 33% of households in *Qacha's Nek* and 22% in *Berea* have access to acceptable sanitary facilities. Households in *Thaba-Tseka* and *Mokhotlong* have the lowest access of 10% and 12% respectively. According to the LDHS, one in three households has no toilet (45% in rural and 4% in urban areas).

4.9 VEGETABLE PRODUCTION

More than half of the households owned some type of a garden. Three types of gardens were looked at: 'normal' garden, 'trench' garden and 'keyhole' garden. Keyhole and trench gardens have been widely introduced as innovative techniques as they are water conservative and ensure vegetable production throughout the year. However, the most prominent type of garden owned by households was normal garden. More than 70% of households had normal

gardens for more than 2 years. Keyhole gardens were owned by 11% to 20% of households, with *Qacha's Nek* and *Mokhotlong* recording the highest possession. The majority of those who have keyhole gardens in *Qacha's Nek* had possessed them for more than 2 years. Ownership of trench gardens was not significant in all the districts. The data shows that keyhole gardens may have been newly introduced in the other districts as they were less than 2 years old.

Garden ownership by Type and District
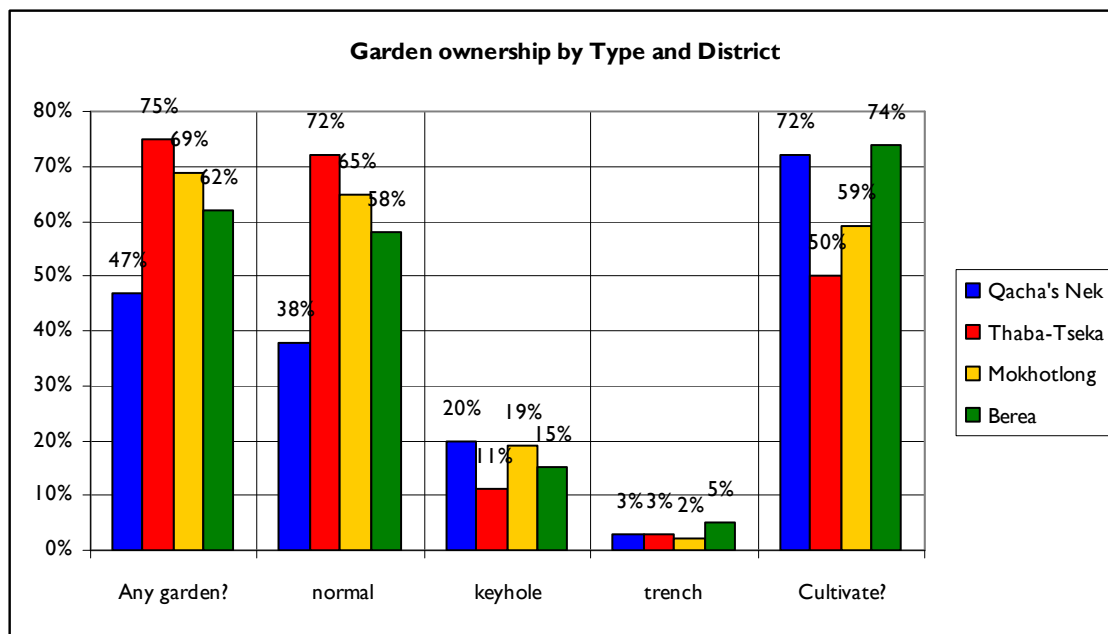
Households in *Berea* had the largest proportion of their land allocated for vegetable gardening, followed by *Thaba-Tseka*. The mean garden size in *Berea* was estimated at 30m². In the mountain districts, garden sizes ranged from 3m² in *Qacha's Nek* to 10.5 m² in *Mokhotlong*. It is important to note that some households in the mountain districts had gardens in the fields because the land around homestead was not enough or not available for this activity.

Green leafy vegetables were the most commonly grown vegetables, followed by cabbage, carrots, beetroot, tomatoes and pumpkins. The most notable differences between districts were the high percentages of gardens growing cabbage in *Thaba-Tseka* and *Mokhotlong* and that gardening households in *Berea* were more likely to produce tomatoes and pumpkins compared to the other districts.

Types of Vegetables Grown
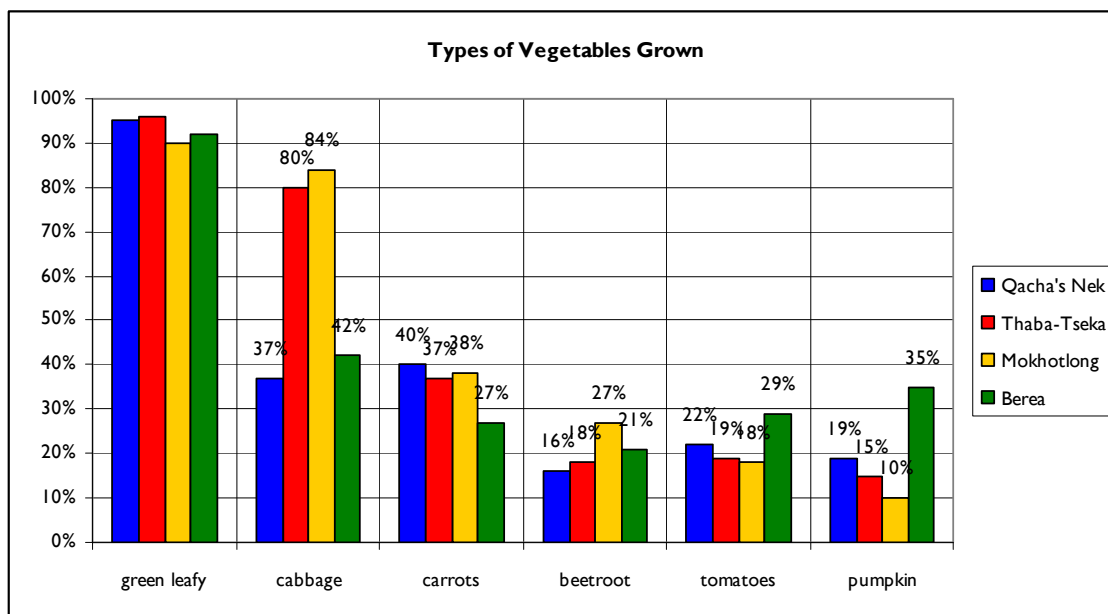
The time periods - June to August and more prominently September to November were times commonly allocated to grow vegetables.

Households were asked to report on the types of training they received in order to improve their skills. The results revealed that very low proportion of households were trained. Only 4% to 12% of households were trained on vegetable production; 2% to 5% were trained on post harvest handling and processing in the four districts combined. A small proportion of households received training on Small Medium Enterprises. Training received was most provided by extension workers from the Ministry of Agriculture and Food Security and to some extent, some NGOs. This clearly indicates a need for training.

At the time of the study only 50% to 74% of households with gardens from the four districts had cultivated their gardens with a variety of vegetables. A number of reasons were provided by those who had not cultivated vegetables. In order of priority, lack of rain, no seeds followed by other (e.g. animal interference with plants) were cited as major reasons for not cultivating. However, illness, no time and lack of labour were not important factors determining cultivation of vegetables.

More than 80% of households obtained seeds through purchases and less than 10% acquired them through donor assistance and gifts from neighbour, relative or friend.

Vegetables were used in a number of ways and these include consuming, giving away, selling, bartering and preserving. Most of the vegetables grown were consumed, approximately by more than 80% and given away, approximately by 20% irrespective of the type of vegetable. Preservation (approximately 10%) was most common for cabbage, green leafy vegetable, beetroot and tomatoes.

Households reported sources of vegetables consumed using 7-day recall. Generally, households accessed vegetables through purchases; gathering (of wild vegetables) and production in order of importance. Many households in *Qacha's Nek* (48%) relied more on purchases, followed by *Mokhotlong* (46%) and *Berea* (41%). Gathering of vegetables was not significant and this could be explained by the fact that wild vegetables were not common at the time of the survey.

Households were asked how much income they generate from selling vegetables produced within 7-day period. 13% to 32% of households had sold vegetables in the past week and money earned ranged from 75 to 200 *Maloti* (local currency) per week. About 88% to 100% reported using the money mainly to purchase household essentials. Bartering of vegetables was not common expect in the mountain districts where households exchanges dried cabbage for cereal in winter, at the time when vegetables are rare.

5. CONCLUSIONS

- The study shows that the majority of people living with HIV in *Thaba-Tseka, Mokhotlong, Qacha's Nek* and *Berea* had acceptable body mass index. However, a significant proportion of undernourished HIV+ persons was found in Berea and this indicates the need for nutritional support. Adherence to ART and TB medication was found to be satisfactory as the majority did not miss doses.

- The results show poor dietary diversity among households in the study districts especially in *Thaba-Tseka*. Households which employ more coping strategies to survive seemed to have poor food consumption. This could be explained by prolonged food insecurity which is a factor of poverty.

- Most households rely on purchase to access most of their food. Households spend more money on food than other household needs.

- Skill training on agricultural activities and small scale entrepreneurship was found to be low.

- Most households rely on income sources which are not reliable such as casual labour, brewing and sale of crops from subsistence farming. The majority of those who want to engage in income generating activities mentioned poultry farming, vegetable production and small businesses as the most preferred. However, there is need to provide training, capital and agricultural inputs to enable these activities to take place.

- Most households have vegetable gardens. However, normal gardens were the most common type of gardens owned, an indication that households have not yet adopted new gardening methods as ownership of keyhole and trench gardens was low.

- Cultivation and production of vegetables were low in general. Households mainly grow vegetables for consumption during the months that coincide with the rains. Very few households grow vegetables throughout the year.

- Vegetable sales are not common as culture requires households to give away. Preservation of vegetables is common in green leafy vegetables and cabbage especially through drying method. Other varieties of vegetables and preservation methods are not commonly used.

- Though access to safe water is good in most districts, access to safe sanitation is very low.

6. RECOMMENDATIONS

- There is need to provide nutritional support to food insecure people who are on ART and TB treatment especially in *Berea*.

- Efforts to promote vegetable production should be strengthened in order to increase household consumption, sales and preservation of vegetables. Training and input supply should be given a priority.

- As households have the desire to do income generating activities, there is need to support them with capital and training.

- There is need to provide safe sanitation to households.

ANNEXES

When green leafy vegetables are cultivated by District

When cabbages are grown by District

When carrots cultivated by District

When beetroot is cultivated by District

When tomatoes are grown by District

When carrots cultivated by District

When purchase vegetables - Normal gardens

When purchase vegetables - Keyhole gardens

When purchase vegetables - Trench gardens

What HH do with Green leafy vegetable production

What HHs do with cabbage production

What HH do with Carrot production

What HHs do with beetroot production

What HHs do with tomato production

What HHs do with pumpkin production