DRAFT

REPORT OF SEVEN NUTRITION SURVEYS CONDUCTED IN FLOOD AND DROUGHT AFFECTED LIVELIHOOD ZONES OF MALAWI

SURVEY AREAS:

Rift Valley Escarpment Livelihood Zone

Lake Chirwa Phalombe Plains Livelihood Zone

Lower Shire Livelihood Zone

Thyolo-Mulanje Tea Estates Livelihood Zone

Shire Highlands Livelihood Zone

Kasungu Lilongwe Plain Livelihood Zone

Chitipa Karonga Rumphi Mzimba Livelihood Zone

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LIST OF ACRONYMS

ARI	Acute Respiratory Infections
CSI	Coping Strategy Index
EAs	Enumeration Areas
ENA	Emergency Nutrition Assessment
EPI	Expanded Program on Immunization
FCS	Food Consumption Score
FEWS	Feminine Early Warning System
GAM	Global Acute Malnutrition
HFCS	Household Food Consumption Score
HHS	Household Hunger Score
HIV/AIDS	Human immunodeficiency virus infection and acquired immune deficiency syndrome
IFPRI	International Food Policy Research Institute
MAM	Moderate Acute Malnutrition
MDHS	Malawi Demographic and Health Surveys
MHDDS	Minimum Household Dietary Diversity Score
MUAC	Mid-Upper Arm Circumference
MVAC	Malawi Vulnerability Assessment Committee
NSO	National Statistical Office
rCSI	Reduced Coping Strategy Index
SAM	Severe Acute Malnutrition
SMART	Standardized Monitoring and assessment of Relief and Transitions
UNICEF	United Nations Children's Fund
WHO	World Health Organization

EXECUTIVE SUMMARY

The report presents results for the seven nutrition follow up surveys conducted in May 2017 in 7 livelihood zones covering 25 districts that had been affected by floods and drought in the 2014/2015 agricultural season. The current round of survey is the fourth to be conducted in Malawi in the past three years, with the first round conducted in May 2015 in five livelihood zones, while the second and the third rounds were conducted in May 2016 and November/December 2016 respectively, covering seven livelihood zones and 25 districts. The nutrition surveys used a two-stage cluster sampling design to randomly sample the survey clusters and households using the SMART Survey Methodology. During the first stage, the clusters were sampled using probability proportional to size (PPS) and the 2015 Malawi Demographic Health Survey was used as the sampling frame. At the second stage, households were selected using the simple random sampling from the selected clusters.

A total, 6,312 households were visited with 3,504 children (1734 Males and 1770 Females) aged 6-59 months measured for anthropometry representing a response rate of 89.1%. The survey found that within each zone, households were largely monogamous (over 63%), most households were headed by males (over 64%) and were educated to either primary or secondary level. Additionally, the respondents were educated to either primary level or had no education at all.

On nutrition situation, the overall prevalence of global acute malnutrition (GAM) for the entire survey area (weighted analysis for all livelihood zones) was 2.2% (1.7 – 2.8) which is classified as *acceptable*, based on the World Health Organization (WHO) classification of malnutrition. Further, the survey classified the GAM in all the livelihood zones as *acceptable* since the GAM prevalence was below 5%. However, Lower Shire Zone recorded the highest GAM Prevalence of 4.3% (2.8-6.6), while the least GAM Prevalence was recorded in Kasungu-Lilongwe Plain Zone with a prevalence of 1.1% (0.5-2.6). Similarly, the prevalence of severe acute malnutrition was classified as *acceptable* with an estimated prevalence of 0.3% (0.2 – 0.6), with no major variation across the livelihood zones. Further analysis showed that there was a *slight* improvement in the nutrition situation in May 2017 when compared to May 2016. According to the results, the GAM prevalence slightly improved from 2.5% (2.0 – 3.3) in May 2016 to 2.2% (1.7 – 2.8) in May 2017. Additionally, *slight* improvements were recorded in all the livelihood zones apart from Karonga-Chitipa where the GAM prevalence worsened from 1.1% (0.3-3.7) in May 2016 to 1.9% (1.1-3.4) in May 2017. The prevalence of severe acute malnutrition (SAM) also improved across all the livelihood zones, with the weighted SAM for the seven livelihood zones *slightly* improving from 0.5% (0.3 – 0.9) in May 2016 to 0.3% (0.2 – 0.6) in May 2017. Additionally, the prevalence of underweight *significantly* improved from 16.0% (14.1 – 18.1) in May 2016 to 11.2% (10.0 – 12.6) in May 2017.

Morbidity rates remained high in the survey areas, with 59.1% of the children aged 6 to 59 months being reported sick within the two weeks recall period and this was not different with the 58.8% recorded in May 2016. The highest morbidity rate recorded in May 2017 was in Kasungu-Lilongwe at 63.2% while the lowest morbidity rate was in Lower Shire Zone at 49.3%. Although there was no major difference found when comparing May 2016 and May 2017, the results indicate *significant* reduction in the prevalence of diarrhoea in the same period from 37.3% in May 2016 to 26.5% in May 2017. Additionally, remarkable variation in the prevalence of diarrhoea was recorded across the livelihood zones with Thyolo-Mulanje Tea Estate Zone recording the highest prevalence of diarrhoea (48.4%) and Kasungu-Lilongwe Plain recording the least prevalence of diarrhoea (19.6%).

Vitamin A supplementation rates *significantly* decreased from 71.3% in May 2016 to 54.8% in May 2017. While the coverage was almost similar across the 7 livelihood zones, Thyolo-Mulanje zone recorded the lowest coverage (48.3%) of vitamin A and the highest was Karonga/Chitipa/Rumphi/Mzimba livelihood zone (57.3%). It is of concern that vitamin A supplementation was below the World Health Organization recommendations of over 80%.

The mortality situation was within the recommended thresholds of less than 2 deaths per 10,000 per day for under-five death rate. For crude death rate less than 1 death per 10,000 per day was also within the recommended famine thresholds. In addition, the observed thresholds were not significantly different across the livelihood zones.

Although Lower Shire reported an equal number of people experiencing little/no hunger and moderate hunger (about 47%), there is generally very little or no hunger in all the zones with proportions of up to about 70% or more in the central

and northern zones surveyed. Cases of severe hunger were also rare in all zones with the highest proportion recorded being 6.6% in Lower Shire.

The food consumption score has remained almost the same when comparing May 2016 with May 2017; for instance, the percentage of households classified as having acceptable food consumption was 67% in May 2016 and 64% in May 2017. On the other side, 29.2% in May 2016 were classified as having boarder-line food consumption score, while in 2017, this was recorded as 31.8%. Important to note was that six livelihood zones recorded *insignificant* shift in the food consumption score while only Karonga-Chitipa Zone deteriorated on the food consumption score.

The Minimum Acceptable Diet (MAD) is currently estimated at 19% which is a huge shift from the estimate of 6% recorded in December 2016, though this would be highly attributed to differences in season, the lean and post-harvest seasons; with all zones showing significantly higher MAD in May 2017 compared to December 2016. Despite the shift in the MAD, the consumption of animal source foods such as eggs, milk and flesh products were all quite low (less than 15%) in all livelihood zones.

Although the nutrition situation has improved, the delivery of the nutrition interventions should be continued to ensure that any cases of malnutrition can been enrolled in the programme. In addition, strategies to sustain existing food availability are needed to prevent extreme hunger as the season progresses and preventive interventions should also be intensified in all the districts. The strategies that need to be promoted and strengthening include; irrigation farming, homestead farming, integrated farming that include rearing of small stock and aquaculture for improved dietary quality. These may contribute to increased availability of animal foods and vitamin A rich fruits and vegetables which were found to be extremely low in all the seven livelihood zones.

The proportion of 6-23.9-month-old children that meet MAD continue to be low, hence it is strongly recommended that any nutrition interventions implemented should include cooking demonstrations of nutritious complementary foods. In addition, simple ways of increasing dietary diversity to child's porridge such as adding from family pot, pureed vegetables, mashed beans and peas or running cooked meat through a sieve into baby's porridge significantly increase dietary diversity. This would in turn result in a higher proportion of infants and young children being fed on minimum acceptable diet.

There is need for Government to address the long-standing issue of proper recording of vitamin A supplementation during both "child health days" and the routine "growth monitoring and promotion" (GMP) to ensure authentic data source which can estimate true coverage of vitamin A supplementation. Meanwhile routine vitamin A supplementation through the normal monthly GMP must also be strengthened.

As a result of the improved nutrition situation in the country, then there is need to *revise the caseloads* for both the MAM and SAM programs based on the current *MAM* and *SAM p*revalence's to ensure availability of adequate supplies. In addition, *Active Case Finding* should be intensified in the country, since a number of malnourished children (either moderate or severe*)* were found during the SMART Surveys who were not in the programmes but should have been in programmes.

The results show that Karonga-Chitipa- Rumphi-Mzimba livelihood zones' nutrition indicators have deteriorated in comparison with the May 2016 survey results. Hence there is need to monitor the situation closely to ensure that the nutrition situation does not deteriorate any further.

ACKNOWLEDGEMENTS

The survey management team is greatly indebted to the Government of Malawi through Department of Nutrition, HIV and AIDS (DNHA) for their overall guidance and coordination; UNICEF Malawi for the financial and technical support through the survey; FEWSNET for their support throughout the survey training; USAID for assisting with supervision in Lake Chilwa Phalombe Plain livelihood zone; the survey teams for working tirelessly to get the survey completed on time and all participating households, villages and their authorities for their cooperation.

Without the combined efforts of the above, and feedback from the nutrition community in Malawi, this work would not have been accomplished with excellence as was attained.

1.0 INTRODUCTION

1.1 Background

Since 2014/15, most districts in Malawi have continued to experience both heavy flooding and drought which has resulted in various shocks on livelihoods among households. As a result of the disasters, a national multi-sectorial response had been on-going till 31st March, 2017, while the Nutrition Cluster Response is still on-going, and these were put in place to mitigate their negative impacts. Initially, 15 districts were affected by the erratic climatic conditions but by mid-2016 twenty-five out of the twenty-eight districts (89%) were affected.. Additionally, according to the Malawi Vulnerability Assessment Committee (MVAC), the number of people who were affected by food insecurity in the country increased from about 2.8 million in mid-2015 to about 6.5 million towards the end of 2016. Due to the prevailing food insecurity and other shocks in the country, the nutrition cluster through the leadership of the Department of Nutrition and HIV/AIDS (DNHA) started conducting nutrition surveys using the SMART Methodology in the country in order to keep track of the nutrition situation and to inform nutrition response and programming.

The first nutrition survey was conducted in June 2015 covering 15 affected districts in five livelihood zones and showed low levels of Global Acute Malnutrition (GAM) that was attributed to coordinated support provided by the stakeholders, and the survey timing which was post-harvest. The second round of surveys was again conducted during the post-harvest season covering 25 districts from seven livelihood zones in 2016 showed higher GAM rates compared to the 2015 surveys and this was mainly attributed to worsening food security in the country. Finally, a third round of nutrition assessments was conducted during the lean season in November-December 2016 covering 25 districts across seven livelihood zones, and the results showed *poor* nutrition status in 4 livelihood zones from the south and *normal* nutrition situation in the other three livelihood zones from the central and northern regions of Malawi.

In order to continue monitoring the nutrition situation in the country, a fourth round of nutrition survey was conducted during the post-harvest (May-June 2017) using the SMART methodology. Similar to the 2nd and 3rd rounds of the SMART Surveys in 2016, the current assessments were conducted in seven livelihood zones covering twenty-five districts, thus a total of seven nutrition surveys were conducted across the country.

The livelihood zones covered by the fourth and latest surveys included: 1) Lake Chirwa Phalombe Plains Livelihood Zone (Phalombe, Zomba and Machinga), 2) Lower Shire Livelihood Zone (Chikhwawa and Nsanje), 3) Thyolo-Mulanje Tea Estates Livelihood Zone (Thyolo and Mulanje), 4) Rift Valley Escarpment Livelihood Zone (Balaka, Ntcheu, Mwanza, Neno, Salima and Nkhotakota), 5) Shire Highlands Livelihood zones (Blantyre Rural, Chiradzulu and Mangochi), 6) Kasungu-Lilongwe Plain Livelihood zone (Lilongwe Rural, Dedza, Mchinji, Dowa, and Kasungu), 7) Chitipa-Karonga/Mzimba Livelihood Zone (Chitipa, Mzimba, Rumphi, and Karonga).

1.2 Objectives

The broad objective of the survey was to provide updated information on the nutritional situation of children aged 6-59 months in the flood and drought affected areas of Malawi in the 2017 post-harvest season and specifically to

i. To estimate the prevalence of acute malnutrition among children aged 6-59 months in flood and drought affected areas in Malawi
ii. To estimate the prevalence of underweight among children aged 6-59 months in flood and drought affected areas in Malawi
iii. To determine the crude and the under-five mortality rates in flood and drought affected areas in Malawi
iv. To estimate morbidity rates (Acute Respiratory Infection (ARI), Fever and Diarrhoea) among children 6-59 months two weeks prior to the survey in flood and drought affected areas in Malawi
v. To determine the proportion of children 6-59 months that had received Vitamin A supplementation in the flood and drought affected areas in Malawi
vi. To estimate the proportion of children aged between 6 and 23.9 months who were meeting the minimum acceptable diet in the drought and affected areas in Malawi

vii. To establish the various food security indicators which included: Household Dietary Diversity Score (HDDS), Food Consumption Score (FCS), Coping Strategy Index (CSI), and Household Hunger Scale (HHS) in flood and drought affected areas in Malawi

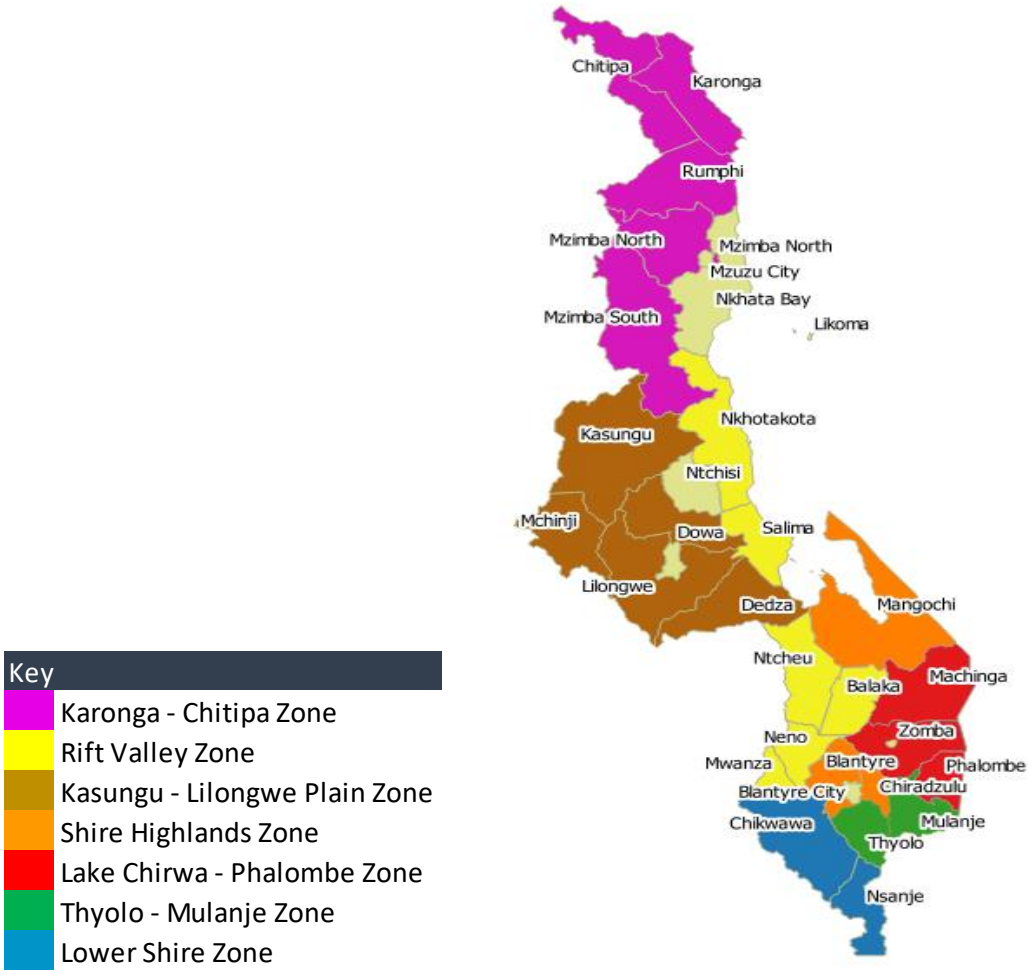
2.0 METHODOLOGY

2.1 Survey Area

In total, seven nutrition surveys were conducted, targeting seven livelihood zones in the flood and drought affected districts of Malawi. The following were the livelihood zones covered and the districts in each zone:

i. Lake Chirwa Phalombe Plains Livelihood Zone (Phalombe, Zomba and Machinga),
ii. Lower Shire Livelihood Zone (Chikhwawa and Nsanje),
iii. Thyolo Mulanje Tea Estates Livelihood Zone (Thyolo and Mulanje),
iv. Rift Valley Escarpment Livelihood Zone (Balaka, Ntcheu, Mwanza, Neno, Salima and Nkhotakota),
v. Shire Highlands Livelihood zones (Blantyre Rural, Chiradzulu and Mangochi),
vi. Kasungu-Lilongwe Plain Livelihood zone (Lilongwe Rural, Dedza, Mchinji, Dowa, and Kasungu),
vii. Chitipa-Karonga/Mzimba Livelihood Zone (Chitipa, Mzimba, Rumphi, and Karonga)

Map of the Survey Area



2.2 Survey Design and Sample Size

The surveys adopted a two-stage cluster sampling approach using the Standardized Monitoring and Assessment of Relief and Transitions (SMART) Methodology. The sampling frame for this survey was the updated list of households from the 2015 Malawi Demographic Health Survey (MDHS) provided by the National Statistics Office (NSO).

Sample size calculation for nutrition assessments in the 7 livelihood zones was based on the expected prevalence of GAM in the specific livelihood zones drawn for the May 2016 SMART surveys. Sample sizes were estimated following SMART methodology using the ENA for SMART software version2011 (July 9, 2015). Sample size calculations in terms of number of children and households visited for each of the livelihood zones have been presented in Table 1 below.

Table 1: Number of Children 6-59 Months, Clusters and Households per Livelihood Zone

Livelihood Zone	Number of Clusters	No of Children (6-59 months)	Number of Households
Rift Valley Escarpment	44	558	907
Lower Shire	44	560	909
Thyolo - Mulanje Tea Estates	44	578	910
Lake Chilwa Phalombe Plain	42	533	866
Shire Highlands	44	566	919
Kasungu Lilongwe Plain	44	557	904
Chitipa Karonga/Mzimba	44	578	939
TOTAL	306	3,930	6,354

2.3 Training and Data Collection

The training for the SMART Survey Enumerators was conducted between 2nd and 9th May, 2017 at Dedza Rural Training Centre (RTC) Hall in Dedza Town. A total of 62 survey personnel (14 team leaders, 14 enumerators, 28 anthropometric measurers and 6 data entry clerks) were trained in three separate training sessions but running concurrently at the same venue and using the same training materials (standardization of materials was done on 20th April). The team of trainees included 6 additional personnel to ensure that trained enumerators would be available on reserve to step in when necessary.

The SMART Survey data collection began on 10th May, 2017 and ended on 31st May, 2017 in all the 7 livelihood zones. Data collection in the 1st livelihood zone (Lake Chirwa Phalombe Plain) was done by all the 14 teams, and thereafter, the team was split into 2 groups, each comprising 7 Survey Teams, 3 Supervisors and 3 Data Entry Clerks. Survey managers were assigned to any of the 2 groups. The first group collected data in the 3 Livelihood Zones in the Southern Region, while the second group collected data in the 3 livelihood zones of the Central and Northern Region.

2.4 Data entry, Management and Analysis

Data was concurrently double entered in the field using 2 packages, the CSPro version 6.3 and ENA SMART (9th July, 2015 Version) as a data quality control measure. For the anthropometric data quality, plausibility checks were also done daily to assess quality of the data collected using the WHO 2006 growth standards to identify any call back issues for immediate addressing by teams before moving to a different area. The household level data was cleaned and exported to SPSS version 17 for analysis, while the anthropometric data analysis was analysed using ENA for SMART survey (9th July, 2015 version).

3.0 RESULTS AND DISCUSSION

3.1 Response Rate

The household and individual children (6 – 59 months) response rate for the seven SMART Surveys are shown in Table 2. Overall, the survey achieved the minimum required sample size (80%) for all the livelihood zones, both at the household level and the individual children for anthropometric measurements. However, the initial achieved sample size was below 80% with the initial 44 clusters in Thyolo-Mulanje Tea Estates and Chitipa-Karonga Zones, hence the five reserve clusters were surveyed, which explain the response rate of above 100% in these two zones. The reserve clusters were calculated automatically by the ENA Software during the cluster selection.

Table 2: Response Rate for Household and Individual Children (6-59 Months) per Livelihood Zone

Livelihood Zone	Achieved Sample (Households)	Response Rate (Household)	Achieved Sample (6 – 59 Months)	Response Rate (6 – 59 Months)
Lower Shire	888	97.9%	555	99.1%
Shire Highlands	868	95.5%	526	92.9%
Thyolo - Mulanje Tea Estates*	968	106.4%	484	83.7%
Lake Chilwa Phalombe Plain	842	97.2%	462	86.7%
Rift Valley Escarpment	878	95.5%	499	89.4%
Kasungu Lilongwe Plain	900	99.6%	454	81.5%
Chitipa-Karonga-Rumphi-Mzimba*	968	103.1%	522	90.3%

** Reserve Clusters were Surveyed*

3.2 Demographic Characteristics

In all livelihood zones, respondents were mostly females (over 70%) coming from households headed by males (about 64% or more). The results indicate that in all livelihood zones, slightly above 50% of the household heads were educated up to primary level, and this was the situation with the respondents. Proportion of households who had never attended school was higher in Lake Chilwa Phalombe Plains, Lower Shire, Shire Highlands, and Kasungu/Lilongwe plains. On the other side, Karonga-Chitipa zone recorded lower proportions of household heads and respondents who had never attended schools. Overall, zones in the Southern Region recorded lower education attainment for both household heads and respondents compared with zones in the Central and Northern Regions (Table 3).

Table 3: Demographic Characteristics of Households by Livelihood Zone

Household Characteristics	Lake Chilwa Phalombe Plain	Lower Shire	Shire Highlands	Thyolo/ Mulanje Tea Estates	Rift Valley Escarpment	Karonga/ Chitipa/Rumphi/Mzimba	Kasungu/ Lilongwe Plains
	n=842	n=888	n=868	n=968	n=878	n=8968	n=900
Sex of Respondent:							
Male	13.1	26.4	18.1	19.3	16.7	27.5	25.1
Female	86.9	73.6	81.9	80.7	83.3	72.5	74.9
Sex of Household Head							
Male	63.9	77.5	65.9	71.3	67.4	77.1	74.4
Female	36.1	22.5	34.1	28.7	32.6	22.9	25.6
Education level of household head:							
Adult literacy	0.2	0.2	0.5	0.4	0.7	0.0	0.3
Primary	55.5	54.2	53.0	59.9	57.3	55.3	57.3
Secondary	14.7	15.8	16.0	21.8	19.1	30.8	19.1
Tertiary	1.8	3.5	2.3	1.8	3.6	4.8	3.0
Never attended	27.7	26.2	28.0	16.0	19.2	9.2	20.2
Other	0.1	0.1	0.2	0.1	0.0	0.0	0.0
Education level of respondent:							
Adult literacy	0.4	0.2	0.3	0.5	0.2	0.1	0.2
Primary	56.2	48.4	51.8	56.1	60.0	55.3	58.4
Secondary	10.2	12.4	11.9	17.4	14.9	28.4	16.2
Tertiary/University	0.8	2.0	1.6	1.2	2.1	2.2	2.3
Never attended	32.4	36.8	33.9	24.8	22.8	14.0	22.8
Other	0.0	0.1	0.5	0.0	0.0	0.0	0.0

3.3 Quality Check (Plausibility Analysis)

The overall anthropometric data quality of seven livelihood zones was ***excellent*** as per the SMART Methodology Thresholds[1]**.** Table 4 presents the plausibility values for each of the seven surveys comparing the current surveys and the December 2016 round of surveys; which indicates improved quality. The major reasons for the high data quality includes: in-depth training, optimal supervision, daily data entry, running plausibility checks, and daily debriefing meetings with the survey teams.

Table 4: Overall Quality Value of Anthropometric Data by Livelihood Zone

Livelihood Zone	December 2016		May 2017	
	Overall Quality Value	Interpretation (SMART Thresholds)	Overall Quality Value	Interpretation (SMART Thresholds)
Lower Shire	0%	Excellent	1%	Excellent
Shire Highlands	10%	Good	0%	Excellent
Thyolo - Mulanje Tea Estates	1%	Excellent	0%	Excellent
Lake Chilwa Phalombe Plain	2%	Excellent	1%	Excellent
Rift Valley Escarpment	1%	Excellent	5%	Excellent
Kasungu Lilongwe Plain	6%	Excellent	4%	Excellent
Chitipa-Karonga Zone	3%	Excellent	2%	Excellent

[1] Overall Scores Thresholds: 0 – 9: Excellent; 10 – 14: Good; 15 – 24: Acceptable; >25: Problematic

3.4 Nutritional Status

3.4.1 Sex and Age Ratio

A total of 3,504 children were measured to derive the nutrition indicators for the survey. Results on age and sex distribution (Table 5) show equal representation of boys and girls in the survey and the ratio of boys to girls was ***one*** for all age categories except the 42 to 53-month-old children and the 54 to 59-month-old children who had slightly more girls (ratio=0.9) and boys (ratio=1.1) respectively. Age distribution was also spread across the age categories assessed (between 20 to 25%) except the 54 to 59-month-old category which was under represented (9.9%).

Table 5: Distribution of Age and Sex of Sample

	Boys		Girls		Total		Ratio
Age (mo)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy: girl**
6-17	360	50.3	356	49.7	716	20.4	1.0
18-29	408	49.6	414	50.4	822	23.5	1.0
30-41	418	48.8	439	51.2	857	24.5	1.0
42-53	367	48.2	394	51.8	761	21.7	0.9
54-59	181	52.0	167	48.0	348	9.9	1.1
Total	1734	49.5	1770	50.5	3504	100.0	1.0

3.4.2Nutrition Situation

Anthropometric measurements of weight, height/length and mid upper arm circumference (MUAC) were collected among children aged 6 to 59 months to assess their nutritional status and establish prevalence of under nutrition in the affected areas. Two anthropometric indicators were used to assess child nutritional status as was in the previous assessments namely; GAM and underweight.

3.4.2.1 Prevalence of acute malnutrition

The overall weighted GAM prevalence was 2.2% (1.7-2.8) and SAM prevalence was 0.3% (0.2-0.6) which were both *Acceptable* according to the WHO Classification[2] of Malnutrition. The prevalence of GAM ranged from 4.3% in Lower Shire livelihood zone to 1.1% in Kasungu-Lilongwe Plain livelihood zone hence all zones recorded *acceptable* GAM rates of less than 5%. Further, the prevalence of SAM was also within the *Acceptable* levels that is, less than 2% and there were no major variations among the zones; apart from Karonga-Chitipa/Mzimba/Rumphi Zone that didn't record any SAM Case (Table 6).

[2]WHO Classification of Malnutrition: <5%-Acceptable, 5%-9.9%-Poor, 10%-14.9%-Serious and 15% and above-Emergency

Table 6: Prevalence of Acute Malnutrition (GAM and SAM) by Livelihood Zone

Indicator	Livelihood Zones							Overall-Weighted
	Lower Shire	Shire Highland	Thyolo-Mulanje Tea Estates	Lake ChilwaPhalombe Plain	Rift Valley Escarpment	Kasungu – Lilongwe Plain	Karonga-Chitipa – Mzimba	
GAM *(May 2016)*	6.6% (4.3- 9.9)	4.0% (1.9- 8.3 9)	3.4% (1.8- 6.4)	3.1% (1.8- 5.4)	2.1% (1.1- 4.1)	1.3% (0.5- 3.2)	1.1% (0.3- 3.7)	2.5% (2.0 – 3.3)
GAM *(Dec 2016)*	6.2% (4.2- 9.0)	5.8% (3.9- 8.6)	5.2% (3.6- 7.5)	6.0% (4.2- 8.4)	2.2% (1.2- 3.9)	3.3% (2.0- 5.4)	2.0% (1.2- 3.6)	4.1% (3.5 - 4.9)
GAM *(May 2017)*	4.3% (2.8- 6.6)	2.7% (1.7- 4.2)	3.5% (2.2- 5.6)	3.0% (1.6- 5.6)	1.8% (1.0- 3.2)	1.1% (0.5- 2.6)	1.9% (1.1- 3.4)	2.2% (1.7 – 2.8)
SAM (May 2016)	0.9% (0.3- 2.3)	0.7% (0.2- 2.1)	0.5% (0.1- 2.1)	0.5% (0.1- 1.9)	0.9% (0.4- 2.4)	0.3% (0.0- 2.3)	0.3% (0.0- 2.1)	0.5% (0.3 - 0.9)
SAM *(Dec 2016)*	0.8% (0.4- 2.0)	0.9% (0.4- 2.1)	1.0% (0.3- 2.9)	1.5% (0.7- 3.2)	0.8% (0.3- 2.1)	0.7% (0.2- 2.0)	0.4% (0.1- 1.7)	0.8% (0.6 - 1.2)
SAM (May 2017)	0.4% (0.1- 1.4)	0.2% (0.0- 1.4)	0.8% (0.3- 2.2)	0.6 % (0.1 - 2.9)	0.2% (0.0- 1.5)	0.2% (0.0- 1.6)	0.0% (0.0- 0.0)	0.3% (0.2 – 0.6)

Nutrition Situation Trends during the Post-Harvest Season

As expected, the overall nutrition situation in the post-harvest season was significantly better compared to the lean season (Table 6). However, compared to the same time in 2016, the prevalence for GAM has slightly improved from 2.5% (2.0-3.3) in May 2016 to 2.2% (1.7-2.8) in May 2017. At the livelihood zone level, a similar trend was observed where the May 2017 GAM prevalence was slightly lower than the May 2016, except in Karonga-Chipita Zone where a deterioration has been observed.

Despite the improvement recorded in 2017 *post-harvest season* compared with the same season in 2016; the GAM results were still worse in the five zones where the SMART Surveys were conducted in the same season in 2015 (Figure 1).

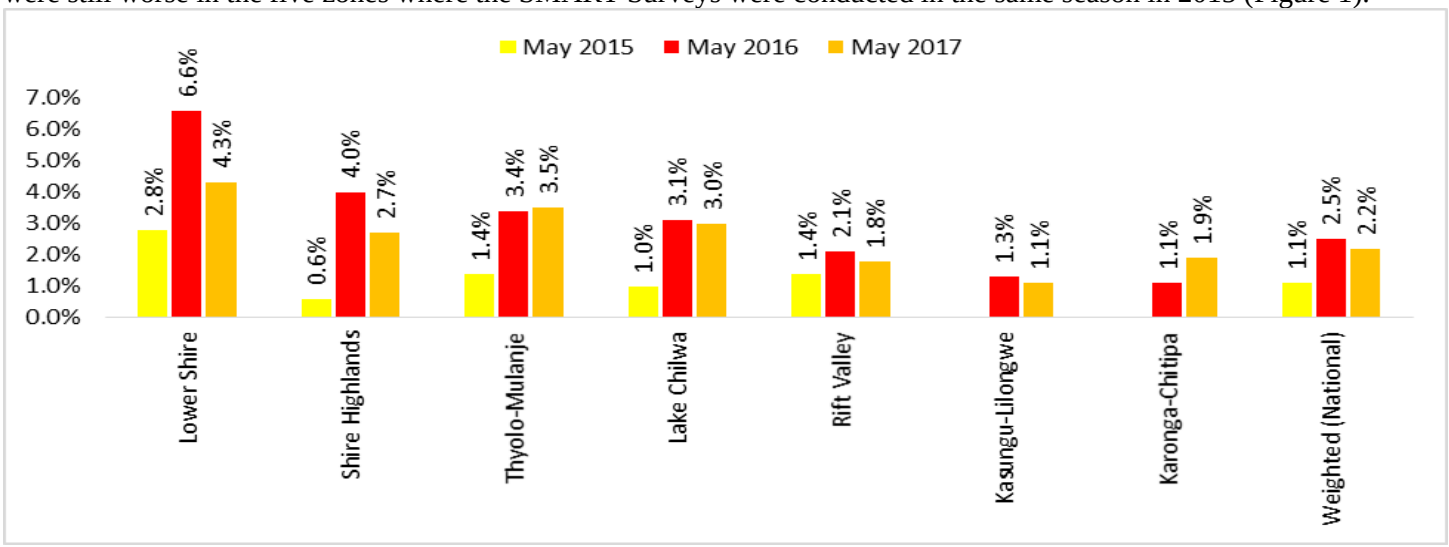


Figure 1: Trends in Nutrition Situation during the Post-Harvest Season 2015-2017

3.4.2.2 Prevalence of underweight by livelihood zone

Underweight was highest in Thyolo-Mulanje livelihood zone (14.7%) followed by Lake Chilwa Phalombe Plain livelihood zone (14.1%) while Karonga-Chitipa-Rumphi-Mzimba had the lowest prevalence of 10.5% (Table 7). There was a steady reduction in underweight in five livelihood zones except for Thyolo- Mulanje and Karonga- Chitipa-Mzimba livelihood zones with current prevalence of 14.7% and 10.5% respectively. Of major concern is Karonga-Chitipa-Mzimba zone where the prevalence increased from 8.9% in May 2016, to 9.9% in December 2016 and now at 10.5% despite low

prevalence of severe cases. Lower Shire livelihood zone on the other hand, continues to show a declining trend at each assessment point. Nevertheless, the overall improvements observed between 2016 and 2017 have resulted in a slight reduction in the national weighted underweight prevalence from 16% in 2016 to 11.2% in 2017.

Table 7: Prevalence of Underweight by Livelihood Zone

Indicator	Livelihood Zones							Overall-Weighted
	Lower Shire	Shire Highland	Thyolo-Mulanje Tea Estates	Lake ChilwaPhalombe Plain	Rift Valley Escarpment	Kasungu – Lilongwe Plain	Karonga-Chitipa - Mzimba	
Underweight (May 2016)	18.9% (15.8-22.5)	18.4% (14.0-23.8)	13.0% (10.2-16.5)	18.9% (15.1-23.5)	15.1% (10.7-20.9)	16.5% (12.8-20.9)	8.9% (5.9-13.3)	16.0% (14.1–18.1)
Underweight *(Dec 2016)*	16.8% (14.3-19.6)	13.4% (10.3-17.4)	17.4% (14.7-20.5)	19.7% (16.4-23.5)	14.5% (11.2-18.4)	14.4% (11.1-18.5)	9.9% (6.9-13.9)	14.4% (12.8 - 16.2)
Underweight (May 2017)	12.3% (9.4-15.9)	13.1% (10.6-16.2)	14.7% (11.8-18.3)	14.1% (11.1-17.9)	12.0% (9.3-15.4)	12.3% (9.6-15.7)	10.5% (8.2-13.4)	11.2% (10.0–12.6)
Severe Underweight (May 2016)	3.3% (1.9- 5.6)	2.8% (1.5- 5.1)	1.0% (0.4- 2.7)	2.1% (1.1- 4.0)	3.5% (1.8- 7.0)	2.8% (1.5- 5.4)	0.8% (0.3- 2.6)	2.6% (2.0-3.5)
Severe Underweight *(Dec 2016)*	2.7% (1.7- 4.3)	2.4% (1.2- 4.4)	3.4% (2.2- 5.2)	2.3% (1.3- 4.0)	2.4% (1.2- 4.5)	3.3% (1.8- 5.8)	0.4% (0.1- 1.7)	2.7% (2.0 - 3.8)
Severe Underweight (May 2017)	1.6% (0.7-3.5)	2.7% (1.7-4.1)	2.5% (1.5- 4.1)	1.3% (0.5- 3.1)	1.4% (0.7- 2.8)	1.1% (0.5- 2.5)	1.5% (0.7- 3.2)	1.4% (1.0-2.1)

3.5 Morbidity and Vitamin A Supplementation

3.5.1 Morbidity

Information on morbidity among children in the previous two weeks prior to the survey was assessed in all the seven livelihoods zones and results are presented in Table 8. Overall, 59.1% of all children had some illness in the recall period and this prevalence is not different from the results of May 2016 (58.8%). Compared to the May 2016, results indicate a significant decrease in prevalence of morbidity among the Southern zones and an increase in the Central/Northern Zones. Among all the zones, Lower Shire livelihood zone appears to be on a right path in that it registered significant decline in morbidity compared to the May 2016 results. Morbidity prevalence was lowest in Lower Shire (49.3%) while the highest prevalence was recorded for Kasungu-Lilongwe Plain (63.2%).

However, overall morbidity showed an increase of 8.6 percentage points in comparison to the November/December 2016 survey morbidity rate of 50.5%. Except for Lower Shire, all livelihood zones showed an increase in morbidities between December 2016 and the current survey.

While there was no change in the prevalence of morbidities between May 2016 and May 2017, the current survey results indicate that prevalence of diarrhoea significantly decreased from 37.3% in May 2016 to 26.5% in May 2017. Six out of the seven livelihood zones registered a sharp decrease in diarrhoea prevalence, while in Thyolo-Mulanje Tea Estates livelihood zone prevalence increased from 40.2% in May 2016 to 48.4% in the current survey. Where diarrhoea was reported, survey respondents were asked to state the actions that were taken to manage the diarrhoea. Overall, 71.3% of the respondents in all the zones took their children to a health facility indicating that appropriate health seeking behaviour was high. While health seeking, behaviour was comparable across the 7 livelihood zones Rift Valley zone had fewer (65.8%) caretakers who took their children to a health facility during diarrhoeal episodes. Again, Lower Shire zone reported the highest (84%) prevalence of caretakers following appropriate diarrhoea management practices.

Table 8: Morbidity, Health Seeking Behaviour for Diarrhoea and Vitamin A by Livelihood Zone

Indicator	Livelihood Zone								Overall - Weighted
	Period	Lower Shire	Shire Highland	Thyolo-Mulanje Tea Estates	Lake Chilwa Phalombe Plain	Rift Valley Escarpment	Kasungu – Lilongwe Plain	Karonga-Chitipa – Rumphi Mzimba	
Prevalence of Morbidity[3]	May 2016	62.8% (n=285)	60.9% (n=259)	66.7% (n=256)	63.4% (n=268)	50.0% (n=212)	61.2% (n=194)	46.1% (n=166)	58.8% (n=1640)
	Dec 2016	48.9% (n=291)	44.8% (n=245)	50.1% (n=253)	48.5% (n=251)	49.6% (n=239)	56.9% (n=260)	44.1% (n=213)	50.5% (n=1810)
	May 2017	49.3% (n=265)	57.8% (n=298)	54.1% (n=256)	57.8% (n=253)	61.5% (n=305)	63.2% (n=285)	56.1% (n=289)	59.1% (n=2,031)
Prevalence of Diarrhoea	May 2016	53.0% (n=151)	34.7% (n=90)	40.2% (n=103)	39.6% (n=106)	36.3% (n=77)	32.5% (n=63)	44.0% (n=73)	37.3% (n=663)
	Dec 2016	45.7% (n=133)	43.7% (n=107)	45.1% (n=114)	45.8% (n=115)	35.6% (n=85)	34.6% (n=90)	40.4% (n=86)	39.7% (n=719)
	May 2017	32.8% (n=87)	30.9% (n=92)	48.4% (n=124)	26.9% (n=68)	25.9% (n=79)	19.6% (n=56)	21.5% (n=62)	26.5% (n=538)
Health Seeking – Diarrhoea	May 2016	78.8% (n=119)	70.0% (n=63)	68.9% (n=71)	73.6% (n=78)	70.1% (n=54)	69.8% (n=44)	75.3% (n=55)	72.0% (n=477)
	Dec 2016	78.2% (n=104)	65.4% (n=70)	65.8% (n=75)	64.3% (n=74)	71.8% (n=61)	62.2% (n=56)	80.2% (n=69)	67.3% (n=484)
	May 2017	83.9% (n=73)	70.7% (n=65)	71.8% (n=89)	69.1% (n=47)	65.8% (n=52)	69.6% (n=39)	82.3% (n=51)	71.3% (n=383)
Vitamin A Supplementation	May 2016	66.2% (n=301)	77.2% (n=328)	75.2% (n=289)	65.8% (n=278)	76.7% (n=325)	67.2% (n=213)	73.6% (n=265)	71.3% (n=1999)
	Dec 2016	81.2% (n=487)	70.0% (n=386)	71.1% (n=354)	73.5% (n=383)	74.7% (n=378)	71.7% (n=329)	70.4% (n=344)	73.5% (n=2661)
	May 2017	56.8% (n=315)	53.6% (n=282)	48.3% (n=234)	54.3% (n=251)	55.1% (n=276)	56.2% (n=255)	57.3% (n=299)	54.8% (n=1,920)

3.5.2 Vitamin A Supplementation

Information on child vitamin A supplementation 6 months prior to the survey was collected from the caretaker either by recall or using a health passport card. Overall, vitamin A supplementation coverage was at 54.8%, which is 17% lower compared to the May 2016 survey. Apart from being lower than the May 2016 survey, the current coverage is far below the internationally recommended coverage of 80%. While the coverage was comparable across the 7 livelihood zones, Thyolo-Mulanje zone recorded the lowest coverage (48.3%) of vitamin A. It is of concern that vitamin A supplementation was below the WHO recommendations (80%). However, it is also important to note that for most children, coverage was based on mothers' recall, which may have an influence on coverage. It is of concern that vitamin A supplementation has tremendously decreased (perhaps due to the fact that the first round of supplementation through national campaign was delayed from its schedule of May as the country agreed on integrating with Rubella-Measles campaign scheduled in June 2017 which is six months after the last round conducted in November 2016) and was below the WHO recommendation. This implies that the biannual routine Vitamin supplementation is hardly implemented during GMP clinics.

3.5.3 Infant and Young Child Feeding Practices

Based on 24-hour dietary recall, information on the types of foods consumed by children aged 6 to 23.9 months the day preceding the survey and feeding frequency was collected in all the livelihood zones. The information was then used to estimate the proportion of children who received minimum acceptable diet (MAD), achieved minimum dietary diversity and fed acceptable minimum feeding frequency. The results are presented in Figures 2, 3, and 4.

[3] Two weeks recall period

Overall, 18.7% of the children aged 6 to 23.9 months were meeting the MAD compared with only 6% in the November/December 2016 surveys. MAD is defined as consumption of at least 4 out of the 7 food groups in the previous 24 hours fed meals 4 or 5 times per day for non-breastfed children age 6-23 months. However, breastfed infants aged 6-8 months who meet MAD are those fed meals of complementary foods two or three times per day, with one or two snacks as desired; while breastfed children aged 9-23 months are those fed meals three or four times per day, with one or two snacks (PAHO/WHO, 2003). At the livelihood zone level, the proportion of children who achieved MAD ranged between 9.6% in Lower Shire livelihood zone to 23.7% in Shire Highlands livelihood zone. As expected, the proportion of children who were fed minimum acceptable diet more than doubled (9.6% to 23.7%) in six out of seven livelihood zones in the current post harvest period in comparison with the lean period (3% to 11%). Lake Chilwa-Phalombe Plain was the only zone that registered a one per cent increase.

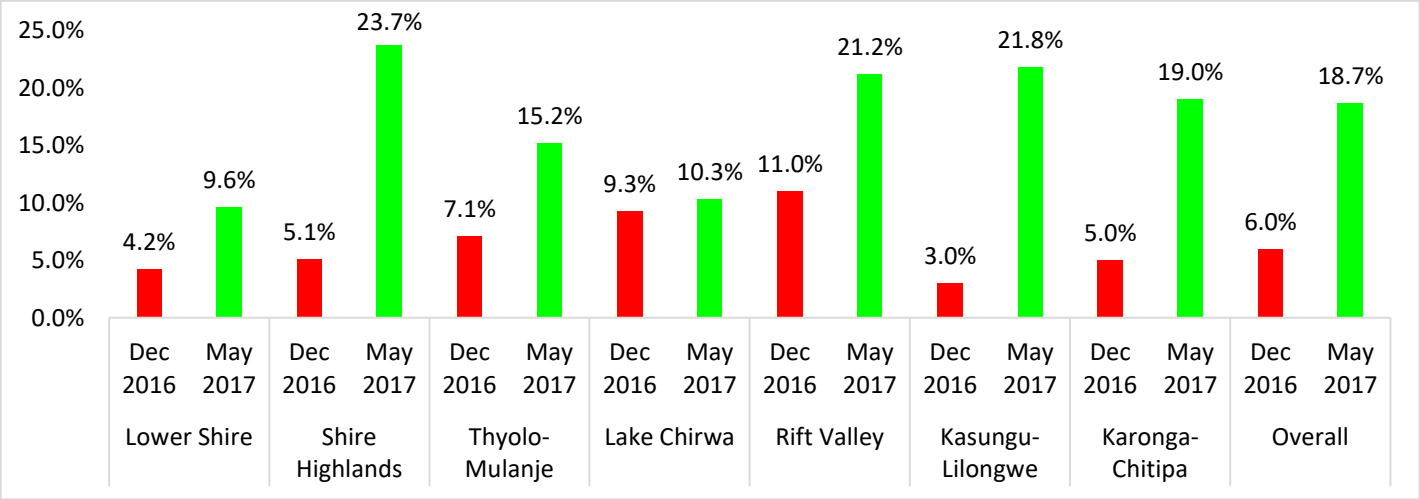


Figure 2: Proportion of Children 6-23.9 Months who Achieved Minimum Acceptable Diet

The minimum acceptable diet is a composite indicator which is developed from two other indicators namely, minimum meal frequency and dietary diversity. The results indicate the 64.4% of the children aged 6 to 23.9 months met the minimum meal frequency[4] within the 24 hour recall. The highest proportion of children who met the minimum meal frequency was recorded in Thyolo-Mulanje (73.4%) while the lowest proportion was recorded in Lake Chirwa-Phalombe Plain Zone (52.7%). Comparing the *lean* and the *post-harvest seasons*, the results indicate significant increment in the proportion of children meeting the minimum meal frequency.

[4] Minimum Meal Frequency: 2 Meals for children 6-8.9 Months and Breastfeeding or 3 Meals for children 9-23.9 Months and Breastfeeding, or 4 Meals for children 6-23.9 Months and Not Breastfeeding

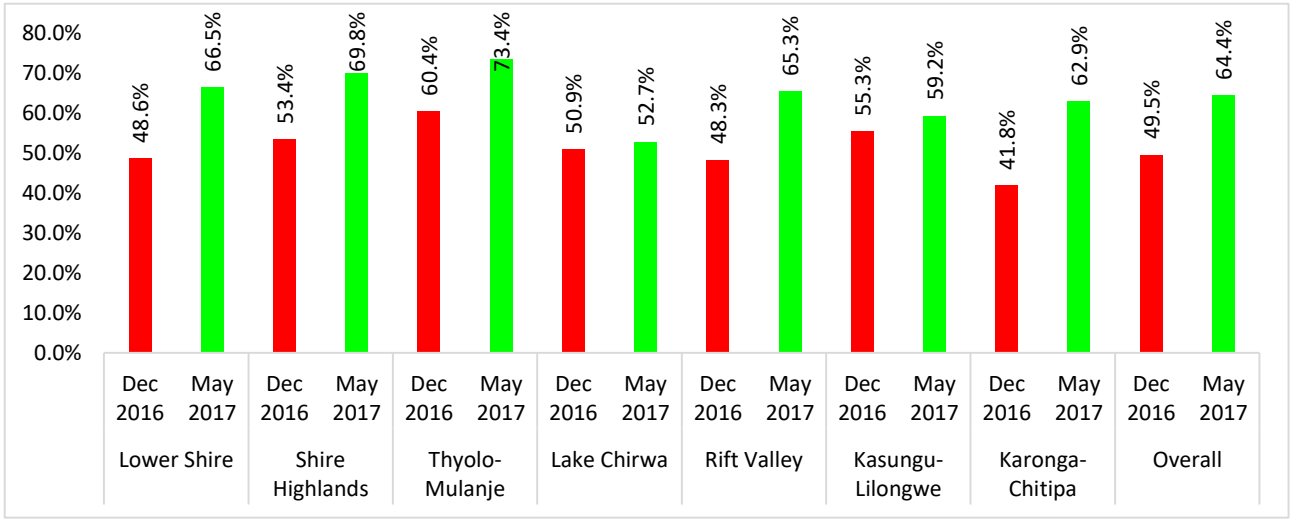


Figure 3: Proportion of Children 6-23.9 Months Fed with Minimum Meal Frequency

A similar pattern was observed with MAD with respect to proportion of 6-23.9 children who were fed with nutritious diets that achieved high[5] dietary diversity the day before data was collected in the survey. Overall, only 21% of the children had met the requirement. However, this was almost three times the percentage recorded during the lean period (8%). At livelihood zone, the proportion ranged from 11.6% in Lower Shire to 29% in Shire Highlands. In general, the Central and Northern Malawi were slightly better (Figure 4).

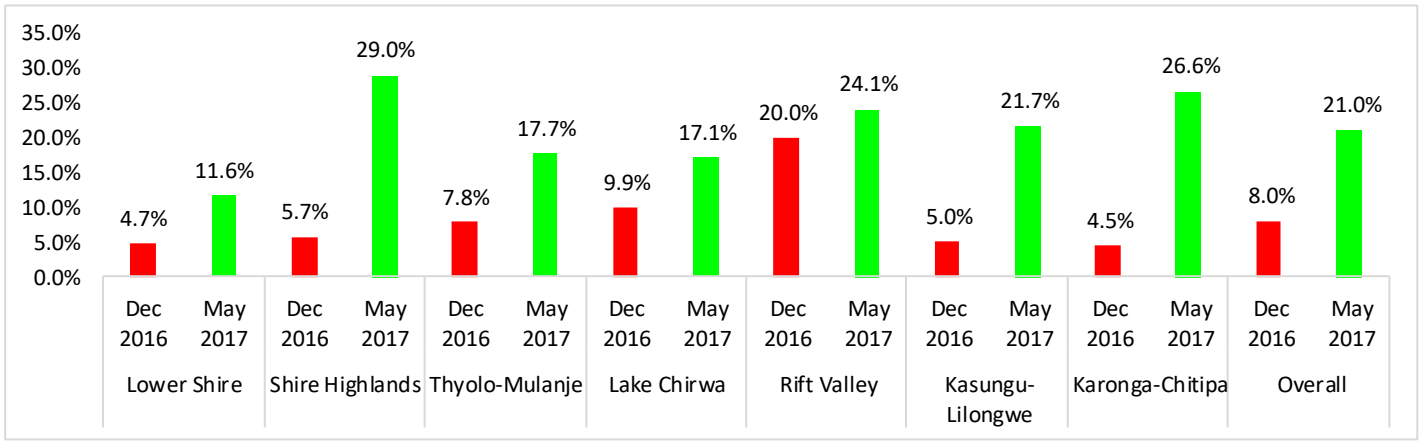


Figure 4: Proportion of Children 6-23.9 Months who Achieved Minimum Dietary Diversity

3.5.3.1 Type food consumed by children 6-23.9 months

The main food type for 6-23.9 months children is the staple comprising mainly of cereals and to a minor extent roots and tubers (95.1% overall) and with hardly variation among the livelihood zones. The consumption of milk, eggs and fleshy products were low at 5.2%, 6.8% and 14.9% respectively (Table 9). These findings help to explain the extremely low proportion of the children who had achieved Minimum Dietary Diversity and Minimum Acceptable Diet.

[5] 4 Food Groups from a Total of 7 Food Groups

Table 9: Food Types Eaten by Children by Livelihood Zone

Food type	Lake Chirwa	Lower Shire	Shire Highlands	Thyolo-Mulanje	Rift Valley	Karonga Chitiap	Kasungu-Lilongwe	Overall weighted
	n=146	n=173	n=169	n=158	n=170	n=184	n=124	
Cereals, roots and tubers	93.2	96.0	97.0	94.3	95.9	94.6	94.4	95.1
Legumes, nuts and seeds	51.4	49.1	62.1	44.3	46.5	51.6	52.4	51.1
Milk and milk products	4.8	4.6	4.7	10.1	8.8	7.1	7.3	6.8
Flesh products	14.4	13.9	16.0	16.5	21.2	10.9	11.3	14.9
Eggs	2.7	2.9	3.0	7.0	5.3	6.5	9.7	5.2
Vitamin A rich fruits and vegetables	30.1	27.7	32.5	31.0	34.7	28.8	34.7	31.2
Other fruits and vegetables	40.4	39.9	63.9	60.1	47.1	48.4	49.2	49.9

3.6 Mortality Indicators

Presented in Table 10 are crude and under-five death rates three months before the survey. Both the crude[6] and under-five[7] death rates were within the acceptable thresholds of less than 2 deaths per 10,000 per day for under-five death rate and less than 1 death per 10,000 per day for crude death rate in all the zones. Lake Chilwa - Phalombe Livelihood Zone recorded the highest crude and under-five death rates while Lower Shire livelihood zone recorded the lowest crude death rate while in Rift Valley Escarpment, no under-five death had occurred within the recall period. The under five death rate declined in 5 Zones out of 7 Zones, with an exception of Karonga-Chitipa/Rumphi/Mzimba and Lake Chilwa -Phalombe Plain zones. However, the Crude Death Rate was slightly higher in the Post Harvest Season (May 2017) than in the Lean Season (Nov/Dec 2017) in 5 Zones out of 7; though not significant.

Table 10: Crude and Under-Five Death Rate by Livelihood Zone

Indicator	Livelihood Zone						
	Lower Shire	Shire Highland	Thyolo-Mulanje Tea Estates	Lake Chilwa-Phalombe Plain	Rift Valley Escarpment	Kasungu – Lilongwe Plain	Karonga-Chitipa - RumphiMzimba
Crude Death Rate – Nov/Dec 2016	0.03 (0.00-0.26)	0.40 (0.20-0.80)	0.25 (0.12-0.52)	0.11 (0.04-0.35)	0.08 (0.02-0.34)	0.08 (0.02-0.31)	0.07 (0.02-0.31)
Crude Death Rate – May 2017	0.15 (0.05–0.43)	0.30 (0.16-0.56)	0.21 (0.10-0.43)	0.32 (0.15-0.68)	0.18 (0.08 – 0.40)	0.21 (0.10-0.45)	0.29 (0.14-0.57)
Under-Five Death Rate – Nov/Dec 2016	0.24 (0.03-1.77)	0.74 (0.17-3.26)	0.29 (0.04-2.04)	0.26 (0.03-1.93)	0.30 (0.04-2.21)	0.29 (0.04-2.12)	0.00 (0.00-0.00)
Under-Five Death Rate – Dec 2017	0.22 (0.03-1.65)	0.50 (0.12-2.01)	0.26 (0.03-1.94)	0.54 (0.13-2.22)	0.00 (0.00 – 0.00)	0.28 (0.04-2.11)	0.51 (0.13-2.01)

3.7 Household Food Security

The food security situation was assessed using various indicators which included: the food consumption score (FCS), household dietary diversity score (HDDS), household hunger scale (HHS) and the coping strategy index (CSI).

[6] Thresholds for Crude Death Rate: <1/10,000/day=Acceptable; > 1/10,000/day=Very Serious, > 2/10,000/day=Out of Control, >5/10,000/day=Major Catastrophe *(adapted from Checchi and Roberts, 2005)*

[7] Thresholds for Under-Five Death Rate: <2/10,000/day=Acceptable, >2/10,000/day=Very Serious, >4/10,000/day=Out of Control, >10/10,000/day= Major Catastrophe*(adapted from Checchi and Roberts, 2005)*

3.7.1 Food Consumption Score

Overall the results show that 4.2% of households had a poor food consumption score which has remained almost the same when comparing with May 2016 (3.8%). Six livelihood zones registered slightly higher proportions of households with poor food consumption scores than in May 2016. No significant difference was noted in the food consumption score between May 2016 and May 2017 in 5 livelihood zones, apart from Thyolo-Mulanje Tea Estates and Karonga-Chitipa/Mzimba/Rumphi Zones where slight *worsening* of the food consumption score was recorded. Only Lower Shire livelihood zone registered lower proportion in May 2017 (9.1% against 12.9% in May 2016) which may be a reflection of the humanitarian intervention contributions that were undertaken in May 2016.

The overall poor consumption score of 4.2% is however, a *significant* improvement when compared with the *lean season* with a score of 10.5% as compared to 6.3%. The largest reduction was in Lake Chilwa-Phalombe Plain with a massive reduction of 31.3% (5.1% in May 2017 compared with 36.4% in November-December 2016).

Table 11: Food Consumption Score by Livelihood Zone

Indicator	Livelihood Zone								Overall Weighted
	Period	Lower Shire	Shire Highland	Thyolo Mulanje Tea Estates	Lake Chilwa Phalombe Plain	Rift Valley Escarpment	Kasungu Lilongwe Plain	Karonga Chitipa Rumphi Mzimba	
Poor Food Consumption	*May 2016*	12.9% (n=87)	2.6% (n=15)	3.2% (n=23)	5.2% (n=33)	2.9% (n=20)	3.3% (n=20)	1.7% (n=11)	3.8% (n=172)
	Dec 2016	7.0% (n=62)	4.8% (n=41)	7.5% (n=66)	36.4% (n=294)	4.0% (n=33)	10.3% (n=88)	3.2% (n=26)	10.5% (n=622)
	May 2017	9.1% (n=81)	2.9% (n=25)	5.0% (n=48)	5.1% (n=43)	3.2% (n=28)	3.7% (n=33)	4.2% (n=41)	4.2% (n=265)
Borderline Food Consumption	*May 2016*	36.1% (n=244)	28.8% (n=167)	35.8% (n=258)	31.0% (n=197)	30.2% (n=208)	26.7% (n=160)	22.8% (n=144)	29.2% (n=1323)
	Dec 2016	34.5% (n=305)	23.3% (n=198)	29.8% (n=261)	38.0% (n=307)	25.9% (n=214)	45.2% (n=385)	30.5% (n=248)	34.5% (n=2038)
	May 2017	40.8% (n=362)	31.0% (n=269)	35.5% (n=344)	33.3% (n=280)	28.8% (n=253)	30.3% (n=273)	30.8% (n=298)	31.8% (n=2005)
Acceptable Food Consumption	*May 2016*	51.0% (n=345)	68.6% (n=398)	61.0% (n=439)	63.8% (n=405)	66.9% (n=460)	70.0% (n=420)	75.4% (n=476)	67.0% (n=3035)
	Dec 2016	58.4% (n=516)	71.9% (n=612)	62.7% (n=549)	25.6% (n=207)	70.1% (n=578)	44.0% (n=378)	66.3% (n=540)	55.0% (n=3249)
	May 2017	50.1% (n=445)	66.1% (n=574)	59.5% (n=576)	61.6% (n=519)	68.0% (n=597)	66.0% (n=594)	65.0% (n=629)	64.0% (n=4042)

3.7 Other Food Security Indicators

During the May 2017 survey, information collected was also used to generate ***household dietary diversity score*** and ***copying strategy index*** and the results are presented in Table 12. Overall, households in all zones registered a mean household dietary diversity score (MHDDS) of 5.0 indicating medium diversity, and scores ranged from 4.4 in Lower Shire to 5.3 in Karonga/Chitipa/Rumphi/Mzimba zone. There was no change observed between the current harvest period and the lean period in November -December 2016 (Table 12).

Lower Shire is the only zone that registered low dietary diversity with a score of less than 4.5 (was at 5 during the lean period). However, it is of concern that no zone registered high dietary diversity during the post-harvest season even at the minimum of 6+ based on the IFPRI thresholds (<4.5 = low dietary diversity; 4.5-6 = medium dietary diversity >6 = high dietary diversity).

Table 12: Household Dietary Diversity and Copying Strategy Index by Livelihood Zone

Indicator	Livelihood Zone							Overall - Weighted
	Lower Shire	Shire Highland	Thyolo-Mulanje Tea Estates	Lake Chilwa - Phalombe Plain	Rift Valley Escarpment	Kasungu Lilongwe Plain	Karonga-Chitipa – Rumphi Mzimba	
Household Dietary Diversity Score Dec 2016	5.0 (±1.7)	5.1 (±1.7)	5.0 (±1.6)	4.8 (±1.8)	5.3 (±1.6)	4.5 (±1.7)	5.3 (±1.6)	4.9 (±1.7)
Household Dietary Diversity Score May 2017	4.4 (±1.5)	4.9 (±1.6)	5.0 (±1.6)	4.8 (±1.7)	5.1 (±1.7)	5.1 (±1.7)	5.3 (±1.7)	5.0 (±1.7)
Median Reduced Coping Strategy Index Dec 2016	19.0	19.0	21.0	22.0	18.0	18.0	16.0	19.0
Median Reduced Coping Strategy Index May 2017	17.0	15.0	13.0	14.0	10.0	9.0	9.0	12.0

Table 13 shows the Food Consumption Score (FCS) for nutrition which provides information on nutrient rich groups consumed by the households and which are essential for nutritional health and well-being; these include: protein, iron and vitamin A. For the iron and protein rich foods, over 60% indicated these are consumed ***sometimes*** in all the zones. While for vitamin A rich foods the majority (>60%) indicated ***at least daily*** consumption except for Lower shire (41%) and Shire Highlands (56.5%). For the iron rich foods, only about 5 % reported consumption frequency of at least once per day and ranged from 2.8% in Lower Shire to 7.1% in Rift Valley Escarpment. It is of concern that a significant proportion indicated no consumption at all (28.8%) and ranged from 22.7% in Thyolo/Mulanje to a high of 34% in Kasungu/Lilongwe Plain zone.

When livelihoods are negatively affected by a shock /crisis, households may adopt various strategies which are not adopted in a normal day-to-day life, to cope with reduced or declining access to food. Coping Strategy Index (CSI) is often used as a proxy indicator of household food insecurity. It is based on a list of 5 food-related coping strategies applied during the past 7 days prior to the survey. The maximal rSCI is 56 during the past 7 days prior to the survey (that is, all 5 strategies are applied every day) and the higher the rCSI, the more severe the coping is applied by a household.
The results of May 17 surveys on the coping strategy index, show that negative coping is still high in some livelihood such as Lower Shire and Shire Highland livelihood zones (17 and 15 respectively) although the overall rCSI was at 12 nationally ranging from 9 to 17. The results showed that overall rCSI reduction from 19 in the lean period to 12 in the postharvest period.

Table 13: Consumption of Iron, Vitamin A and Protein Rich Foods

Food Group	Lower Shire	Shire Highlands	Thyolo/ Mulanje	Lake Chilwa	Rift Valley	Kasungu-Lilongwe	Karonga-Chitipa	Overall - Weighted
Haem Iron (Flesh Meat, Organ Meat and Fish):								
Never Consumed	30.5%	23.8%	22.7%	23.9%	27.3%	34.0%	32.6%	28.8%
Sometimes	66.7%	70.9%	73.8%	72.2%	65.6%	62.0%	62.2%	66.6%
At least ONCE/day	2.8%	5.3%	3.5%	3.9%	7.1%	4.0%	5.2%	4.7%
Vitamin A (Dairy products, Organ Meat, Eggs, Green Veg. Orange Veg. and Orange Fruits):								
Never Consumed	3.2%	1.2%	0.3%	0.4%	0.6%	0.8%	0.6%	0.8%
Sometimes	55.9%	42.4%	30.6%	37.1%	32.3%	21.3%	25.5%	31.5%
At least ONCE/day	41.0%	56.5%	69.1%	62.6%	67.1%	77.9%	73.9%	67.7%
Protein Rich (Pulses, Dairy products, Meat, Organ Meat, Eggs, Fish):								
Never Consumed	9.9%	2.6%	6.7%	6.3%	3.9%	4.6%	5.4%	5.0%
Sometimes	68.5%	65.1%	67.8%	63.1%	58.4%	53.2%	59.5%	60.0%
At least ONCE/day	21.6%	32.3%	25.5%	30.6%	37.7%	42.2%	35.1%	35.0%

3.8 Household Hunger Scale

Experiences of extreme hunger where households reported having no food to eat or going a whole day or night without eating were rare in the current survey compared to the December 2016 survey. Based on the findings from the Household Hunger Scale[8] (Table 14), severe hunger was reported in just 2.1% of the total households surveyed, a reduction from 5.2% in December 2016. The proportion experiencing little or no hunger rose from 48.9% in 2016 to 73.4% in 2017 with the proportion almost doubling in Thyolo Mulanje and Lake Chilwa Phalombe plains. While notable improvements were observed across all zones, results from Shire Highlands zone did not differ much when compared to the results from the 2016 assessment. The survey timing can explain the improvements observed in the current assessment although it is impossible to give much details using two data collection points alone.

Table 14: Household Hunger Scale by Livelihood Zone

Indicator	Livelihood Zone							Overall - Weighted
	Lower Shire	Shire Highland	Thyolo-Mulanje Tea Estates	Lake Chilwa Phalombe Plain	Rift Valley Escarpment	Kasungu Lilongwe Plain	Karonga-Chitipa – Rumphi Mzimba	
Little or No Hunger Dec 2016	38.8% (n=338)	54.4% (n=463)	38.9% (n=341)	32.4% (n=262)	56.7% (n=468)	51.9% (n=442)	57.8% (n=469)	48.9% (n=2886)
Little or No Hunger May2017	46.6% (n=414)	58.5% (n=508)	65.8% (n=637)	66.5% (n=560)	79.7% (n=700)	85.0% (n=765)	80.7% (n=781)	73.4% (n=4634)
Moderate Hunger Dec 2016	52.8% (n=466)	40.8% (n=347)	49.2% (n=431)	57.5% (n=465)	42.1% (n=347)	44.5% (n=379)	40.9% (n=333)	45.9% (n=2713)
Moderate Hunger May 2017	46.7% (n=415)	38.5% (n=334)	31.6% (n=306)	30.0% (n=253)	19.1% (n=168)	14.2% (n=128)	18.3% (n=177)	24.5% (n=1548)
Severe Hunger in HH Dec 2016	8.9% (n=79)	4.8% (n=41)	11.9% (n=104)	10.0% (n=81)	1.2% (n=10)	3.5% (n=30)	1.5% (n=12)	5.2% (n=309)
Severe Hunger in HH May 2017	6.6% (n=59)	3.0% (n=26)	2.6% (n=25)	3.4% (n=29)	1.1% (n=10)	0.8% (n=7)	1.0% (n=10%)	2.1% (n=130)

[8] Household Hunger Scale is an indicator used to measure household hunger in food insecure areas. The HHS is different from other household food insecurity indicators in that it has been specifically developed and validated for cross-cultural use

4.0 CONCLUSION

The overall nutrition situation has slightly improved as expected compared to the December 2016 assessment which was conducted during the lean period resulting in a national GAM prevalence reduction of 2.2% from 2.5% last year. Cases of SAM have also declined across all zones as have cases of underweight. However, results of the current assessment are not very different from the assessment conducted in May 2016. While the Lower Shire shows a continued declining prevalence of undernutrition, of concern is the increased GAM and underweight prevalence in Karonga-Chitipa- Rumphi - Mzimba livelihood zone.

The prevalence of morbidity has not changed, but that of diarrhoea has significantly decreased particularly when comparing the May 2016 and May 2017 survey results. Prevalence of diarrhoea decreased across six livelihood zones apart from Thyolo-Mulanje Tea Estates Zone. Vitamin A supplementation coverage has tremendously decreased compared with the previous post-harvest survey results (perhaps since the second round of national campaign was due a few weeks after the survey) and was below the WHO recommendation. Lower Shire livelihood zone was showing improvements in most indicators including morbidities, health seeking behaviour, management of diarrhoeal episodes in children and vitamin A supplementation levels. The mortality situation was within the recommended thresholds for both under-five death rate and crude death rate, with no significant difference across the livelihood zones.

Although Lower shire reported an equal number of people experiencing little/no hunger and moderate hunger (about 47%), there is generally very little or no hunger reports in all the zones with proportions of up to about 70% or more in the central and northern zones surveyed. Cases of severe hunger were also rare in all zones with the highest proportion recorded being 6.6% in Lower shire. Compared to 2016 data, the 2017 results indicate improvements in food availability.

The food consumption score has remained almost the same when comparing May 2016 with May 2017; but *significantly* improved when compared with the *lean season* (November /December 2016). No significant differences were noted in the food consumption score between May 2016 and May 2017 in 5 livelihood zones, apart from Thyolo-Mulanje Tea Estates and Karonga-Chitipa/Mzimba/Rumphi zones where slight *worsening* of the food consumption score was registered.

The minimum acceptable diet is currently estimated at 19% which is significantly higher than the December 2016 estimate of 6% though this would be highly attributed to the different seasons for data collection; with all zones showing significantly higher MAD in May 2017 compared with December 2016. In addition, minimum dietary diversity was only achieved by 6% of the children nationwide ranging from 4.5% in Kasungu /Lilongwe Plain to 20% in Rift Valley Escarpment Livelihood zone. The consumption of animal source foods such as eggs, milk and fleshy products were all quite low (less than 15%) in all livelihood zones.

The Household Dietary Diversity was 5.0 (*medium* dietary diversity), with no significant differences across the livelihood zones (4.4 and 5.3).

5.0 RECOMMENDATIONS

Although the nutrition situation has improved, the delivery of the nutrition interventions should be continued to ensure that any malnourished child has been enrolled in the programme. In addition, strategies to sustain existing food availability are needed to prevent extreme hunger as the season progresses and preventive interventions should also be intensified in all the districts. The strategies that need to be promoted and strengthened include; irrigation farming, homestead farming, integrated farming that include rearing of small stock and aquaculture for improved dietary quality. These may contribute to increased availability of animal foods and vitamin A rich fruits and vegetables which were found to be extremely low in all the seven livelihood zones.

The proportion of 6-23.9 month-old children that meet minimum acceptable diet continue to be low, hence it is strongly recommended that any nutrition interventions implemented should include cooking demonstrations of nutritious complementary foods. In addition, simple ways of increasing dietary diversity to child's porridge such as adding from family pot, pureed vegetables, mashed beans and peas or running cooked meat through a sieve into baby's porridge significantly increase dietary diversity. This would in turn result in a higher proportion of infants and young children being fed on minimum acceptable diet.

There is need for Government to address the long-standing issue of proper recording of vitamin A supplementation during both "child health days" and the routine "growth monitoring and promotion" (GMP) to ensure authentic data source which can estimate true coverage of vitamin A supplementation. Meanwhile routine vitamin A supplementation through the routine monthly GMP must also be strengthened and integrated with the Expanded Program of Immunization (EPI).

As a result of the improved nutrition situation in the country, then there is need to *revise the caseloads* for both the MAM and SAM Programs based on the current *MAM* and *SAM p*revalence's to ensure availability of adequate supplies. In addition *Active Case Finding* should be intensified in the country, since a number of ***Active Cases*** were found during the SMART Surveys who were not in the programmes but should have been in programmes.

The results show that Karonga-Chitipa- Rumphi-Mzimba livelihood zone nutrition indicators to be deteriorating in comparison with the May 2016. Hence there is need to monitor the situation closely to ensure that the nutrition situation does not deteriorate any further.

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ANNEXES

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