ZAMBIA
Vulnerability
Assessment Committee

In-Depth Vulnerability and Needs Assessment Report

June 2015

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Executive Summary

The 2015 In – depth Vulnerability and Needs Assessment was triggered by prolonged dry spells experienced mainly in the southern half of the country between February and March 2015. The Assessment was designed to understand the impact of these prolonged dry spells on selected sectors of the economy in forty-eight (48) districts of Central, Copperbelt, Eastern, Luapula, Muchinga, Northwestern, Southern and Western Provinces.

The results of the assessment showed that the main livelihoods for most people in the assessed districts was farming where sixty (60) percent of households earned their incomes and food. The other livelihoods were trading, agriculture wage labour, skilled trade, non-agricultural wage labour and remiattances.

The Assessment further determined that production of maize in most of the districts reduced by as much as 38 percent. The western province districts were the most affected indicating a loss of as much as 41 percent overall. In terms of carry – over stock, only 34.7 percent of households reported to have had stock from the previous season. When households were asked when cereal would run out, about 55.2 percent indicated that they would have no cereal by July. By the time the households start the lean period around November, 86.7 percent of the households would have run out of cereal.

The assessment results showed that there were variances in food expenditure share across the districts covered. In this regard, majority of the households spent most of their money on food items.The results showed that 34.8 percent of the households had an expenditure share on food of between 51 and 75 percent. A further 34.1 percent of households had food expenditure shares of more than 75 percent.

The coping strategies index (CSI) showed no major food insecurity stress across the surveyed districts. This could be attributed to the period of the assessment when even the poor households are able to access own food production, and also engage in agricultural labour for incomes and food exchange.

The Assessment showed that most of the people in the assessed districts have acceptable food consumption scores (52.7 percent) followed by those with borderline food consumption scores (24.6 percent). The Assessment showed that most of the people in the assessed districts have acceptable food consumption scores (52.7 percent) followed by those with borderline food consumption scores (24.6 percent).

Utilizing a composite food security indicator developed by the Consolidated Approach for Reporting for Security which combined FCS, Expenditure share and coping behaviour, (CSI and FCS), 31 districts out of the 48 assessed districts, will require humanitarian assistance for part of the 2015/16 consumption season. Based on this, 798, 948 people in 31 districts will require relief food amounting to 53, 242 MT of cereal for eight months.

In terms of health, there is need to strengthen Malaria Control Programs especially in the districts that are currently showing an increase in malaria. There is need to strengthen water quality monitoring in all the districts to ensure safe water sources of drinking.

For nutrition, the survey results showed that on average 0.3 percent of households in the entire district slept hungry, 8.9 percent ate once and 46.3 percent ate two times the day preceding the

survey. About 2.1 percent of the households in Shangombo, Ikelenge, Sikongo and Sioma had no meals a day preceding the survey. Sikongo and Sioma recorded the highest proportion of households (50.7 percent and 34.6 percent respectively) who had one meal the day preceding the survey. Further, Lukulu and Nyimba showed that over 79 percent of the households ate two meals the day preceding the survey. The results further showed that in terms of child nutrition, 2.2 percent children were at risk of severe wasting, 3.2 percent were at risk of moderate wasting and 94 percent of the children were not at risk of wasting or death in the entire district.

For water, sanitation and hygiene, the results showed that reported main water sources that were affected (that is lower water level than in previous years same time) is 2, 585,983 people or 430,997 households. The population that reported main water sources which dried up is 1,082,752 people (180,459 households).

A large number of households in the assessed districts did not have any toilets and practice open defecation. The population which reported not having sanitation facilities stood at 927,551 people (154,592 households). Districts where households do not have sanitation facilities were mainly in Western Province.

Conclusions and Recommendations

Agriculture and Food Security

Conclusion

- No major productive assets were offloaded and/or sold in response to the prolonged dry spells.
- Livelihood diversity still remains low with majority of the households in the assessed districts dependent on agricultural based livelihoods (e.g. crop production, livestock rearing and agriculture wage labour).
- The permanent and seasonal cash incomes in the assessed districts are also largely agricultural based mainly being sale of crops and agricultural wage labour.
- Employment of moderate to high cost coping mechanisms was high across most of the assessed districts (RCSI).
- Prolonged dry spells did have an impact on household food production which ultimately will affect household food security especially as households move towards the lean period.
- Despite a slight increase in dietary diversity, the assessment showed that there is over – dependency on carbohydrates (mainly maize and sweet potatoes).
- Utilizing a composite index of FCS, Expenditure Share on food and coping behaviour, the results of the survey showed that 31 districts in six provinces would require assistance.

Recommendations

Short Term

- A total of 798, 948 people (133, 158 households) from thirty one (31)districts will require food relief amounting to 53, 242 MT of maize equivalent for a period of eight (8) months (August 2015 – March 2016).These include: Serenje and Chitambo (Central); Chadiza, Chipata, Katete, Lundazi, Mambwe, Nyimba, Petauke, Sinda, Vubwi (Eastern); Samfya (Luapula) Chikankata, Gwembe, Kazungula, Pemba, Sinazongwe (Southern); Ikelenge

(North Western) and Kalabo, Kaoma, Mulobezi, Senanga, Sesheke, Shangombo, Nalolo, Limulunga, Nkeyema, Sikongo, Sioma, Mwandi and Luampa (Western).

- There is need to monitor the evolvement of the food security situation in the seventeen (17) districts as most of them fall within the moderately food secure district with a possibility of graduating into food insecurity as we approach the lean period.
- There is need to strengthen the extension delivery system.
- Input provision for 45,079 households in twenty-seven (27) districts.

Medium to Long Term

- Livelihood diversification programmes be scaled up in order to contribute to alternative livelihoods.
- Strengthen the support on conservation farming implementation.
- There is need to introduce appropriate technologies for small – scale farmers which could enhance household food security such as water harvesting and small scale irrigation systems.
- There is need to enhance the monitoring of nutrition and food security through the establishment of sentinel sites.
- Child headed Households should be targeted for food security pack programs
- Promote asset building projects among the child headed households through Youth empowerment funds.

Health

Conclusion

Malaria was the most common disease suffered by household members especially those in rural areas. The most affected districts were: Nkeyema, Luampa, Kaoma, Ngabwe, Mpika, Mwinilunga, Chama and Masaiti. The percentages of infection for diarrhoea, respiratory infection and other diseases were too low as a result they had no significant consequence on household's livelihood.

On health care seeking behavior, a bigger percentage of respondents who didn't seek medication at all and those who took their own medication where those who suffered from malaria. There is need to increase the deployment of Community Health Assistants (CHAs) to communities so as to sensitize communities on the importance of making use of health facilities.

Fever and ARI/cough were the top two diseases that affected the under five children in the districts were the assessment took place. ARI/cough had 29 percent and fever had 27.2 percent.

Recommendations

Short term

- Increase the coverage of indoor-residual spraying and effective use of RDTs.for the following districts; Nkeyema, Luampa, Kaoma, Ngabwe, Mpika, Mwinilunga, Chama, and Masaiti and
- There is need to develop a Statutory Instrument on the use of ITNs.

Medium to Long term

- Extending malaria surveillance to community level using an active case detection system for community level surveillance.
- There is need to improve on the supply of drugs and logistics for treatment of respiratory infections (non-pneumonia).

- Recruit more Community Health Assistants (CHAs).
- There is need to promote community based disease prevention mechanisms.

Nutrition

Conclusion

The study showed that most of the households ate two meals a day preceding the survey. Most households that ate twice had normal meals and a reduction was seen among those that ate three meals compared to their normal meals. This situation could be explained by the fact that most households reported having run out of food in 30 days preceding the survey and a reduction was observed among those who normally eat three meals.

The results indicate that the overall wasting was less than 6 percent, however, specific districts data show high proportion of child wasting. The results showed that children from large families and families headed by the young and the elderly had a higher chance of becoming wasted. Hence children in these households had a higher chance of dying. The family size contributed to child wasting due to the intra household's food distribution in households. Therefore, children between 6 to 24 months in larger families and households headed by the elderly are at risk of being wasted in all the 48 districts.

The survey established that about three quarters of the children who were severely wasted had fever, cough and diarrhea while all the children who were moderately wasted had all the three illnesses. This shows that these illness might have contributed to the wasting state of the children. Studies have shown that illnesses such as diarrhea increases the nutrient loss from the body and reduces appetite hence reducing the food intake and increasing the likelihood of wasting.

Further, the survey revealed that interventions such as supplementary and therapeutic feeding were only available in few districts with limited coverage in each of the districts. Therefore, vulnerable children would have been missed at targeting stage of the intervention.

Recommendations

Short term

- Children in the moderate and severe wasted should be considered for supplementary and therapeutic feeding. The feeds should provide adequate nutrient requirement for the children. The targeting should consider Child headed households, households headed by the elderly and children from larger families.
- The child rations should be large enough to support the food needs of the women. This will take care of the intra household's food distribution in the households since most wasted children normally come from the poorest segments of the population.

- There is need to intensify the monitoring of nutritional status of children and mothers to detect under - nutrition early and target support towards the vulnerable households in the communities.

- Scale up the supplementary feeding programs and therapeutic programs to cover vulnerable districts where wasting is high among children and women.

Medium term

- Promote food diversification to help in promoting diet diversity among the households
- Promote food storage for consumption and advocate for less sale on food assets from communities who depend on own production for livelihood.
- Promote infant feeding programs in the community.
- Improve the service delivery to reduce childhood illnesses such as diarrhoea and malaria.

Water, Sanitation and Hygiene

Conclusion

- The population which reported main water sources that were affected (that is lower water level than in previous years same time) is 2, 585,983 people or 430,997 households. The population that reported main water sources which dried up is 1,082,752 people or 180,459 households.

- The worst affected districts were Kaoma, Kalabo, Mitete, Sikongo, Sioma and Luampa (Western Province); Mwinilunga and Ikelenge (North-Western Province); Vubwi, Sinda, Chipta, Chadiza, Petauke and Lundazi (Eastern Province); Zimba, Namwala, Gwembe, Kazungula, Choma, Kalomo (Southern Province); Lufwanyama (Copperbelt Province); and Mafinga and Mpika (Muchinga Province).
- Majority of households in the surveyed districts did not treat their drinking water.
- A large number of households in the assessed districts did not have any toilets and practice open defeacation. The population which reported not having sanitation facilities stood at 927,551 people (154,592 households). Districts where households do not have sanitation facilities were mainly in Western Province.
- Most of the households washed their hands with the commonest scouring agents used being soap and ash.

Recommendations

Short – term (WASH)

In terms of water sources (working in liaison with MMEWD, MLGH, MOCTA, D-WASHE, DDMC and Satellite Disaster Management Committees):

- Assess and search for new water sources in needy areas;
- Drill boreholes in areas where water points (21 percent) have dried and where the distance from household to water point is more than 500m; and
- Continuous monitoring the situation in case of more water points drying out and determining alternative water sources.
- Plan for operation and maintenance of existing water infrastructure.

In terms of sanitation facilities and Hygiene (working with MLGH, MOCTA, MOH, MCDMCH, D-WASHE, DDMC and Satellite Disaster Management Committees):

- Construct demonstration latrines at the schools, health centres, rural community centres (markets, faith centers, and traditional chiefs' palaces) as well as latrines for vulnerable households. Work with households to build robust and appropriate latrine versions from the start, even though the latrines may be basic.
- The government at national, provincial and districts levels should encourage the formation of a practical WASH Chiefdom and Community Action Plans for improving WASH access generally;
- Promoting CLTS, monitoring and maintaining ODF status, maintaining a clean environment generally, and Make use of traditional leaders, local religious leaders and the influence and opportunities they have in bringing messages of personal cleanliness and well-being to their community.
- There is need to increase availability of chlorine at rural health centers level in all the affected districts
    - Create WASH awareness programme.

Medium and long term (WASH)

In terms of sanitation facilities and Hygiene (working with MLGH, MOCTA, MOH, MCDMCH, D-WASHE, DDMC and Satellite Disaster Management Committees):

- Community involvement in planning, design and construction of water infrastructure (e.g., small dams and ancillary works) and in watershed management
- Piloting and promoting of water supply and sanitation technology options that are climate resilient.

In terms of sanitation facilities and Hygiene (working with MLGH, MOCTA, MOH, MCDMCH, D-WASHE, DDMC and Satellite Disaster Management Committees):

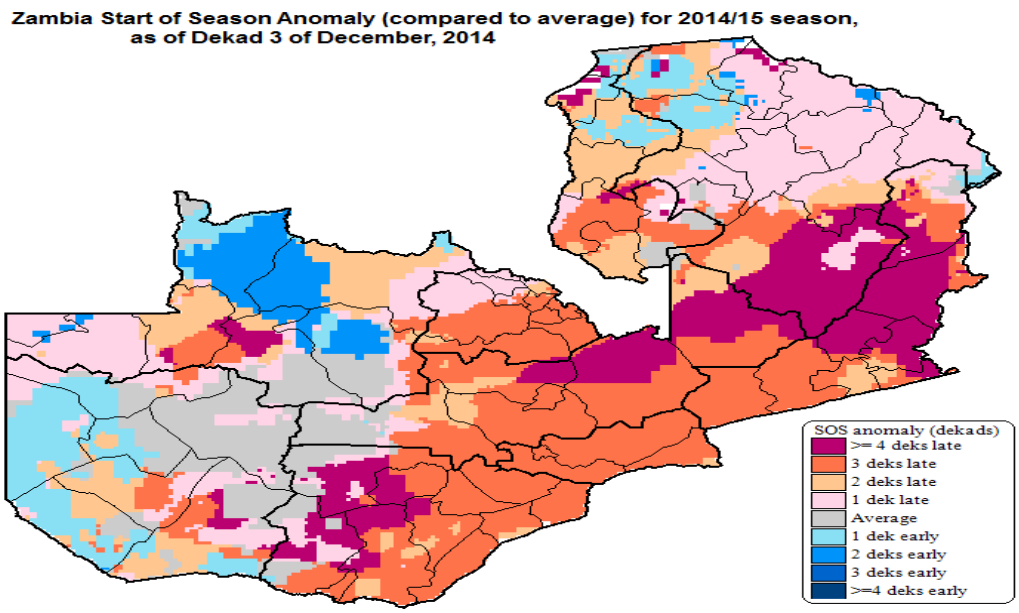
- Provide external technical advice in challenging environments while ensuring full consultation with beneficiaries regarding technical challenges and solutions. Some "Smart" subsidies could be targeted to particularly vulnerable groups (including cash transfers), or to households facing significant technical and physical challenges to latrine building (mason/ artisan technical support).
- Build sanitation shops at District/Chiefdom level to sell sanitation facilities and give advice on improved sanitation facility construction, operation and maintenance

CHAPTER ONE: INTRODUCTION

1.1. Background

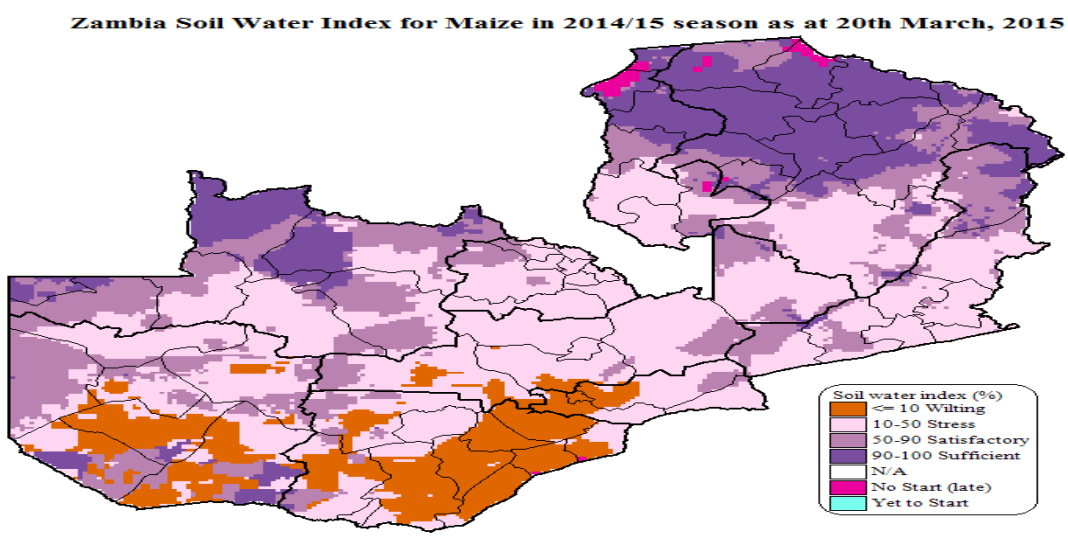
According to the Zambia Rainfall forecast issued in September 2014 for the 2014/2015 rainfall season, most parts of the country had a likelihood of receiving normal rainfall during the period October to December 2014 with isolated pockets expected to receive normal to below normal rainfall. The forecast further indicated that normal to above normal rainfall was likely to be received during the period January to March 2015.

Figure 1: Start of Season Anomaly



Contrary to the forecast issued, the country experienced mixed rainfall performance with an early on-set confined to the Northern, Luapula, some parts of North Western and Western Provinces.

Figure 2: Soil Water Index for Maize in 2014/15 Season as at 20th March, 2015



The rest of the country (Central, Copperbelt, Eastern, Lusaka and Muchinga Provinces) experienced a late onset (**figure 1**) with much of the rains received during the 3rd dekad (21-31) of December 2014. It is worth noting that January 2015 had normal rainfall. Dry spells set in at the beginning of February 2015 and continued into March 2015 affecting Western (all districts), Southern (all districts), Eastern Province (all districts), some parts of Central, Luapula, Muchinga, North-western and Lusaka Provinces being severely affected. The prolonged dry spells coupled with poor rainfall distribution shortened the growing season (**figure 2**). This scenario is likely to compromise the food security situation in the country at both national and household levels. Hydrological indicators showed that provinces such as Central, Eastern, Western, Southern and Lusaka Provinces are likely to have challenges of accessing water for domestic and other uses. Furthermore, the lack of adequate water in the water bodies is likely to negatively impact power generation in the country which might result into longer load – shedding hours.

The 2015 In-depth and Needs Assessment therefore sought to understand the impact of the dry spells experienced in Zambia on selected sectors of the economy. This was done through the capture of information relating to the causative agents, vulnerability drivers, numbers of elements at risk, coping strategies being utilized and the possible solutions to the shock (both short and long term). This assessment covered forty-eight (48) districts in Central, Copperbelt, Eastern, Luapula, Muchinga, Northwestern, Southern and Western Provinces. (**Refer to Annex 1 for Assessed districts).**

1.2. Objectives

1.2.1 Overall Objective

To assess the impact of prolonged dry spells experienced during the 2014/2015 rainfall season on agriculture and food security (availability, WATSAN, health, access, stability and utilization) and recommend appropriate interventions.

1.2.2 Specific Objectives

The following were the specific objectives:

i. Determine the severity of food insecurity;
ii. Determine the number and areas affected; and
iii. Determine food and non – food needs, if any.

1.3 Scope of the In-Depth Vulnerability and Needs Assessment

The broader themes covered in the Assessment included the following:

Household Questionnaire themes covered were as follows:

- Household Demographics
- Productive Asset Ownership
- Agriculture Production (Crop and Livestock Production)

- Livelihoods and Expenditure Patterns
- Household Coping Strategies
- Food Sources and Consumption
- Water, Sanitation and Hygiene
- Health
- Nutrition

Community and district Questionnaires themes covered were as follows:

- Description on the rainfall performance
- Review the impact of rainfall (2014/15 rainfall season)
- Community Income Sources (Livelihoods)
- Agriculture Production (Crops and Livestock)
- Prices for staple foods
- Access and Livelihoods
- Health and Nutrition
- Water , Sanitation and Hygiene
- Safety Nets programmes
- Development Projects

1.4. Limitations of the Survey

The following were the limitations of the survey:

- Most of the maps were not well detailed as they missing land mark features for identifying enumeration areas;
- Non- enumeration of Ngabwe district due to prevailing land disputes; and
- Challenges with population and boundaries for the newly created districts leading to over or underestimations of the district estimates.

CHAPTER TWO: METHODOLOGY

2.1. Identifying Areas to be assessed

An Integrated Context Analysis (ICA) was done to determine the districts to assess. The key indicators used for the selection of hotspots district included rainfall performance and anticipated crop losses with food insecurity frequency, poverty incidences and field reports from the District Disaster Management Committees (DMMCs) used as trailing indicators. The following parameters shown in the table below were used:

Table 1: Integrated Context Analysis

Indicator	Criteria	variable description
Rainfall performance	COMPRISED OF A COUNT OF DEKADS FOR BELOW NORMAL, NORMAL AND ABOVE NORMAL WEIGHTED TO GIVE RISK LEVELS FOR DISTRICTS. ALL DISTRICTS ABOVE THE CALCULATED MEAN.	**RISK LEVEL** 3 = SEVERE 2 = MODERATE 1 = ALRIGHT
Anticipated crop loss	ALL DISTRICTS SUFFERING FROM 30% CROP LOSS.	**ANTICIPATED CROP LOSS**
Extreme poverty incidence	**extreme poverty incidence is either category 5 (75% or greater) or Category 4 (61% to 70%)**	**EXTREME POVERTY** 1=<=20% 2=21% TO 40% 3=41% TO 60% 4=61% TO 70% 5=>=70% **MODERATE POVERTY** 1=<=10% 2=11% TO 16% 3=17% TO 20% 4=21% TO 25% 5=>=26%
Food insecurity frequency	**category 4 (5 or more times appearing as food insecure) or category 3 (3 to 4 times)**	**FOOD INSECURITY** 1= DISTRICT NEVER APPEARED 2=DISTRICT APPEARED TWO TO THREE TIMES 3= DISTRICT APPEARED THREE TO FOUR TIMES 4= DISTRICT APPEARED FIVE OR TIMES

2.2. Target Population

2.2.1. Target Population

The target population is the number of people living in the districts identified to have been affected by prolonged dry spells that occurred during the 2014/2015 rainfall season. A total of forty-eight (48) districts were targeted.

2.2.2. Sampling Frame

Sampling frames are lists or enumeration procedures that allow identifying every individual of the target population (Kish, 1965; Kalton, 1983).The simplest form of a sample frame is a target population list or database in which each individual of the target population is uniquely identified.

Zambia is administratively divided into ten (10) provinces. Each province is in turn sub-divided into districts. Each district is further sub-divided into constituencies and wards. For statistical purposes, each ward is subdivided into Census Supervisory Areas (CSAs) which, in turn, are sub-divided into Standard Enumeration Areas (SEAs). The SEAs are geographical areas, classified as either rural or urban, have information on number of households and the population size. This demarcation is done through a mapping exercise.

Prior to the 2010 Census of Population and Housing, the Central Statistical Office (CSO)-Zambia conducted a mapping exercise. Based on the Census results, data collected during the mapping exercise was updated.

The national frame has an updated list of Standard Enumeration Areas (SEAs). The frame has 25,631 SEAs and 2,815, 897 households. A listing of SEAs in all the forty-eight (48) districts was the sampling main frame for the 2015 In-Depth Vulnerability and Assessment Survey. The SEAs were the primary sampling units for the survey.

2.2.3. Sample allocation

The survey targeted forty-eight (48) districts in eight (8) provinces. Provision of precise survey estimates for each district required that samples of adequate sizes be allocated to each district. Since it was desired that estimates from each district have the same level of precision, an equal allocation was the most efficient strategy.

Therefore, an equal sample of 15 clusters or 150 households was allocated to each of the forty-eight (48) districts.

2.2.4. Sampling Method

The 2015 In-Depth Vulnerability and Assessment Survey employed probability sampling procedures. A two-stage stratified cluster sample design was used. In the first stage, 15 SEAs were selected using the Probability Proportional to Estimated Size (PPES) procedure. During the second stage, 10 households were randomly selected from each enumeration area. *Random does not* in any way imply haphazard; rather it means that each possible household had an equal chance of being selected.

2.2.5. Sample Size

A total of 6, 906 households in 609 SEAs were covered in the 48 districts with an estimated population of 5,140,795 people.

2.2.6. Weighting Procedure

Sampling weights are needed to compensate for unequal selection probabilities, non-coverage, non-response, and for known differences between the sample and the reference population. Thus sample weights act as boosting factors to represent the number of units in the survey population that are accounted for by the sample unit to which the weight is assigned.

2.2.7. Base Weights

The first type of weight that is normally calculated is the design weight, also known as base weight. Construction of the base weights for the sampled units corrects for their unequal probabilities of selection. The base weight of a sampled unit is the number of units in the population that are represented by the sampled unit for purposes of estimation (UNSTATS, 2005). It is derived as a reciprocal of the probability of selection for inclusion in the sample.

Since a two-stage sample design was used for the 2015 In-Depth Vulnerability and Assessment Survey, the base weights were constructed to reflect the probabilities of selection at each stage.

a) Probability of selecting a primary sampling unit (***1st Stage***).
The primary sampling unit for the survey was a SEA. Its probability of selection is given by;

$$P_h = \frac{m_h \, X \, N_{hi}}{N_h}$$

Where:

P**h*= probability of selection for the ***i-th sampled EA in district ***h***
m**h*= number of sample EAs selected in district ***h.
N**hi*= total number of households for the ***i-th sampled EA in district ***h***.
N**h*= total number of households in district ***h.

b) Probability of selecting a household (***2nd Stage***)
The probability of selecting a household was given by;

$$\boldsymbol{P_{hi} = \frac{m_{hi}}{N_{hi}}}$$

Where:

P_{hi}= probability of selection for the ***i***-th sampled household in SEA ***h***
m_h= number of households selected in SEA ***h***.
N_{hi}= total number of households for the SEA ***h***.

c) Overall probability of selecting a household
The overall probability of selecting a household is given as the product of the probabilities of selection at the first and second stages of selection. The formula is given below;

$$P = P_h \, X \, P_{hi}$$

Therefore, the base weight W_h was calculated as below;

$$W_h = \frac{1}{P}$$

2.2.8. Reliability of Estimates

Reliability of estimates in the 2015 In-Depth Vulnerability and Assessment Survey was affected by both sampling and non-sampling errors.

Sampling error is the part of the difference between a population value and an estimate thereof, derived from a random sample, which is due to the fact that only a sample of values is observed. Sampling errors arise from the fact that not all units of the targeted population are enumerated, but only a sample of them. Therefore, the information collected on the units in the sample may not perfectly reflect the information which could have been collected on the whole population. The difference is the sampling error. EUROSTAT

To reduce sampling errors, a sufficient sample size was determined for this survey. Sampling errors were further minimized by using a stratified sample design. The sample was explicitly stratified into 48 strata and implicit stratification was provided ordering or sorting the list of SEAs for each strata.

Non-Sampling error is an error in sample estimates which cannot be attributed to sampling fluctuations. Non-sampling errors may arise from many different sources such as defects in the frame, faulty demarcation of sample units, defects in the selection of sample units, mistakes in the collection of data due to personal variations or misunderstanding or bias or negligence or dishonesty on the part of the investigator or of the interviewer, mistakes at the stage of the processing of the data, etc. OECD

Non-sampling errors may have arisen from many factors at all stages of data collection and processing. These include errors resulting from;

- Respondents misunderstanding the questions
- Incorrect presentation of the questions
- Question specific non-response;
- Errors in data entry, and
- Errors during coding.

The report therefore contains no quantitative assessments of these errors. Although it was not possible to eliminate all sources of error, a high level of control on all known sources of error was done efficiently and effectively in planning and conducting the survey. Below are the key steps that were taken to minimize or control non-sampling errors during the survey:

- The most recent sampling frame, based on the 2010 Census of Population and Housing was used.
- Thoroughly testing questionnaires before being used in the field.
- Non-responding households were followed up to achieve high response rates.
- High quality editing and cleaning procedures were employed in processing the data.
- International standard procedures and processes were employed at all stages of the survey process.

2.3. Food Needs Computation

Determining the Food Insecure Districts and Number of persons in Need

In determining the food insecure districts, a composite indicator combining Food Consumption Score (FCS), Expenditure Share on food and coping behaviour was utilized. The cut – offs used are in line with the Consolidated Approach for Reporting Food Security Indicators (CARI).

To determine the amount of maize equivalent required by affected persons largely, the formula below was used;

$$\boldsymbol{F = (N \times R \times M)/1000}$$

Where:
F = Total Maize Equivalent required in Metric Tonnes
N = Total number of the affected persons
R = Individual ration size per Kilogram per month (250 grammes per person per day)
M = Recommended number of months for the food

CHAPTER THREE: CONTEXT

3.1. The Economy

The country's economy in 2014 remained stable with real GDP growth rate of 6 percent. This growth is consistent with the vision 2030 of becoming a middle income prosperous nation. Investment in the mining sector continued to drive other sectors especially construction, transport and energy. According to the 2013 Economic report, the economy is expected to grow by 5.8 percent in 2015 and while 6.4 percent in 2016. Despite robust economic performance, poverty remained high at over 60 percent with some improvements in urban areas.

Zambia amended its corporate tax rates for mining firms in 2015 from 20 percent to 9 percent. This means that a roll-back in tax rates is expected to cost US$310 million and government expects to offset this income reduction by cutting expenditure and external borrowing.

The country's monetary policy focused on sustaining stability by maintaining single digit inflation while ensuring adequate liquidity for the growing economy. The country's inflation rate experienced a decline from last year with 7.9 percent in May, 2014 to 6.9 percent in May, 2015. The decline is due to the decreases in non-food items mainly purchase motor vehicles and air fares. Annual food inflation decreased from 8.0 percent in May 2014 to 7.2 percent in May, 2015. The increase was due to increases in the prices of vegetables.

In terms of the exchange rate, the country experienced a rapid depreciation of the Kwacha against major currencies, reaching a high of K7 per US dollar in May, 2014. This has not changed much during May, 2015 with the exchange rate being at K7.1 per dollar. The unemployment rate has reduced from 19 percent in 2012 to 15 percent in 2015.

3.2. Agriculture and Food Security

The Zambian government has placed agriculture as one of the key priority sectors that can make significant contribution to sustainable economic growth and poverty reduction. In this regard, a number of initiatives are being implemented. The sector is given this pre-eminence because 60 percent of the population derives its livelihood from agriculture. In addition, the country is endowed with abundant natural resources such as arable land and adequate water bodies, forming a basis for a viable sector.

In order to fully exploit this agricultural potential, Zambia has developed well articulated agricultural policies and strategies which emphasize on objectives such as attainment of food security, maximizing farmers' incomes, promoting sustainable agriculture, and enhancing private sector roles in input and output markets. The National Agriculture Investment Plan (NAIP, 2013) emphasizes liberalization, commercialization, and promotion of public – private partnerships and provision of effective agricultural services that ensures sustainable agricultural growth. To strengthen agricultural policy further, the

National Agricultural Policy has been reviewed to support the implementation of the National Agricultural Investment Plan (NAIP).

However, past and present agricultural policies have tended to promote maize production at the expense of other crops and agricultural related enterprises. This has led to majority of small – scale farmers venturing in mainly only one enterprise thereby increasing their exposure to the risk of crop failure due to negative impacts of climate change. Further, the small – scale farmers rely heavily on rain-fed agriculture and cultivate mostly less than two hectares which heightens their exposure to crop failure.

Despite the agricultural sector recording increased investments exceeding the ten (10) percent CAADP threshold, sixty (60) percent of the investments in the sector goes to support two programs namely; the Farmers Input Support Program and Food Reserve Agency. This leaves a paltry forty (40) percent to support other programs such as Research, Extension, Crop production and diversification, Irrigation, Livestock and Fisheries which are the key drivers of the sector. This has led to low output from Research and Development, expensive and limited uptake of appropriate technologies for small – scale farmers leading to low production and productivity as well as utilization of inappropriate and expensive breeding stock. The area under irrigation still remains low with majority of smallholders not able to afford irrigation technologies. Investment in value addition especially at the farm household level has also eluded the sector. This has had a negative impact on household incomes, food security and nutrition. The situation is worsened by the lack of essential infrastructure leading to post harvest losses and failure to connect to main markets.

The Government has however put in place a number of initiatives to counteract this situation and build resilience at the household level. The Government intends to redesign the Farmer Input Support Programme (FISP), strengthen research, invest in irrigation, rehabilitate and develop rural infrastructure, reform the agricultural marketing system, promote crop diversification and value addition. In an effort to improve smallholder productivity and production, Government has continued to support farmers through the Farmer Input Support Programme (FISP). During the 2014/2015 farming season, a total number of 900,000 farmers was targeted with each beneficiary getting four (4) bags of fertilizer and 10kg of maize seed. In addition 12,700 farmers were targeted for the rice pack, 23,820 for sorghum and 67,855 farmers were targeted for the groundnut packs.

To improve livestock and fisheries governance, the Government is developing the two policy documents for livestock and fisheries policies respectively. To combat micro-nutrient deficiency particularly in children and women of the child bearing age, government has developed nutrient- dense crops (such as Orange Maize, Orange Fleshed Sweet potatoes, and iron/zinc beans) through bio-fortification.

Furthermore, Government realizes that hazards such as prolonged dry spells will be worsened by climate change and thus to counter its effects, adaptation programmes such as promotion of conservation agriculture, livelihoods diversification and provision of water harvesting infrastructure have been put in place.

In tackling these hindrances to increased agricultural contribution to the country's growth, the Government hopes to ensure that benefits of improved agricultural output reach the poorest rural households and consequently the country at large will begin to register reductions in the current poverty levels.

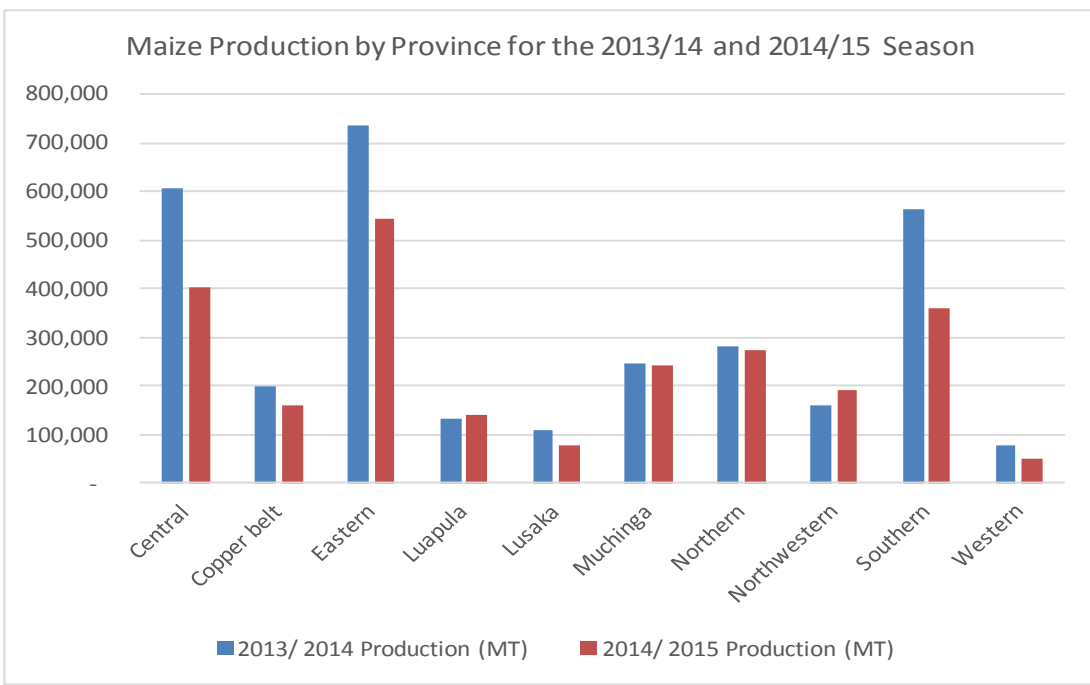
Government through the Food Reserve Agency (FRA) maintains the Strategic Food Reserve to cover for three months of national consumption. In addition to this role, the FRA is a major player in maize marketing. In the current marketing year, FRA has targeted to purchase 500,000 MT of maize from small scale farmers residing mainly in outlying areas.

Crop Production, Food Supply and Access

Maize continued to rank very high in the country's crop performance with area put under the crop increasing by 5.3 percent during the 2014/2015 production season. The production levels of other crops have remained comparatively low. During the 2014/2015 season, production was mixed with some crops recording significant increases while others experienced notable drops. Due to the extended dry spells experienced in the southern half of the country during the growing season, official production estimates from the Ministry of Agriculture and Livestock show a significant drop (22 percent) in maize production. This has been partly attributed to poor productivity levels among small – scale farmers and also due to wilting of the crop due to the prolonged dry spells experienced during the season. According to official government estimates, maize production for the 2014/2015 production season has been pegged at 2.62 million MT.

The erratic rainfall experienced in the country resulted in a reduction in the area harvested for maize in almost all the provinces. Although the impact on crops was severe in the southern half, the effects of the deficit will be masked by the good levels of carry – over stocks. Similar to maize, rice output for the 2014/2015 production season has been estimated to decline by as much as 48.6 percent with respect to the previous season.

Figure 3 : Maize Production by Province for the 2013/14 and 2014/15 Seasons



A quick analysis of production for the last two production seasons (figure 3) shows that Central, Copperbelt, Eastern, Lusaka, Southern and Western Provinces are likely to have localized food insecurity.

National Food Supply for the 2014/2015 Season

The National Food Balance sheet for the 2015/2016 marketing season released by the Ministry of Agriculture and Livestock (MAL) shows that the country has produced more than sufficient maize to meet the total national requirement. National maize production has been estimated at 2, 618, 401MT, while the unusually large carryover stock stands at 1, 345, 401 MT giving a total maize availability of 3,963,622MT. The country's total requirement stands at 3, 086, 854 MT implying that Zambia has a maize surplus of 876, 768 MT which will be available for export.

Table 2: National Food Balance Sheet for Zambia for the 2015/2016 Agricultural Marketing Season

	Maize	Paddy rice	Wheat (Preliminary)	Sorghum & Millet	Sweet and Irish potatoes	Cassava flour	Total (maize equivalent)
A. Availability:							
(i) Opening stocks (1st May 2015)	1,345,401	2,239	56,690	6,625	0	12	1,409,887
(ii) Total production (2014/15)	2,618,221	25,514	N/A	65,000	164,232	952,847	3,853,399
Total availability	**3,963,622**	**27,753**	**N/A**	**71,625**	**164,232**	**952,859**	**5,263,286**
B. Requirements:							
(i) Staple food requirements:							
Human consumption	1,501,896	58,477		65,911	156,020	793,392	2,727,913
Strategic Reserve Stocks (net)	500,000	0		0	0	0	500,000
(ii) Industrial requirements:							
Stockfeed	245,630	0		0	0	0	245,630
Breweries	110,000	0		0	0	0	110,000
Grain retained for other uses	40,000	3,000		2,464	0	0	45,306
(iii) Losses	130,911	1,276		3,250	8,212	47,642	192,670
(iv) Structural cross-border trade	200,000						200,000
(v) Existing FRA Export Commitments	358,417						
Total requirements	**3,086,854**	**62,753**		**71,625**	**164,232**	**841,034**	**4,021,518**
C. Surplus/deficit (A-B)	**876,768**	**-35,000**		**0**	**0**	**111,825**	**883,351**
D. Potential Commercial exports	-876,768	35,000		0	0	0	0
E. Food aid import requirements	0	0	0	0	0	0	0

Source: MAL

Similar to past years, sorghum, millet and cassava are expected to be adequately available to meet domestic requirements this year while an estimated 12,583MT of rice imports will be needed to meet the national shortfall.

Food Access

The food security situation during the 2015/ 2016 marketing and consumption period for the country is projected to remain stable due to previous successive years of surplus production. However, decline in rice, soya beans, sweet potatoes and groundnuts production coupled with high demand for maize in the region may affect access of these food stuffs at household level. At national level, there are adequate food supplies to meet the dietary needs of the majority of the people though this may be a challenge for household food security. This phenomenon will however, be cushioned by surplus food production from the Northern half of the country. The prices for staple food have remained stable in the last twelve months guaranteeing accessibility by all people at all times. Even if food will be relatively accessible on the market, people will have to walk long distances to purchase the staple food due to decreased crop production. This will eventually lead to high demand for cereals in areas that experienced prolonged dry spells during the 2014/ 2015 season. Government through the Food Reserve Agency and private sector will be expected to play a critical role in purchasing and selling cereals closer to the affected communities. Further, food access may be affected by increased prices in food commodities as majority of the rural households will have inadequate income to meet their daily food requirements.

Livestock Situation

Livestock production continues to be a major livelihood among small scale farmers in many parts of the country. The production of major livestock such as cattle, goats and pigs is concentrated in three provinces, namely Central, Southern and Western Provinces. Based on the Ministry of Agriculture and Livestock statistics, cattle have the largest share of the major livestock population at 55%, with goats at 35% while pigs make up only 10%. In the past number of years, cattle production has severely been disrupted by recurring disease outbreaks, with the common ones being Foot and Mouth Disease (FMD), East Coast Fever, Contagious Bovine Pleuro-pneumonia (CBPP) and Anthrax. The FMD is endemic in Sesheke (Western Province), Kazungula (Southern Province), Mbala and Nakonde (Northern Province), but in 2004 spread to parts of Central and other districts in Southern Province. CBPP is endemic in some areas of Western Province, North- western, Southern (Kazungula) and extreme Northern Province Districts. East Coast Fever areas include Eastern, Southern, Central, Lusaka and Northern Provinces while outbreaks of Anthrax are mostly confined to Western Province. Last year, the country also experienced sporadic outbreaks of African Swine fever in Copperbelt, Eastern, Lusaka, North Western and Southern provinces. Under normal circumstances, in these farming systems, livestock acts as some form of insurance against poor weather and subsequent crop failure while also providing the farmers with income during difficult times.

3.3 Health

Zambia recognizes health as one of the priority sectors that contribute to the well-being of the nation and, therefore, remains committed to providing quality health services to all its citizens. Recognizing that a healthy population is critical to improved production and productivity, Zambia will continue investing in the health sector, in order to ensure sustainability of the nation's human capital base, required for sustainable economic growth.

The Zambian government is implementing wide-ranging health sector reforms, aimed at attaining equity of access to assured cost-effective quality health services, as close to the family as possible. These reforms are based on a system of health sector plans.

The health sector plans and documents seek to provide the strategic framework for the efficient and effective organization, coordination and management of the health sector in Zambia. This is aimed at improving the health status of the Zambian population, in line with the national, regional and global health objectives and targets, particularly the Vision 2030 for Zambia and the health related Millennium Development Goals (MDGs).

Zambia has a high burden of disease, which is mainly characterized by high prevalence and impact of communicable diseases, particularly, malaria, HIV and AIDS, STIs, and TB, and high maternal, neonatal and child morbidities and mortalities. The country is also faced with a rapidly rising burden of non-communicable diseases, including mental health, diabetes, cardio-vesicular diseases and violence.

The country is also faced with a high burden of Maternal, Neonatal and Child Health (MNCH) problems, and a growing problem of Non-Communicable Diseases (NCDs), including mental health, cancers, sickle cell anaemia, diabetes mellitus, hypertension and heart diseases, chronic respiratory disease, blindness and eye refractive defects, and moral health problems. Currently, the top 10 causes of morbidity and mortality in Zambia include malaria, respiratory infections (non-pneumonia), diarrhoea (non-blood), trauma (accidents, injuries, wounds and burns), eye infections, skin infections, respiratory infections (pneumonia), ear, nose and throat infections, intestinal worms and anaemia.

The country is also faced with the high burden of the HIV&AIDS epidemic, which has significantly impacted on the morbidity and mortality levels across the country.

The health of individuals and communities is, to a large extent, determined by the environments and circumstances in which they live and operate. These factors are commonly referred to as the determinants of health and include: the social and economic environment; the physical environment; and the person's individual characteristics, behaviour and circumstances. Even though most of these factors are beyond the normal scope of the health sector, it is the responsibility of the health sector to ensure that such factors are considered and included in the health sector and national development agenda, in order to promote good health and quality of life of the population. In Zambia, the key determinants of health manifest differently and contribute to the high burden of disease.

Water and Sanitation which is poor access to safe water and good sanitation, poor housing and unsafe food has continued to drive various diseases. Limited access to water and sanitation facilities accompanied by poor hygiene is associated with skin diseases,

acute respiratory infections (ARIs), and diarrhoeal diseases, the leading preventable diseases. ARI and diarrhoeal diseases are among the leading causes of child deaths in Zambia (MoH, 2012).The Zambia Demographic and Health Survey 2013-14 (ZDHS 2013-14) indicates that only 64.5percent of the households in Zambia have access to improved sources of water. Households in urban areas are more likely to have access to improved sources of water than those in rural areas (89.5percent compared with 46.6percent). Overall, 54 percent of households in Zambia have no toilet facilities. This problem is more common in rural areas (74.2percent) than in urban areas (27percent). Climate change is also another major global threat to health, and is becoming a major problem for Zambia. Therefore, the Zambia government recognises the need to harmonise the different sectoral development strategies, through a National Climate Change Response Strategy.

This plan for mitigating the impacts of several climatic and variable conditions will take the preventive, promotive and treatment approach to address both anticipated conditions when water is scarce and treat conditions existing in the population, including health promotion to address life style/behaviour which facilitates disease transmission. Therefore it's a three tier plan to reduce further vulnerability of the populations already affected by weather events in the 2014/2015 rainy season and beyond.

As a general rule, the risk of epidemic after a disaster is related to the endemic levels of diseases in the population. These include diarrhea and dysentery, cholera, measles, whooping cough, meningococcal meningitis, tuberculosis, malaria, intestinal parasites, scabies and other skin diseases, louse borne typhus and relapsing fever. Broadly these are water washed, water borne and water related diseases.

3.4 Nutrition

Adequate nutrition is the pillar of any economic developmental programme for a country. Under malnutrition is an intense global problem that has been made worse by high levels of poverty which has depleted poor's ability to access resources that can help them access adequate diets. As a result, under nutrition has become evident in most countries though over nutrition has currently become a measure of public health problems. High levels of malnutrition, particularly under-nutrition which includes stunting, wasting, underweight and micronutrient deficiencies among children under five years and women of child bearing age hold back the country's socio-economic development and potential to reduce poverty.

Stunting

Stunting prevalence of 40 percent among children under -five years of age in Zambia is closer to the African average level of 42percent[1]. Stunting among Zambian children starts in early months, rapidly increases after six months of age and reaches the pick of 59 percent at 18 to 23 months of age, then declines to 40percent among 24 to 59 months old

[1] National Food and Nutrition Commission (NFNC). (2011). Food and Nutrition Strategic Plan 2013-2016. NFNC, Lusaka

children. This trend is due to poor quality of complementary feeds provided to the children after 6 months of age[2].

Under weight

The ZDHS 2013-2014 shows that the prevalence of underweight among children under five years of age in Zambia has decreased from 25 percent in 1992 to 15 percent in 2014. The proportion of underweight children reaches its highest peak among children aged 18-23 months (18 percent) then reduces after 23 months.

Wasting

According to the ZHDS 2013-2014, Zambia has consistently maintained the wasting levels among children under five between 5 and 6 percent from1992 to 2014 period which shows a peak at 9 to 11 months of age. Wasting prevalence in Zambia varies slightly between urban (4 percent) and rural children (6 percent) DHS.

Under nutrition among women

Wasting among women of child bearing age in Zambia has been evident among 10 percent of the women in the country from 2007 to 2014, however ZDHS (2013-2014) shows that overweight among the women has increased from 12 percent in 1992 to 23 percent in 2014.
Maternal and child under nutrition are caused by multiple factors, and addressing the problems therefore requires the collaboration between a wide range of actors from different sectors, working at all levels from community to national level[3].

Micronutrient malnutrition

In Zambia, micronutrient deficiencies are highly prevalent among infants and young children aged 6-24 months and pregnant and lactating women. The most common micronutrient deficiencies' includes Vitamin A, iron, and zinc. The 2003 survey on micronutrient malnutrition showed that 53.3 percent of children and 13.4 percent of women were deficient. In terms of iron deficiency anemia, this remains a major public health concern. Prevalence of anemia was 53 percent among under-five children. The recent survey done in Nyimba and Mkushi consistently showed 57 percent of the children 24 to 59 months were Vitamin A deficient[4].

Causes of poor nutritional status in Zambia

The causes of malnutrition are multifaceted and affect all the sectors of the economy as explained in the UNICEF conceptual frame work. The framework shows that causes of malnutrition are grouped in immediate, underlying and basic causes. The immediate causes include inadequate dietary intake and disease, the underlying include household

[2]Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International. 2014.
Zambia Demographic and Health Survey 2013-14. Rockville, Maryland, USA: Central Statistical Office, Ministry of Health, and ICF International.
[3] National Food and Nutrition Commission (NFNC). (2011). National Food and Nutrition strategic plan for Zambia 2011-2015. NFNC, Zambia.
[4] NFNC, TDRC &Harvest plus. (2011). Nutrition Survey in Central and Eastern Province, Zambia 2009. Focus on Vitamin A and Maize intake & Vitamin A status among Children and Women.

food insecurity, inadequate care for women and children, unhealthy household environments and lack of health services. The root causes mainly apply to political issues, infrastructures and social and political norms and traditions that the populations adhere to.

The Zambian diet has an over-reliance on maize which is not only insufficient to fulfill energy needs and diversity but also not able to meet adequate quantity and quality of protein and micronutrient. A study by NFNC[5]showed that rural areas could only consume 4 out of the 13 food groups depicting poor diet diversity. In addition, the Zambian diet is mainly vegetarian. Study results show that 27 percent to 65 percent of the population cannot afford a minimum cost of a nutritionally adequate diet. Further, the increased disease burden in the community affects the consumption and causes the loss of essential micronutrient in the body contributing to under nutrition.

Current interventions to address under nutrition

The Zambian government has prioritized addressing malnutrition through its food and nutrition policy of 2006 and the subsequent policy implementation plan and the food and nutrition strategic plan of 2011 to 2015. The NFNC in collaboration with partners developed a three year multi-sectoral programme, focused on the First 1000 Most Critical Days Program (MCDP), for all funding and implementing partners. Some of the strategies in this document include reduction of stunting among children under the age of three years through the 1000 MCDP. The programme contains a package of interventions that has scientific proof of reducing malnutrition in other countries. Therefore, partners have come together to mobilize resources for the implementation of these interventions across all the key sectors dealing with food and nutrition[6].

3.5. Water and Sanitation

At the beginning of the 21st century, almost two billion people – a third of the world's population – were affected by natural disasters, and 86 percent of these disasters were floods and droughts. Those affected by emergencies often suffer from malnutrition, injuries, stress and other ailments. Having inadequate water and/or sanitation can lead to increased instances of diseases and death, and a lack of hygiene can contribute to diarrhea, dysentery, typhoid, cholera, measles, scurvy, and other hygiene-related disease outbreaks in emergencies – all preventable with the right resources and awareness. In addition, lack of WASH facilities can prevent learners from attending school, impose a burden on women and children, and diminish productivity. For this reason, water, sanitation and hygiene are often among the most important elements not only in humanitarian disasters but also in development implementation.

Water, Sanitation and Hygiene (WASH) are key components in all aspects of sustainable development. The country's vision for water as reflected in the Revised Sixth National Development Plan (R-SNDP, 2013-2016) is to ensure that all Zambians access safe water and sanitation as well as efficient and sustainable water utilization for wealth creation and betterment of livelihoods by 2030. Access to WASH is a key public health and socioeconomic issue, especially in many rural districts and peri-urban areas in the

[5]NFNC. (2009) National Nutrition Surveillance System. NFNC, Lusaka Zambia
[6]NFNC (2012). The first 1000 Most Critical Days Programme, three Year Programme 2013 to 2015, Based on the strategic Direction one: Prevention of stunting in Children less than Two years of age in the National Food and Nutrition strategic Plan (NFNSP 2011 to 2015).

country. The Revised Sixth National Development Plan has identified WASH as an area with great potential to improve health, life-expectancy, student learning, gender equality, and many other key issues of development. Access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death, and also enhance poverty reduction and socioeconomic development.

The Current Situation and Challenges

Currently, the water resources development and management is implemented through the Ministry of Mines, Energy and Water Development based on the National Water Policy of 2010 and the Water Resources Management Act of 2010. Water supply and sanitation provision is implemented by the Ministry of Local Government and Housing (MLGH) through commercial utilities in the urban and peri-urban areas and through the Local Authorities in rural areas guided by the national water policy and the Water Supply and Sanitation Act No. 28 of 1997. The sector has prioritized infrastructure development in rural areas in order to improve the livelihood of the rural population where the majority of the poor live. The sector is also developing the National Water Supply and Sanitation Policy that will facilitate effective development and management of the water supply, sanitation and solid waste subsector in Zambia. The Water Supply and Sanitation Act No. 28 of 1997 will also be reviewed.

The 2013-2014 ZDHS states that the Percentage of population using an improved drinking water source at national level is at 89.2 percent for rural is 46.9 percent and urban is 63.1 percent. The Percentage of population with access to improved sanitation at national level is at 39.2 percent for rural is 19.7 percent and urban is 27.3 percent. Though there have been improvement in the WASH coverage. it has not been sufficient progress to meet the MDGs by 2015. The current deficiencies in WASH services provision result from inadequate investment in the water sector; limited institutional and human capacity; and natural hazards such as flood and prolonged dry spells (or drought) which occur yearly either combined or individually with varying severity. The sector is also faced with the challenge of climate change and variability resulting in increased atmospheric temperature and difficulty in predicting rainfall and related events such as flood and drought. For instance, during the 2013/2014 rainy season, flood was the prominent hazard affecting 33 districts while in the 2014/2015 rainy season, prolonged dry spell was the main hazard affecting 48 districts.

The WASH solutions

From 2013 to 2016, the sector is progressively implementing WASH infrastructural development and management programmes outlined in the Revised SNDP and the Integrated Water Resources Management and Water Efficiency (IWRM/WE) Implementation Plan (2007 to 2030) in order to realise the 2030 vision of clean and safe water supply and sanitation for all (target 100 percent for water and 90 percent for sanitation). Thus the various infrastructural and management projects and programmes in the water sector embarked on by GRZ and stakeholders are inherently targeted at addressing the above mentioned challenges and others including inadequate water

supplies to meet various needs, pollution, inadequate information for decision making, inefficient use of the water resource and limited stakeholder awareness and participation.

In order to achieve the set targets both in water resources development and management and in water supply and sanitation, the government through the revised SNDP has projected investment in Water and Sanitation Infrastructure development for the period 2013 to 2016 as shown in the table below:

Table 3: Projected funds for investment in WASH infrastructure

	2013	2014	2015	2016
Sub-sector	Cost K'millions	Cost K'millions	Cost K'millions	Cost K'millions
Water Resources Development and Management	587.0	712.0	698.6	692.7
Water Supply and Sanitation	810.1	1,731.1	1,892.0	1,408.5

Source: Revised SNDP, 2013

Diarrhoea diseases are endemic in 26 districts mainly in Luapula, Northern, Southern, Lusaka, Central and Copperbelt Provinces; outbreaks start just before the rainy season (water scarcity obliging some communities to use alternative unsafe water sources) and spreads with the rains; interestingly, health authorities report less cases (or no more cases) in endemic areas where CLTS has been rolled out (i.e. Chiengi and other districts in Luapula).

The top priorities for WASH elements in emergency response is providing sufficient quantities of safe water, arrangement of basic sanitation, and promoting good hygiene behaviour. Responses range from rapid and limited interventions in short-term emergencies to comprehensive long-term interventions including dam building and borehole (provision to development). Urgent WASH services include providing hygienic sanitation facilities, protecting water supplies from contamination, repairing broken down water supply systems, water tracking, providing water that is safe for cooking and other essential hygiene purposes, ensuring that people have containers to obtain and store water cleanly, and distributing soap, water purification tablets and family water kits, and education and awareness surrounding proper hygienic habits in emergencies.

CHAPTER FOUR: FINDINGS

4.1 General Demographics

This section covers aspects relating to gender status, age and marital status of the household heads. Further this section brings out relating to education level and employment status. Household size and dependence ratio are also discussed.

The 2015 In-depth Vulnerability and Needs Assessment was mainly rural based with 92 percent of the households residing there. The assessment has also shown that the majority of those assessed are male headed households (74 percent) while the rest were female headed. The age of the majority (30 percent) of the household heads assessed ranged between 29 - 39 years age bracket followed by those in the range of 40 - 50 page at 22 percent and those in the range of 51 - 61 were 15 percent. The households headed by elderly people of 61 years and above made up 16 percent of the assessed households. The assessment found that child headed households were insignificant (0.3 percent).

In terms of marital status, the majority (78 percent) of the household heads in the surveyed districts were married, 11 percent widowed, 5 percent single while the rest were either divorced or separated.

On Educational level of the household head, the majority of the heads (53 percent) in the assessed areas had at least primary education. Furthermore, 25 percent of the household heads indicated having reached up to secondary with only 5 percent indicating they attained tertiary. The rest of the household heads indicated not have been to any formal education.

The assessment indicated that the majority (32 percent) of the households had 5-6 household members followed by 30 percent indicated having 3-4 household members. Further, 19 percent of households indicating 7 - 8 household members. Household size ranges of 1-2 and 9-10 accounted for 8 percent. Only 4 percent indicated household size of over 10 household members. The survey further indicated that most of the households are keeping orphans with the majority being single orphans (27 percent). Double orphans only accounted for 1 percent.

Most of the household interviewed were informally employed (50 percent) followed by those who were unemployed (38 percent). The rest were formally employed. The employment status given indicates that most of these households were involved in some form of income generating activity which is a good indicator for withstanding shocks.

In terms of household head having chronic illness and disability, the percentages were not significant (2.5 percent and 1.4 percent, respectively).

4.2. Vulnerability and Hazards

The 2014/ 2015 In-depth Vulnerability and Needs Assessment indicated that most of the households in the rural areas were affected by prolonged dry spells coupled with poor rainfall distribution in different parts of the country. The hazard that affected these rural households differed from district to district and household to household. The survey revealed that 87.6 percent of the communities interviewed indicated that they were severely affected by the prolonged dry spells while 11.4 percent were moderately affected by the same hazard. The Survey further shows that the districts that were highly impacted included Sesheke, Kaoma, Kalabo, Gwembe, Katete and Chadiza while the rest were moderately affected. In terms of the mitigation measures that were put in place to minimize the impact of the dry spells, the majority (18. 5 percent) of the households did nothing, 14.5 percent engaged in trading, 10. 6 percent were engaged in piece work, while 9.8 percent diversified their crops and the rest employed other mitigation measures.

4.3. Early Warning

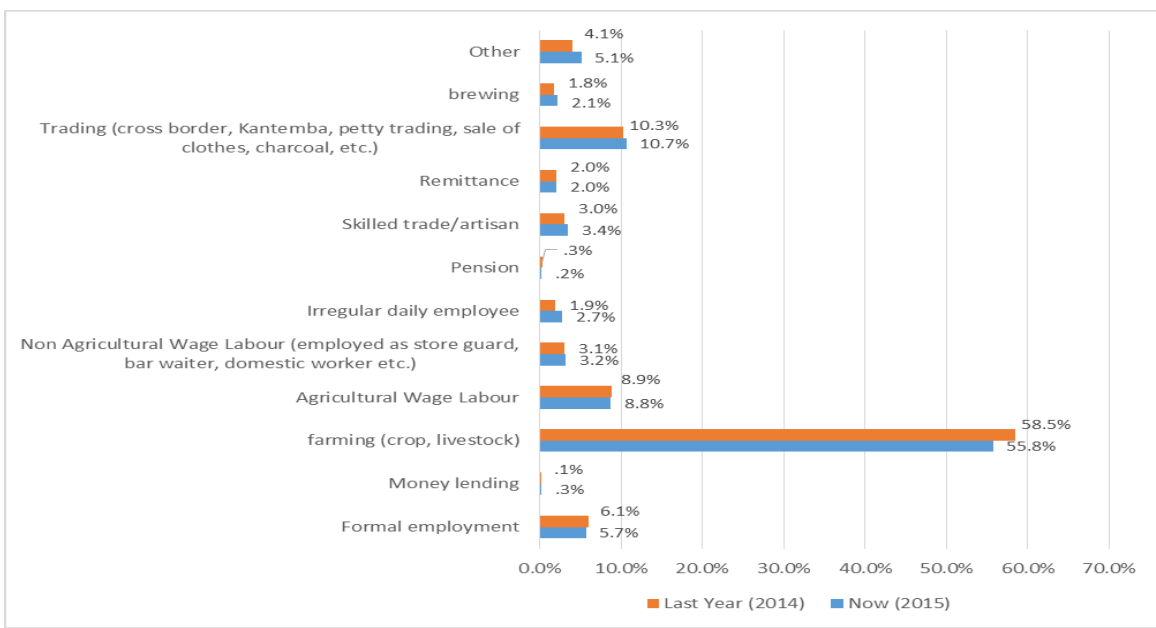
The assessment established that 46 percent of the households in the assessed districts were warned about the impending prolonged dry spell. This was an improvement compared to previous assessments that have been done. The assessment also established that 23 percent of the household received these messages through radio. Other modes used included flyers (15 percent) and television (8 percent) .The main source of information was Zambia Meteorological Department (30 percent), the District Disaster Management Committees (17 percent) and ZESCO (13percent).

4.4. Livelihoods

The main livelihoods for most people in the assessed districts has remained farming, trading, agriculture wage labour, skilled trade, non-agricultural wage labour and remiattances. A few households had pension and money lending of of their main livelihood activities.

A comparative analysis between 2014 and 2015 has shown that there is a slight reduction

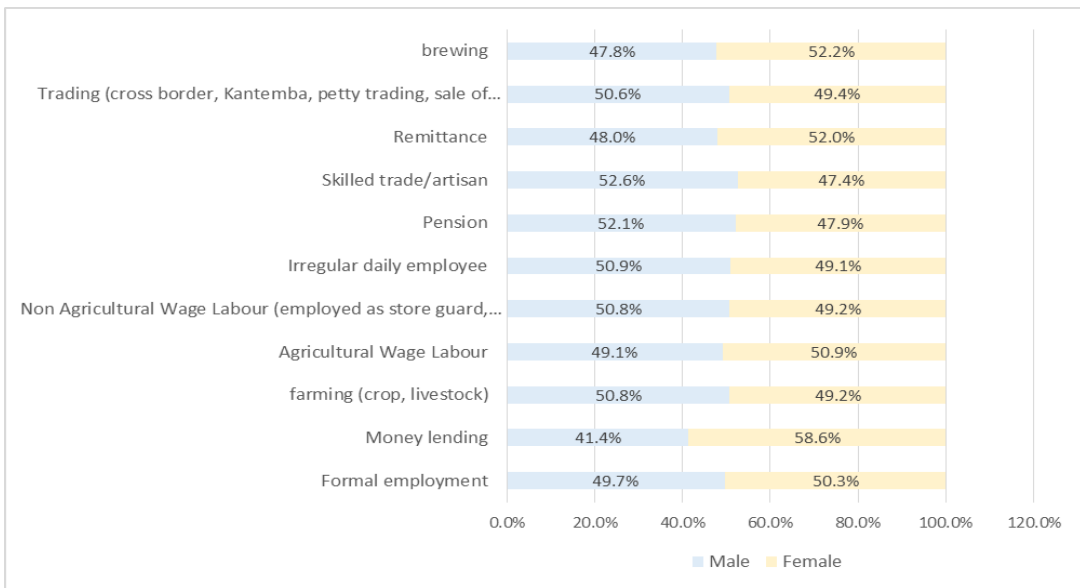
Figure 4 : Livelihood Sources by Gender



in the proportion of households whose livelihood sources are farming (from 58.5 percent to 55.8 percent), agriculture wage labour (8.9 percent to 8.8 percent) and formal employment (from 6.1 percent to 5.7 percent) .

The reduction in the first two livelihood sources can be attributed to the negative impact the prolonged dry spells had on agriculture in general. Slight improvements were equally observed in Non-agriculture wage labour, skilled artisan, brewing and irregular daily employee.

Figure 5: Alternative Livelihood Sources



This increase was also attributed to affected households having increased the focus of their well-being on alternative livelihood sources mentioned above.Further, analysis on the main livelihoods across the gender status of the household heads showed that majority of the female headed households depended on money lending (58.6 percent), brewing (52.2 percent), remittance (52 percent), agriculture wage labour and formal employment (50.3 percent) as the main livelihood sources. On the contrary, the the male headed households depended more on artisan/skilled trade (52.6 percent), pension (52.1 percent), irregular daily employee (50.9 percent), non-agriculture wage labour (50.8 percent) and farming (50.8 percent).(Figure 5)

The assessment findings showed that family size did play a role on the diversity of main livelihood sources households had, a phenomenon which is consistent with previous vulnerability needs assessments and the 2010 Living Conditions Monitoring Survey. In view of this, households that had family size of 1 to 2 persons depended more on livelihood sources which were not that sustainable such as remittances (8.9 percent), pension (5.6 percent) and irregular daily employee (3.3 percent). Consequently those that had family size of 2 to 3 equally depended on similar livelihood sources but also included brewing (25.9 percent), agriculture wage labour (24.3 percent) and pension (21.4 percent). It is worth noting that the majority of households with smaller family sizes that

depended on these unviable livelihood sources were female headed and had family sizes of 1 to 2 and 3 to 4 persons, which accounted for 51.1 percent and 50.6 percent that respectively.

Detailed discussion of the results of the livelihood components (asset ownership, expenditure share, coping strategies and food consumption) has been provided below:

Asset Ownership

Asset ownership does form part of the the wealth determinants in any given context. This is key in understanding the general welfare of households. The prolonged dry spells of 2014-2015 rainfall season did affect the utilization of the broader range of assets such as **Natural** – *Water Resources, Grazingland and Fish,* **Physical** - *farm equipment, tools, sewing machines, vehicles, livestock, houses,* **Human** - *labor power availability within a household, education and to some extent skills,* **Financial** -*wages, access to credit and savings*and**Social** -, *neighborhood associations and networks.* It is worth noting that for the 2014-2015 impact assessment report, the analysis on assets focused only on physical assets excluding livestock and housing.

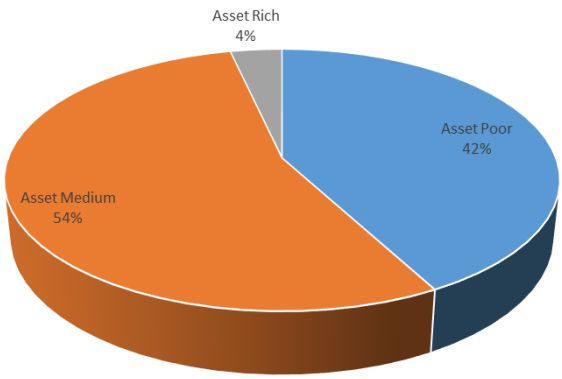
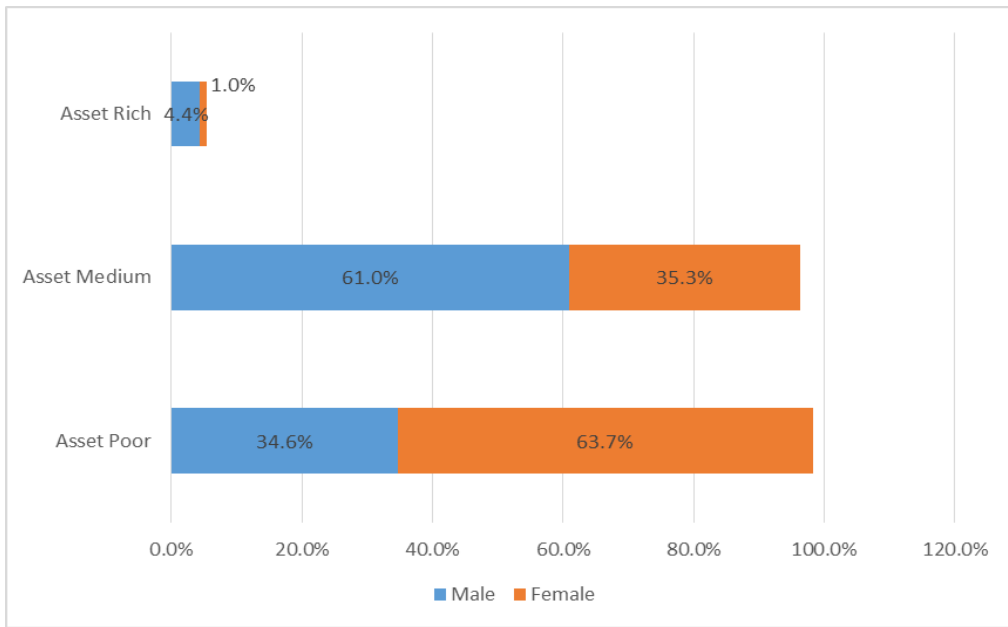


Figure 6: Asset Wealth Index – 2014 and 2015

Majority (54 percent) of the households assessed were Asset Medium, 42 percent were Asset Poor while the rest were Asset Rich.

The mean number of assets owned by a household in the forty eight (48) districts assessed was five (5) and this number remained consistence for 2014 and 2015 respectively. The analysis results showed marked variances in the number of assets owned across gender status, education level and marital status of the head of households. In this regard, the results showed that the mean number of assets owned by male headed households was six (6) compared to 4 for the female headed households. Further, from the education level perspective for the head of household, the results showed those that attained high education level had more assets owned comapred to those that had never been to school (4) or only attained primary school level (5). For the ones that attained either secondary and tertiary education level, the mean number of assets they owned was 6. Suffice to mention despite the small differences in the mean numbers of assets across the education level strata, they were statistically signifincant ($P<0.05$).

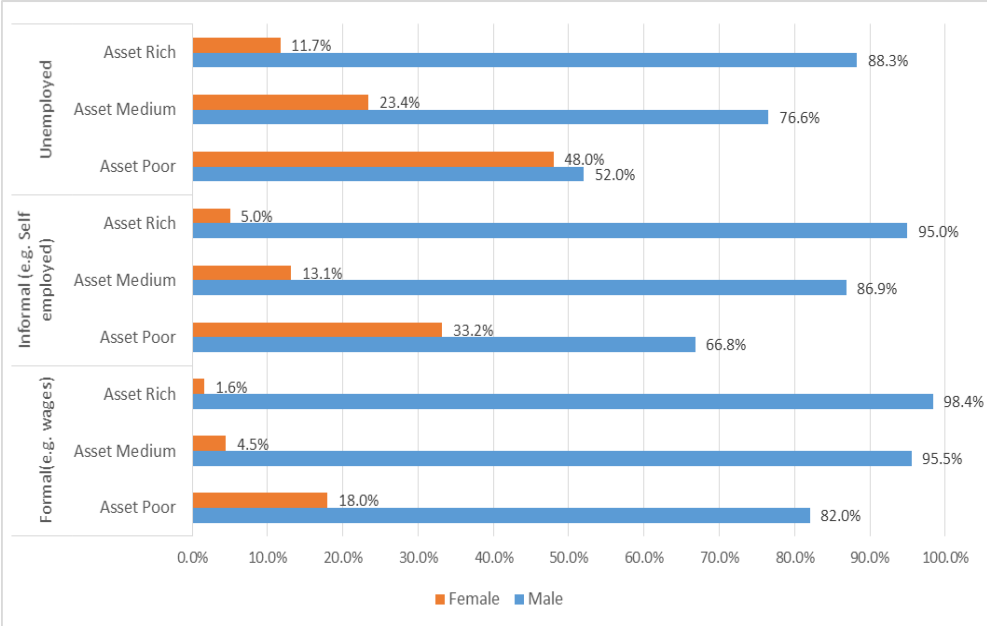
Figure 7: Asset Wealth Categorization by Gender



Consequently, the results also showed that married head of households possessed more assets (*6*) compared to those who were single, separated, divorced and widowed that had a mean number of 4 assets owned.

Generally, the results have remained consistent in terms of imbalance between male and female headed households when it comes to wealth distribution. In this regard, the results showed that majority of the asset poor households were femaled headed (63.7 percent) while those who were moderately (61.0 percent) and higly (4.4 percent) wealthier were male headed (see figure 7). Within the asset wealth categories, the assessment results showed a lot variances across household head's marital status, where the majority of those who were asset poor were divorced (72.0 percent), widowed (65.4 percent), single (62.6 percent) and separated (60.9 percent) respectively. As expected, majority of the households who were either moderately or asset rich came from married household heads (60.3 percent). There were however some household heads who despite the larger proportion being asset poor from the assessed districts, some were moderately or asset rich. These accounted for 38 percent of the household heads who were separated, 36.7 percent single, 32.9 percent widowed and 27.6 percent divorced.

Figure 8 : Asset Wealth Categorization by Employment Status



Further, analysis showed that wealth distribution across different types of employment the household heads engaged in favoured more of the maled headed unlike the female headed. Figure 8 showed that majority of the asset poor household heads, whose employment status was unemployed and informally employed , were female headed accounting for 48 percent and 33.2 percent respectively. Consequently, the results also showed that female headed households that fell under asset medium and asset rich category were unemployed and informally employed (farmers). In view of the 2014-2015 prolonged dry spells that affected most of the parts of the country, an attempt was made to ascertain to what extent assessed households had their assets affected in one way or the other. In this regard, the results showed that generally no change in numbers of assets owned was observed with a few notable exceptions on hoes, cellphones, axes and radios. The main reason for the changes in the numbers of hoes, cellphones, axes and radios owned by some households in the assessed districts were either additional purchases made, assets damaged or sold. These casual factors that led to the change in number of assets owned despite being minimal,could not have been triggered by negative impacts of prolonged dry spells. Generally, the results of the assessment showed that asset ownership at household level did not change.

4.5. Agriculture and Food Security

The analysis of agriculture and food security in this report is in line with the FAO definition, utilizing the pillars to interrogate the issue of agriculture and food security in the country. The discussion in this chapter focuses on agricultural production issues, food availability, access and stability.

4.5.1. Land Availability and Cultivation

The average land holding of the households in the assessed districts stood at 5.04 hectares. When asked how much of it was owned by the household itself, the assessment results showed that an average of 4.56 hectares was actually self – owned. Districts in

Southern and Central provinces had the largest landholding amongst the assessed areas with Choma and Kalomo having 14.5 and 13.1 hectares respectively while the average for Kapiri Mposhi was 8 hectares. Households in districts in Western province showed the smallest landholdings with Sikongo reporting an average landholding size of 1.3 hectares.

An interrogation of landholding by gender showed that male headed households owned 2hectares more than the females. The average land holding for male headed households stood at 4.4 hectares while that for females was at 2.4 hectares.

The assessment also showed that an average of 1.8 hectares of arable land was cultivated by the households in the assessed districts. Further, results showed that majority of households are not utilizing their arable land fully.

4.5.2. Food Availability

Results from the assessment showed that production of the 2014/2015 season stood at 1.3 million MT. The assessment showed that the households in the assessed districts anticipate selling about 595, 989 MT of maize. It was also determined that the amount to be given away stood at 597 MT. The total balance of the cereal likely to be held at the household level therefore stood at 695, 500 MT.

The other crops grown in the assessed districts included cotton, tobacco, sun flower, soya beans, sorghum, millet, sweet potatoes, rice, groundnuts and cassava. The cash crops of cotton, tobacco and sun flower were mainly grown in eastern, southern and central provinces.

4.5.3. Food Access

Food access at the household level is attained through a combination of their own production, fishing or gathering wild foods; exchange or purchases from the market and gifts obtained from the household's social networks. Food purchases depend on prices and cash income and are closely linked to livelihood strategies. Therefore, this section discusses access in terms of physical availability, financial, social access as well as how markets impact food access.

4.5.4. Access to Own Production

The results of the assessment showed that production of maize in most of the districts reduced by as much as 38 percent. The western province districts were the most affected indicating a loss of as much as 41 percent overall. In terms of carry – over stock, only 34.7 percent of households reported to have had stock from the previous season. When households were asked when cereal would run out, about 55.2 percent indicated that they would have no cereal by July. By the time the households start the lean period around November, 86.7 percent of the households would have run out of cereal.

Physical Access

Results from the community focus group discussions showed that communities in the assessed districts would be impeded physical access to the staple mainly because of bad roads. This further weakens household resilience in the sense that such households may not be connected to main markets where the price of the commodity they are selling may be better than their local community.

Financial Access

When households were asked whether they would purchase cereal/Millie meal during the 2015/2016 marketing season, only 25.9 percent indicated that they would not purchase these commodities. From the community focused groups, it was indicated that the commodity is currently readily available in the market.

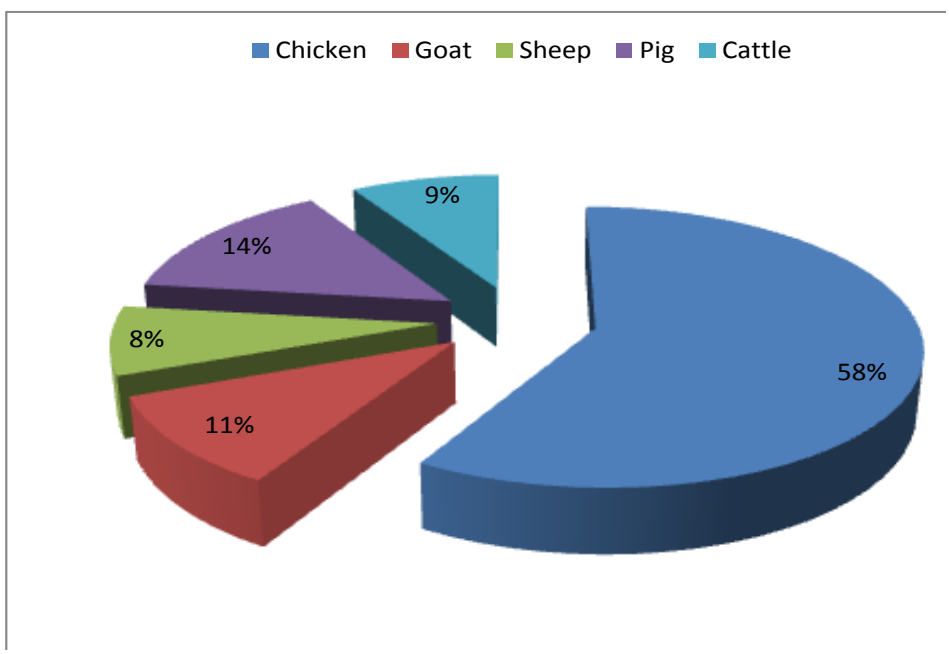
The survey showed that maize prices at community markets on average were 19.7 percent higher than in May 2014. The communities indicated that the main reason for the rise in prices was increase in demand coupled with reduced supplies to markets.

The survey further showed that about 30 percent of households earned cereal from casual labour while about 45 percent purchased maize/maize meal between January and May 2015. This signifies that casual labour continues to be an important source of cereal.

4.5.5. Livestock Condition and Major Crops Grown

The study revealed that 70 percent of the households interviewed owned different species of livestock. Majority of households in the assessed district owned chickens. In terms of numbers of livestock owned, the largest type of livestock in the assessed districts was chicken (58 percent), followed by pigs (14 percent). Others owned were goats (11 percent), cattle (9 percent) and sheep (8 percent), see figure 9 below.

Figure 9: Type of Livestock Kept by Households



Results of the assessment showed that in terms of livestock prices, there was no change between November 2014 and the time of Assessment.

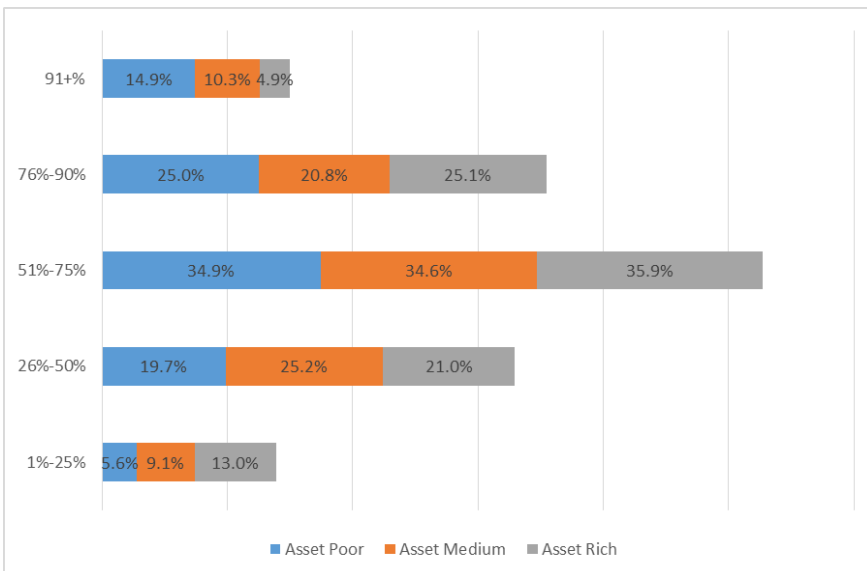
Results of the In – depth Vulnerability and Needs Assessment showed that 93 percent indicated having grown some crops during the 2014/15 agricultural season. Of these, 86.3 percent indicated having grown maize while only about 6 percent of the households indicated having grown other cereal such as rice, sorghum and millet. When asked whether households in the assessed districts grew cassava, only 18 percent of the households responded in the affirmative.

In terms of cash crops, majority of the households indicated having grown sunflower (19.8 percent) while a few households in the assessed districts indicated having grown tobacco (11.9 percent) and cotton (10.9 percent).

4.6. Expenditure Share

Expenditure share is key in determining the economic vulnerability of households and population in general. Under this section, the discussion will be limited to expenditure share on food to ascertain to what extent people in the assessed districts created a balance between food and non-food items in view of the negative impacts brought about by the 2014-2015 dry spells. The expenditure share analysis in this Impact Assessment Report is based on both purchases and own production estimates with a standard recall period of thirty (30) days.

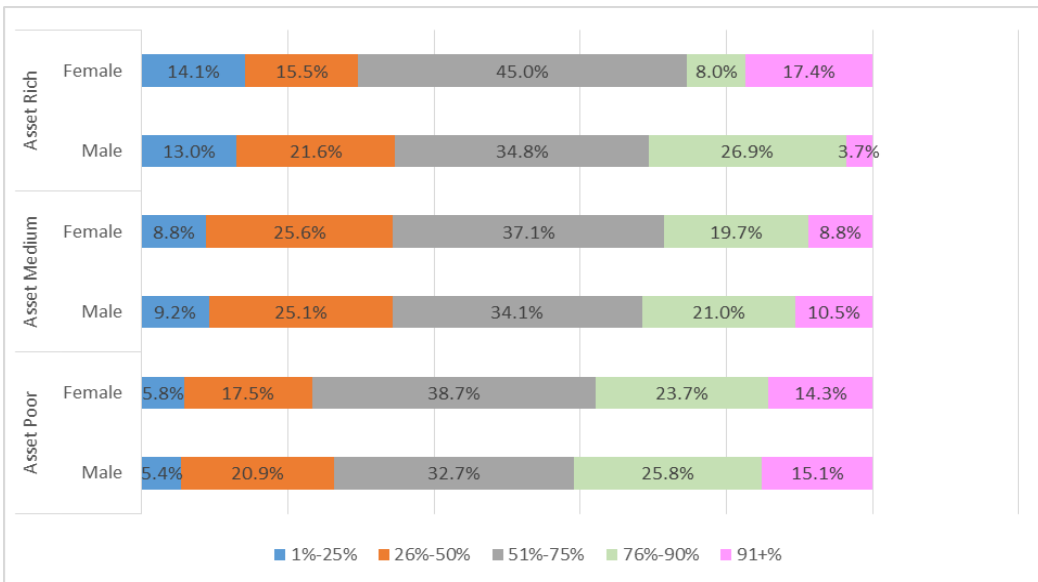
Figure 10: Expenditure Share



The assessment results showed that there were variances in food expenditure share across the districts covered under the 2015 Assessment. In this regard, majority of the households spent more money on food at expense of the non food.The results have

showed that 34.8 percent of the households had an expenditure share on food between 51 and 75 percent. Furthermore, a total of 34.1 percent of households had expenditure share on food more that 75 percent.

Figure 11 : Expenditure Share by Gender



As expected, asset ownership did to some extent determine how much of expenditure balancing households had between food and non-food items. In this regard, the assessment results showed that households that had an expenditure share on food of 51 to75 percent were mainly asset poor (34.9 percent), followed by asset medium (34.6 percent) and asset rich (35.9 percent). Coincidentally, the results also showed that most of female headed households had a higher food expenditure share compared to the male headed across all three asset wealth categories. Suffice to mention that the proportion of households that had a food expenditure share of between 51 to 75 percent was not only from the female headed households but also fell under the asset wealth category “Rich”. Similar trend was also observed for the asset categories “Medium” and “Poor” where female headed households had higher food expenditure share of upto 75 percent (see figure 11).

Further, the results showed that majority of households that had food expenditure share between 51 and 75 percent had their main livelihood sources as Money lending (56.9 percent), skilled trade/artisan (41.0 percent), trading (38.3 percent), irregular daily employee (38.2 percent), agriculture wage labour (37 percent) and non- agriculture wage labour. Generally, all the households that depended on farming (crop and livestock) as their main livelihood had fewer proportion of households that had high expenditure share on food.

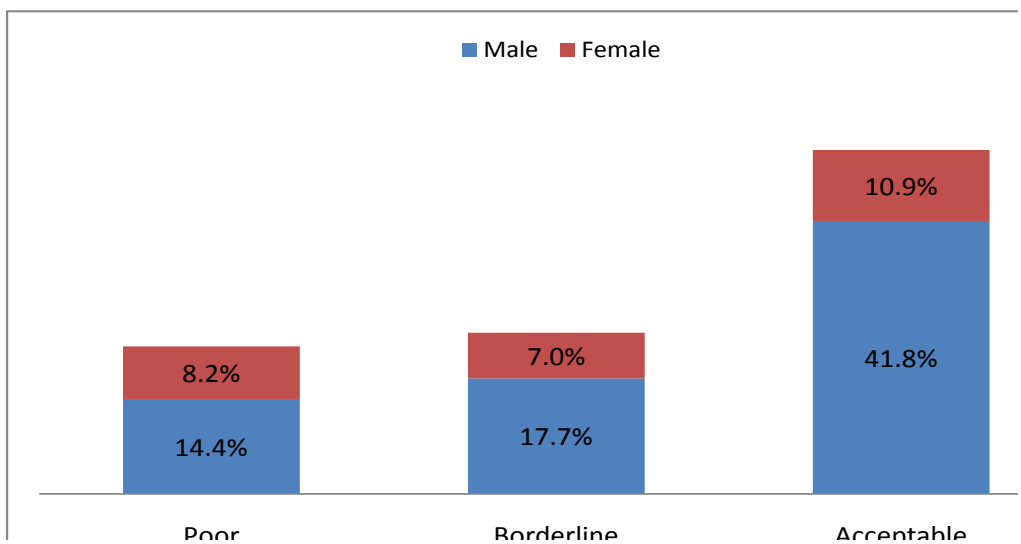
4.7. Food Consumption Scores (FCS)

The Food Consumption Score is a composite score based on dietary diversity, food frequency and relative nutrition importance of different food groups consumed by individuals, households and people in general. The discussion under this section of the 2015 Assessment Report will tease out to what extent the prolonged dry spells affected consumption patterns of households and people in the assessed districts.

The Assessment showed that most of the people in the assessed districts have acceptable food consumption scores (52.7 percent) followed by those with borderline food consumption scores (24.6 percent). Although the survey showed that majority of the households had good dietary diversity in the form of consumption scores, there were still 22.7 percent of households which had poor dietary diversity.

In terms of the gender perspective, the findings showed that majority of those that had a poor consumption score were actually male (14.4 percent) compared to only 8.2 percent of their female counterparts (see figure 12).

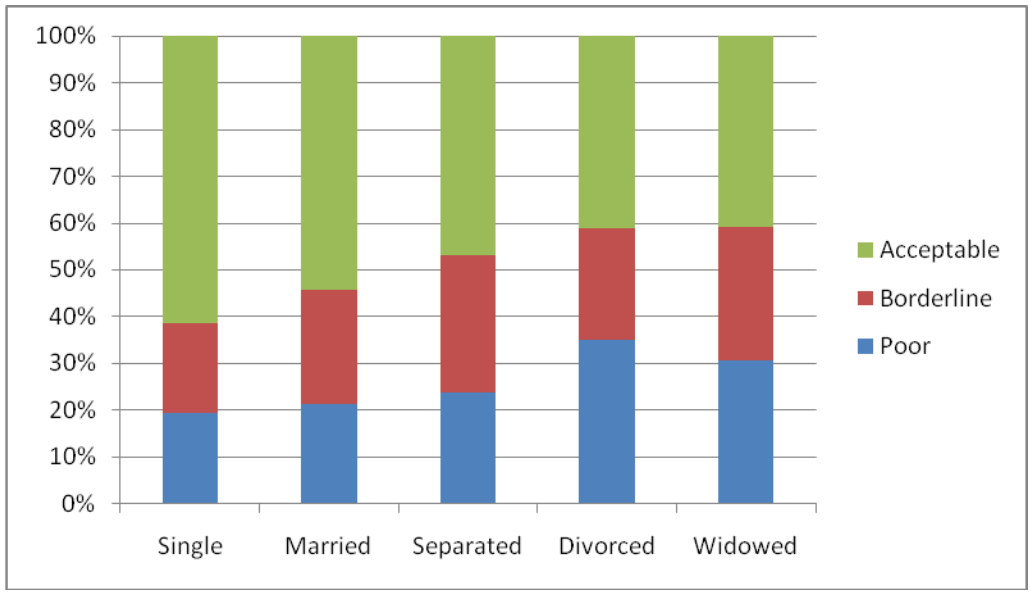
Figure 12: Food Consumption Score by Gender



When education levels is crossed with the food consumption score, the assessment indicated that the highest proportion of the households with poor food consumption scores had household heads that had either never been to school (7.2 percent) or had only attained primary education (11.9 percent). Those households that had heads with an education level of secondary or higher had high consumption scores.

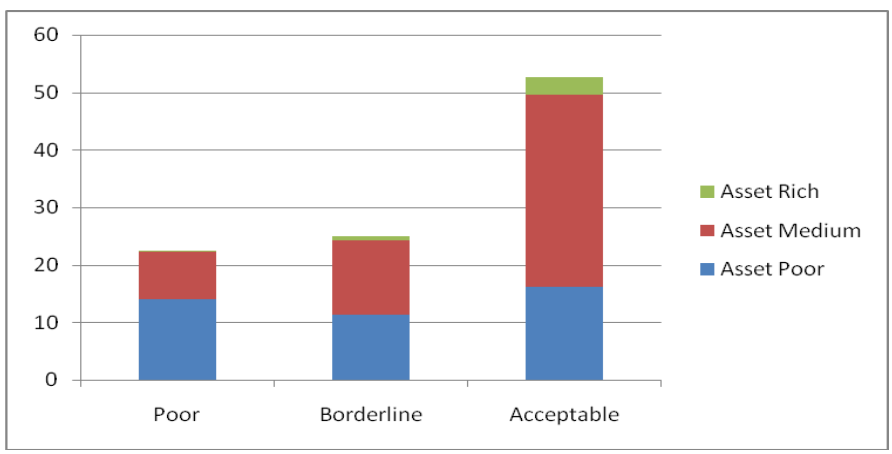
In terms of marital status, evidence gathered showed that of those that had poor consumption scores, the divorced or widowed had more people in this category (see figure 12). In terms of age of head of household, 11.9 percent of the child headed households had poor consumption scores. Those in the 18 – 28 years age bracket had about 5.1 percent of people who had poor scores. When analysed from the employment perspective, majority of those that had poor consumption scores were actually in informal employment (21.4 percent).

Figure 13*: Food Consumption Score by Marital Status*



There is certainly a correlation between asset ownership with diversity of food consumed which to a larger extent is determined by the viability of the income sources. Majority of those that had poor consumption scores were either asset poor or asset medium (see figure 14).

Figure 14: Food Consumption Score by Asset Wealth



4.8. Coping Strategy Index (CSI)

Coping strategies are things that households and people in general do to try to increase their food and cash income after a shock or hazard. In this section, the coping strategy index has been used to determine those households that were already using a high number of coping strategies to access food. Thus, a high CSI score generally means that a household is unable to access enough food, and therefore has to rely on a number of coping strategies; conversely, the lower the CSI score, the fewer the coping strategies harnessed (Maxwell & Caldwell, 2008:2) leading to the assumption that the household is more food secure.

The fact that the majority of households (58.8 percent) had a CSI below the mean (23.4) implies that about half of households were better equipped regarding the use of coping strategies relative to the average of the assessed districts. Furthermore, a standard deviation of 9 is indicative of the limited range of coping strategies employed by households.

The households with 5 – 6 members had the highest mean CSI, with a value of 24.3, followed by the households with 3 – 4 members and the smaller households with 1 -2 members, with a mean CSI of 18. The higher number of coping strategies used by households with 9 – 10 members might have arisen from the fact that there were more children per household who required adequate and nutritious food for their continued growth. When these households anticipated problems relating to food consumption, they tended to use more coping strategies in an effort to avoid these anticipated problems.

Table 4: Mean CSI by Family Size

Family Size	Mean CSI	SD
1 to 2	18	6.9
3 to 4	24.1	9.3
5 to 6	24.3	9.2
7 to 8	22.9	10.1
9 to 10	22.5	10.4
above 10	22.4	7.3

The Spearman's correlation coefficient between the number of household members and CSI showed a strong negative monotonic relationship ($r = -0.72$ at $p < 0{,}001$). This strong negative correlation coefficient indicates that when the number of household members increased, the coping strategies used by the households generally decreased, hence a reduction in the food insecurity with the increase in the number of people in a household. The fact that households with large household members had a fairly low CSI may be attributed to larger labour force available for the household and hence greater food security.

Table 5: CSI by Employment Status

Employment Status	Mean CSI of the subgroup	Standard Deviation
Formal	23.6	9.3
Informal	23.8	9.83
Unemployed	25.6	7.75
CSI = Coping Strategy Index, SD = 9.75, Mean = 39		

In terms of employment status of the household head, the assessment revealed that households with heads in formal or in informal employment had a lower CSI of 23.6 and 23.8 respectively while those households with unemployed heads had a CSI of 25.6. It has also been found through research that households with more employed members are better able to purchase adequate food supplies; employment plays an important role in food security and in decreasing the need to change behaviours to access food (Food and Agriculture Organization, 2012:10).

Table 6: CSI by Education and Gender

Education	Mean CSI of the subgroup	Standard Deviation
Never been at school	24	10.3
Primary	23.5	9.2
Secondary	23.4	9.2
Tertiary	22.6	4.9
Gender		
Male	23.6	9.5
Female	24.5	9.5

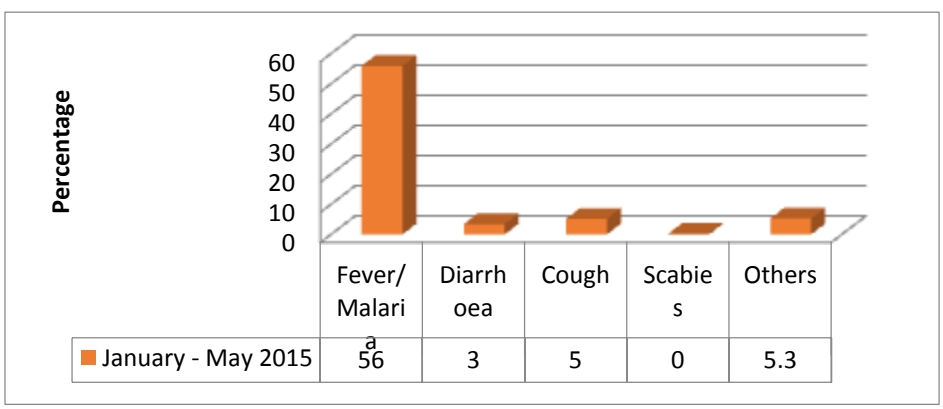
The above table shows that those that had never been to school were more food insecure than those that had some schooling (primary to tertiary). However, the Standard Deviation showed that the number of coping methods were inversely proportional to schooling. The gender of the household head showed that male headed households (23.6) were more food secure than those that were female headed (24.5). The methods of coping employed by these two types of households were insensitive to gender of headship.

4.9. Health

Diseases that affected assessed Households

In the first quarter of the year under review 72.3 percent of households from rural areas reported to have fallen sick which was higher than 65.1 percent reported from urban households**.** However**,** a minimal deference was observed between urban and rural households among those who were sick two weeks prior to the assessment. (53.7 percent rural households and 55.9 percent urban). The survey also showed that among households members who fell sick malaria had a higher percentage than any other disease. Figure () shows the diseases suffered during the first quarter. 56.1percent of the respondents reported to have contracted Malaria, 3.4 percent diarrhoea, 5.1 percent cough and 5.3 percent other diseases. Two (2) weeks prior to the assessment only 26 percent of the respondents reported to have contracted malaria and higher percentages were those from rural areas. The most affected districts were Nyeyema 100 percent, Luampa 65.5 percent, Kaoma 53.4 percent, Ngabwe 47.1 percent, Mpika 47 percent, Mwinilunga 44.2 percent, Chama 44 percent and Masaiti 43 percent.

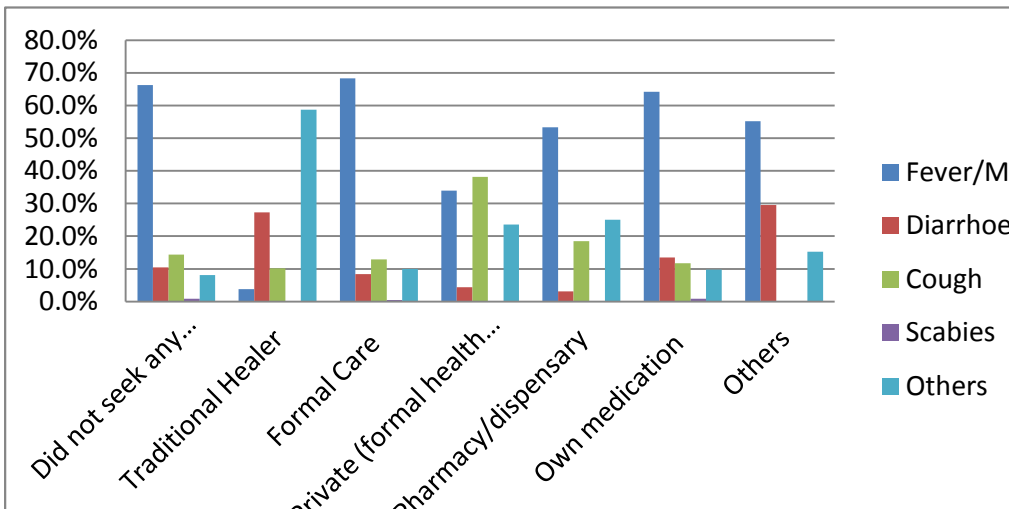
Figure 15: Diseases that Affected Assessed Households in Q1 of 2015



Health Care Seeking Behaviour

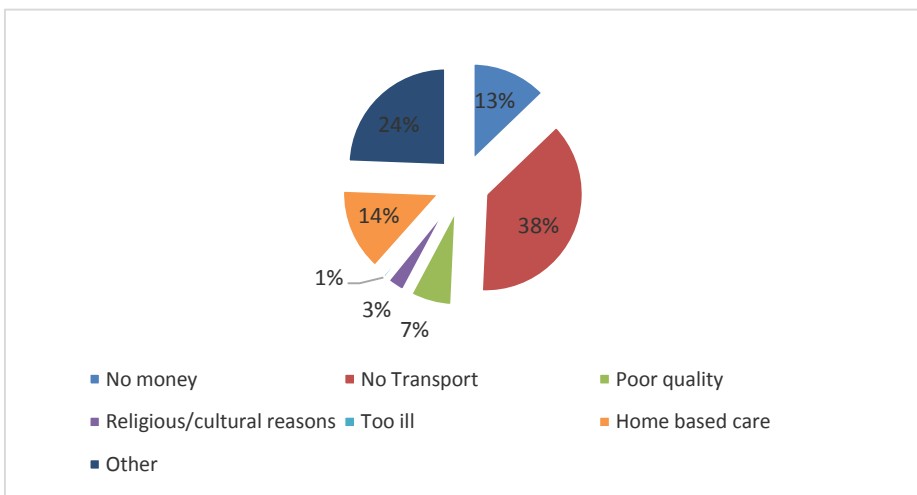
The survey indicates that health care seeking behaviour depend on the disease the household member is suffering from. Figure 17 shows that 80.3 percent of the respondents who contracted fever/malaria opted for formal care services while 66.2 percent opted not to seek any medication and 64.2 percent preferred their own medication. 53.3 percent opted to visit the pharmacy/dispensary. On the other hand about 27 percent of household members who had diarrhea opted to visit traditional healers and about 29 percent went for other alternatives. 38.1 percent of those who had a cough opted for private formal health care while 18.5 percent opted for pharmacy/dispensary with a few going for traditional healers or not seeking any medication.

Figure 16: Health Care Seeking Behaviour by Disease



According to the above there is still some resistance in some sector of society to change their health care behavior. There are various reasons, however, as to why some household members opt not to seek formal health care. The major reason being lack of transport as indicated in figure 17. Transport accounts for 38 percent, money 24 percent, home based care 14 percent and 24percent too ill to go to a health facility.

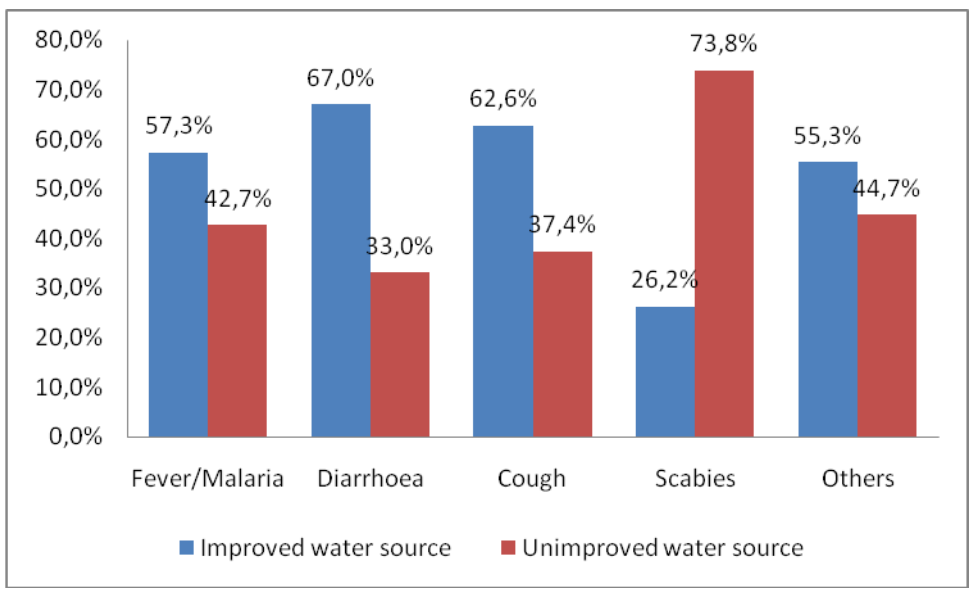
Figure 17: Reasons for poor health seeking patterns



Disease suffered by main water source

The assumption is that if households use improved water sources the disease burden would be less. However, the survey shows otherwise in that the results show that most of the disease incidences were reported by household that used improved water sources. For instance Figure 18 indicates that 57.3percent households using improved water sources reported that they had Fever/Malaria while the households that used unimproved sources had 47.2 percent. Households that reported having contracted diarrhoea who used improved water sources were 67percent and those that used unimproved water sources were 33 percent. Scabies on the other hand is the only disease that reported a higher percentage of 73.8 for the households that use unimproved water source. The reasons for the difference in disease incidences by water source could be due to the fact that the assessment was based on the type of water source rather than the quality of water at source. In addition, the households that were assessed used more improved water sources than unimproved.

Figure 18: Diseases by Water Source



The analysis results show that 72.2 percent of the households that accessed water from the river or lake reported to have contracted Fever/ Malaria while 72.4 percent that accessed water from protected wells reported to have contracted Malaria. 11.1 percent of the members that accessed water from the borehole and 11.1 percent that accessed piped water reported to that they suffered from diarrhea. Reasons for these observed percentages could be that the improved water source was not checked for quality or confirmed safe for drinking.

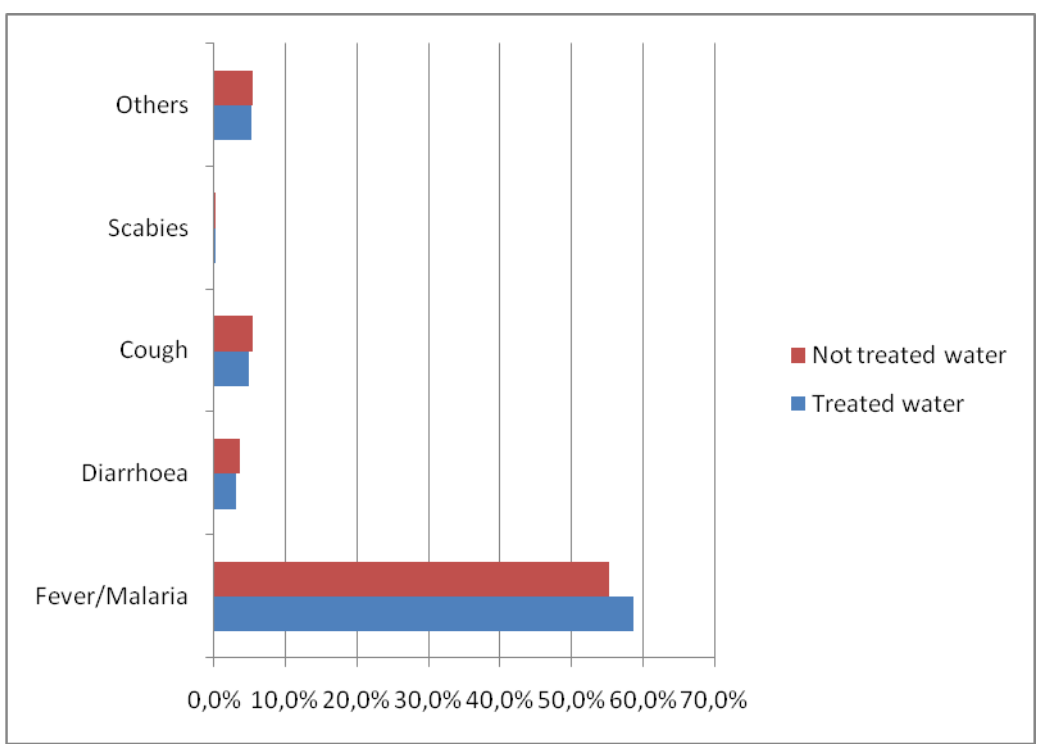
Table 7: Water Source by Diseases

Water Source	Fever/Malaria	Diarrhoea	Cough	Scabies	Others	Total
River or lake	72.2Percent	9.0Percent	9.4Percent	.4Percent	9.0Percent	100.0Percent
Unprotected well	69.4Percent	5.6Percent	11.8Percent	.8Percent	12.3Percent	100.0Percent
Protected well	72.4Percent	4.0Percent	14.8Percent	.6Percent	8.2Percent	100.0Percent
Borehole	66.7Percent	11.1Percent	13.2Percent	.1Percent	8.9Percent	100.0Percent
Piped water	53.8Percent	11.0Percent	17.8Percent	.4Percent	17.0Percent	100.0Percent
Other	45.9Percent	10.7Percent	27.2Percent	4.8Percent	11.4Percent	100.0Percent

Disease burden by water treatment

Treatment of water is one of the attributes to the waterborne disease burden. The assessment indicates that the percentage of households that didn't treat water reported higher percentages of incidence in terms of the water related diseases. For example, the households that didn't treat water reported sickness due to diarrhoea (3.6 percent); malaria (55.1 percent), cough (5.3 percent) while the households that used water that was treated reported sickness due to diarrhoea (3.0 percent),0.6 percent lower than those who did not treat their water, and malaria (58.5 percent).

Figure 19: Diseases by Water Treatment



Disease by type of Sanitation Facility

The type of sanitation facility used by the household does to some extent contribute to the type of diseases suffered by household. The assessment shows that most of the households that suffered from diarrhea were those using traditional pit latrines (63.7 percent) as their main sanitation facility. The disease burden for Households that had no sanitation facility was 29.7 percent.

Table 8: Diseases by Sanitation Facility

	Flash Toilet	VIP	Sanplat (Improved Traditional)	Traditional Latrine	Bucket	No facility (i.e. Bush, river, CAT Method)	Total
Fever/Malaria	1.5%	1.2%	2.5%	78.8%	.0%	15.9%	100.0%
Diarrhoea	3.5%	1.1%	1.9%	63.7%	0.0%	29.7%	100.0%
Cough	3.1%	2.4%	2.1%	74.2%	0.0%	18.3%	100.0%
Scabies	0.0%	0.0%	5.8%	52.8%	0.0%	41.4%	100.0%
Others	3.6%	0.0%	1.6%	74.4%	0.0%	20.4%	100.0%
Asthma	0.0%	0.0%	0.0%	81.6%	0.0%	18.4%	100.0%
Back ache	0.0%	0.0%	0.0%	79.0%	0.0%	21.0%	100.0%
Body pains	0.0%	5.2%	0.0%	62.4%	0.0%	32.4%	100.0%
Eye problems	0.0%	0.0%	3.9%	78.6%	0.0%	17.5%	100.0%
Stroke	0.0%	0.0%	2.4%	95.3%	0.0%	2.3%	100.0%
Toothache	0.0%	0.0%	0.0%	64.2%	0.0%	35.8%	100.0%
BP	30.2%	6.7%	0.0%	55.0%	0.0%	8.2%	100.0%

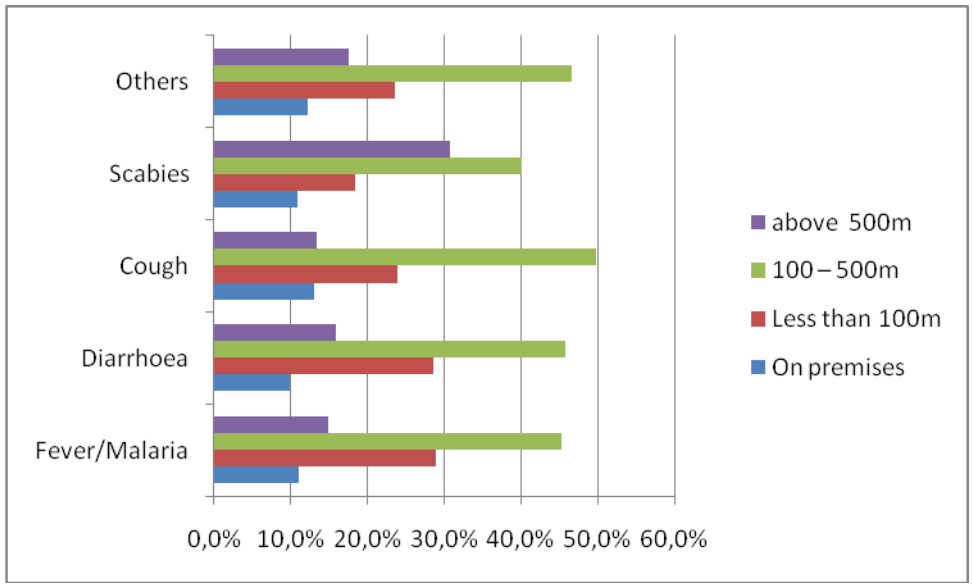
The analysis results have further shown that majority of the households that had a member sick from diarrhea in the last two weeks prior to the assessment and their main sanitary disposal was traditional latrine or no facility, reside in the rural strata of the surveyed districts. On the other hand only 3.5 percent of the households that use improved sanitary facilities such as flash toilets reported cases of diarhoea and only 1.1 percent was reported from those who used VIP toilets.

Disease suffered by distance from water source

There is moderate proof from the data that distance to water source was a factor to disease burden in that the further away the household is from the water source the more prone they are to contracting a disease. People staying far from water sources tend to ration their use of water to the extent that some safe practices such as washing hands after using toilets are perceived to be a waste of water. In some cases even bathing is avoided in an effort of preserving water for other perceived important activities.

Figure 21 shows that households covering a distance between 100 to 500m to fetch water has a higher risk of contracting diseases as compared to other households. The data shows that scabies has the lowest percentage with 40.1 and the highest being Cough with 49.8.Surprisingly enough households covering distances more than 500m indicated a lower risk of contracting most of the diseases as compared to those covering distances between 100 – 500m.

Figure 20: Diseases by Distance to Water Source

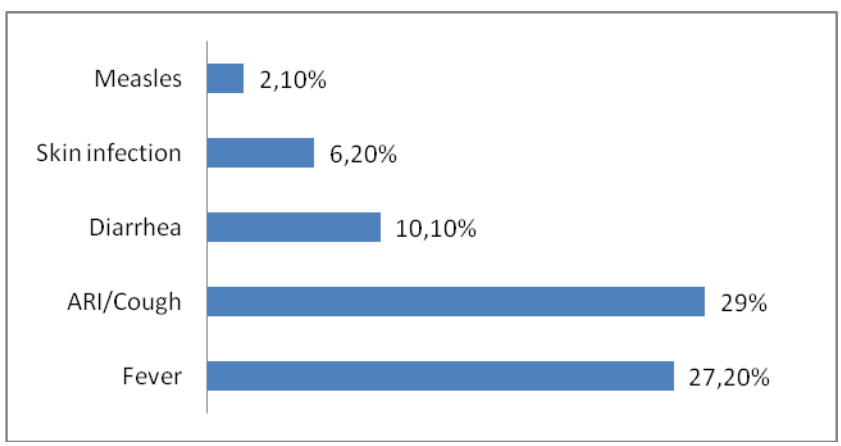


Under Five Immunizations

Diseases

Fever, ARI/cough, and Diarrhea were the top three diseases that affected the under five children during the period under review. The highest prevalent was ARI/cough with 29 percent followed by Fever and diarrhoea with 27.2 percent and 10.1percent respectively as shown in figure 22 below.

Figure 21: Diseases that the Under 5 Suffered from

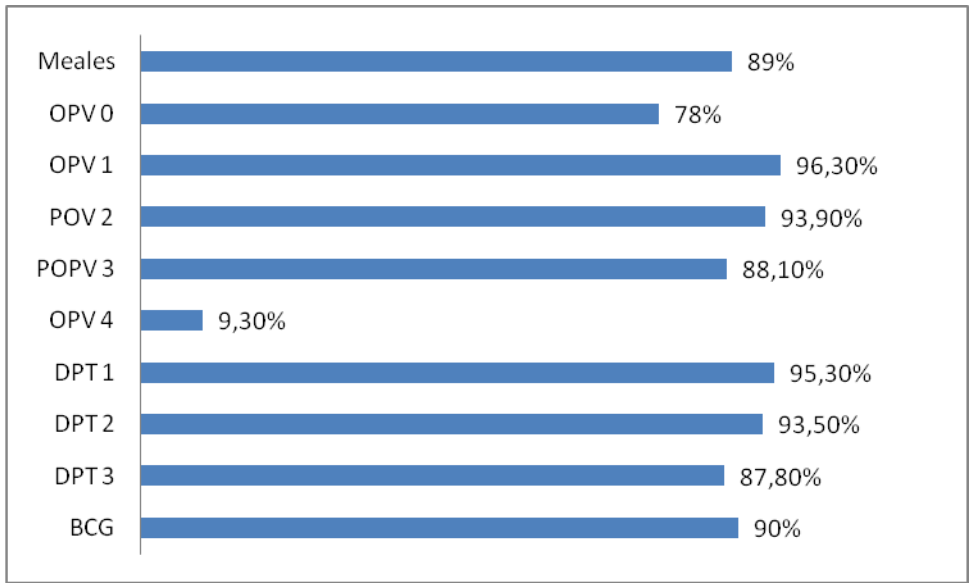


The highly affected provinces with Diarrhoea were Central, Southern and Muchinga with 12.6percent, 10.6percent and 10percent respectively. Whereas, those affected with fever were N/Western (39.3percent), Western (33.4percent), and Central (32.6percent). For ARI/ Cough the most affected provinces were Western (42percent), Muchinga (37.3percent) and Luapula (35.9percent).

Immunization

The table below shows the percentage of children who were immunized for each dose.

Figure 22: Immunization Rates



Almost all the parents interviewed indicated that they had their children immunized as showed in the figure above. The lowest percentage was OPV 4 with 9.3% because it is only given to children who did not have OPV 0.

4.10. Nutrition

Meal Consumption Pattern

The assessment of food consumption is essential in understanding the immediate causes of under nutrition in the population. Disturbances in the dietary consumption within a short period of time have a direct influence on the nutrition status of the population. The survey results on consumption in 30 days preceding the survey indicate that about 32.9 percent of the households ran out of food, 28 percent slept hungry and 21.4 percent spent the whole day without food at any one time in 30 days.

Frequency of occurrence of the problem

The results show that majority (18.4 percent) of those who had no food had experienced this 1 to 2 times in 30 days and 12.2 percent experienced this between 3 to 10 times in the 30 day preceding the survey. In addition, of the 28.8 percent of the households who slept with hunger, 17.6 percent rarely experienced this and 9.5 percent experienced it 3 to 10 times in 30 days. Further, among those who went without food, 13.3 percent experienced it rarely and 7 percent experienced it 3 to 10 times in 30 days. Less than 3 percent of the households frequently experienced this.

This shows that there was a general disturbance in food intake among the households in 30 days preceding the survey.

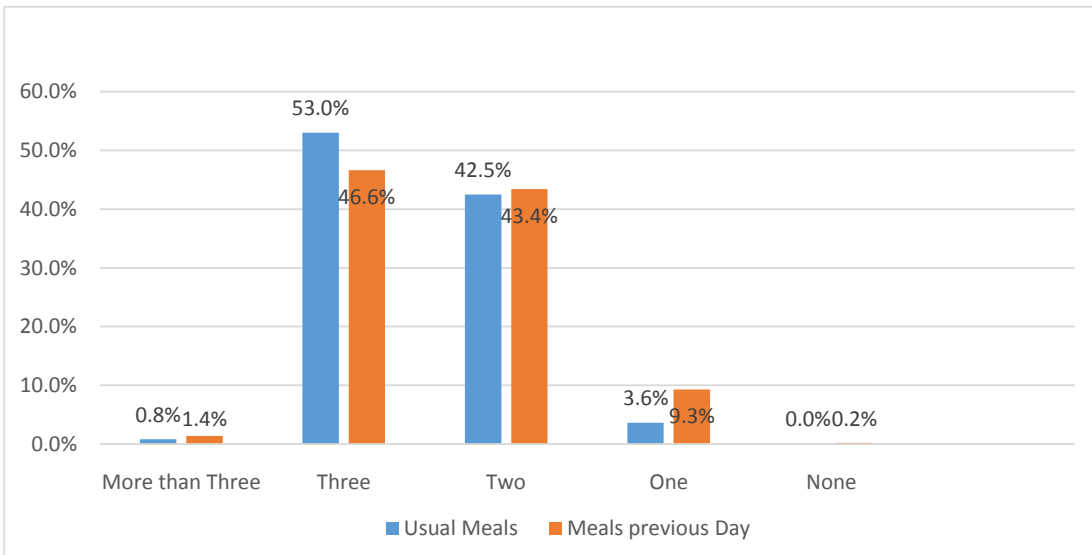
Table 9: Meal consumption in 30 days

No food in the house		
	Frequency	Percent
Rarely(1-2 times)	174391	18.7
Sometimes (3-10 times)	113934	12.2
Often (more than 10 times)	19765	2.1
No	623895	66.9
Total	931985	100.0
Slept hungry		
	Frequency	Percent
Rarely(1-2 times)	164867	17.7
Sometimes (3-10 times)	88535	9.5
Often (more than 10 times)	16220	1.7
n/a	661735	71.1
Total	931357	100.0
Spent whole day without eating		
	Frequency	Percent
Rarely(1-2 times)	123530	13.3
Sometimes (3-10 times)	64824	7.0
Often (more than 10 times)	12294	1.3
n/a	730568	78.5
Total	931217	100.0

Meal frequency

The frequency of meal consumption at household level is important in assessing the adequacy of nutrient intake of the household members. The assessment of meal frequency the day preceding the survey in the household, among adults and children showed that majority of the households (46.6 percent) had three meals, 43.4 percent had two meals, 9.3 percent had one meal and the rest had no meal a day preceding the survey. In addition, 0.2 percent of households slept hungry the day preceding the survey. It therefore evident that the households were not having the usual meals as seen in figure 23 below.

Figure 23: Meals consumed Preceding Day and Normal Meals



The data showed that on average 0.3 percent of households in the entire district slept hungry, 8.9 percent ate once and 46.3 percent ate two times the day preceding the survey. About 2.1 percent of the households in Shangombo, Ikelenge, Sikongo and Sioma had no meals a day preceding the survey. Sikongo and Sioma recorded the highest proportion of households (50.7 percent and 34.6 percent respectively) who had one meal the day preceding the survey. Further, Lukulu and Nyimba showed that over 79 percent of the households ate two meals the day preceding the survey.

The results indicated that 53 percent of the households reported that they usually ate 3 meals per day while 42 percent usually ate twice per day. This implies that those who had 2 meals consumed normally while there was a slight reduction among those who ate 3 meals. Therefore, there were no major disturbances in their meal consumption pattern among the households. Further, the data showed that over 50 percent of the households in Southern province and 2 districts in eastern province had normal meals a day preceding the survey.

Nutritional Status

Child Nutrition

The survey assessed a total of 452 595children in all the forty-eight (48) districts of which 51.6 percent were males and 48.4 percent were females.

Breast feeding

Continued breast feeding among children 6 to 59 months of age is essential for continued growth and development of the child. Breast milk contributes greatly to the nutrient requirement of the child after 6 months though it is not sufficient to provide all the nutrients required at this age. The survey showed that about 28.3 percent of children between 6 to 24 months of age were still breast feeding in all the forty-eight (48) districts. Mambwe districts showed the lowest proportion (2.3 percent) of children not breast fed followed by Sesheke, Mwandi, Serenje, Samfya and Lundazi which were below 10 percent. On the other hand, Senanga had the highest proportion (40 percent) of children breast feeding followed by Mongu, Zimba, Kaoma and Namwala which had around 30 percent of the children.

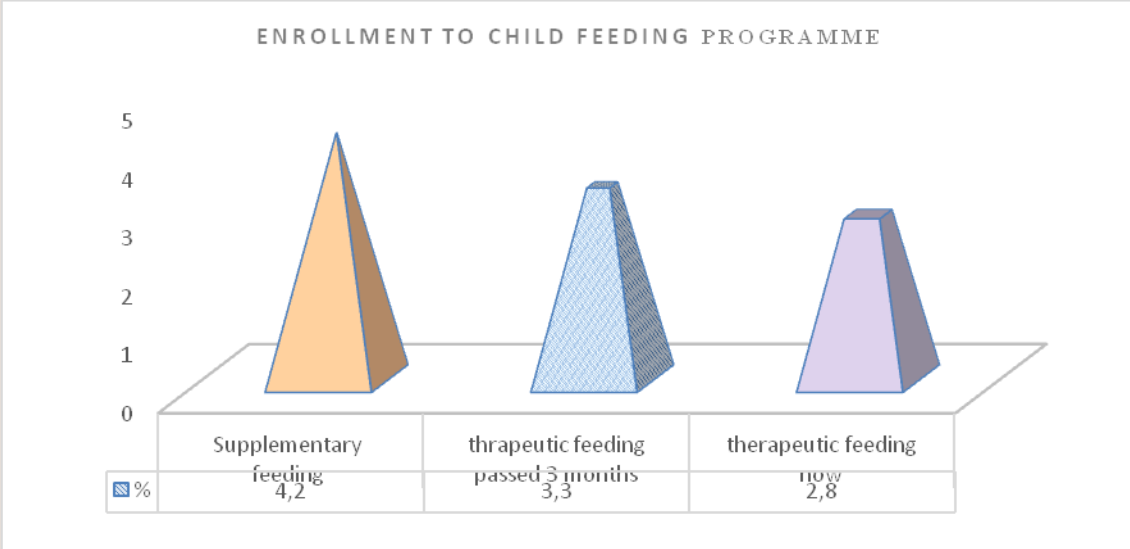
Micronutrient Supplementation

Consistent vitamin A supplementation among children under-five above 80 percent has the potential to reduce child Mortality. In addition, de-worming programme plays a critical role in reduction of under nutrition among children and pregnant women. The survey showed that 81.5 percent of the children in the survey areas received Vitamin A supplementation and 56.3 percent were de-wormed in the 6 months preceding the survey (Table).The data further shows that districts such as Nkeyema, Senanga, Ngabwe, Pemba, and Chikankata recorded 90 percent to 100 percent Vitamin A Supplementation, de-worming coverage was 100 percent in Ngabwe and Nkeyema while Senanga , Sesheke, Nalolo Mwinilunga recorded over 90 percent coverage.

Child feeding Programme

Supplementation and therapeutic feeding programs have been designed to help in the rehabilitation of the undernourished children. Enrollment of children in three feeding programs in the 3 months preceding the survey showed that 4.2 percent of children in the survey were enrolled in supplementary feeding programs, 3.3 percent were enrolled in therapeutic feeding and 2.8 percent were currently enrolled in the therapeutic feeding programs. Analysis at district level showed that 5.5 percent of children in Luampa, 5.6 percent in Mpika, 5.1 percent in Mwinilunga were enrolled in supplementary feeding. Therapeutic feeding was reported among 39.2 percent of the children in Petauke, 26.8 percentin Nyimba, 15.5 percent in Nyimba and 4.7 percent in Mambwe.

Figure 24: Children enrolled in Child feeding programme 3 months prior the survey



Child feeding programme

Child feeding at household level is influenced by a number of factors. Family size has a significant impact on household food distribution and subsequent child feeding. The results found an association between family size and enrollment to child supplementary feeding programme (p=0.000). The results show that most children from the family size of 5 to 6 people were enrolled in supplementary feeding 3 months prior to the survey and children about 5 percent of the children from the family size of between 3 to 6 were enrolled in therapeutic feeding programs three months prior to the survey (Table …….).

Table 10: Child feeding program by Family size

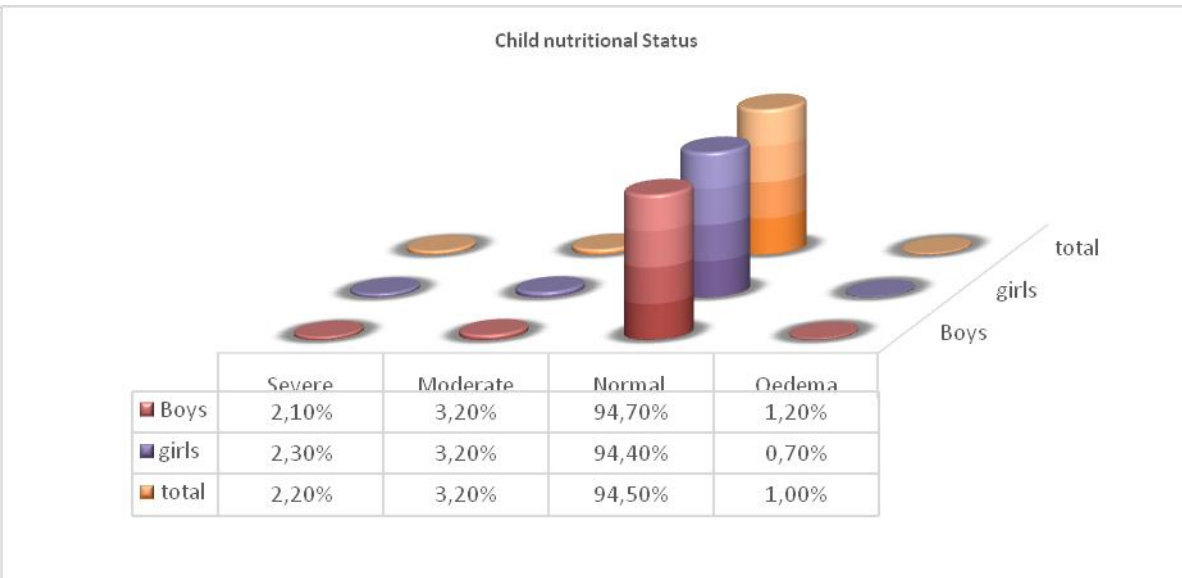
Child Feeding Programme by Family Size						
Family Size	Supplementary		Therapeutic		Currently on Therapeutic feeding	
	Yes	No	Yes	No	Yes	No
1-2 People	0.00%	100.00%	0.00%	100.00%	0.00%	100.00%
3-4 People	7.00%	88.30%	5.40%	88.30%	5.50%	88.80%
5-6 People	5.70%	90.30%	5.10%	90.50%	4.60%	91.30%
7-8 People	1.30%	96.60%	0.40%	97.30%	0.20%	97.30%
9-10 People	2.50%	95.50%	1.90%	95.90%	1.00%	96.40%
Over 10 People	2.60%	94.10%	1.60%	95.40%	0.50%	96.80%
Total	4.20%	92.40%	3.30%	92.80%	2.80%	93.40%

Child Nutritional status

The MUAC measurement for children is used as a proxy for wasting and assesses the risk of death among 6 to 24 months of age. Oedema was also used in the assessment to assess the level of severe under nutrition among the children. The results shows that 2.2 percent children were at risk of severe wasting, 3.2 percent were at risk of moderate wasting and 94 percent of the children were not at risk of wasting or death in the entire district. More girls (2.3 percent) were at risk of sever wasting than boys (2.1 percent) while the same proportion of boys and girls were at risk of moderate wasting(3.2 percent) (Figure below). The result further shows that Sioma (18.9 percent), Sikongo (15.7 percent) and Lundazi (11.4 percent) districts had highest proportion of children with severe wasting. The moderate wasting was highest in Mwinilunga (10.5 percent) and Sinda (9.5 percent) while other districts had less than 7 percent of the children in the moderate range (Annex….).

Further, the data shows that 1 percent of the children had Oedema across the districts and more boys (1.2 percent) had Oedema than girls (0.7 percent). This is consistent with other surveys that have been done in the country though districts specific survey data may not be available.

Figure 25: Child Nutritional Status



	Severe	Moderate	Normal	Oedema
Boys	2,10%	3,20%	94,70%	1,20%
girls	2,30%	3,20%	94,40%	0,70%
total	2,20%	3,20%	94,50%	1,00%

Child MUAC and family size

The number of people in the household influences the consumption of the household members especially the children. The results established a strong association between family size and wasting among children (p=0.000). The results show that 3.2 percent of children in households with 7 to 8 people were severely wasted and 4.4 percent were moderately wasted. In addition, 3, 4 percent of the children with Oedema were found in households with 9 to 10 people.

Table 11: Under - Nutrition by Family Size

Household Size	child's MUAC			Oedema Presence
	Severe	Moderate	Above normal	Yes
1-2 People	0.00%	0.00%	100.00%	0.00%
3-4 People	2.60%	2.70%	94.70%	1.00%
5-6 People	1.80%	2.90%	95.20%	0.60%
7-8 People	3.20%	4.10%	92.70%	0.50%
9-10 People	1.90%	4.00%	94.10%	3.40%
Over 10 People	0.60%	2.40%	97.10%	0.40%
Total	2.20%	3.20%	94.50%	1.00%

Child MUAC with Age of Household Head

The age of the household head influences the nutrition decision at household level hence influences the extent to which resources are used to access to provide food for the household. The survey assessed associations between wasting and age of the households head. A strong association was found between wasting based on MUAC and age of household head (p=0.001). The results show that 10.6 percent of moderately wasted children were found in houses with household heads less than 18 years old. In addition, about 5.5 percent to 5.1 percent of moderately wasted children were found in households with heads aged 51 to 61 years old and above 61 years old respectively.

Table 12: Child MUAC by age of Household head

Child MUAC			
Age of household head	Severe	Moderate	Above normal
Less 18 years	0.00%	10.60%	89.40%
18-28 years	1.70%	2.70%	95.60%
29-39 years	2.20%	2.50%	95.30%
40-50 years	1.50%	4.10%	94.40%
51-61 years	3.40%	5.50%	91.20%
61+ years	1.20%	5.10%	93.70%
Total	2.00%	3.40%	94.70%

Child MUAC by Illness in Past two weeks

A childhood illness is one of the immediate causes of under nutrition according to the Conceptual framework of under nutrition. Childhood illness suffered with 2 weeks prior to assessment can influence the wasting levels among children. The survey assessed the childhood illnesses 2 week prior to the survey. The results indicate that 1.5 percent of the children who were severely wasted had a fever, 0.9 percent had a cough and 1.2 percent had diarrhea. In addition, among those with moderate wasting, 4.1 percent had a fever and a cough and 3.9 percent had diarrhea (Table 13).

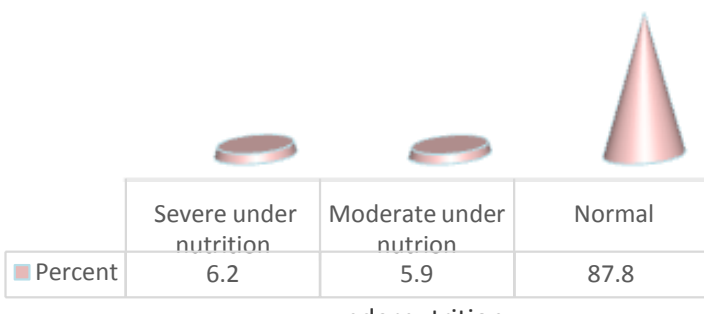
Table 13: Child illnesses by Child MUAC

		child's MUAC		
Illnesses		Severe	Moderate	Above normal
Fever	Yes	1.50%	4.10%	94.40%
	No	2.20%	3.10%	94.80%
Cough	Yes	0.90%	4.10%	94.90%
	No	2.40%	3.00%	94.60%
Diarrhea	Yes	1.20%	3.90%	94.90%
	No	0.00%	6.40%	93.60%
		2.00%	3.40%	94.70%

Mothers Nutritional Status

MUAC among adults is used to assess the nutritional status and determine the eligibility for nutrition support in low resource setting and in emergencies. The MUAC measurement show that 6.2 percent of women were severely undernourished while 5.9 percent were moderately malnourished (Figure below). The results further shows that majority of the severely wasted women were found in Sioma (20 percent) and Masaiti (19.3 percent) districts. Other districts such as Kapiri, Katete, Ikelenge, Chama and Namwala had between 9 percent and 10 percent of the severely wasted women. Moderately under wasting was highest in Mwinilunga (20.9 percent) and Petauke (19 percent)). Other districts with less than 14 percent of moderately wasted women included Sikongo (13.7 percent), Chama (12.0 percent), Kapiri Mposhi (11.8 percent), Lukulu (10.6 percent) and Senanga (12.5 percent).

Figure 26: Nutrition Status of Women

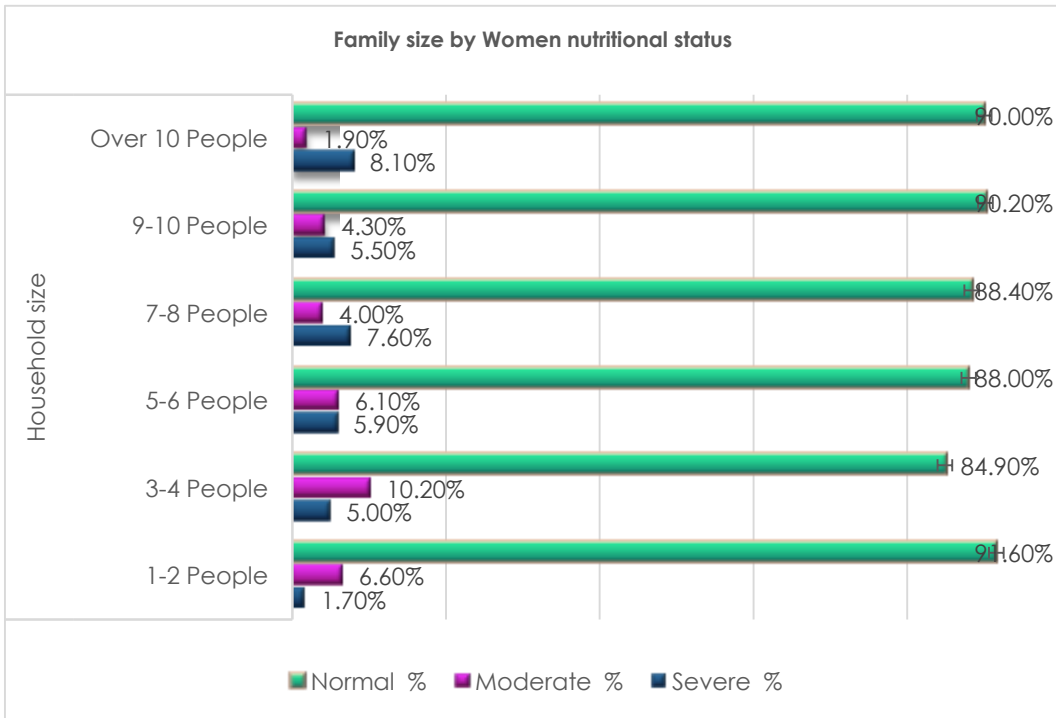


Women Nutritional status with Household Size

Women contribute greatly towards the acquisition of food in the households. Family size is key in the intra household food distribution and is especially important in understanding the nutritional status of women in the household. The results show that high proportion of severely wasted women were found in households with 3 to 10 members and moderate wasting was common among households with 1 to 6 members of the household(Figure).

The results imply that thought women are the primary distributors of food in the household, they do not consume enough and most times they are overwhelmed by ensuring everybody has food at the expense of their own nutrition.

Figure 27: Women Nutritional status by Household size

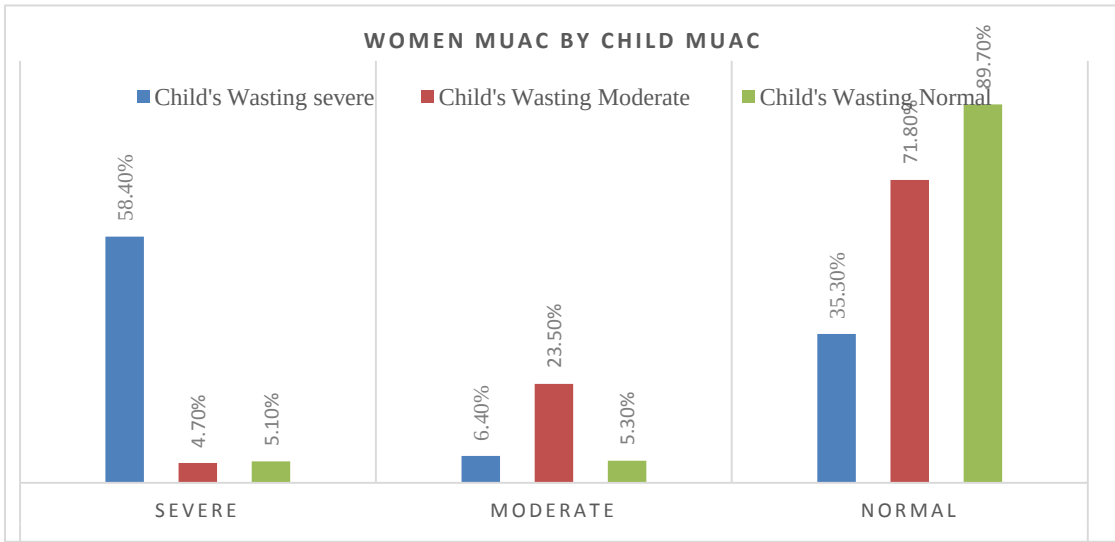


Women Nutritional Status and Child Wasting

Women are primary care providers for children and their nutritional status plays a key role in the nutritional status of the children and in the provision of child care. The results of the survey shows that 58.4 percent of the severely undernourished women had severely wasted children and only 35.3 percent of women with normal nutritional status had severely wasted children.

This implies that women nutritional status is important if under nutrition among children is to be eradicated. Therefore, women need to be targeted with interventions that reduce under nutrition if child nutrition has to be addressed.

Figure 28: Women MUAC by Child MUAC

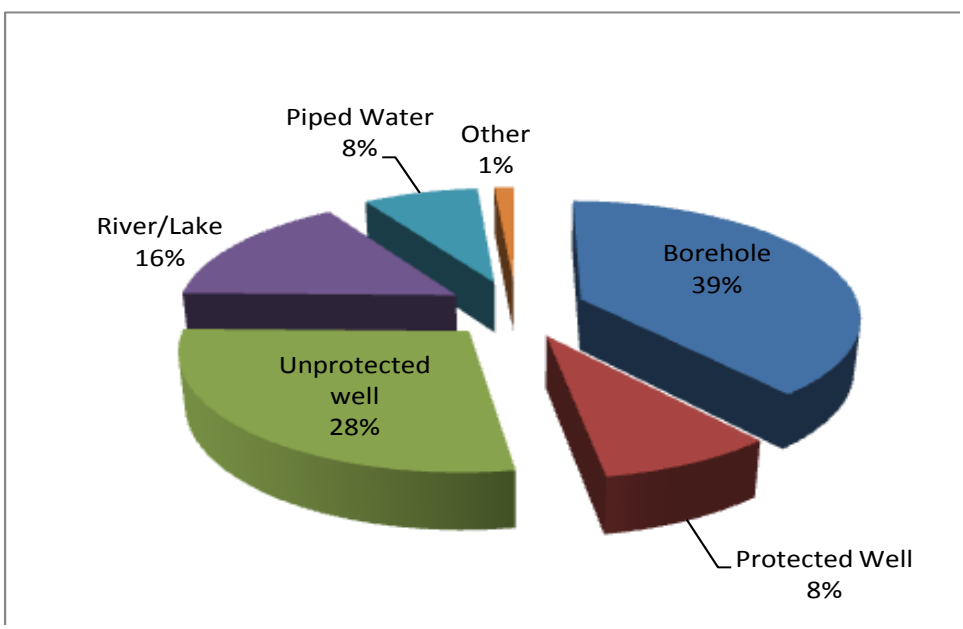


4.11. Water, Sanitation and Hygiene

Main Water Sources

The assessment revealed that the access to total improved water supply by main source was 56.2 percent (of which 39.8 percent was borehole, 8.6 percent protected well and 7.8 percent piped water,). The access to total unimproved water supply by main source of drinking water was 43.8 percent (of which 26.8 percent was unprotected well, 15.6 percent river or lake and 1.4 percent other unimproved source). For the purpose of this report, improved water sources were grouped as borehole, piped and protected wells while unimproved water sources were grouped as unprotected wells, streams, rivers or lakes and other.

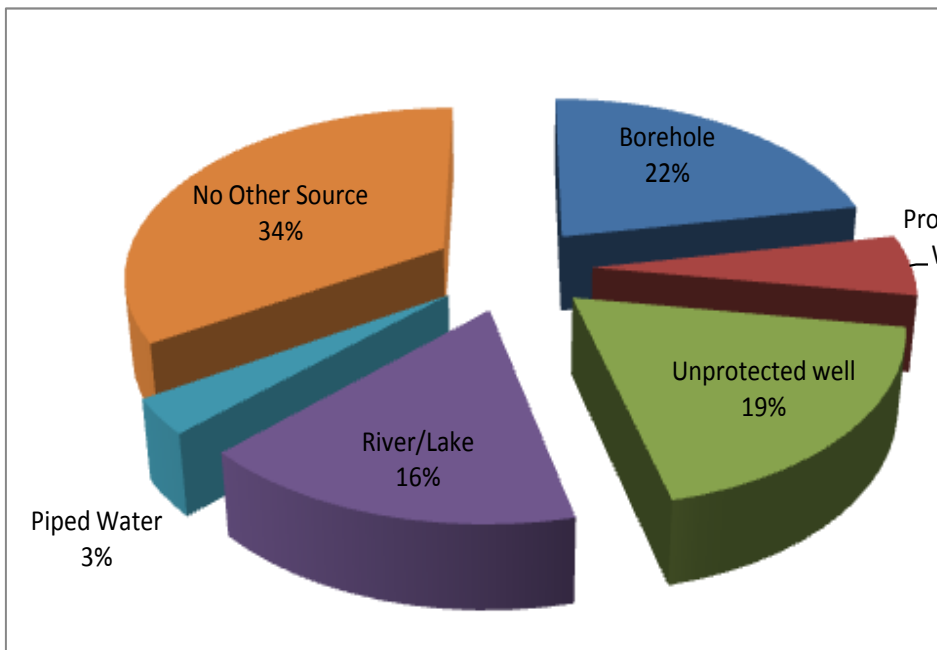
Figure 29: Main Sources of Water



Alternative or Secondary Water Sources

The assessment also revealed that the access to total improved water supply by alternative or secondary sources of drinking water was 30.9 percent (of which 21.9 percent was borehole, 3.3 percent piped water and 5.7 percent protected well). The access to total unimproved water supply by alternative or secondary source of drinking water was 38 percent (of which 18.7 percent was unprotected well, 16.3 percent river or lake, and3percent other unimproved source).The assessment further revealed that another31.1 percent of the households did not have any alternative or secondary water source because normally their main sources do not dry.

Figure 30: Secondary Water Sources



Main Water Sources by Region

The rural population accounted for 40 percent portion of unimproved water with only 15 percent unimproved water sources reporting for the urban population. The rural households accounted for 91.8 percent of the responses for main water sources while the urban area accounted for 8.2 percent. In the rural areas, the most common main water source was borehole (47.6 percent), followed by unprotected well (24.0 percent). In the urban areas, the most common main water sources were piped water (59.2 percent) and borehole (15.3 percent).

The provincial distribution of the main water sources indicates that Luapula, Muchinga and Central had the highest unimproved water sources with 71 percent, 68 percent and 57 percent, respectively. The provinces with the highest improved main water sources were Eastern (82 percent), North-Western (68 percent) and Southern (67 percent).

Table 14: Main Water Sources by Province

Province	Main Water Source						Total
	River Or Lake	Unprotected Well	Protected Well	Borehole	Piped Water	Other	
Central	12.6%	44.1%	7.0%	26.5%	9.3%	.5%	100.0%
Copperbelt	22.4%	28.7%	29.5%	11.5%	7.8%	.1%	100.0%
Eastern	7.4%	7.3%	6.3%	74.0%	1.7%	3.2%	100.0%
Luapula	26.9%	44.1%	5.7%	20.9%	2.4%		100.0%
Muchinga	26.4%	38.2%	9.3%	14.0%	9.0%	3.0%	100.0%
Southern	10.7%	20.7%	7.9%	45.5%	13.7%	1.5%	100.0%
Northwestern	19.4%	12.9%	28.9%	36.7%	2.2%		100.0%
Western	27.8%	12.9%	22.0%	24.6%	10.9%	1.8%	100.0%
Total	13.0%	22.9%	9.6%	44.9%	7.8%	1.7%	100.0%

Sources of Water Affected by Prolonged Dry Spell

The study revealed that 51.2 percent of the households said their main water sources were affected by the prolonged dry spells while 48.8 percent were not affected.

Water Availability at Source

The study revealed that of the households that responded, 21 percent reported that their main water sources dried up and 79 percent did not dry up. The most affected main water sources which were reported to have dried up were others (50.4 percent), unprotected wells (33.4 percent) and rivers or lakes (25.1 percent). "Other" water sources included streams, scoop holes and springs. The households reporting water sources that did not dry up mostly include piped water (94.1 percent), borehole (84.9 percent) and protected well (79.7 percent).

Table 15: Main Water Sources by Water Sources Drying Up

Main Water Source	Did Water Source Dry Up?		
	Yes	No	Total
River Or Lake	25.10%	74.90%	100.00%
Unprotected Well	33.40%	66.60%	100.00%
Protected Well	20.30%	79.70%	100.00%
Borehole	15.10%	84.90%	100.00%
Piped Water	5.90%	94.10%	100.00%
Other	50.40%	49.60%	100.00%
Total	21.00%	79.00%	100.00%

The study also revealed that the water level at the main source compared to the same time last year was reported by households to be lower (44.5 percent), the same (52.3 percent) and higher (3.2 percent). The study revealed that the main water sources whose water level dropped compared to the previous year (2014) were unprotected wells (70.2 percent) and the river or lake (59.1 percent). However, the main water sources whose water level remained the same include piped water (78.7 percent), borehole (65.1

percent), protected well (50.7 percent) and others including streams, scoop holes and springs (51.8 percent). Each main water source type was reported to have had between 2.3 and 5.3 percent of households whose water source level increased compared to the previous year.

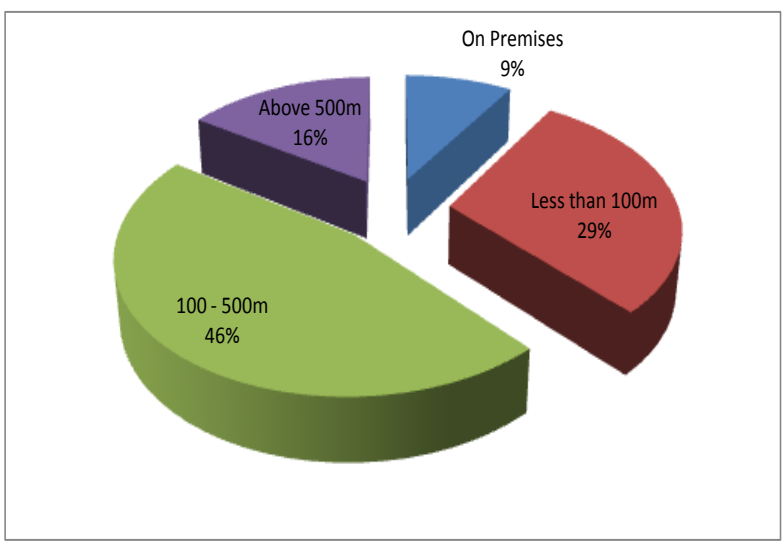
Table 16: Main Water Source by Water Level Change

Main Water Source	Water Level Change			Total
	Lower	Same	Higher	
River Or Lake	59.1%	37.5%	3.4%	100.0%
Unprotected Well	70.2%	27.4%	2.3%	100.0%
Protected Well	44.0%	50.7%	5.3%	100.0%
Borehole	31.6%	65.1%	3.2%	100.0%
Piped Water	19.1%	78.7%	2.3%	100.0%
Other	45.7%	51.8%	2.5%	100.0%
Total	44.5%	52.3%	3.2%	100.0%

Distance to Water Source

The assessment revealed that while only 8.9 percent have access to a water source within their household premises, 29.3 percent of the respondents had access to a water source below 100m from their household, 46.2 percent had access to a water source between 100m and 500m from their household and 15.6 percent had access to a water source above 500m from their household.

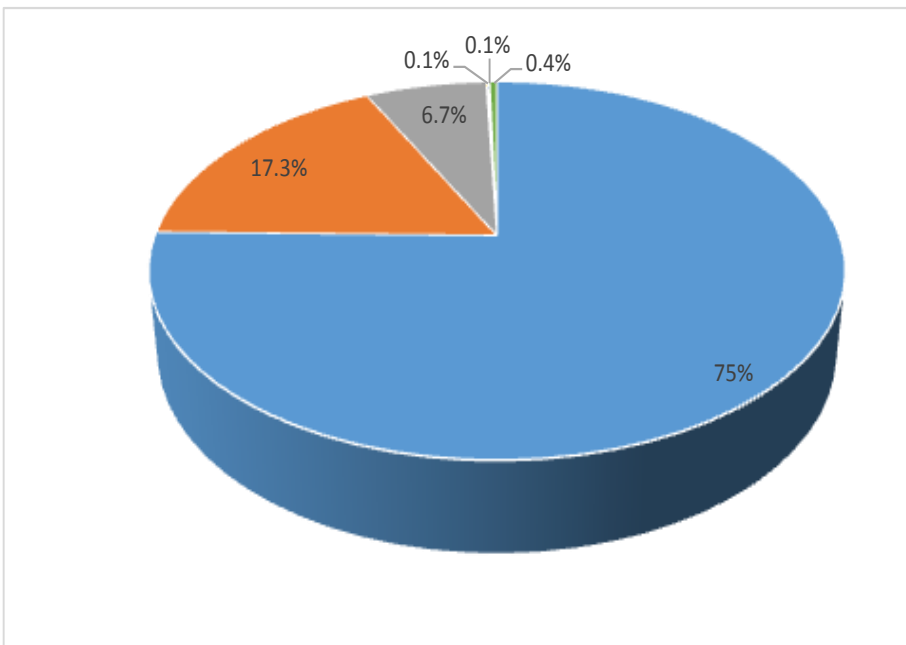
Figure 31: Distance to Water Sources



Treatment of Drinking Water

Only 24.6percent of the households treated their water while the 75.4 percent of the households did not treat their drinking water in any way. The distribution of the type of treatment revealed that 17.3 percent use chlorine (70.3 percent of those households who treat their water) was the most widely used followed by 6.7 percent of the households who boil their water (27 percent of those households who treat their water).Another 0.4 percent treated their water using other methods, with a nominal 0.1 percent each using filtration and decanting for their water treatment.

Figure 32: Water Treatment Methods

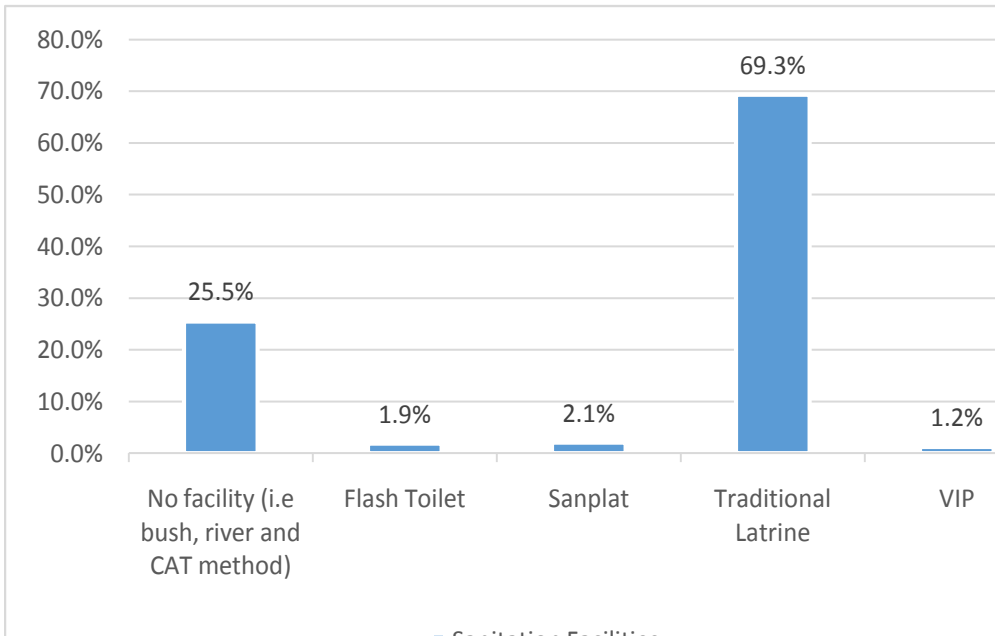


Sanitation Facilities

Distribution of Sanitation Facilities

Traditional latrines were found to be the most used by households at 69.3 percent, followed by flash toilet (1.9 percent); VIP (1.2 percent), Sanplat or improved traditional latrine(2.1 percent) while 25.5 percent of the households had no sanitation disposal facility.

Figure 33: Distribution of Sanitation Facilities



Sanitation Facilities Distribution by Asset Wealth Index

The study revealed that when sanitation facilities are distributed among the three asset wealth indices, access to traditional latrines was the highest along each of the wealth indices: 71.4 percent (Asset Poor), 78.4 percent (Asset Medium) and 80.9 percent (Asset Rich).

Table 17: Sanitation Facilities Distribution by Asset Wealth Index

Asset Wealth Index	Sanitation Facilities					Total
	Flash Toilet	VIP	Sanplat (Improved Traditional)	Traditional Latrine	No facility (i.e. Bush, river, CAT Method)	
Asset Poor	1.3%	.7%	2.0%	71.4%	24.6%	100.0%
Asset Medium	2.6%	1.3%	2.3%	78.4%	15.3%	100.0%
Asset Rich	1.0%	5.7%	6.3%	80.9%	6.2%	100.0%
Total	2.1%	1.3%	2.4%	76.0%	18.2%	100.0%

Sanitation Facilities by Region

In the rural areas, the most common sanitation facility was the traditional latrine at 76.8 percent followed by ‘no facility at 19.5 percent while in the urban areas it was the traditional latrines at 66.7 percent followed by flash toilet at 15.9 percent.

The provincial distribution of the sanitation facilities indicates that Central, Southern and Muchinga had the highest households without sanitation facilities at38.9 percent, 21.8 percent and 14.2 percent, respectively. All the eight provinces had at least 57 percent

coverage of traditional latrines, with the highest being North-Western with 96percent and least being Central with 57.1percent.

Table 18: Type of Sanitation Facilities by Province

Province	Sanitation Facilities					Total
	Flash Toilet	VIP	Sanplat (Improved Traditional)	Traditional Latrine	No Facility (I.E. Bush, River, Cat Method)	
Central	1.7%	1.8%	.5%	57.1%	38.9%	100.0%
Copperbelt	6.3%	1.3%	4.1%	81.4%	6.9%	100.0%
Eastern	.1%	.0%	.6%	90.4%	8.8%	100.0%
Luapula		2.3%	1.1%	87.9%	8.8%	100.0%
Muchinga				85.8%	14.2%	100.0%
Northern	4.1%	2.5%	5.6%	65.9%	21.8%	100.0%
Northwestern		.5%	1.3%	96.3%	1.9%	100.0%
Western	2.1%	.6%	2.3%	93.2%	1.9%	100.0%
Total	2.1%	1.3%	2.4%	76.0%	18.2%	100.0%

Hygiene Practices

Hand washing practices before cooking and after using the toilet

The study revealed that out of the households that responded, 82.8 percent washed their hands before preparing food and 17.2 percent did not. After using the toilet, 84 percent of households washed their hands and 16 percent did not.

Scouring agents used for hand washing

Regarding hand washing after use of the toilet, 49.2 percent said they use soap to wash their hands; 2.7 percent use ash and 31.9 percent only use water to wash their hands (of those who said they washed their hands after using the toilet, 58 percent used soap; 3 percent used ash; and 1 percent used other means while 38 percent used nothing but water).

Sanitation Facilities Distribution by Asset Wealth Index

The study revealed that the use of soap as a scouring agent in hand washing was highest in each of the three asset wealth indices. The table below shows that among the Asset Poor the use of soap was reported by 39.3 percent respondents; for the Asset Medium it was 56.9 percent; and among the Asset Rich it was 77.0 percent. The use of no scouring agent was also significantly high (38.4 percent among the Asset Poor; 28.9 percent for the Asset Medium and only 12.3 percent among the Asset Rich).

Figure 34: Scouring Agents for Hand Washing

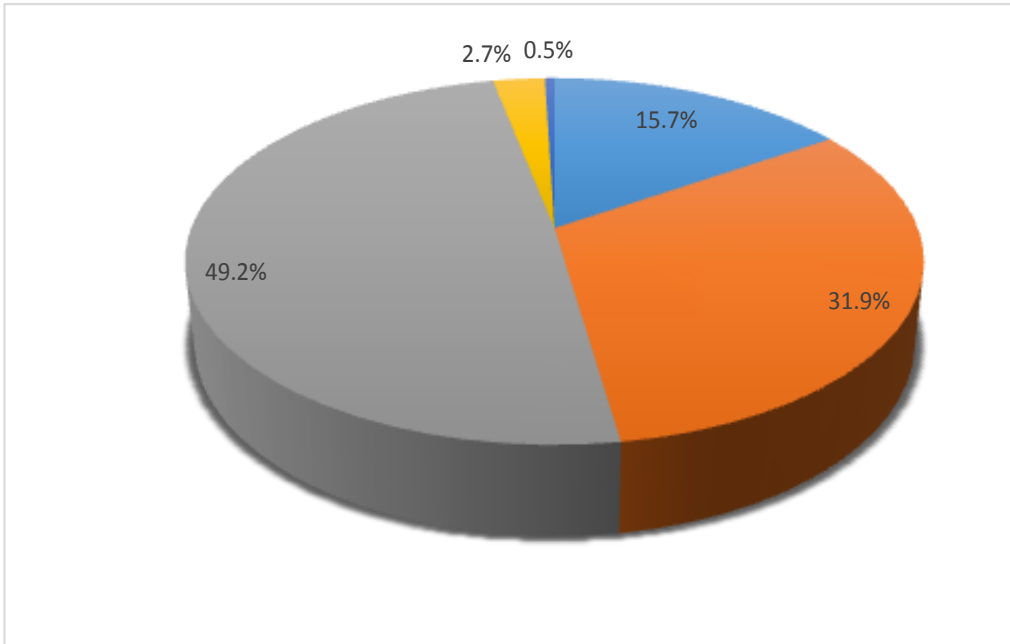


Table 19: Use of Scouring Agent for Hand washing after Using the Toilet by Asset Wealth Index

Asset Wealth Index	*Use of Scouring Agent for Hand washing After Using The Toilet*					Total
	No Scouring Agent used	Soap	Ash	Other	Do not wash hands	
Asset Poor	38.4%	39.3%	3.5%	.6%	18.2%	100.0%
Asset Medium	28.9%	56.9%	3.0%	.3%	10.9%	100.0%
Asset Rich	12.3%	77.0%	2.4%	.7%	7.6%	100.0%
Total	31.4%	51.6%	3.2%	.4%	13.4%	100.0%

WASH Related Diseases

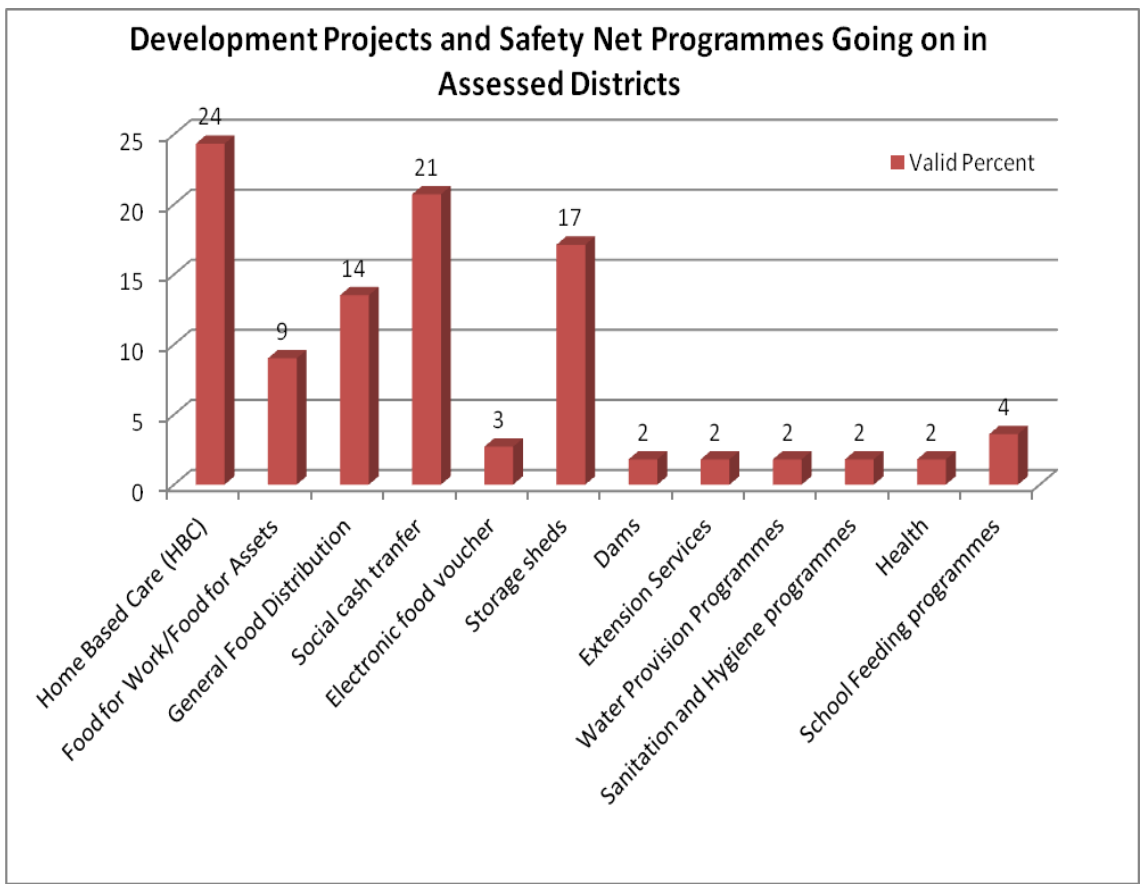
The assessment showed that 69.3 percent of respondents reported to have fallen sick since January 2015 of which 64.9 percent were due to WASH related diseases, namely, malaria (56.1 percent), diarrhea (3.4 percent), cough (5.2 percent) and scabies (0.2 percent).

4.12. Developmental Projects and Safety Net Projects

Development projects and safety nets programmes are critical for reducing poverty and boosting inclusive growth and shared prosperity as well as stimulating local economies. This in turn helps households to better manage risks and cope with shocks in district where they are done.

The assessment found that about 96 percent of the districts indicated that there were development projects and safety net programmes in their districts going on at the time of the survey. These were Home Based Care programmes (24 percent) which formed the majority followed by Social Cash transfer (21 percent), Storage Shed (17) and General Food Distribution (14) as shown in Figure.....

Figure 35: Districts having on – Going Development Projects and Safety Net Programmes



CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1. Agriculture and Food Security

Conclusion

- No major productive assets were offloaded and/or sold in response to the prolonged dry spells.
- Livelihood diversity still remains low with majority of the households in the assessed districts dependent on agricultural based livelihoods (e.g. crop production, livestock rearing and agriculture wage labour).
- The permanent and seasonal cash incomes in the assessed districts are also largely agricultural based mainly being sale of crops and agricultural wage labour.
- Employment of moderate to high cost coping mechanisms was high across most of the assessed districts (RCSI).
- Prolonged dry spells did have an impact on household food production which ultimately will affect household food security especially as households move towards the lean period.
- Despite a slight increase in dietary diversity, the assessment showed that there is over – dependency on carbohydrates (mainly maize and sweet potatoes).
- Need to strengthen the extension delivery system.
- Utilizing a composite index of FCS, Expenditure Share on food and coping behaviour, the results of the survey showed that 31 districts in six provinces would require assistance.

Recommendations

Short Term

- A total of 798, 948 people (133, 158 households) from thirty one (31)districts will require food relief amounting to 53, 242 MT of maize equivalent for a period of eight (8) months (August,2015 – March,2016).These include: Serenje and Chitambo (Central); Chadiza, Chipata, Katete, Lundazi, Mambwe, Nyimba, Petauke, Sinda, Vubwi (Eastern); Samfya (Luapula) Chikankata, Gwembe, Kazungula, Pemba, Sinazongwe (Southern); Ikelenge (North Western) and Kalabo, Kaoma, Mulobezi, Senanga, Sesheke, Shangombo, Nalolo, Limulunga, Nkeyema, Sikongo, Sioma, Mwandi, Luampa (Western).
- There is need to monitor the evolvement of the food security situation in the seventeen (17) districts as most of them fall within the moderately food secure district with a possibility of graduating into food insecurity as we approach the lean period.
- There is need to strengthen the extension delivery system.
- Input provision for 45,079 households in twenty-seven districts (27) districts.

Medium to Long Term

- Livelihood diversification programmes be scaled up in order to contribute to alternative livelihoods.
- Strengthen the support on conservation farming implementation.
- There is need to introduce appropriate technologies for small – scale farmers which could enhance household food security such as water harvesting and small scale irrigation systems.
- There is need to enhance the monitoring of nutrition and food security through the establishment of sentinel sites.
- Child headed Households should be targeted for food security pack programs
- Promote asset building projects among the child headed households through Youth empowerment funds.

5.2. Health

Conclusion

Malaria was the most common disease suffered by household members especially those in rural areas. The most affected districts were: NKeyema 100 percent, Luampa 65.5 percent, Kaoma 53.4 percent, Ngabwe 47.1 percent, Mpika 47 percent, Mwinilunga 44.2 percent, Chama 44 percent and Masaiti 43 percent. The percentages of infection for diarrhoea, respiratory infection and other diseases were too low as a result they had no significant consequence on household's livelihood.

On health care seeking behavior, a bigger percentage of respondents who didn't seek medication at all and those who took their own medication where those who suffered from malaria. There is need to increase the deployment of Community Health Assistants (CHAs) to communities so as to sensitize communities on the importance of making use of health facilities.

Fever and ARI/cough were the top two diseases that affected the under five children in the districts were the assessment took place. ARI/cough had 29 percent and fever had 27.2 percent.

Recommendations

Short term

- Increase the coverage of indoor-residual spraying and effective use of RDTs.for the following districts; Nkeyema, Luampa, Kaoma, Ngabwe, Mpika, Mwinilunga, Chama, and Masaiti and
- There is need to develop a Statutory Instrument on the use of ITNs.

Medium to Long term

- Extending malaria surveillance to community level using an active case detection system for community level surveillance.
- There is need to improve on the supply of drugs and logistics for treatment of respiratory infections (non-pneumonia).

- Recruit more Community Health Assistants (CHAs).
- There is need to promote community based disease prevention mechanisms.

5.3. Nutrition

Conclusion

The study showed that most of the households ate two meals a day preceding the survey. Most households that ate twice had normal meals and a reduction was seen among those that ate three meals compared to their normal meals. This situation could be explained by the fact that most households reported having run out of food in 30 days preceding the survey and a reduction was observed among those who normally eat three meals.

The results indicate that the overall wasting was less than 6 percent, however, specific districts data show high proportion of child wasting. The results showed that children from large families and families headed by the young and the elderly had a higher chance of becoming wasted. Hence children in these households had a higher chance of dying. The family size contributed to child wasting due to the intra household's food distribution in households. Therefore, children between 6 to 24 months in larger families and households headed by the elderly are at risk of being wasted in all the 48 districts.

The survey established that about three quarters of the children who were severely wasted had fever, cough and diarrhea while all the children who were moderately wasted had all the three illnesses. This shows that these illness might have contributed to the wasting state of the children. Studies have shown that illnesses such as diarrhea increases the nutrient loss from the body and reduces appetite hence reducing the food intake and increasing the likelihood of wasting.

Further, the survey revealed that interventions such as supplementary and therapeutic feeding were only available in few districts with limited coverage in each of the districts. Therefore, vulnerable children would have been missed at targeting stage of the intervention.

Recommendations

Short term

- Children in the moderate and severe wasted should be considered for supplementary and therapeutic feeding. The feeds should provide adequate nutrient requirement for the children. The targeting should consider Child headed households, households headed by the elderly and children from larger families.
- The child rations should be large enough to support the food needs of the women. This will take care of the intra household's food distribution in the households since most wasted children normally come from the poorest segments of the population.

- There is need to intensify the monitoring of nutritional status of children and mothers to detect under - nutrition early and target support towards the vulnerable households in the communities.

- Scale up the supplementary feeding programs and therapeutic programs to cover vulnerable districts where wasting is high among children and women. The districts where supplementary feeding needs to be scaled up include Kalabo, Lukulu, Shangombo, Nalolo, Chipata, Nyimba, Petauke, Sinda, Mwinilunga, Choma, Gwembe, Namwala, Masaiti, Limulunga, Sioma, Samfya and Zimba. For therapeutic programmes, the districts include Kalabo, Mulobezi, Mongu, Senanga, Shangombo, Kapiri Mposhi, Chadiza, Lundazi, Sinda, Ikelenge, Masaiti, Chama, Mafinga, Mpika, Limulunga, Sikongo Sioma and Siavonga.

Medium term

- Promote food diversification to help in promoting diet diversity among the households
- Promote food storage for consumption and advocate for less sale on food assets from communities who depend on own production for livelihood.
- Promote infant feeding programs in the community.
- Improve the service delivery to reduce childhood illnesses such as diarrhoea and malaria.

5.4. Water, Sanitation and Hygiene

Conclusion

- The population which reported main water sources that were affected (that is lower water level than in previous years same time) is 2, 585,983 people or 430,997 households. The population that reported main water sources which dried up is 1,082,752 people or 180,459 households.
- The worst affected districts were Kaoma, Kalabo, Mitete, Sikongo, Sioma and Luampa (Western Province); Mwinilunga and Ikelenge (North-Western Province); Vubwi, Sinda, Chipta, Chadiza, Petauke and Lundazi (Eastern Province); Zimba, Namwala, Gwembe, Kazungula, Choma, Kalomo (Southern Province); Lufwanyama (Copperbelt Province); and Mafinga and Mpika (Muchinga Province).
- Majority of households in the surveyed districts did not treat their drinking water.
- A large number of households in the assessed districts did not have any toilets and practice open defeacation. The population which reported not having sanitation facilities stood at 927,551 people (154,592 households). Districts where households do not have sanitation facilities were mainly in Western Province.
- Most of the households washed their hands with the commonest scouring agents used being soap and ash.

Recommendations

Short – term (WASH)

In terms of water sources (working in liaison with MMEWD, MLGH, MOCTA, D-WASHE, DDMC and Satellite Disaster Management Committees):

- Assess and search for new water sources in needy areas;
- Drill boreholes in areas where water points (21 percent) have dried and where the distance from household to water point is more than 500m; and
- Continuous monitoring the situation in case of more water points drying out and determining alternative water sources.
- Plan for operation and maintenance of existing water infrastructure.

In terms of sanitation facilities and Hygiene (working with MLGH, MOCTA, MOH, MCDMCH, D-WASHE, DDMC and Satellite Disaster Management Committees):

- Construct demonstration latrines at the schools, health centres, rural community centres (markets, faith centers, and traditional chiefs' palaces) as well as latrines for vulnerable households. Work with households to build robust and appropriate latrine versions from the start, even though the latrines may be basic.
- The government at national, provincial and districts levels should encourage the formation of a practical WASH Chiefdom and Community Action Plans for improving WASH access generally;
- Promoting CLTS, monitoring and maintaining ODF status, maintaining a clean environment generally, and Make use of traditional leaders, local religious leaders and the influence and opportunities they have in bringing messages of personal cleanliness and well-being to their community.
- There is need to increase availability of chlorine at rural health centers level in all the affected districts
    - Create WASH awareness programme

Medium and long term (WASH)

In terms of sanitation facilities and Hygiene (working with MLGH, MOCTA, MOH, MCDMCH, D-WASHE, DDMC and Satellite Disaster Management Committees):

- Community involvement in planning, design and construction of water infrastructure (e.g., small dams and ancillary works) and in watershed management
- Piloting and promoting of water supply and sanitation technology options that are climate resilient.

In terms of sanitation facilities and Hygiene (working with MLGH, MOCTA, MOH, MCDMCH, D-WASHE, DDMC and Satellite Disaster Management Committees):

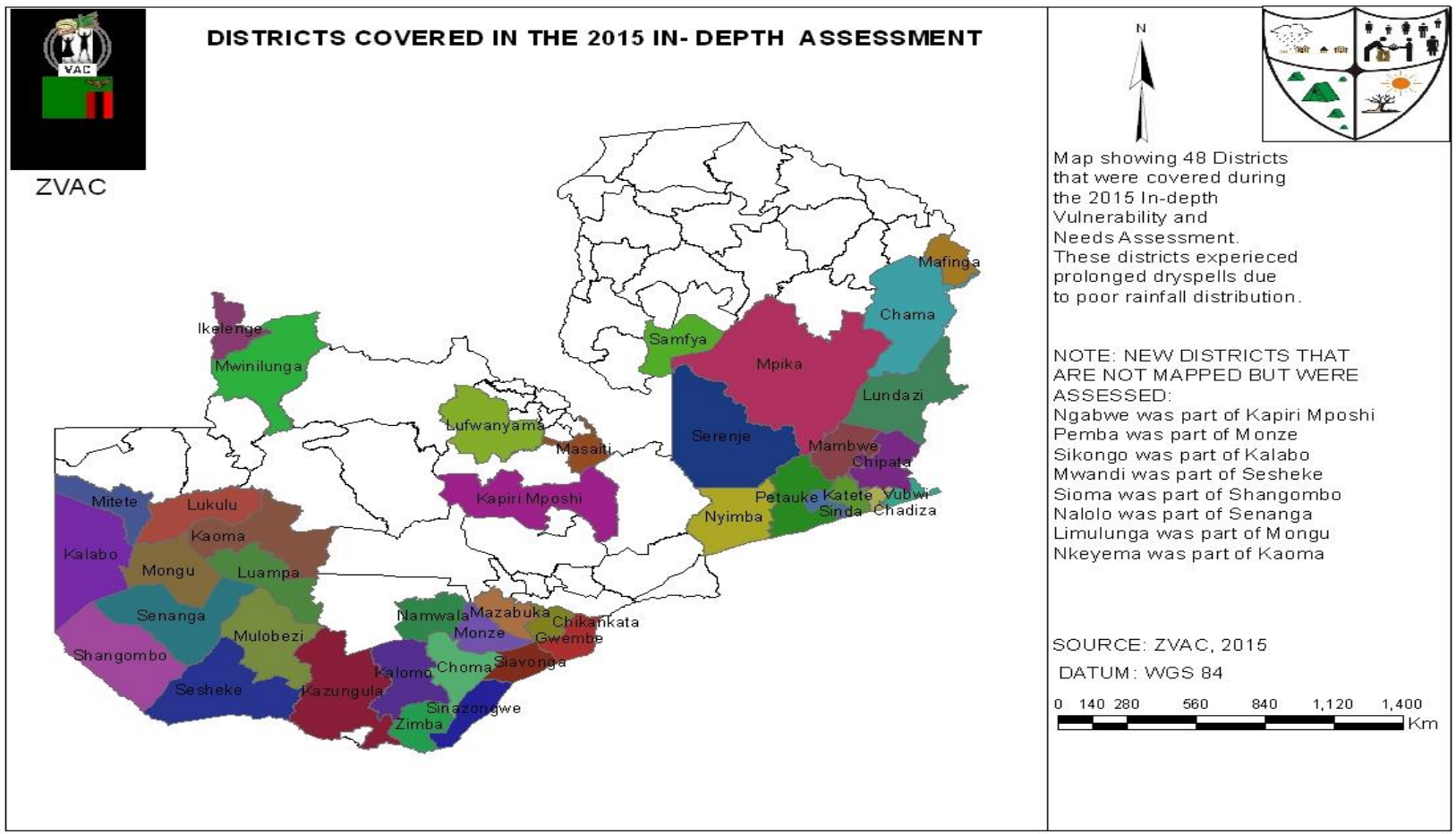
- Provide external technical advice in challenging environments while ensuring full consultation with beneficiaries regarding technical challenges and solutions. Some "Smart" subsidies could be targeted to particularly vulnerable groups (including

cash transfers), or to households facing significant technical and physical challenges to latrine building (mason/ artisan technical support).

- Build sanitation shops at District/Chiefdom level to sell sanitation facilities and give advice on improved sanitation facility construction, operation and maintenance

ANNEXES

Annex 1: Map Showing Districts Visited



Annex 2: Estimated Population of the Sampled Households per District

PROVINCE	DISTRICT	TARGETED POPULATION			VISITED AREAS		
		Total Population	Total Households	SEAs	Households	SEAs	Households
Central	Kapiri Mposhi	232 548	41 918	15	150	15	155
	Ngabwe	21 548	4 059	15	150	5	17
	Serenje	64 432	11 477	15	150	15	151
	Subtotal	**318 528**	**57 454**	**45**	**450**	**35**	**323**
Copperbelt	Lufwanyma	78 503	15 597	15	150	15	152
	Masaiti	103 857	20 511	15	150	15	152
	Subtotal	**182 360**	**36 108**	**30**	**300**	**30**	**304**
Eastern	Chadiza	62 742	11 218	15	150	15	149
	Chipata	455 783	88 065	15	150	15	149
	Katete	160 985	30 686	15	150	15	152
	Lundazi	323 870	62 069	15	150	15	149
	Mambwe	68 918	13 196	15	150	15	147
	Nyimba	85 025	16 040	15	150	15	131
	Petauke	307 889	59 154	15	150	15	141
	Sinda	82 864	16 166	15	150	15	152
	Vubwi	44 585	8 604	15	150	15	152
	Subtotal	**1 592 661**	**305 198**	**135**	**1 350**	**135**	**1 322**
Luapula	Samfya	198 911	39 979	15	150	15	149
	Subtotal	**198 911**	**39 979**	**15**	**150**	**15**	**149**
Muchinga	Chama	103 894	19 420	15	150	11	110
	Mafinga	65 969	12 648	15	150	15	150
	Mpika	203 379	39 956	15	150	15	153
	Subtotal	**373 242**	**72 024**	**45**	**450**	**41**	**413**
NorthWestern	Ikelenge	11 970	69 608	15	150	15	141
	Mwinilunga	92 321	16 836	15	150	15	150
	Subtotal	**104 291**	**86 444**	**30**	**300**	**30**	**291**
Southern	Chikankata	59 909	11 070	15	150	15	149
	Choma	180 673	33 069	15	150	15	150
	Gwembe	53 117	9 846	15	150	15	150
	Kalomo	188 693	31 838	15	150	15	122
	Kazungula	104 731	20 024	15	150	15	150
	Mazabuka	171 063	32 341	15	150	15	149
	Monze	191 872	32 849	15	150	15	149
	Namwala	102 866	16 662	15	150	15	150
	Pemba	67 187	11 414	15	150	15	150
	Siavonga	90 213	17 757	15	150	15	151
	Sinazongwe	101 617	19 721	15	150	15	150
	Zimba	69 877	12 890	15	150	15	152
	Subtotal	**1 381 818**	**249 481**	**180**	**1 800**	**180**	**1 772**
Western	Kalabo	83 442	16 942	15	150	15	119
	Kaoma	189 290	36 068	15	150	15	151
	Limulunga	50 741	10 180	15	150	15	150
	Luampa	43 840	8 422	15	150	15	122
	Lukulu	58 534	16 676	15	150	15	149
	Mitete	27 468	5 446	15	150	15	138
	Mongu	128 844	26 425	15	150	15	156
	Mulobezi	30 482	6 075	15	150	15	143
	Mwandi	25 054	5 065	15	150	15	151
	Nalolo	55 569	10 841	15	150	15	150

PROVINCE	DISTRICT	TARGETED POPULATION			VISITED AREAS		
		Total Population	**Total Households**	**SEAs**	**Households**	**SEAs**	**Households**
	Nkeyema	42 170	10 841	15	150	15	150
	Senanga	70 937	14 321	15	150	15	150
	Sesheke	43 848	9 019	15	150	15	151
	Shang'ombo	54 903	11 503	15	150	15	150
	Sikongo	45 462	9 538	15	150	15	150
	Sioma	38 400	7 526	15	150	15	152
	Subtotal	**988 984**	**204 888**	**240**	**2 400**	**240**	**2 332**
Grand Total		**5 140 795**	**1 051 576**	**720**	**7 200**	**706**	**6 906**

Annex 3: Districts Selected for Provision of Relief Food by Ward

Province	District	FOOD SECURITY STATUS								Percentage Affected	Households Requiring Support	Affected Population	Cereal Requirement-Full Ration (8.33 kg/P/M) August 15 to March 16
		Food Secure		Marginally Food Secure		Moderately Food Insecure		Severely Food Insecure					
		Hhlds	Proportion	Hhlds	Proportion	Hhlds	Proportion	Hhlds	Proportion				
Central	Chitambo										1222	7,329	488
	Serenje	2,089	31.0%	2,074	30.7%	2,219	32.9%	367	5.4%	38.3%	2,586	15,517	1,034
											3,808	**22,846**	**1,522**
Eastern	Chadiza	1,092	16.0%	2,034	29.8%	3,246	47.5%	456	6.7%	54.2%	3,702	22,211	1,480
	Chipata	1,656	12.0%	4,667	33.9%	6,288	45.7%	1,162	8.4%	54.1%	7,450	44,702	2,979
	Katete	2,844	17.3%	5,278	32.1%	6,771	41.2%	1,555	9.5%	50.6%	8,326	49,957	3,329
	Lundazi	7,448	23.0%	14,400	44.4%	8,193	25.3%	2,400	7.4%	32.7%	10,593	63,559	4,236
	Mambwe	1,408	22.1%	2,630	41.2%	1,997	31.3%	343	5.4%	36.7%	2,340	14,041	936
	Nyimba	791	11.5%	1,957	28.5%	3,625	52.8%	492	7.2%	60.0%	4,117	24,701	1,646
	Petauke	1,696	6.5%	6,704	25.7%	14,039	53.9%	3,628	13.9%	67.8%	17,667	106,004	7,064
	Sinda	722	9.0%	1,563	19.5%	3,158	39.4%	2,565	32.0%	71.5%	5,723	34,337	2,288
	Vubwi	425	9.8%	1,279	29.6%	2,117	49.0%	499	11.6%	60.6%	2,616	15,694	1,046
											62,534	**375,205**	**25,004**
Luapula	Samfya	4,424	17.8%	9,568	38.6%	8,289	33.4%	2,532	10.2%	43.6%	10,821	64,926	4,327
North Western	Ikelenge	645	18.2%	1,267	35.7%	1,263	35.6%	373	10.5%	46.1%	1,636	9,818	654
Southern	Chikankata	1,653	25.0%	2,546	38.5%	2,303	34.8%	111	1.7%	36.5%	2,413	14,480	965
	Gwembe	630	11.0%	2,744	47.8%	1,996	34.8%	368	6.4%	41.2%	2,363	14,179	945
	Kazungula	3,257	24.6%	5,727	43.2%	3,898	29.4%	374	2.8%	32.2%	4,272	25,631	1,708
	Pemba	1,339	20.0%	2,823	42.3%	2,252	33.7%	266	4.0%	37.7%	2,519	15,112	1,007

Province	District	FOOD SECURITY STATUS								Percentage Affected	Households Requiring Support	Affected Population	Cereal Requirement-Full Ration (8.33 kg/P/M) August 15 to March 16
		Food Secure		Marginally Food Secure		Moderately Food Insecure		Severely Food Insecure					
		Hhlds	Proportion	Hhlds	Proportion	Hhlds	Proportion	Hhlds	Proportion				
	Sinazongwe	2,722	26.8%	3,905	38.5%	2,695	26.6%	815	8.0%	34.6%	3,510	21,062	1,404
											25,898	**155,389**	**10,355**
Western	Kalabo	576	7.3%	2,824	35.9%	2,869	36.4%	1,604	20.4%	56.8%	4,473	26,836	1,788
	Kaoma	8,081	27.2%	11,559	38.9%	8,322	28.0%	1,779	6.0%	34.0%	10,101	60,605	4,039
	Mulobezi	822	22.7%	1,179	32.5%	1,373	37.8%	255	7.0%	44.9%	1,628	9,769	651
	Senanga	726	10.0%	2,979	41.1%	2,578	35.5%	974	13.4%	48.9%	3,552	21,310	1,420
	Sesheke	1,431	30.4%	1,822	38.7%	1,251	26.6%	204	4.3%	30.9%	1,455	8,730	582
	Shangombo	673	12.7%	2,255	42.4%	1,793	33.7%	598	11.2%	45.0%	2,391	14,347	956
	Nalolo	867	15.9%	1,503	27.5%	2,241	41.0%	860	15.7%	56.7%	3,101	18,604	1,240
	Limulunga	1,466	28.5%	1,032	20.1%	1,955	38.0%	692	13.5%	51.5%	2,647	15,881	1,058
Western	Nkeyema	-	.0%	25	100.0%	-	.0%	-	.0%	.0%	1,757	10,543	703
	Sikongo	83	1.5%	897	16.7%	2,811	52.5%	1,564	29.2%	81.7%	4,375	26,248	1,749
	Sioma	440	9.8%	1,490	33.2%	1,720	38.4%	835	18.6%	57.0%	2,555	15,328	1,021
	Mwandi	878	31.1%	1,097	38.9%	675	24.0%	169	6.0%	29.9%	844	5,065	338
	Luampa	202	17.7%	533	46.8%	236	20.7%	168	14.8%	35.5%	404	2,425	162
											40,918	**245,507**	**16,361**
TOTAL											**133,158**	**798,948**	**53,241.90**

Annex 4: Districts Requiring Support broken into Wards

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
Central	**Chitambo**						**488**		
		Mpelembe					44	16	27
		Luombwa					48	18	30
		Chalilo					171	64	107
		Chitambo					225	84	141
	Sub - total						**488**	**183**	**305**
	Serenje		**2,219**	**32.90%**	**367**	**5.40%**	**1,034**		
		Chisomo	109		18			7	44
		Mailo	312		52			21	125
		Kanona	269		45			18	108
		Serenje	223		37			15	89
		Kabansa	34		6			2	14
		Lukasashi	151		25			10	60
		Sancha	225		37			15	90
		Chibale	325		54			22	130
		Masaninga	570		94			38	228
	Sub - total		**2,219**		**367**		1,034	**147**	**887**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
Eastern	**Chadiza**		**3,246**	**47.50%**	**456**	**6.70%**	**1,480**		
		Chamandala	1,074		151			60	429
		Kampini	1,134		159			64	453
		Taferansoni	1,039		146			58	415
	Sub - total		**3,246**		**456**			**182**	**1,298**
	Vubwi		**2,117**	**49.00%**	**499**	**11.60%**	**1,046**		
		Mbozi	326		77			31	130
		Zozwe	718		169			68	287
		Mlawe	386		91			36	154
		Vubwi	687		162			65	275
	Sub - total		**2,117**		**499**			**200**	**846**
	Chipata		**6,288**	**45.70%**	**1,162**	**8.40%**	**2,979**		
		Nsingo	2,365		437			175	946
		Khova	1,128		208			83	451
		Chikando	2,795		516			207	1,117
	Sub - total		**6,288**		**1,162**			**465**	**2,514**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Katete		**6,771**	**41.20%**	**1,555**	**9.50%**	**3,329**		
		Chimwa	280		64			26	112
		Dole	1,480		340			136	592
		Kafumbwe	1,190		273			109	476
		Katiula	1,572		361			144	629
		Kazala	1,378		317			127	551
		Milanzi	871		200			80	348
	Sub - total		**6,771**		**1,555**			**622**	**2,707**
	Lundazi		**8,193**	**25.30%**	**2,400**	**7.40%**	**4,236**		
		Chimaliro	978		287			115	391
		Chilola	992		290			116	397
		Kapirisanga	1,011		296			118	404
		Lumimba	802		235			94	321
		Lunevwa	1,443		423			169	577
		Luwelezi	450		132			53	180
		Magodi	1,637		479			192	654
		Ndonda	880		258			103	352
	Sub - total		**8,193**		**2,400**			**960**	**3,276**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Mambwe		**1,997**	**31.30%**	**343**	**5.40%**	**936**		
		Chipapa	246		42			17	98
		Jumbe	255		44			17	102
		Kakumbi	731		126			50	292
		Malama	25		4			2	10
		Mkanya	343		59			24	137
		Nsemfu	397		68			27	159
	Sub - total		**1,997**		**343**			**137**	**799**
	Nyimba		**3,625**	**52.80%**	**492**	**7.20%**	**1,646**		
		Chinsimbwe	153		21			8	61
		Katipa	182		25			10	73
		Ng'ombe	822		112			45	328
		Chamilala	661		90			36	264
		Chinambi	1,442		196			78	576
		Luangwa	365		50			20	146
	Sub - total		**3,625**		**492**			**197**	**1,449**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Petauke		**14,039**	**53.90%**	**3,628**	**13.90%**	**7,064**		
		Lusangazi	756		195			78	302
		Ukwimi	3,108		803			321	1,243
		Chisangu	2,704		699			279	1,081
		Mawanda	4,087		1,056			422	1,634
		Mateyo Mzeka	3,384		875			350	1,353
	Sub - total		**14,039**		**3,628**			**1,451**	**5,613**
	Sinda		**3,158**	**39.40%**	**2,565**	**32.00%**	**2,288**		
		Kamwaza	280		228			91	112
		Nchingilizya	195		158			63	78
		Lwandazi	311		253			101	124
		Chiwuyu	340		276			110	136
		Sinda	527		428			171	211
		Mnyamanzi	207		168			67	83
		Nyamasonkho	383		311			124	153
		Mungomba	399		324			129	159
		Kasandazi	365		296			118	146
		Chitawe	151		123			49	60
	Sub - total		**3,158**		**2,565**			**1,025**	**1,263**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
Luapula	**Samfya**		**8,289**	**33.40%**	**2,532**	**10.20%**	**4,327**		
		Chinkutila	943		288			115	377
		Chishi	443		135			54	177
		Isamba	773		236			94	309
		Kapata	1,504		459			184	601
		Kapilibila	321		98			39	128
		Kasaba	1,028		314			125	411
		Kasongole	606		185			74	242
		Katanshya	953		291			116	381
		Lumamya	480		147			59	192
		Mbabala	458		140			56	183
		Musaba	780		238			95	312
	Sub - total		**8,289**		**2,532**			**1,012**	**3,315**
North Western	**Ikelenge**		**1,263**	**35.60%**	**373**	**10.50%**	**654**		
		Ikelenge	336		99			40	134
		Jimbe	163		48			19	65
		Mukangala	189		56			22	76
		Mwininyilamba	220		65			26	88
		Nyakaseya	354		105			42	142
	Sub - total		**1,263**		**373**			**149**	**505**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
Southern	**Chikankata**		**2,303**	**34.80%**	**111**	**1.70%**	**965**		921
		Chitete	483		23			9	193
		Kasengo	301		14			6	120
		Mabwe Atuba	582		28			11	233
		Musaya	55		3			1	22
		Namalundu	370		18			7	148
		Upper Kaleya	512		25			10	205
	Sub - total		**2,303**		**111**			**44**	**921**
	Gwembe		**1,996**	**34.80%**	**368**	**6.40%**	**945**		
		Bbondo	611		113			45	244
		Chibuwe	406		75			30	162
		Kkoma	394		73			29	158
		Kota Kota	75		14			6	30
		Luumbo	271		50			20	109
		Sinafala	140		26			10	56
		Siampande	99		18			7	40
	Sub - total		**1,996**		**368**			**147**	**798**
	Kazungula		**3,898**	**29.40%**	**374**	**2.80%**	**1,708**	150	
		Chooma	270		26			10	108
		Katapazi	291					11	

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
					28				116
		Kauwe	257		25			10	103
		Mandia	475		46			18	190
		Mukuni	447		43			17	179
		Moomba	113		11			4	45
		Musokotwane	227		22			9	91
		Nguba	413		40			16	165
		Ngwezi	453		43			17	181
		Nyawa	450		43			17	180
		Sekute	150		14			6	60
		Sikauzwe	352		34			14	141
	Sub - total		**3,898**		**374**			**150**	**1,558**
	Pemba		**2,252**	**33.70%**	**266**	**4.00%**	**1,007**		
		Habunkululu	159		19			7	64
		Hamaundu	653		77			31	261
		Kasiya	435		51			20	174
		Kauba	253		30			12	101
		Maambo	437		52			21	175
		Nachibanga	316		37			15	126

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Sub - total		**2,252**		**266**			**106**	**901**
	Sinazongwe		**2,695**	**26.60%**	**815**	**8.00%**	**1,404**		
		Maamba	259		78			31	104
		Mabinga	21		6			3	9
		Malima	168		51			20	67
		Muchekwa	175		53			21	70
		Muuka	124		38			15	50
		Mweemba	307		93			37	123
		Mweenda	140		42			17	56
		Mweezya	468		141			57	187
		Namazambwe	141		43			17	56
		Nangombe	162		49			20	65
		Nkandabwe	182		55			22	73
		Sinazongwe	292		88			35	117
		Sinenge	213		64			26	85
		Tekelo	43		13			5	17
	Sub - total		**2,695**		**815**			**326**	1,078
Western	**Kalabo**		**2,869**	**36.40%**	**1,604**	**20.40%**	**1,788**	641	1,147

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
		Luanginga	304		170			68	122
		Buleya	158		88			35	63
		Ndoka	296		166			66	119
		Namulilo	274		153			61	110
		Nguma	151		84			34	60
		Lutwi	215		120			48	86
		Kandambo	129		72			29	52
		Yuka	276		155			62	111
		Liumba	124		69			28	50
		Mapungu	134		75			30	54
		Likulundundu	78		43			17	31
		Salunda	114		64			26	46
		Sishekanu	203		114			45	81
		Luola	65		36			14	26
		Libonda	265		148			59	106
		Siluwe	82		46			18	33
	Sub - total		**2,869**		**1,604**			**641**	**1,147**
	Kaoma		**8,322**	**28.00%**	**1,779**	**6.00%**	**4,039**		
		Kanabilumbu	240		51			20	96

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
		Kapili	172		37			15	69
		Lalafuta	507		108			43	203
		Longe	577		123			49	231
		Luambuwa	557		119			48	223
		Mangango	391		84			33	156
		Mulamatila	1,692		362			145	677
		Mushwala	1,282		274			110	513
		Naliele	530		113			45	212
		Namafulo	1,269		271			108	507
		Shikombwe	506		108			43	202
		Shitwa	601		128			51	240
	Sub - total		**8,322**		**1,779**			**711**	**3,328**
	Mulobezi		**1,373**	**37.80%**	**255**	**7.00%**	**651**		
		Kamanga	150		28			11	60
		Luamuloba	177		33			13	71
		Mulobezi	199		37			15	80
		Machile	161		30			12	65
		Nawinda	228		42			17	91
		Sichili	458		85			34	183

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Sub - total		**1,373**		**255**			**102**	**549**
	Senanga		**2,578**	**35.50%**	**974**	**13.40%**	**1,420**		
		Imatanda	808		305			122	323
		Imatongo	352		133			53	141
		Lumbe	186		70			28	74
		Mwanambuyu	510		193			77	204
		Naluywa	274		104			41	110
		Sibukali	224		85			34	90
		Wanyau	224		85			34	90
	Sub - total		**2,578**		**974**			**389**	**1,031**
	Sesheke		**1,251**	**26.60%**	**204**	**4.30%**	**582**		
		Imusho	65		11			4	26
		Kalobolelwa	145		24			10	58
		Luampungu	138		22			9	55
		Lusu	90		15			6	36
		Maondo	241		39			16	96
		Mulimambango	572		93			38	229
	Sub - total		**1,251**		**204**			**82**	500

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Shangombo		**1,793**	**33.70%**	**598**	**11.20%**	**956**		
		Kaunga Mashi	154		51			21	62
		Kayana	206		69			27	82
		Mambolomoka	370		123			49	148
		Mulonga	296		99			40	119
		Sikabenga	285		95			38	114
		Simu	228		76			30	91
		Sipuma	253		84			34	101
	Sub - total		**1,793**		**598**			**239**	**717**
	Nalolo		**2,241**	**41.00%**	**860**	**15.70%**	**1,240**		
		Lyamakumba	467		179			72	187
		Silowana	274		105			42	110
		Shekela	293		112			45	117
		Makoka	259		99			40	104
		Kambai	267		102			41	107
		Kataba	187		72			29	75
		Muoyo	213		82			33	85
		Nanjucha	280		107			43	112

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Sub - total		**2,241**		**860**			**344**	**896**
	Limulunga		**1,955**	**38.00%**	**692**	**13.50%**	**1,058**		
		Limulunga	561		199			79	224
		Mabili	152		54			21	61
		Ikwichi	141		50			20	56
		Namboma	211		75			30	84
		Nangula	469		166			66	187
		Ushaa	190		67			27	76
		Simaa	177		63			25	71
		Ndanda	55		20			8	22
	Sub - total		**1,955**		**692**			**277**	**781**
Western	**Nkeyema**		**-**	**0.00%**	**-**	**0.00%**	**703**		
		Litoya						56	94
		Namilangi						133	222
		Nkeyema						74	123
	Sub - total							**263**	**439.07**
	Sikongo		**2,811**	**52.50%**	**1,564**	**29.20%**	**1,749**	625	

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
		Licha	529		295			118	212
		Liumena	428		238			95	171
		Lueti	563		313			125	225
		Lulangunyi	161		90			36	64
		Lwambi	103		57			23	41
		Maala	370		206			82	148
		Mutala	103		58			23	41
		Mwenyi	233		130			52	93
		Tuuwa	320		178			71	128
	Sub - total		**2,811**		**1,564**			**625**	**1,124**
	Sioma		**1,720**	**38.40%**	**835**	**18.60%**	**1,021**		
		Beshe	122		59			24	49
		Kalongola	132		64			26	53
		Mbeta	590		286			115	236
		Mutomena	490		238			95	196
		Nalwashi	146		71			28	58
		Sioma	240		116			47	96
	Sub - total		**1,720**		**835**			**334**	**687**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
	Mwandi		**675**	**24.00%**	**169**	**6.00%**	**338**		
		Loanja	88		22			9	35
		Lwazamba	126		31			13	50
		Mabumbu	109		27			10	44
		Magumwi	79		20			8	31
		Mushukula	96		24			10	38
		Mwandi	108		27			11	43
		Sankolonga	42		11			4	17
		Simungoma	28		7			3	11
	Sub - total		**675**		**169**			**67**	**270**
	Luampa		**236**	**20.70%**	**168**	**14.80%**	**162**	67	95
		Luampa	54		39			15	22
		Mbanyutu	16		11			4	6
		Mulwa	34		24			10	14
		Namando	10		7			3	4
		Nkenga	74		52			21	30
		Nyambi	49		35			13	20
	Sub - total		**236**		**168**			**66**	**95**

Province	District	Affected Wards	Food Security Situation				Cereal Requirement- Full Ration (8.33 kg/P/M) August 15 to March 16	Cereal Requirement (August - October 2015)	Cereal Requirement (Nov 2015 - March 2016)
			Moderately Food Insecure		Severely Food Insecure				
			Hhlds	Propn	Hhlds	Propn		Ration (Mt)	Ration (Mt)
TOTAL							**53,241.90**	**11,643.96**	**41,597.98**

Annex 4: Assessment Team Composition

Team	Province	Districts	Names
1	Central and Luapula	Samfya , Serenje and Ngabwe	**Team Leader:** Duncan Musama **Team Members:** Oliver Malupande Batesheba Musonda Orbrie Chewe
2	Central and Copperbelt	Kapiri Mposhi, Lufwanyama and Masaiti	**Team Leader:** Elijah Sanga **Team Members** Daisy Namuyemba Constance Ngwane Brian Bwalya
3	Eastern	Vubwi,Chipata and Chadiza	**Team Leader:** Adrian Phiri **Team Members:** Mercy Mbewe Lawrence Phiri Albert Sichivula
4	Eastern	Lundazi, Mambwe and Katete	**Team Leader:** Bisa Bwalya **Team Members** Emma Nyirenda Muunga T. Maunga Felix Mwale

Team	Province	Districts	Names
5	Eastern	Petauke ,Nyimba ,Sinda	**Team Leader:** Francis Zulu **Team Members:** Allan Siwakwi Mark Denga Siyabonga Phiri
6	Muchinga	Chama,Mafinga,Mpika	**Team Leader:** Boniface Kanjere **Team Members:** Emmanuel Chibwe Lloyd Chiyana Chibwe Kabaso
7	North-Western	Ikelenge and Mwinilunga	**Team Leader:** Patricia Sakala **Team Members:** Humphrey Luwaya Martin Nsakanya Quine Chiti
8	Southern	Kazungula,Kalomo,Zimba	**Team Leader:** Erwin Miyoba **Team Members:** Martin Mwanza Cyrus Mwape Cathrine Mumba
9	Southern	Namwala,Choma and Gwembe	**Team Leader:** Claudius Hakapya **Team Members:** Rachael Banda

Team	Province	Districts	Names
			Moono Mutambwa Mwanida Mugala
10	Southern	Pemba,Monze and Sinazongwe	**Team Leader: Robert Mwanza** **Team Members:** James Kamocha Angela Bwalya Muka Mutale
11	Southern	Siavonga, Mazabuka and Chikankata	**Team Leader:** Steven Kateshi **Team Members:** Gift Himuhya Rhoda Sichone Temwani Nyasulu
12	Western	Kalabo and Sikongo	**Team Leader:** Joseph Pupe **Team Members:** Earnest Lilengo Romeo Muchelemba Musonda Chibwe
13	Western	Sesheke, Mulobezi and Mwandi	**Team Leader:** Victor Sinyangwe **Team Members:** Mulele Namasiku Prudence Ng'oma Chileshe Musonda

Team	Province	Districts	Names
14	Western	Sioma and Shangombo	**Team Leader:** Cuthbert Kapumpe **Team Members:** Nchimunya Chiiya Benjamin Shawa Charity Mwewa
15	Western	Senanga, Nalolo and Limulunga	**Team Leader:** Robinson Mtonga **Team Members:** Charity Siyanga Diana Hambote Paphild Munachonga
16	Western	Mitete, Lukulu and Mongu	**Team Leader:** Christopher Chitembo **Team Members:** Mwauluka Lubinda Fredrick Nyirenda Cathrine Musonda Mwape
17	Western	Kaoma, Luampa and Nkeyema	**Team Leader:** Quintine Hamonga **Team Members** Fabian Mubuyaeta Caroline Malambo Edgars Kaheha

Annex 5: Editorial Team

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