Emergency Food Security Assessment (EFSA) Malawi

July 2014

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Table of Contents

Acknowledgements 4
EXECUTIVE SUMMARY 6
1 INTRODUCTION 8
1.1 Food Security Conceptual Framework 9
1.2 Scope of the Emergency Food Security Assessment 10
1.3 Objectives of the Assessment 10
1.3.1 Specific objectives 11
2 Methodology 11
2.1 Study Design 11
2.2 Sampling 11
3 Results 12
3.1 Demographics and physical assets 12
3.1.1 Demographics 12
3.1.2 Physical capital 12
3.2 Emergency Food Security Assessment Findings 13
3.2.1 Food Security Classifications 13
3.2.2 Food Consumption Patterns 13
3.2.3 Coping Strategies 14
3.2.4 Expenditure on food 16
3.2.5 Food Sources 17
3.2.6 Livelihood Activities 18
3.2.7 Asset ownership 19
3.2.8 Agriculture and Livestock 21
3.2.9 Main Shocks 24
3.2.10 External Assistance 24
3.3 Nutrition 25
3.3.1 Distribution of Age and Sex of Sample Children 25
3.3.2 Child Nutritional Status 26
3.3.3 Childhood feeding 28
3.3.4 Child Morbidity 0
3.3.5 Vitamin A Supplementation and Measles Vaccination Coverage 0
3.3.6 Water and sanitation 0
4 Conclusion and Recommendation 1
4.1.1 Short term intervention 1

4.1.2 Medium to long term intervention 1
5 Bibliography 2
6 Annex 1 ..... **Error! Bookmark not defined.**

Table of Figures

Figure 1: Maize Price trend (1US$ = MK394) 8
Figure 3: Food Consumption Pattern 14
Figure 4: Mean Coping Strategy Index 14
Figure 5: Percentage of Households engaging in Coping Strategies 15
Figure 6: Household share of food expenditure 17
Figure 9: Livelihood Sources by food consumption categories 19
Figure 10: Livelihood Sources by Food Consumption Categories in the Poor Category **Error! Bookmark not defined.**
Figure 11: Asset Ownership 20
Figure 12: Asset ownership category by gender 20
Figure 13: Crop production 21
Figure 14: Proportion of households cultivating maize 22
Figure 15: Average maize production 22
Figure 16: proportion of households cultivating cash crops 23
Figure 17: Livestock Ownership 23
Figure 18: Shocks Experienced by Households 6 months prior to the 2014 EFSA 24
Figure 19: Prevalence of malnutrition by district June 2014 27
Figure 19: Dietary diversity over the 24 hour period in children under 5 years 30
Figure 21:Toilet facility 0

Table of Tables

Table 1:Education Levels 12
Table 2: Type of housing construction material 12
Table 5:Distribution of age and sex of children 6-59 months for all 15 districts 26
Table 6: Breastfeeding Practices for the youngest under-five child by district (percent) 28
Table 7: Vitamin A Supplementation and Measles Vaccination Coverage 0

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Acronyms and Abbreviations

APES	Agricultural Production Estimate Survey
CARI	Consolidated Approach for Reporting Indicators of Food Security
CSI	Coping Strategy Index
EFSA	Emergency Food Security Assessment
FAO	Food and Agriculture Organisation
FCS	Food Consumption Score
FISP	Farm Inputs Subsidized Programme
HEA	Household Economy Approach
LUANAR	Lilongwe University of Agriculture and Natural Resources
MoAIWD	Ministry of Agriculture, Irrigation and Water Development
MVAC	Malawi Vulnerability Assessment Committee
INGOs	International Non-Governmental Organizations
NSO	National Statistical Office
UNICEF	United Nations Children's Funds
UNRCO	United Nations Resident Coordinator's Office
VAM	Vulnerability Analysis and Mapping
WFP	World Food Programme
WASH	Water, Sanitation and Hygiene

1 EXECUTIVE SUMMARY

Introduction:

The Emergency Food Security Assessment (EFSA) was carried out in June 2014. The main objective of the assessment was to find out the primary causes leading to food insecurity in the country, as well as determine the nutritional status of under-five children.

Food security assessments in Malawi are carried out through the Household Economy Approach (HEA) which provides indications of food requirements and projections of numbers of people who would need food assistance during a particular consumption season. The EFSA approach was applied with the objective of expanding the coverage of indicators that were not gathered through HEA including the food consumption score, coping strategy index and nutrition information at household level. This is the second year that the EFSA has been carried out in Malawi. The first was carried out in 2013.

The EFSA is coordinated by the Malawi Vulnerability Assessment (MVAC) whose membership comprises staff from various government ministries/departments, INGOs and UN agencies such as WFP, UNICEF, FAO, the UNRCO and also Lilongwe University of Agriculture and Natural Resources (LUANAR) Bunda College.

Information was collected from 3,000 households in 15 districts, considered to be likely food insecure during 2014/15 consumption season, after consultation with the Ministry of Agriculture. Irrigation and Water development (MoAIWD). Additionally, A total of 3,433 children aged 6 to 59 months were sampled in all the 15 districts.

Key findings:

The key findings of the Emergency Food Security Assessment are as follows:

- On average 6% of households in the assessed districts had a poor consumption. Nsanje district had a considerable percentage of households (18%) in the poor consumption group, followed by Blantyre (12%), Chikwawa and Machinga with 10% each.
- Coping Strategy Index (CSI) was at 7 similar to that of 2013 (7.2). At district level, CSI for Karonga increased to 11 from 6 in 2013 and to 6 from 4 in Rumphi district. On the other hand, some districts reduced their CSI from the 2013 results i.e. Dedza from 9 to 4, Balaka 9 to 5 and Chikwawa from 9 to 5.
- Overall, the percentage of households engaging in coping strategies seven days prior to the assessment has reduced slightly in the 2014 EFSA results compared to the 2013 EFSA with notable figures in Dedza, 65% from 73% and Chikwawa at 75% from 83%. Nsanje remains the district with the highest percentage of households engaged in various coping strategies (87%).
- 11 districts had stunting prevalence rate among children ranging from 41.8 to 61.5 percent. The highest stunting rates were found in Mulanje (61.6 percent), followed by Mwanza (48.7 percent) and Neno (48.4 percent)
- Prevalence of acute malnutrition was relatively low in most districts except for Karonga with wasting prevalence rate of 4.1 percent. On the other hand, underweight which is a composite indicator, was highest in Lilongwe (20.7 percent).

The Emergency Food Security Assessment findings show that Malawi still faces food insecurity despite registering surpluses over the past few years. This is evidenced by the fact that most households (77%) spend over 50% of their income to purchase food, and that purchase is the main source of food for most households making them vulnerable to price instability. Households engaging in coping strategies remain high in most districts and thus making it hard for households to concentrate on other household activities such as investments.

Persistent droughts, dry spells and floods in some areas make households vulnerable to food insecurity as they can no longer rely entirely on own production. Uncertainties in growing seasons also contribute to high prices of staple foods because some people will hold on to their staple until prices have gone up so they can make more profit.

Since in most of these vulnerable districts malnutrition is associated with both acute and chronic causes, it is important to provide food as a short term solution of food security for those that are acutely in need. In order to solve the factors that contribute to chronic malnutrition, there is need to design long term solutions that will eventually lead to self-sustenance for local communities.

The government of Malawi and its partners in the food security and nutrition should increase efforts to encourage a resilience approach to livelihoods in order to address the multi-dimensional aspects of chronic food and nutrition insecurity.

Recommendations

- Since in most of these vulnerable districts malnutrition is associated with both acute and chronic causes, it is important to provide food as a short term solution for those that are acutely in need such as close monitoring so that timely food and/or cash assistance can be provided to needy households where necessary and feasible; and targeted nutrition interventions and training for mothers on child care practices.
- In order to solve the factors that contribute to chronic malnutrition, there is need to design long term solutions that will eventually lead to self-sustenance for local communities. These activities may include the following:
    - Promotion of irrigation to reduce reliance on rain fed agriculture, where flooding is the main cause of vulnerability, the residual moisture and irrigation should be promoted.
    - Intensify promotion of conservation agriculture, reforestation, crops diversification and dietary diversification.
    - Government should promote integrated programmes (small stock, aquaculture, horticulture, WASH) that include factors that address acute and chronic causes of malnutrition.
    - Conduct rapid follow up food security and nutrition assessment later in the year using secondary data such as monthly trends on proportion of children on different feeding programmes.

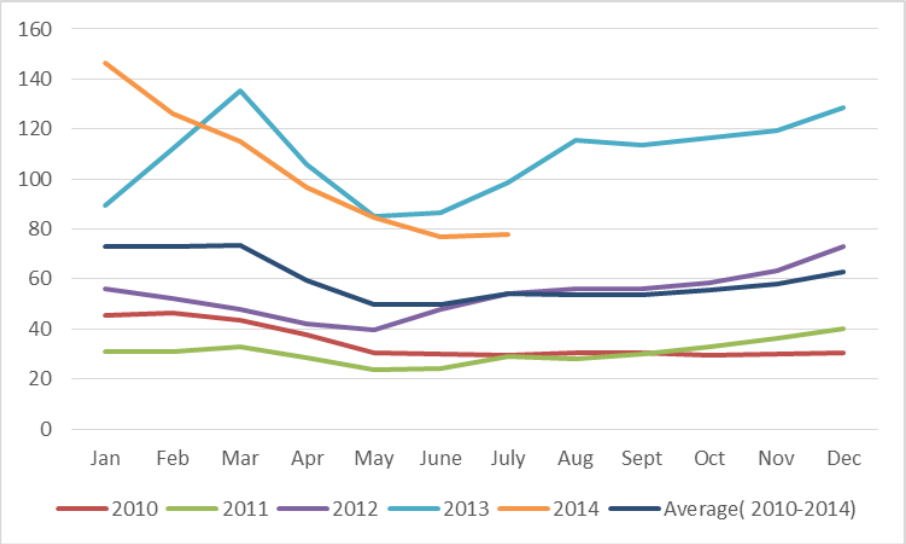
2 INTRODUCTION

Malawi has been realizing a national maize surplus for the past five years. Despite this, some districts have also been facing persistent food insecurity situations requiring humanitarian assistance operations. This mainly is a result of acute food shortages due to erratic rainfall and prolonged dry spells. The acute food insecurity continues to portray as a major shock for the country. Various humanitarian partners have supported the Government in providing humanitarian assistance to affected people yearly. The situation is exacerbated by the environmental, economic, and population pressures. Households in the most food insecure districts persistently face both acute and chronic food insecurity and malnutrition. Degradation of natural resources compounded by natural disasters such as floods, prolonged dry spells and droughts have significantly contributed to high levels of food insecurity. High population density, high dependence on rain-fed agriculture, and limited economic diversification alongside economic shocks further increase vulnerability in the country.

The 2013/2014 agriculture season was characterized by delayed onset of planting rains by 3-4 weeks in almost all districts. In addition, dry spells of more than 2 to 3 weeks were observed in most districts of the country. This resulted in reduced crop production, which limits household food stocks and ganyu labour (Piece work) opportunities. Furthermore, households' access to food is limited by low wages and high food prices. The majority of households spend more than 65 percent of their total monthly expenditure on food which makes them extremely vulnerable to price increases. Incomes are constantly eroded by the high inflation rates that stood at 27.9 percent in June 2013.

Prices for the 2013/14 season started rising unusually as early as May, 2013, a few months after harvest which is a deviation from the normal trend. By June the price had reached MK86/kg from the previous year's price of MK48/kg (fig 1) according to the Ministry of Agriculture, Irrigation and Water Development data.

Figure 1: Maize Price trend (1US$ = MK394)



The sharp rise was attributed to the depreciation of the Malawi Kwacha against US$ in 2012 which resulted in increased cost of living. The average price of maize for June 2014 was the same as that of June 2013, but by July 2014, the prices started to go down unlike 2013. Prices during the peak of the hungry season in 2014 were much lower and this was due to availability of maize grain in the Agricultural Development and Marketing Corporation (ADMARC) market throughout the lean season. Maize in the ADMARC markets were selling at MK80/kg and this influenced traders on the local

markets not to sell their maize higher than the ADMARC price if they were to sell. This coupled with a better harvest this year has facilitated prices stabilization on the market in the current season.

The Ministry of Agriculture, Irrigation and Water Development (MoAIWD) third round Agricultural Production Estimate Survey (APES) results for (2013/14 season indicated a national surplus production of about 1 million metric tons; however, there were pockets of low production in certain districts due to prolonged dry spells. This has affected households in some Traditional Authorities (TAs). In addition, the national surplus production does not necessarily lead to equitable distribution of the food to all people. The affected food insecure populations need to access food through markets. Food access becomes very challenging for the affected households that do not have reliable sources of income. These households require humanitarian assistance to access the food. Hence it is vital to conduct a food security assessment to determine the areas and population that will be affected during the 2014/2015 consumption season.

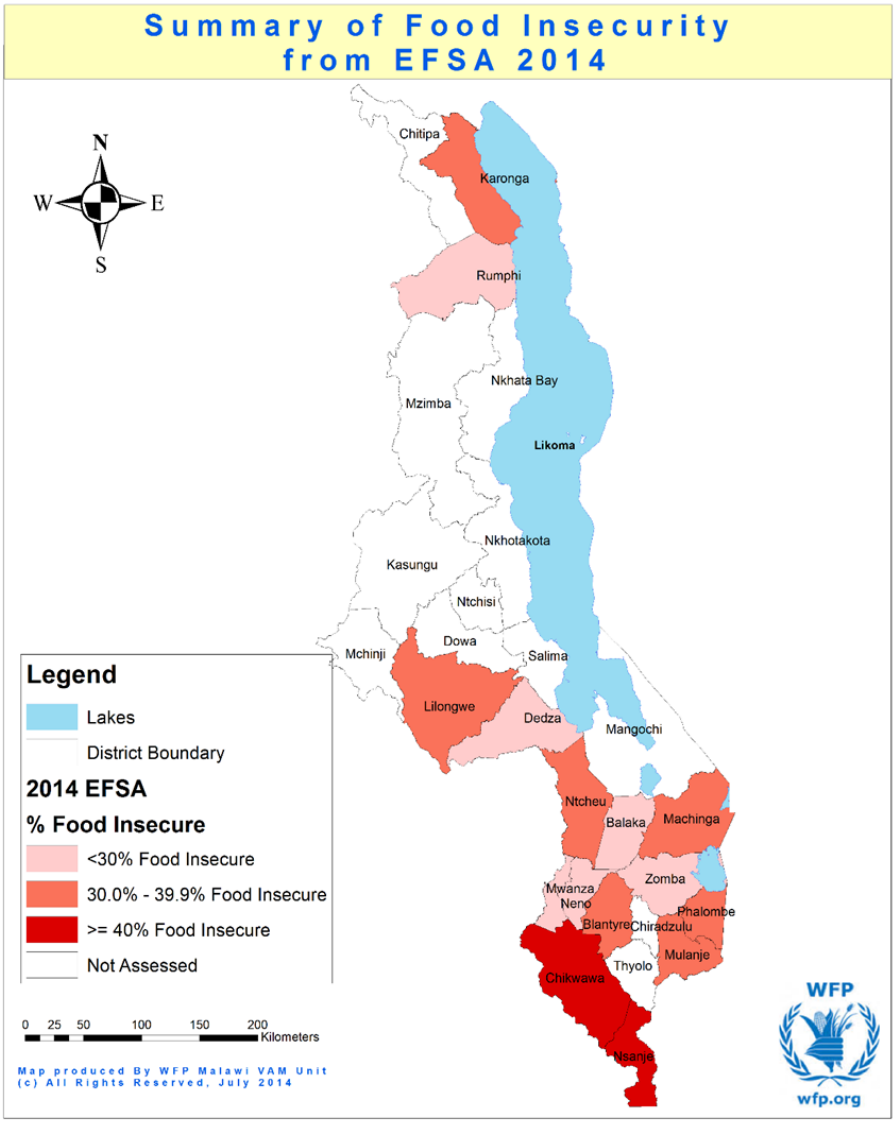
The World Food Programme (WFP) and the United Nations Children's Fund (UNICEF) in coordination with the Malawi Vulnerability Assessment Committee (MVAC) conducted an Emergency Food Security Assessment (EFSA) to establish levels of food insecurity and nutrition status. EFSA complemented findings from the Household Economy Approach (HEA) that was conducted concurrently by MVAC. The HEA approach is designed to identify the most vulnerable of the food insecure who are most likely to have food deficits in the coming year with the data being collected at the community level, and locations of the most vulnerable being identified by various key informants. The MVAC has identified the need to increase the understanding of food insecurity. With support from WFP and UNICEF, the EFSA has been used to collect household data, that is statistically representative at the district level on a wider range of food security indicators, as well as nutritional outcomes, that are not collected using HEA methodology. These include, Food Consumption Score (FCS), Coping Strategy Index (CSI), expenditure patterns, and levels of acute malnutrition to provide holistic analysis of food and nutrition security situation of the assessed districts. The EFSA provides a standardised analysis of food insecurity that permits comparison of indicators over time, between districts, and with other countries in the region. Furthermore, these indicators are part of other regional and global systems for monitoring and describing food insecurity, such as the Integrated Food Security Phase Classification (IPC) report.

2.1 Food Security Conceptual Framework

Food security is when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs, and food preferences for an active and healthy life. However, this is not always the case as there will usually be populations that are food insecure

During the 2014 EFSA, 15 districts were assessed and found to be food insecure with a variation in the magnitude of the food security according to the CARI as shown in figure 2.

Figure 2: Map showing 2014 EFSA Food Insecurity districts



2.2 Scope of the Emergency Food Security Assessment

The Emergency Food Security Assessment was carried out from the 10th to 22nd June 2014. The assessment was conducted in 15 districts of the country that were expected to be food insecure during the consumption season 2014/2015, according to the Joint FEWSNET/WFP/MoAIWD/Meteorological Department food security monitoring report; MVAC and also MoAIWD reports. The districts included Karonga and Rumphi in the northern region, Lilongwe, Ntcheu and Dedza in the central region, Balaka, Machinga, Zomba, Chikwawa, Phalombe, Mulanje, Blantyre, Mwanza, Neno and Nsanje in the southern region.

2.3 Objectives of the Assessment

The main objective of the assessment was to establish the drivers of food insecurity in the assessed districts (e.g. socio-economic issues, recurrence of environmental hazard, food availability, access and utilization).

2.3.1 Specific objectives

The specific objectives of the food security assessment were as follows:

- Describe the food insecure households in terms of their individual and socio economic characteristics (e.g. gender, livelihood, wealth, etc.).
- Determine whether food insecurity is chronic or transitory and the seasonal nuances of food and nutrition insecurity.
- Determine nutritional status of children of 6-59 months of age in the assessed districts.
- Propose short, medium and long term interventions supporting the affected populations

3 Methodology

3.1 Study Design

Members from MVAC institution, UNICEF and the Lilongwe University of Agriculture and Natural Resources (LUANAR) in addition to WFP were involved in the definition of objectives and choice of methods.

A cross-sectional study design was used in the Emergency Food Security Assessment in the 15 targeted districts.

Data collection questionnaires for the 2013 EFSA was the basis of the 2014 assessment tools. In consultation with the various partners minor changes were incorporated to ensure lessons learned and relevant information was collected. To standardise the enumeration process, questionnaires were translated into Chichewa. Household level data were directly captured using Android Devices.

The nutrition component measured all eligible children in the household selected, in order to understand their nutritional status and its risk factors.

3.2 Sampling

A minimum of 200 households were sampled in each of the 15 districts using a 20 x 10 sampling strategy (10 households sampled in 20 clusters - enumeration areas). The 20 clusters in each district were sampled using a probability proportional to cluster size. The 2008 Census data obtained from the National Statistical Office (NSO) were used in sampling the enumeration areas. The NSO maps showing enumeration areas for the sampled areas were used for identifying the villages. Where EAs had more than one village the cluster was randomly allocated to one of the villages within the EA. Selection of the required households from each cluster was done using a spin a bottle method to select initial household for interview in each of the 20 villages sampled in a district. Sampling intervals were used to select subsequent households in the predefined direction (the right hand side of the previous household). In case the minimum number of children of 10 per cluster was not reached after visiting the 10 targeted households, then further households were sampled. In the selected households mothers or caretakers were targeted as respondents. A household in this survey was defined as people living together and sharing same cooking pot.

4 Results

4.1 Demographics and physical assets

4.1.1 Demographics

Data collection on demographics provide a deeper understanding of the food security profile of households with certain demographic profiles; such as female headed households, elderly headed households, education status of the household head, dependency ratios, household size, etc.

4.1.2 Human capital

The 2014 EFSA results show that the average household size is 5.0. Overall, 20% of households were female headed.

Table 2 below shows the distribution of the level of education for the household heads compared to the 2013 EFSA results. The majority of the household heads (62%) have only a maximum of primary level education, 21% have secondary education while 17% have no education at all. Only a small percentage of household heads (one percent) have tertiary education. However, literacy levels for males is higher than that of females i.e. 82% versus 59%, possibly reflecting prioritization of boys education based on the assumption that girls will get married and taken care of by their husbands. Highest literacy levels were observed in districts of Karonga (91%) and Rumphi (94%) while the lowest were observed in districts of Nsanje and Chikwawa, 62% and 63% respectively.

Table 1: Education Levels

Highest Level of Education Attained				
	Primary	**Secondary**	**Tertiary**	**None**
Male	62%	23%	1%	14%
Female	60%	12%		28%
Average	**62%**	**21%**	**1%**	**17%**

4.1.3 Physical capital

House Ownership

The majority of households reported owning the dwelling in which they live (91%), similar to the 2013 results where 93% reported owning the dwelling in which they lived. However, the quality of the dwelling house is good proxy for reflecting poverty. Approximately half of the households have traditional mud walled / grass thatched houses, with only 20% living in permanent style housing; see table 2 for details.

Table 2: Type of housing construction material

Housing construction material	**Percentage of HH heads in assessed areas 2014**	**Percentage of HH heads in assessed areas 2013**
Permanent (bricks, iron sheets, cement)	19%	16%
Semi-permanent (mix of traditional and permanent)	36%	32%
Traditional (mud walled/grass thatched)	47%	52%

4.2 Emergency Food Security Assessment Findings

4.2.1 Food Security Classifications

The food classification assessment used for this assessment was the Consolidated Approach for Reporting Indicators of Food Security (CARI).

CARI is an approach for addressing the multiple dimensions of food security with transparent indicators which are consistent with internationally accepted food security concepts. The CARI is a method used for analysing and reporting the level of food insecurity within a population. When CARI is employed, each surveyed household is classified into one of four food security as shown below. This classification is based on the household's *current status* of food security (using food consumption indicators) and their *coping capacity* (using indicators measuring economic vulnerability and asset depletion).

Food secure	Able to meet essential food and non-food needs without engaging in atypical coping strategies	Food secure
Marginally food secure	Has minimally adequate food consumption without engaging in irreversible coping strategies; unable to afford some essential non-food expenditures	
Moderately food insecure	Has significant food consumption gaps, OR marginally able to meet minimum food needs only with irreversible coping strategies	Food insecure
Severely food insecure	Has extreme food consumption gaps, OR has extreme loss of livelihood assets will lead to food consumption gaps, or worse	

4.2.2 Food Consumption Score

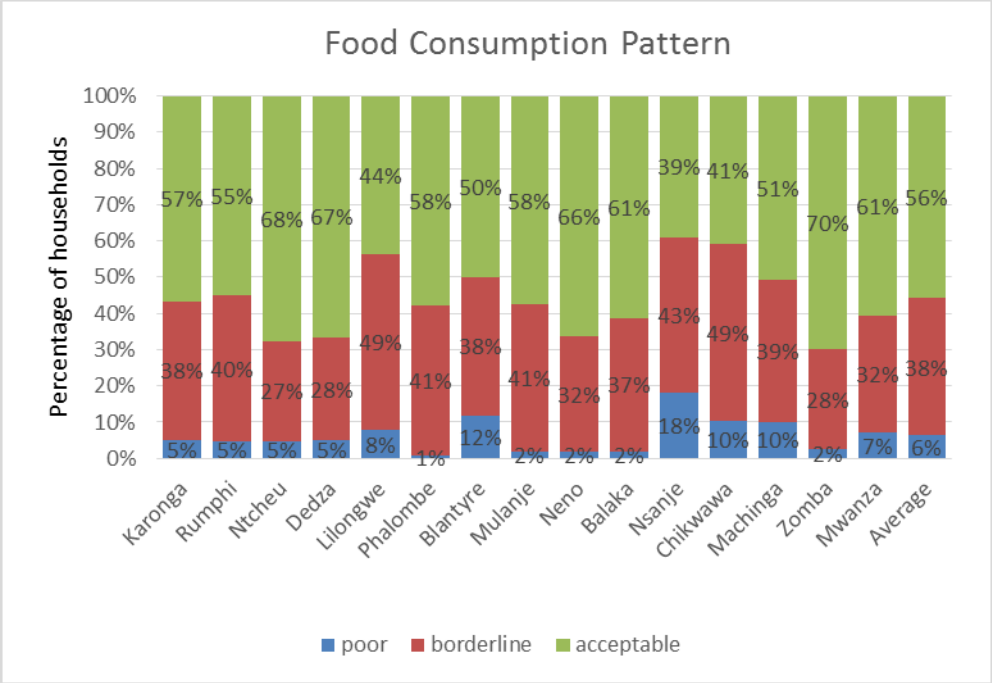
A Food Consumption Score (FCS) measures the frequency and diversity of a household's diet over seven days. Households are asked how often (the number of days) they had consumed items from different food groups in the last 7 days. Each food group is allocated a weight based on its nutritional value; food groups with high nutritional value such as meat and milk are given higher weights than oil and sugar.

The score is calculated by multiplying the frequency of consumption of foods in a certain food group over seven days by the weight of that food group. The FCS has a minimum score of 21 to 35. The lower the score, the poorer the household consumption is. The scores are then categorized into poor <= 21), borderline (21.5 to 35) and (>35) acceptable consumption.

On average 6% of households in the assessed districts had a poor consumption score. Nsanje district had a considerable percentage of households (18%) in the poor consumption group, followed by Blantyre (12%), Chikwawa (10%) and Machinga (10%). All these districts are in the southern region of Malawi, which generally experiences recurrent hazards such as prolonged dry spells and this situation is exacerbated by the small land holding size for most households in the region. On the other hand, Zomba district had the highest percentage of households having acceptable food consumption (70%) followed by Ntcheu (68%) and Dedza (67%). Lilongwe district has one of the highest percentages (49%) of households in the borderline consumption and a smaller percentage of households with acceptable consumption yet it is one of the districts in Malawi which generally has good production and experiences less droughts. Within the poor consumption category there were some increases in higher quality foods, with meat reported as being consumed for 1.2 days on average. As the

consumption improves, households start to consume more pulses (3.1 days on average per week), on top of their meat consumption. In addition to pulses and meat, households in the poor consumption group were also consuming smaller amounts of milk for 0.6 days and sugar 1.9 days.

Figure 3: Food Consumption Pattern

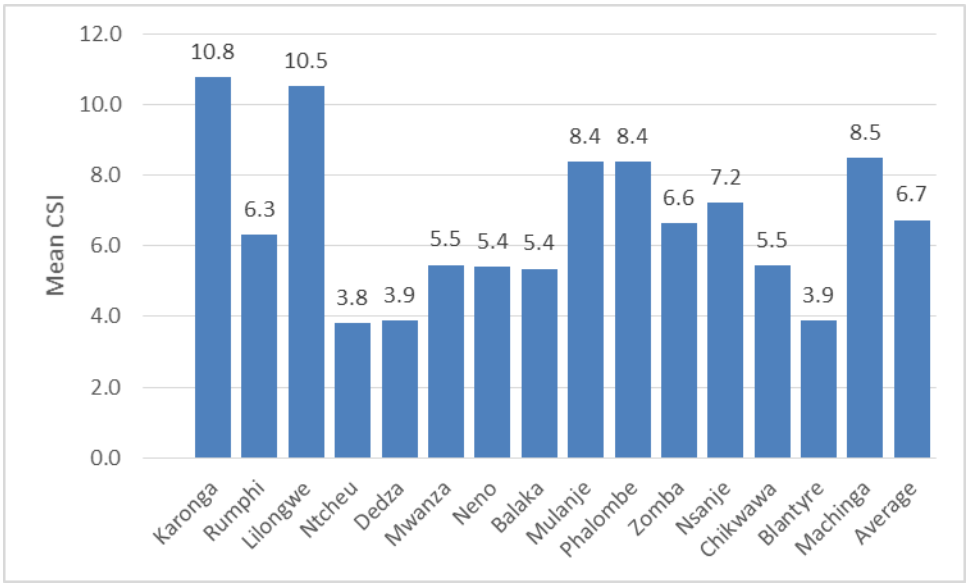


4.2.3 Coping Strategies

The reduced Coping Strategy Index (CSI) is a tool for rapidly measuring food security by assessing consumption behaviours when households cannot access enough food, or do not have enough money to purchase food. In other words, it measures behavioural responses to the threat of inadequate food supply, such as reducing the frequency of meals, reducing the portions and number of meals consumed, relying on cheaper and less preferred foodstuffs and reducing the number of consumers. Households were asked to recall the strategies they had engaged in during the last seven days. Each coping strategy is weighted by a severity score, with the frequency and weight are used to calculate the CSI score. The higher the CSI score is, the higher the stress on households' access to food. The standardised tool allows comparison between districts, regions and countries as well as tracking progress and change over time.

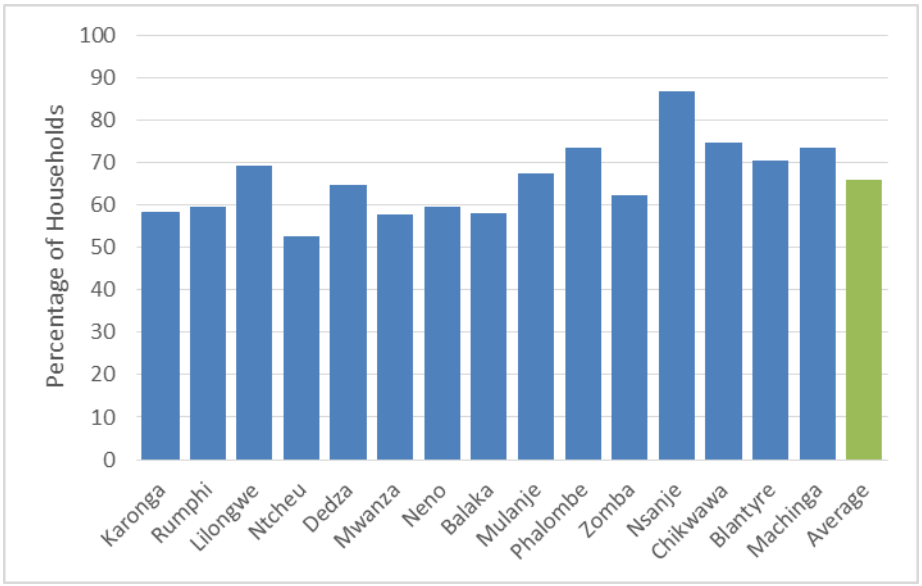
On average the CSI was 7 similar to that of 2013 (7.2). At district level, the CSI for Karonga increased to 11 from 6 in 2013 and to 6 from 4 in Rumphi district. The increase in the score could be a result of the poor harvest experienced in 2014. On a positive note, some districts have reduced their CSI i.e. Dedza from 9 to 4, and Balaka and Chikwawa from 9 to 5 respectively as illustrated in figure 4.

Figure 4: Mean Coping Strategy Index



Overall, the percentage of households engaging in negative coping strategies seven days prior to the assessment has reduced slightly in the 2014 EFSA compared to that of 2013 with notable figures in Dedza, 65% from 73% and Chikwawa at 75% from 83%. Nsanje district remains the district with the highest percentage of households engaged in various coping strategies (87%). Slight increases on the other hand have also been noted in such districts as Rumphi (50%), Balaka (58%) and Machinga (73%), refer to figure 5.

Figure 5: Percentage of Households engaging in Coping Strategies



The most commonly employed household coping strategy was consumption of less preferred/expensive food (55%, a reduction from 77% in the 2013 results), followed by reduced number of meals consumed per day (35%) and reduced portion size at 31%. This may imply a better production this season where a good percentage of households are consuming food from own production. Nsanje district had the highest percentage of households eating less preferred foods

(75%) while those that were reducing the number of meals eaten in a day were 52%. Chikwawa also had 68% of households eating less preferred food.

4.2.4 Expenditure on food

Karonga district had the highest monthly expenditure on food MWK15,791. Karonga district is one of the districts thought to have a high cost of living because of the influence of Tanzanian business people. In addition, the opening of Kayerekera mining company which is believed to influence cash flow into the district through its members of staff and other expenses for the mining company. Nsanje district also had an expenditure of MWK13,266 on food (table 1). The lowest expenditure on food was recorded in Lilongwe district (MWK6, 319).

Nsanje district was one of the districts with the highest percentage share of income expenditure on food of 77%, similar to that of 2013 EFSA results. Zomba district reduced its share of income expenditure on food from 75% in 2013 to 65% in 2014 EFSA. The 2014 good harvest may have contributed to this reduction since most households were still consuming food from own production at the time of the assessment. Overall, none of the households in the districts assessed had per capita monthly food expenditure of less than MWK 1,913, which according to the 2011 Malawi Integrated Household Survey, are people that are falling below the poverty line.

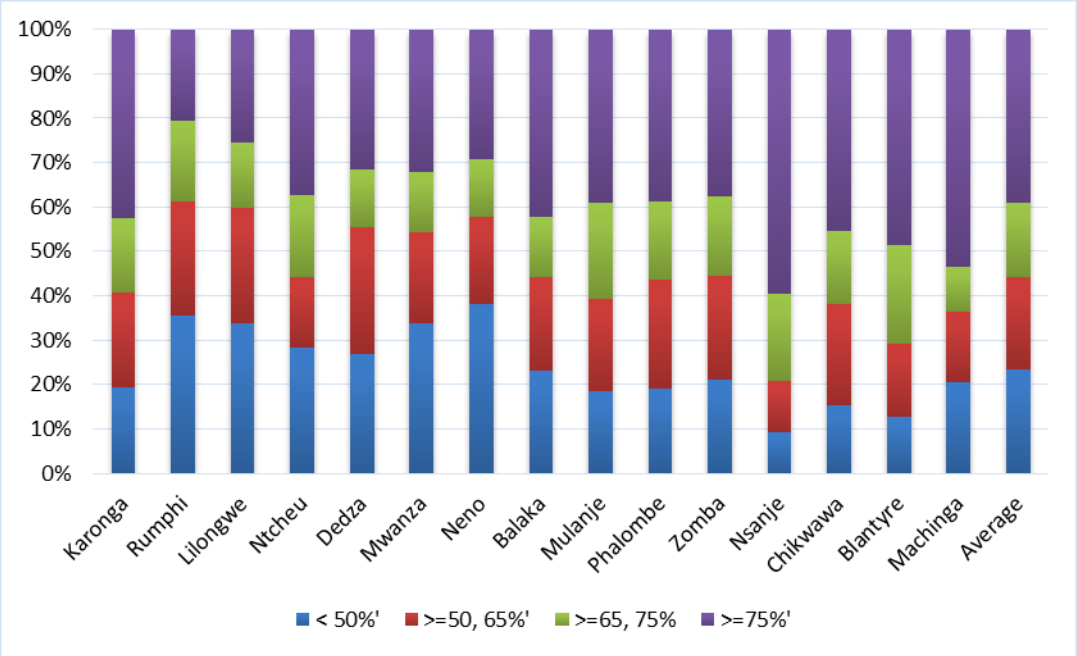
Table 3: Households and per capita food expenditure and percentage expenditure share on food

District	Monthly Food Expenditure (MWK)	Percentage share of Income Expenditure on Food	Per capita expenditure (MWK)
Karonga	15,792	68	4,206
Rumphi	11,997	56	3,845
Lilongwe	6,319	59	2,187
Ntcheu	10,285	64	3,599
Dedza	8,587	61	2,937
Mwanza	14,536	60	4,589
Neno	10,759	58	3,895
Balaka	11,214	66	3,220
Mulanje	9,365	68	2,942
Phalombe	7,837	67	2,397
Zomba	8,594	65	2,691
Nsanje	13,267	77	3,577
Chikwawa	9,408	70	3,004
Blantyre	8,413	73	2,785
Machinga	8,072	68	2,490
Average	**10,236**	**65**	**3,222**

The highest proportion of households spending more than 75 percent on food was found in the southern region, particularly Nsanje district which has 60%, followed by Machinga district (53%). The trend is similar to 2013 EFSA results, however, Chikwawa and Zomba districts registered reductions in

the number of households spending over 75% on food from 65% to 46% in Chikwawa and 60% to 38%in Zomba (fig 6). The 2014 good harvest may have contributed to this reduction since most households were still consuming food from own production at the time of the harvest.

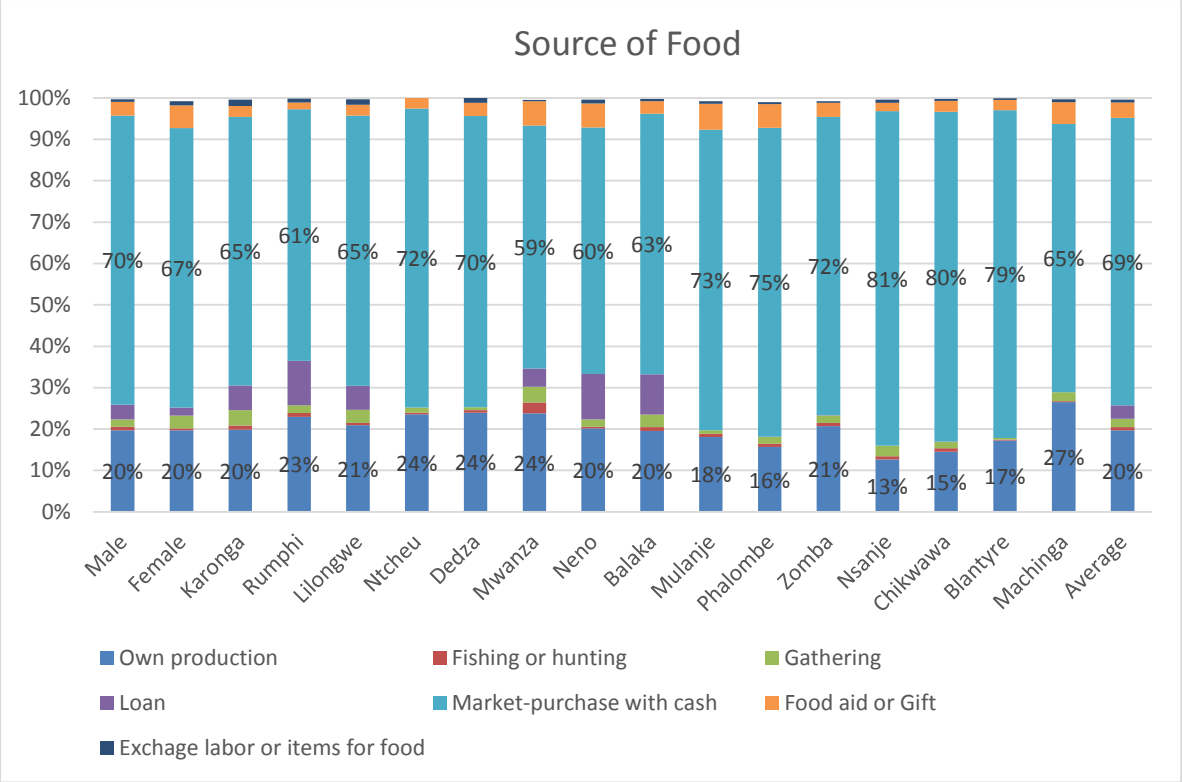
Figure 6: Household share of food expenditure



4.2.5 Food Sources

The main source of food for most households was purchase contributing to 69% on average. Own production was also contributing 20% of the total. Three districts had the highest percentage of households relying on purchases, Nsanje (81%) Chikwawa (80%) and Blantyre (79%). On the other hand, the highest percentage of households relying on food from own production was found in Dedza, Ntcheu and Mwanza each with 24%, fig 8. In addition, six percent of food for female headed households was obtained from food aid/gifts compared to three percent in the male headed households.

Figure 7: Sources of Food

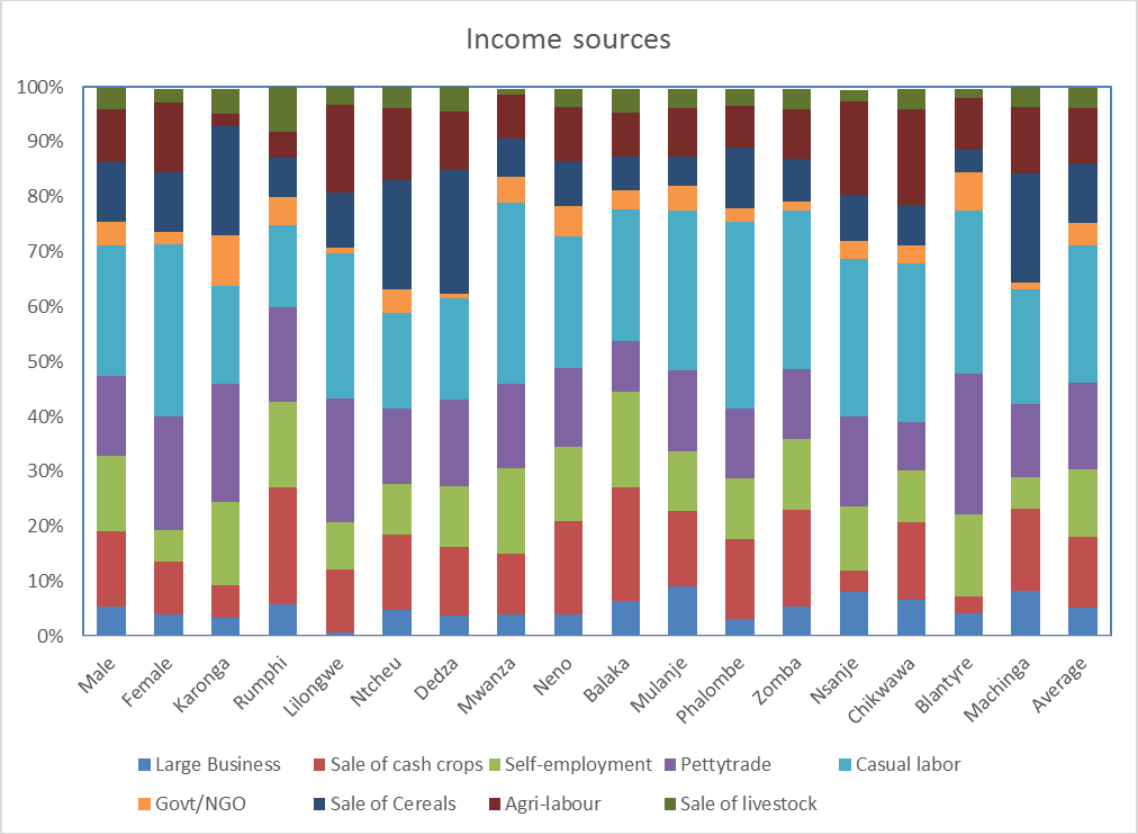


4.2.6 Livelihood Activities

This section mainly focuses on means that households employ to obtain cash. It examines households' most commonly reported activities with a recall of six months.

The main income source for households six months prior to the survey was Casual labour (25%) and petty trade (16%). Both male and female headed households obtained most of their cash income from casual labour, petty trading and agriculture. However, a higher percentage of male headed households (14%) were engaged in self-employment compared to 6% of female headed households, figure 9. Overall, agro-based activities were still the main source of livelihood with about 50% of income coming from these sources. With high levels of dependency on agriculture-based income the rural economy is highly susceptible to climatic shocks, affecting income as well as food sources.

Figure 8: Livelihood Sources by food consumption categories



4.2.7 Asset ownership

Asset ownership refers to possession of items such as household furniture or equipment (e.g. TV, oven or radio). In this assessment, asset is referring to property owned by a household that has a certain value, which can be sold or exchanged in periods of increased stress. During the survey, data was collected from households regarding ownership of assets[1].

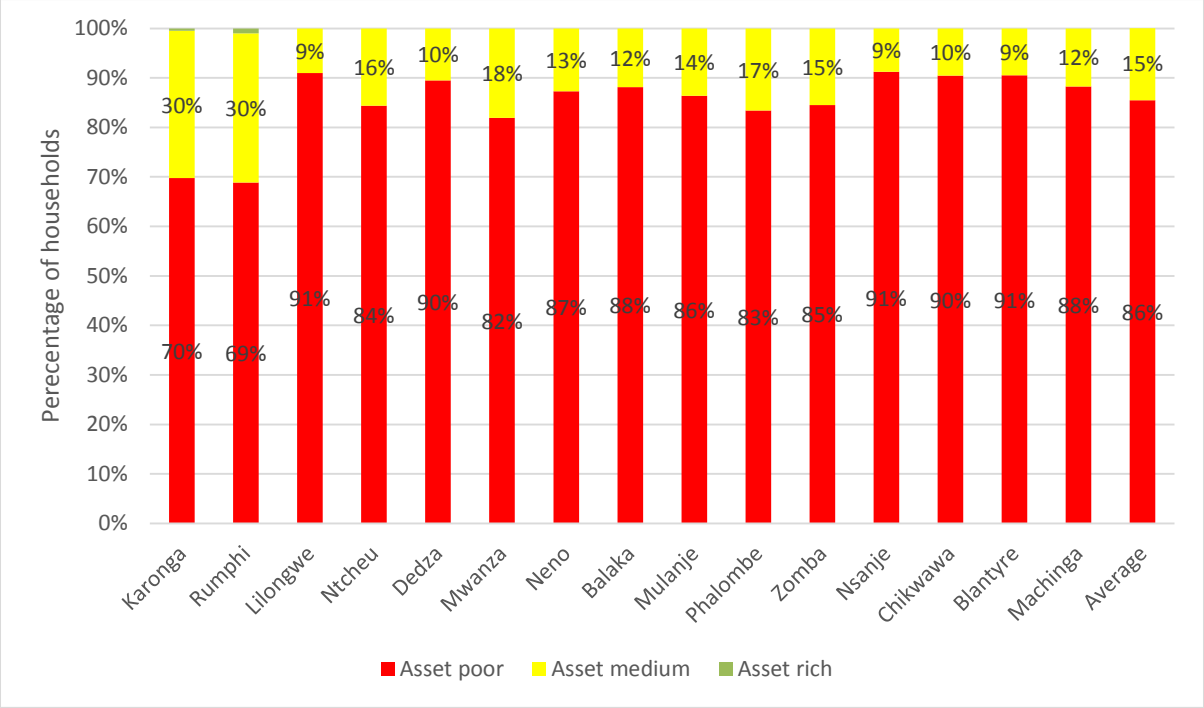
Household asset ownership was analysed according to the number of different types of assets owned by a household. This indicator is classified as:

- Asset Poor: 0 to 4 different types of assets.
- Asset Medium: 5 to 9 different types of assets.
- Asset Rich: 10 or more different types of assets.

The assessment results show that on average, a large proportion of households are asset poor (86% in the 15 assessed districts) An analysis of assets by district shows that Karonga and Rumphi districts have a higher percentage of households in the asset medium category, 30% in each district compared to all other districts. The highest percentages of households in the asset poor category were found In Blantyre Lilongwe and Nsanje districts (91% each), followed by Dedza and Chikwawa districts (90% each) as shown in figure 10.

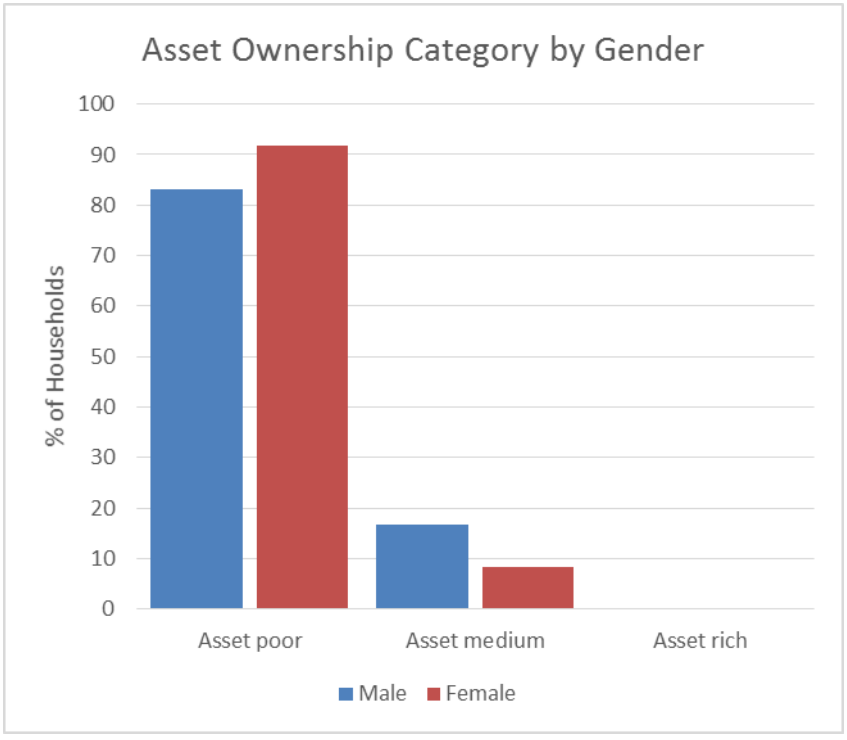
[1] The list comprises of fridge, oven, television, satellite dish, radio, cell phone, sewing machine, oxcart, farm machinery, agricultural tools, bicycle, motorbike, car, cash, bank account, household furniture (table/chairs).

Figure 90: Asset Ownership



When analysing asset ownership by gender of household head, findings show that a higher percentage of female headed households are in the asset poor category 92% of the households compared to 83% of male headed (figure 11).

Figure 10: Asset ownership category by gender

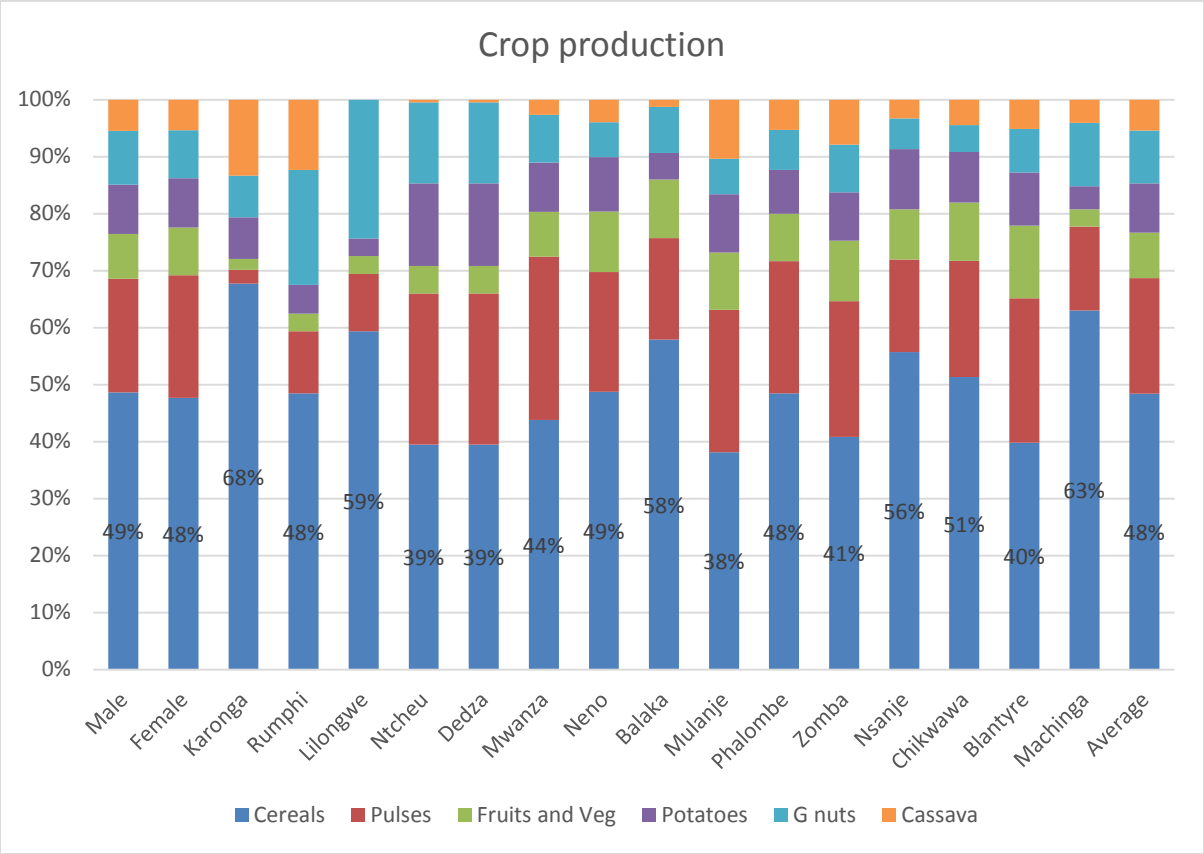


4.2.8 Agriculture and Livestock

4.2.8.1 Subsistence crop production and access to land

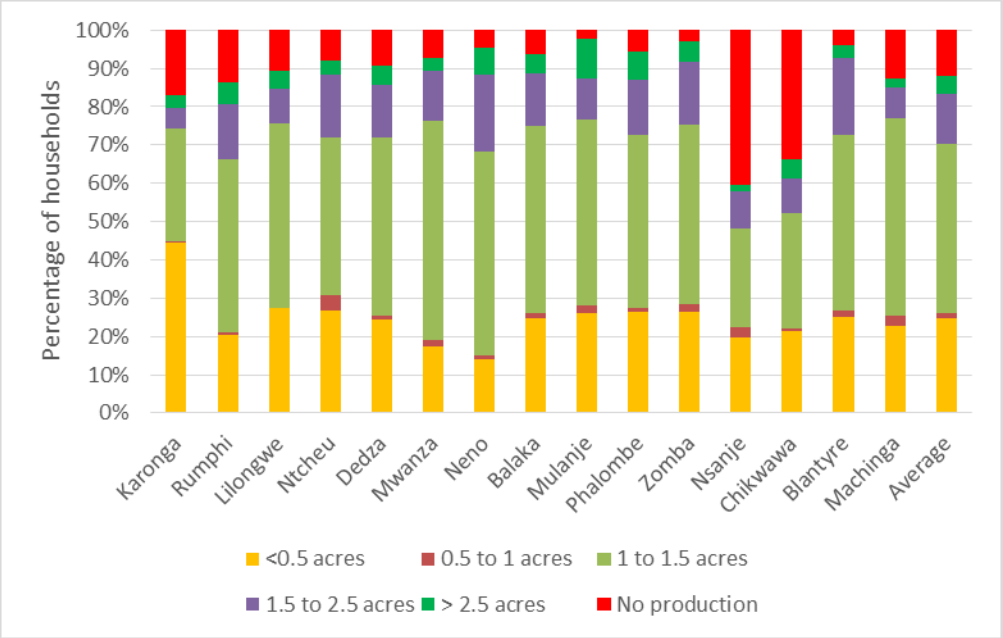
Crop production for this analysis combined all cereals reported (Maize, millet], rice, sorghum) and pulses (beans, soya, pigeon peas and cowpeas). On average, 48% of all grown crops in the 2013/14 agricultural season were cereals, figure 12. However, the types of cereals grown were different in the different districts. For example, Karonga district which had the highest percentage of cereals grown by most households, were maize and rice, mainly while Lilongwe only had maize contributing in that category. Nsanje and Machinga on the other hand had a combination of rice, sorghum and maize. The difference in the type of cereal grown depends on such factors as climatic conditions as well as food preference.

Figure 11: Crop production



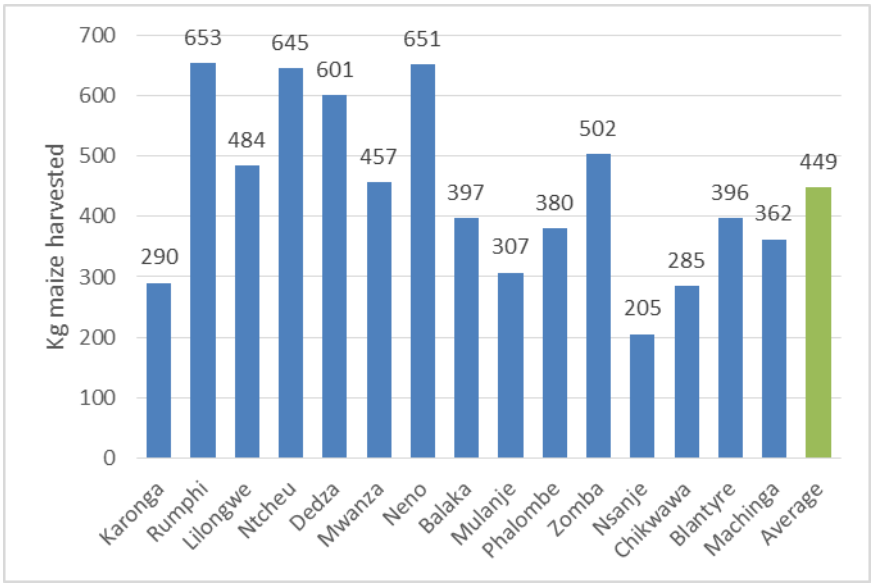
The analysis further looked at percentage of households growing maize and amount of land allocated to maize cultivation. On average 12% of households indicated that they did not grow any maize. The highest percentage of households not cultivating any maize were mainly found in Nsanje (40%) and Chikwawa (34%). These districts are generally dry, as explained in the paragraph above, households in these tend to grow drought tolerant crops such as sorghum and millet. On average 44% of the total households interviewed used 1 to 1.5 acres of their land for maize cultivation (Fig 13)

Figure 123: Proportion of households cultivating maize



There were variations on average maize production across the assessed districts. Rumphi district has the highest average of 653 kilograms (kgs) per acre amongst all the assessed districts, followed by Neno (651kgs) and Ntcheu (645kgs) as illustrated in fig 14. The average is lower in the districts that had a higher percentage of households not cultivating maize at all such as Nsanje (205kgs), Chikwawa (285kgs and Karonga (290kgs).

Figure 134: Average maize production in kilograms

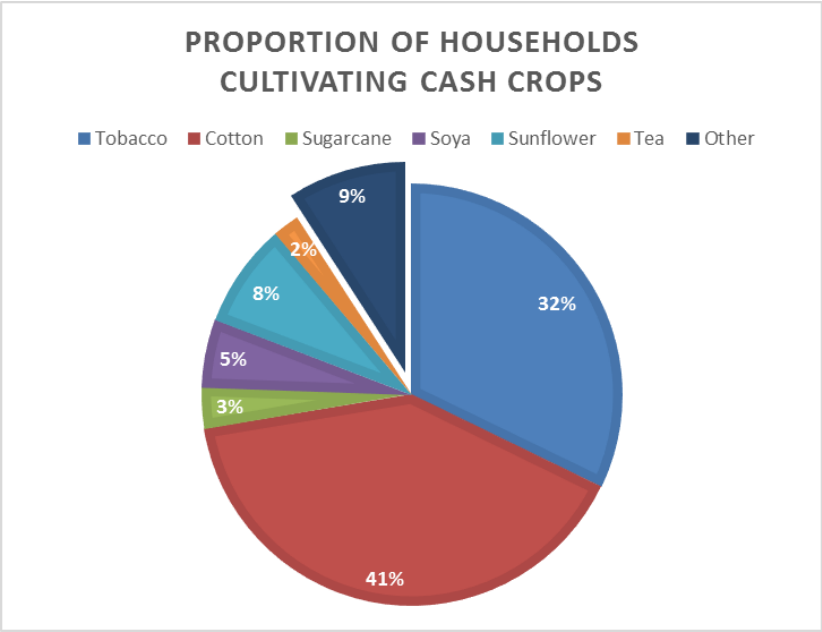


4.2.8.2 Cash crops production

Although cash crop sale is an important source of income for many households, only a small percentage of households (22%) grew cash crops in the 2013/2014 season. The common cash crop that most households grew was cotton (41%) followed by tobacco (32%) as shown in figure 15. Cotton

is topping the list because most of the districts assessed were from the southern region where cotton is the major cash crop grown.

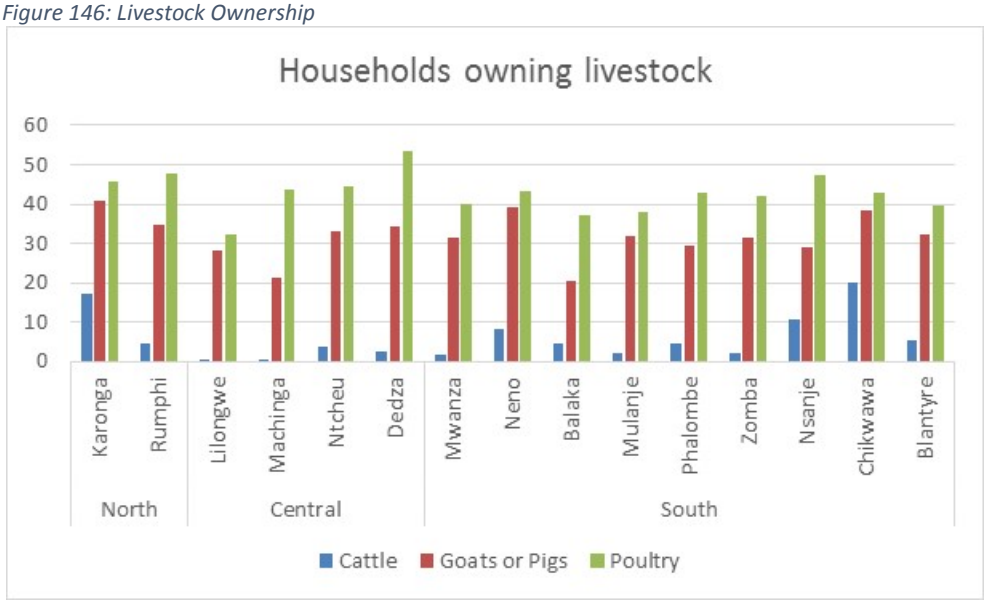
Figure 15: proportion of households cultivating cash crops



Livestock ownership and production

Livestock ownership is considered to be an important indicator of the status of wealth in the country. Generally, households owning cattle, goats and pigs are considered to be better off, compared to those owning small stock livestock such as chickens and a few goats. About 20% of households in Chikwawa district own cattle, 11% in Nsanje and 17% in Karonga district, a familiar pattern and relates to the cultural practice of "lobola", especially for Karonga whereby families receive cattle when they marry off their daughters. Hence, most of the households in the northern districts, especially in Karonga, own more cattle (Figure 16). Other reasons why these districts have a higher percentage of households owning cattle is because the areas are hot, with lots of swampy areas conducive for grazing as well cultural practice where cattle ownership determines wealth of the household.

Figure 146: Livestock Ownership

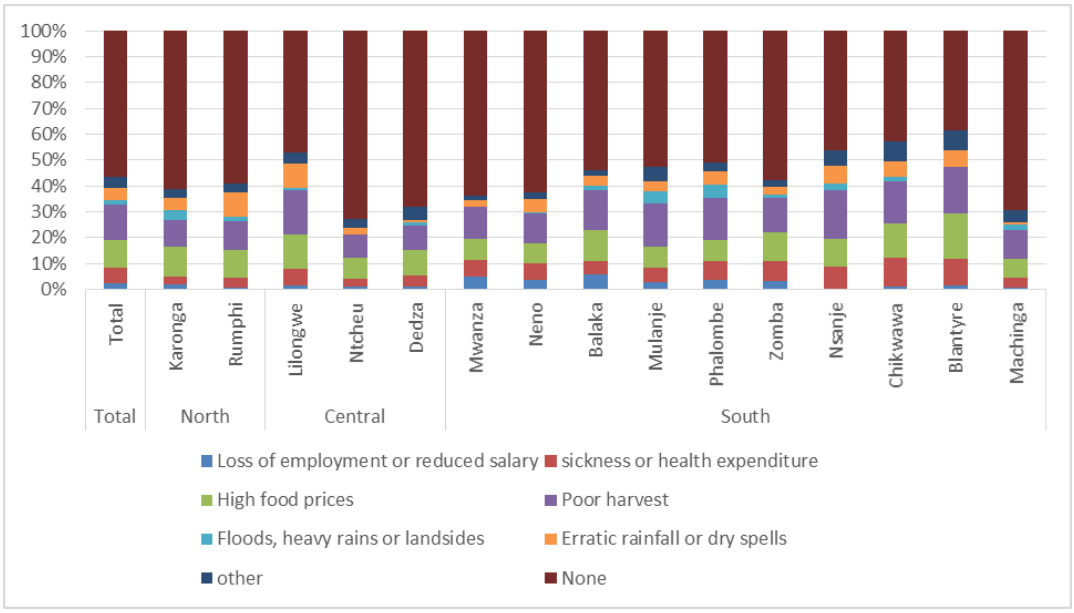


Poultry is the most common livestock reported. Goat and pig ownership is also significant in most of the districts due to government programmes such as the Presidential Initiative of Small Livestock Production (PISP) and pass-on programmes by various non-governmental organisations providing these types of livestock to rural communities. All these efforts are aimed at improving livestock production and increasing availability of these livestock at household level for home consumption, as well as cash for other household needs.

4.2.9 Main Shocks

A shock is described as natural, economic, and political event that is sudden or slow onset and likely to impact negatively on households' food and nutrition security. Almost half of the households (43%) assessed experienced some form of shock in the six months prior to the assessment (figure 17). Blantyre and Chikwawa districts reported the highest percentages of households that reported shocks (Blantyre 62% and Chikwawa (57%). The percentage of households for Lilongwe (47%) is almost as high as Nsanje although Lilongwe is considered to be a high productive district, compared to Nsanje district which has recurrent shocks.

Figure 157: Shocks Experienced by Households 6 months prior to the 2014 EFSA



4.2.10 External Assistance

About 64% of the households received some form of external assistance ranging from fertilizer and input, food assistance and tools twelve months prior to the assessment. Of all the households that received external; assistance, 38% of the respondents received fertilizer under the Farm Input Subsidy Program (FISP) and other programmes, 25% received food assistance (table 4).

Table 4: Type of External Assistance

Type of assistance	Percentage of households
Fertilizers under the FISP or other programmes	38.9%
Food Assistance	26.0%
Waterguard	16.2%
Agricultural tools, seed, feed	13.2%
Cash assistance	2.4%
Blankets, mat,plastic sheet	1.5%
Utensils	0.9%
Cash grant/Credit for pettry trade	0.4%
Veterinary services	0.3%

4.3 Nutrition

Nutritional status of children 6-59 months is a reflection of their overall health and development. In addition, nutritional well-being of young children, reflects household, community, and national investments in family health (NSO and UNICEF, 2008). Infants and young children respond quickly to changes in dietary intakes, illnesses and other environmental factors hence are appropriate targets for monitoring, surveillance and nutritional assessments.

4.3.1 Distribution of Age and Sex of Sample Children

Table 5 summarises the age and sex distribution of the sampled children in all the districts. Overall, sex ratios in each of the age groups fell within the acceptable range of 0.9 – 1.0 limits. This indicates that both sexes were adequately represented in the sample. This categorization of children based on age and sex helps in identification of the age groups and sex of children that are most vulnerable to food insecurity and malnutrition.

Table 5: Distribution of age and sex of children 6-59 months for all 15 districts

	Boys		Girls		Total		Ratio
Age (mo)	no.	%	no.	%	no.	%	Boy:girl
6-17	419	48.8	440	51.2	859	25.0	1.0
18-29	421	49.4	431	50.6	852	24.8	1.0
30-41	394	52.1	362	47.9	756	22.0	1.1
42-53	380	52.2	348	47.8	728	21.2	1.1
54-59	119	50.0	119	50.0	238	6.9	1.0
Total	**1733**	**50.5**	**1700**	**49.5**	**3433**	**100.0**	**1.0**

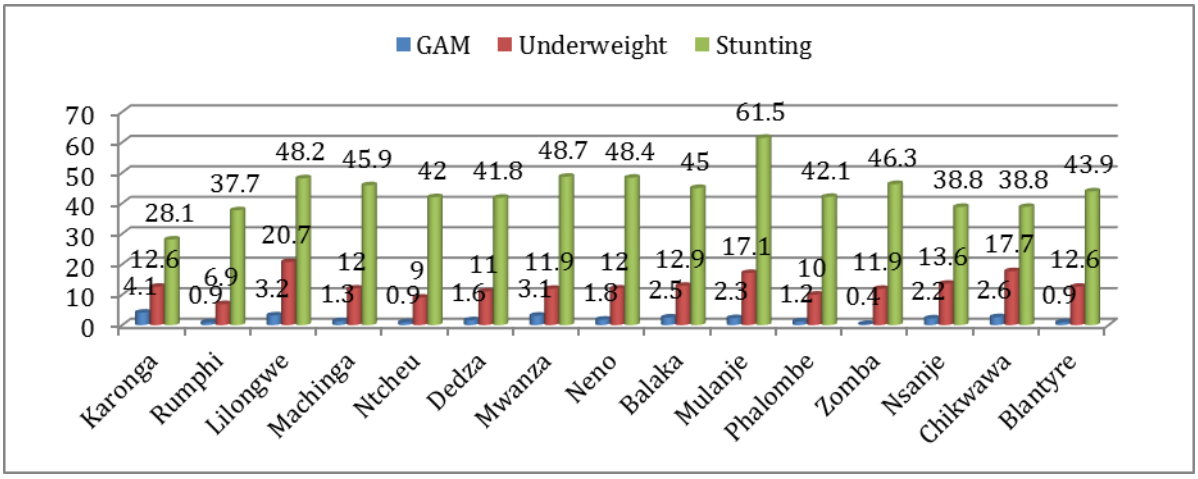
4.3.2 Child Nutritional Status

Figure 18 presents the overall prevalence of malnutrition in each of the districts based on the global acute malnutrition (weight for height <-2 Z-score/oedema), underweight (weight for age <-2 Z-score), stunting (height for age <-2 Z-score).

In general, prevalence of acute malnutrition were within the acceptable range of less than 5 percent in all the districts surveyed. The prevalence ranged from 0.4 percent in Zomba to 4.1 percent in Karonga. All the other districts registered rates of acute malnutrition that are within the normal range were Lilongwe (3.2 percent) and Mwanza (3.1 percent). The situation may however worsen later on in the year in absence of any interventions.

By gender, malnutrition rates varied by gender of the children across the districts. Prevalence of global acute malnutrition were in boys some districts (e.g. Lilongwe and Mulanje) compared to girls. In some districts, prevalence rates were similar between boys and girls (e.g. Mwanza and Rumphi). In Mwanza, most of malnourished cases were severely malnourished. These cases were clustered within Mwanza Boma. Further interrogation revealed that the parents of the malnourished children were prostitutes operating in the Boma.

Figure 16: Prevalence of malnutrition by district June 2014



Stunting rates, a reflection of long term nutritional deprivation, remain high in most districts surveyed and ranged from 28.1 percent in Karonga to 61.5 percent in Mulanje. Of the 15 districts that were surveyed, 11 had stunting prevalence of at least 40 percent. Since stunting of 40 percent denotes 'very high' prevalence by WHO standards, these 11 districts can be considered to be 'very high' rates that may require more attention than the usual disaster response. The proportion of stunted children was highest in Mulanje (61.5 percent) followed by Mwanza (48.7 percent) and Neno (48.4 percent) but lowest in Karonga (28.1 percent) followed by Chikwawa and Nsanje each with stunting prevalence of 38.8 percent.

Chronic malnutrition was consistently in higher in boys across district than in girls except in Zomba where stunting levels were similar between boys (46%) and girls (46.7%). Similarly, severe stunting was more common in boys than girls. The higher stunting levels observed in boys are comparable to other national level studies such as the Malawi Demographic Health Surveys of 2004 and 2010. Thus addressing the underlying factors for chronic malnutrition in both boys and girls especially in the first 1000 days of life would likely reduce stunting levels in Malawian children.

Prevalence of underweight, a composite indicator for both acute and chronic malnutrition, was highest in Lilongwe (20.7 percent) followed by Chikwawa (17.7percent) and Mulanje (17.1 percent). The other districts had underweight rates below 13 percent (Figure 19). The rates of underweight and severe underweight are generally higher in boys than in girls.

Commentary on child nutrition

Prevalence of malnutrition was lowest in Karonga where it was also found that disease incidence was relatively low and significant proportion of children under five years of age consumed diets that were either highly diversified or met the minimum diversity.

4.3.3 Childhood feeding

4.3.3.1 Infant and young child feeding practices

Table 6 present information on infant and young child feeding practices from birth. Nearly 90% of the mothers/caregivers reported that their youngest child had ever breastfed. Most mothers indicated that breastfeeding for the child had been initiated within the first hour after birth and nearly 90% received colostrum. In addition, over 75% of the respondents in all the districts indicated that they had exclusively breastfed their children for the first six month of life. These findings show that the majority of mothers have knowledge of appropriate infant feeding practices but not necessarily that they put the knowledge into practice.

Table 6: Breastfeeding Practices for the youngest under-five child by district (percent)

District	Breastfed within first hour (%)	Given colostrum	Exclusive breastfeeding	Still breastfeeding
Karonga	*91.3*	95.5	81.1	37.8
Rumphi	93.2	95.3	87.6	45.6
Lilongwe	85.2	85.2	91.4	44.2
Machinga	89.9	91.0	92.5	48.4
Ntcheu	95.0	95.0	91.3	43.0
Dedza	88.4	86.7	80.6	41.4
Mwanza	91.5	93.8	71.5	33.9
Neno	86.7	87.9	78.4	43.9
Balaka	90.7	91.3	85.4	48.0
Mulanje	89.2	88.6	89.9	39.5
Phalombe	89.6	90.7	90.9	48.7
Zomba	92.3	91.8	84.4	55.2
Nsanje	89.6	90.2	77.9	47.5
Chikwawa	91.6	88.2	82.8	58.4
Blantyre	94.4	94.9	81.4	52.0

4.3.3.2 Dietary Pattern

A high proportion of the children had been given solid/semi solid food the day before the survey in both breastfed and non-breastfed children (Table 3.12). Overall mean feeding frequency of solid or semisolid food was similar between non-breastfed and breastfed children. The frequency of about 2.5 times per day is too low for the non-breastfed children (Malawi guidelines recommend 4 to 6 times /day). Only Nsanje, Chikwawa, and Blantyre achieved the recommended guidelines of at least 4 (Table 3.12).

Breast feeding frequency of >12 times is adequate as long as the baby is allowed to empty each breast at each sitting. The results indicate that only Balaka achieved the required breast feeding frequency (12.7%). However, districts such as Chikwawa, Blantyre, Mulanje, Neno and Machinga had mean breastfeeding frequency of about 11. Thus, these children require nutritious complementary food to ensure normal growth and development.

Further assessment of dietary patterns among children 6-59 months over the last 24 hours, indicated that nearly 90% of the children had been given food. The majority of the children had received food at least 3 times in the previous 24 hours prior to the survey. The proportion of children who had received minimum acceptable diet in all districts was low for both the breastfed and non-breastfed children (Table 3.12). In fact the worst affected are the non-breastfed since food given is the only source of nourishment. If the feeding practices do not change then acute malnutrition prevalence would rise.

4.3.3.3 Childhood Dietary diversity

Dietary diversity for the children based on 24 hour recall using WHO recommended seven food grouping summarised in Figure 6. The food groups include grains, roots and tubers; dairy products (milk, yoghurt, cheese); flesh foods (meat, fish, poultry and liver/organ meats); eggs; vitamin A rich vegetables and fruits; and other fruits and vegetables. Consumption of a highly diversified diet at household level is essential for optimal child growth and development. Overall, consumption of highly diversified diet (at least 6 food groups) was low. The highest proportion of caretakers who reported that their children were given highly diversified diet were in Karonga (20.1percent) and while the lowest proportion was in Phalombe district (7.8percent). Consumption of low diversified diet (2 food groups and below) was highly reported in Lilongwe, Chikwawa, Mulanje, and Machinga as shown in Figure 19.

Figure 17: Dietary diversity over the 24 hour period in children under 5 years

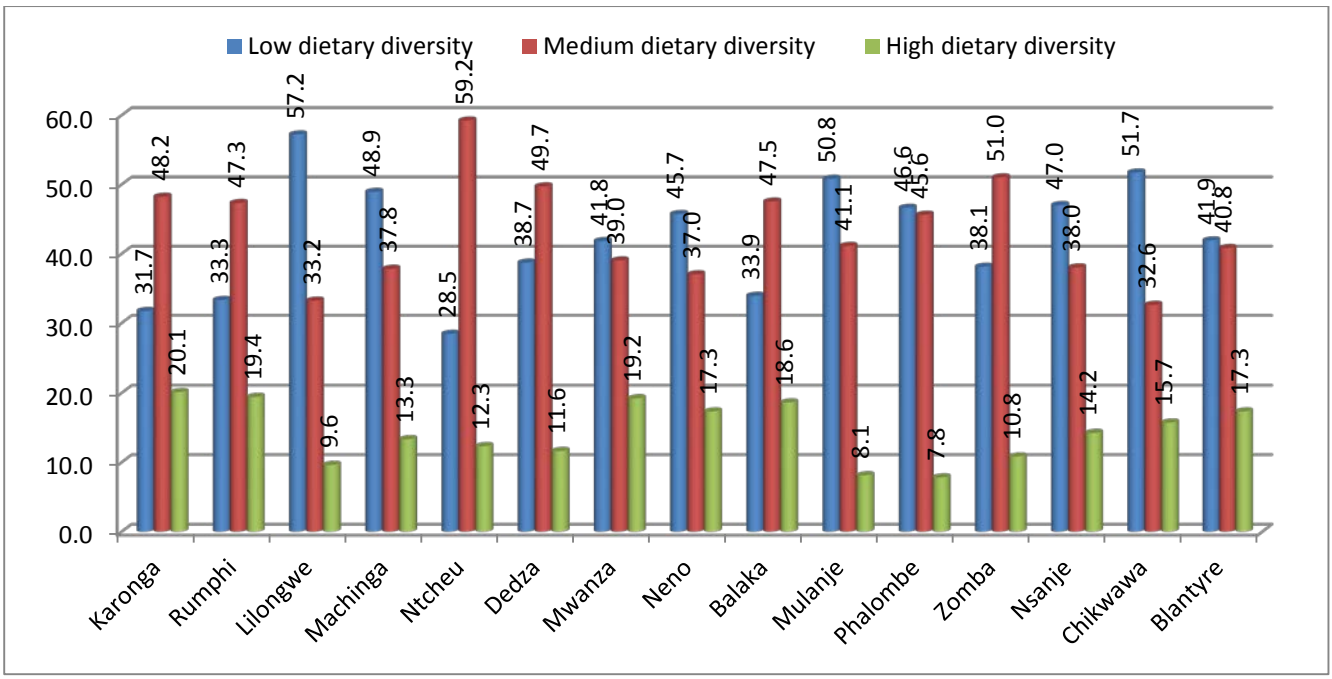


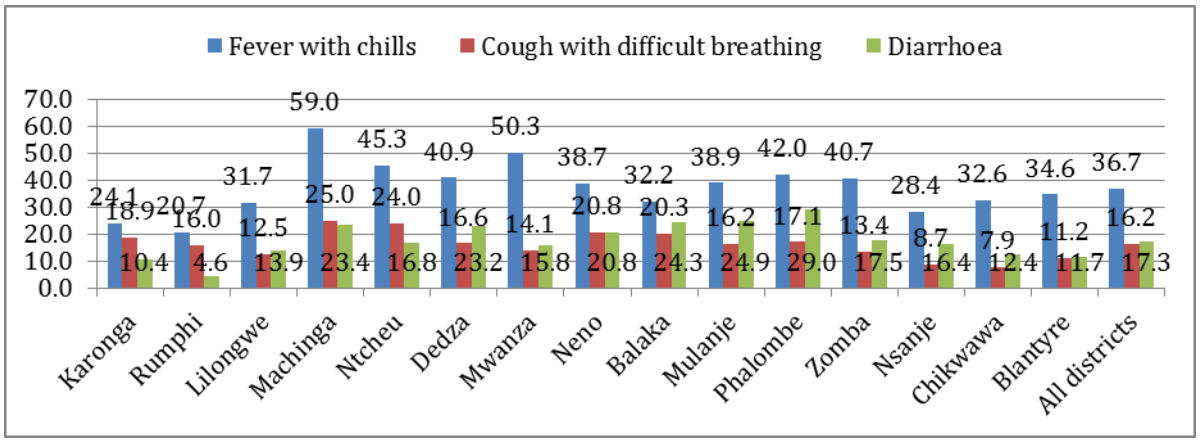
Table 3.12: Dietary pattern for non-breastfed and breastfed 6 – 59 month old children 24 hours prior to the survey by district

	Karonga	Rumphi	Lilongwe	Machinga	Ntcheu	Dedza	Mwanza	Neon	Balaka	Mulanje	Phalombe	Zomba	Nsanje	Chikwawa	Blantyre
Non-breastfed children:															
Proportion of children who ate any semi/solid food	82.7	81.3	59.8	81.6	90.2	82.1	90.6	75.0	69.6	82.8	79.4	81.8	81.3	77.0	86.7
Mean feeding frequency of semi/solid food	2.7	2.6	1.4	2.4	2.7	2.2	2.5	2.2	2.0	2.2	2.2	2.4	2.0	1.9	2.6
Proportion who had minimum acceptable diet	42.3	37.3	14.5	29.6	39.2	28.6	36.8	30.2	38.0	26.7	29.4	31.8	34.4	36.5	40.0
Breastfed children:															
Proportion of children who ate any semi/solid food	87.1	85.4	83.5	95.6	92.2	90.7	80.0	92.2	83.5	76.8	86.8	88.7	70.1	84.6	86.5
Mean feeding frequency of semi/solid food	2.8	2.6	2.2	2.5	2.4	2.3	1.8	2.0	2.1	2.0	2.2	2.6	4.3	4.1	4.7
Mean breastfeed frequency per day	10.1	9.1	9.9	11.9	10.2	10.6	9.2	11.2	12.7	11.6	10.8	9.5	10.3	11.5	11.3
	45.2	43.7	29.7	17.8	33.8	30.7	28.3	24.7	38.8	20.3	23.1	34.0	29.9	23.1	25.8

4.3.4 Child Morbidity

Children's morbidity interferes with child growth and development and it exacerbates child mortality. Morbidity among the children in the previous two weeks prior to the survey was assessed in all the districts, indicated that in all the districts 36.7% of the children had fever with chills (proxy for malaria), 16.2% had fever with difficult breathing and 17.3% had diarrhoea. Fever with chills was highest in Machinga (59%) and Mwanza (50.3%). While diarrhoea was highest in Phalombe (29%) and fever with difficult breathing was highest Machinga (25%) as shown in Figure 20.

Figure 18: Prevalence of reported illness and symptoms two weeks prior to interview by district



4.3.5 Vitamin A Supplementation and Measles Vaccination Coverage

In assessment of measles vaccination coverage among children aged 9 to 59 months, the study showed that the coverage based on both card and mother's recall was above the 90% in most districts. Documentation of the measles vaccination were less optimal in most of the districts. This is in part because measles vaccination campaign conducted in November 2013 did not document the vaccination status of the children in the health card. On the other hand, vitamin A supplementation was not universally high in all the districts surveyed and its documentation was poor in all the districts. For both mother's recall and confirmed by health card, only Karonga, Ntcheu, Dedza, and Mulanje had attained at least 85% coverage (Table 7).

Table 7: Vitamin A Supplementation and Measles Vaccination Coverage

	Karonga	Rumphi	Lilongwe	Machinga	Ntcheu	Dedza	Mwanza	Neno	Balaka	Mulanje	Phalombe	Zomba	Nsanje	Chikwawa	Blantyre
Measles vaccination (9 months and above):															
Confirmed by card	48.2	47.2	55.4	54.3	63.2	58.5	61.0	49.5	58.0	63.3	71.8	67.7	56.1	55.7	59.7
Mother's recall	49.1	48.1	37.3	41.0	34.8	38.8	35.8	46.0	35.6	33.2	25.0	30.5	37.6	39.6	38.8
Vitamin A supplementation:															
Confirmed by card	34.1	21.6	6.3	11.6	15.8	22.6	11.9	8.6	5.8	1.9	0.4	0.0	8.8	10.3	2.2
Mother's recall	54.9	38.5	48.0	66.8	77.0	71.0	44.3	40.9	74.4	81.6	57.1	80.7	34.6	22.8	34.5

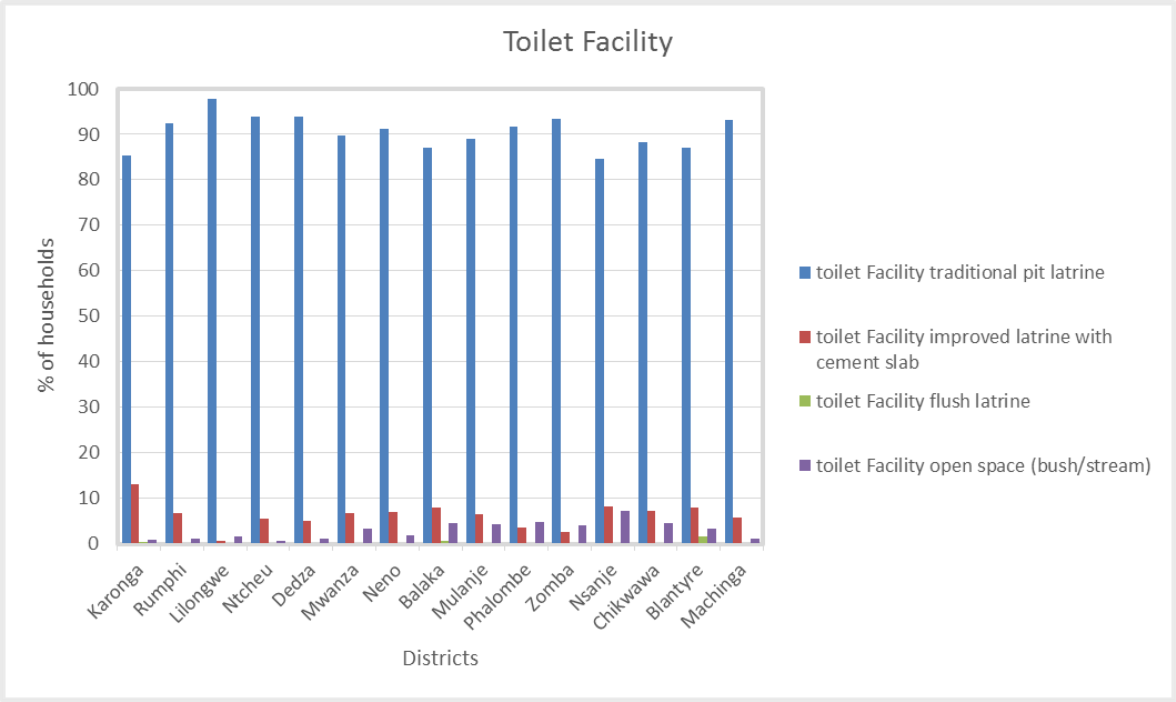
4.3.6 Water and sanitation

Access to safe and clean drinking water and proper disposal of wastes have significant effects on health through reduction in incidence of waterborne diseases. Water and sanitation improvements affect health primarily by reducing transmission of waterborne diseases such as diarrhoea, cholera and dysentery.

4.3.6.1 Toilet Facility

Proper disposal of wastes may result in better health due to reduction in such disease conditions as diarrhoea and parasitic infections which in turn can result in lowered mortality. In addition, ownership of sanitation facilities such as latrines gives dignity to household members. Overall 97% had a toilet facility and out of those, 91% had the traditional pit latrine and 6% with an improved cemented pit latrine). However, 3% did not have a toilet facility, with open defecation potentially contributing to poor sanitation and increased risk of disease (Figure 21). Nsanje district had the highest percentage of households with no toilet facility (7%), followed by Balaka and Phalombe, each with 5%. These households could be using those of their neighbour's as this is a common phenomenon.

Figure 19: Toilet facility



4.3.6.2 Water Sources

The majority of households get water from boreholes (77%) followed by public stand pipes (13%). Respondents were asked if they did anything to treat the water they drank. Respondents were further asked if they treated the water used for drinking at household level either currently or in the last 6 months. Only 22% percent of households reported to be treating water before drinking it. According to the findings, the households that treat water mostly treat it using water guard, a chlorine water treatment product (21%), one percent of the households treated their water by boiling it. The rest of the households do not treat their water. Water treatment practices were less

common in most districts. The proportion of households currently treating water were lowest in Dedza, Rumphi and Karonga districts with on 6%of the households reported treating water using chlorine or boiling. The districts with at least 30% of the households reporting currently treating water were Chikwawa, Nsanje, Blantyre, Neno, and Mwanza.

5 Conclusion and Recommendation

- The majority of the children from the 15 districts (11 districts) had stunting prevalence ranging from 41.8 to 61.5 percent. The highest stunting rates are found in Mulanje (61.6 percent), followed by Mwanza (48.7 percent) and Neno (48.4 percent) all in the Southern region.
- Prevalence of acute malnutrition was relatively low in most districts except for Karonga with wasting prevalence of 4.1 percent. Karomga is therefore is the worst hit.
- Stunting (chronic malnutrition) was highest in in Mulanje (61.5 percent) followed by Mwanza (48.7 percent) and Neno (48.4%). On the other hand, underweight which is a composite indicator, was highest in Lilongwe (20.7 percent). Since in most of these vulnerable districts malnutrition is associated with both acute and chronic causes, it is important to provide food as a short term solution for those that are acutely in need. In order to solve the factors that contribute to chronic malnutrition, there is need to design long term solutions that will eventually lead to self-sustenance for local communities.
- Breastfeeding is almost universal in all the 15 districts (>90%), breastfeeding frequency of >12 times, and over 75% of the respondents in all the districts indicated that they had exclusively breastfed their children for the first six month of life

5.1.1 Short term intervention

- Close monitoring so that timely food and/or cash assistance can be provided to needy households where necessary and feasible;
- Targeted nutrition interventions and training for mothers on child care practices.

5.1.2 Medium to long term intervention

- Promotion of irrigation to reduce reliance on rain fed agriculture, where flooding is the main cause of vulnerability, the residual moisture and irrigation should be promoted.
- Intensify promotion of conservation agriculture, reforestation, crops diversification and dietary diversification.
- Government should promote integrated programmes (small stock, aquaculture, horticulture, WASH) that include factors that address acute and chronic causes of malnutrition.
- Conduct rapid follow up food security and nutrition assessment later in the year using secondary data such as monthly trends on proportion of children on different feeding programmes.

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