THE UNITED REPUBLIC OF TANZANIA

Comprehensive Food Security and Nutrition Assessment Report

Coordinated by the Disaster Management Department - Prime Minister's Office and

The National Food Security Division - Ministry of Agriculture Livestock and Fisheries

Dar es Salaam

Prepared by the Tanzania Food Security and Nutrition Analysis System - MUCHALI Tanzania

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The Mfumo wa Uchambuzi wa Uhakika wa Chakula na Lishe (MUCHALI) Partners

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EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organisation
FSNA	Food Security and Nutrition Analysis
GAM	Global Acute Malnutrition
HDDS	Household Dietary Diversity Score
IPC	Intergrated Food SecurityPhase Clasification
ITCZ	Inter-Tropical Convergency Zone
MALF	Ministry of Agriculture Livestock and Fisheries
NPS	National Panel Survey
NBS	National Bureau of Statistics
MT	Metric Tons
MUAC	Mid Upper Arm Circumferences
MUCHALI	Mfumo wa Uchambuzi wa Uhakika wa Chakula na Lishe
PMO	Prime Ministers' Office
SAM	Severe Acute Malnutrition
SSR	Self Safficiency Ratio
SUA	Sokoine University of Agriculture
TFNC	Tanzania Food and Nutrition Centre
TMA	Tanzania Meteorology Agency
UNICEF	United Nations Children Education Fund
WFP	World Food Organisation

EXECUTIVE SUMMARY

This report provides a detailed analysis of the assessment on the food and nutrition situation of Tanzania Mainland during the 2016/2017 marketing year. The assessment was coordinated and conducted by the MUCHALI Team in January-February, 2017 in 55 Councils of 17 regions. The assessed regions were **Arusha** (5 districts); **Dodoma** (5 districts); **Kilimanjaro** (3 districts); **Lindi** (3 districts); **Mara** (3 disticts); **Manyara** (3 districts); **Morogoro** (3 districts); **Mwanza** (3 districts); **Pwani** (2 districts); **Shinyanga** (1 district); **Kagera** (8 districts); **Simiyu** (1 districts); **Singida** (4 districts); **Njombe** (2 districts); **Iringa** (1 district); **Tabora** (1 districts) and **Tanga** (8 districts). These Councils were identified basing on different levels of food security indicators and nutritional status as reported by Ministry of Agriculture through Food Crop production Preliminary forecast (2015/2016) report and various stakeholders of food and nutrition security information. The assessment considered a holistic livelihood-based approach using Integrated Food Security Phase Classification (IPC) tool - incorporating **contributing factors**: Vulnerability and hazards; the four pillars of food security (availability, accessibility, utilization and stability) and **outcome factors**: food consumption; livelihood change; nutritional status and mortality.

Findings indicate that food price increase in most of the assessed areas has been the major limiting factor to food accessibility. Nutritional status is alarming with GAM recorded to be High in 5 Districts (Karagwe, KorogweDC, Bukoba DC, Longido and Manyoni) and Very High in in 2 Districts Ngorongoro and Misenyi) – Annex 7.

Generally, the assessment and analysis indicate that 13,058,569 people were found to be in IPC Phase 1 (Minimal); 1,067,425 IPC Phase 2 - stressed and 1188,603 IPC Phase 3 – crisis – Annex (9). Respective response objectives are recommended to ensure sustainable food and nutrition security for the affected population.

CHAPTER ONE

1. Introduction

In the month of July, 2016 the Ministry of Agriculture Livestock and Fisheries (MALF), through its National Food Security Division (Crop Monitoring and Early Warning), carried out a regular preliminary food crop production forecast survey to determine food crop harvest status for 2015/16 and the corresponding availability for 2016/17. The assessment was conducted in collaboration with the National Bureau of Statistics (NBS) and the President's Office-Regional Administration and Local Government (PO-RALG). The assessment focused on major food crops in the country which involved: maize, rice, sorghum & millets, wheat, banana, cassava, sweet potatoes, Irish potatoes, beans and other legumes from all 26 regions of Tanzania mainland in 169 district councils.

The forecast analysis estimated that 16,172,841 MT of food crops would be available from farm production comprised of 9,457,108 MT of cereals and 6,715,733 MT of non-cereals (*Grain Equivalent),* which would meet national food requirement amounting to 13,159,326 MT of food by 123% Self Sufficiency Ratio (SSR) of which 8,355,767 MT are cereals and 4,803,560 MT are non-cereals.

Although an overall surplus food availability situation has been forecasted at the national level during the 2016/2017 marketing year, major inter and intra-regional and councils variations exist due to localized food crop failures of varying magnitudes of factors and vulnerability. A total of 43 councils in 15 regions that would experience food shortage and would require close monitoring including in-depth follow-up measure and interventions were identified.

Planning and implementation of this particular Food Security and Nutrition Assessment (FSNA), took into account the findings of the MALF 2015/2016 Preliminary Food Crops Forecast. The initial work of the assessment involved getting an update of the food and nutrition situation from the regions and councils by the *Mfumo wa Uchambuzi wa Uhakika wa Chakula na Lishe* (MUCHALI) national team; to complement findings of the forecast and confirm information from regions and councils through which an in-depth FSNA survey was conducted in 55 councils of 17 regions in January – February, 2017.

The National MUCHALI team composed of multi-sectoral representatives from Government Institutions, Higher Learning Institutions, Development Partners and Non-Governmental Organizations (NGOs). The national team joined the regional and council food and nutrition security (FNS) personnel to carry out the survey.

1.1. Overview of the National Food and Nutrition Security Situation

The following sub section describes the overview of food and nutrition security in the country focusing on nutrition, weather performance, crop and livestock production as well as fish production.

1.1.1. Tanzania Seasonal Rainfall Patterns

Seasonal rainfall patterns in Tanzania are mainly governed by the dynamics of a synoptic scale weather system called Inter-Tropical Convergence Zone (ITCZ). In addition to the ITCZ, local rainfall pattern in different areas is influenced by mesoscale or local features of which some area behave uniquely within a bigger area with uniform rainfall regime. The dynamics of the ITCZ from northern hemisphere to southern hemisphere and from southern hemisphere to northern hemisphere make Tanzania to have two distinct parts with different rainfall regimes called bimodal areas and unimodal areas.

The bimodal areas exhibit two rainfall seasons, which occur when the ITCZ moves southwards from the northern hemisphere and when it moves northwards from the southern hemisphere. The first season is the short rain (*vuli*) season that occurs during October to December when the ITCZ moves from the northern hemisphere to southern hemisphere. The second season is the long rains (*masika*) season that occurs during March to May when the ITCZ moves from the southern hemisphere to northern hemisphere. The areas that exhibit this kind of rainfall patterns include Lake Victoria basin (Northern Kigoma, Kagera, Geita, Mwanza, Mara, Simiyu and Shinyanga), northeastern highlands (Arusha, Manyara, Kilimanjaro and Tanga regions) and northern coast (Dar-es-salaam, Pwani, Tanga, Morogoro, Unguja and Pemba islands).

The unimodal areas exhibit only one long rainfall season called *msimu,* which starts around November/December and ends in mid-April. These areas include western regions (Kigoma, Katavi and Tabora regions), central areas (Dodoma and Singida regions), South-Western highlands (Rukwa, Mbeya, Iringa, Songwe and Njombe regions), southern coast (Lindi, Mtwara, southern Morogoro) and southern regions (Ruvuma region).

1.1.2. Crop Production

Agriculture sector is the mainstay of the country's economy. It generates 25 percent of the GDP and contributes 30 percent of export earnings. Of this amount, livestock production contributes nearly 5% and fishery slightly more than 1%. The sector offer livelihoods to over 80 percent of the population and employs 75 percent of the total labour force (URT, 2016 a).

Tanzania is endowed with 44 million hectares (46 percent of total land) suitable for agriculture. However, part of this arable land is only marginally suitable for agricultural production due to a combination of factors including infertile soils, erosion, land degradation and drought. Moreover, about 28% of the land is under protection as Forest reserves and Wildlife hence inaccessible to agriculture. The country however, has a significant potential for irrigated agriculture, with the area suitable for irrigation estimated to about 29.4 Hectares. Smallholder farmers dominate the agricultural sector with average farm sizes of between 0.2 and 2.0 hectares, depending on the location (URT, 2015). Maize and rice are the most dominant crop in the country, other major food include sorghum, millet, wheat, pulses, cassava, potatoes, bananas, plantains, sugar, groundnuts, sesame, coconuts and soybeans.

According to preliminary food crops forecast report 2015/16, Tanzania has Self Sufficient Ratio (SSR) of 123 – implying surplus food production. The production of maize was 6,148,699 MT, rice 2,229,071MT, cassava 2,204,783MT and pulses 1,958,555 MT. Based on SSR the country has surplus of 946,284 MT of maize. The country had SSR of 125, 120 and 123 in the year 2013/2014, 2014/2015 and 2015/2016, respectively (MALF, 2015/2016).

1.1.3. Livestock Production

Livestock farming is one of the major agricultural activities in the country that contributes to national food supply, employment, income, recreation, trade, draught power, organic manure and economic wellbeing. The livestock sub-sector, supports livelihoods of large proportion of households and has important role on value addition and on insuring national food security. About 36% of farm households are engaged in livestock keeping. Most of the animals kept are cattle, sheep, goats and poultry (ICAE, 2015). Cattle ownership is however, limited to about one third of households while poultry ownership is widespread to most households (NPS, 2009).

The share of livestock activities to the National Gross Domestic Product (GDP) in 2015 was 7.4% and the annual growth rate was 2.2%. Furthermore, the sector contributes about 30% of the Agricultural GDP. Out of

the sector's contribution to GDP, about 40% originates from beef, 30% from milk and another 30% from poultry and small stock production.

More than 90% of the livestock population in the country is indigenous type, tamed traditionally, with a major characteristic of low production and productivity but well adapted to existing environment and resistant to diseases. Livestock keeping in the country is categorized into two major production systems namely intensive and extensive. The intensive system, though limited in size, has been receiving more emphasis in investment and improvement because of its contribution to the market oriented economy. Extensive system is mostly agro-pastoralism and pastoralism. Pastoralism is concentrated in the northern savannah plains where climatic and soil conditions do not favour crop production (for instance parts of Arusha and Manyara) while agropastoralism is found in low rainfall areas of Western Zone (Shinyanga and Tabora) and Central Zone (Dodoma and Singida). Other areas with agro-pastoral characteristic include Lake, Eastern and Southern Highland Zones.

1.1.4. Fisheries Production

Tanzania is a coastal state, bordering the Western Indian Ocean (WIO) region; it is endowed with natural water resources from lakes, diverse rivers system, dams, ponds wetlands and a coastline of about 1,200 km along the Indian Ocean. The country is one of the greatest fisheries nations in Africa, ranking in the top 10 countries in Africa in terms of total capture of fisheries production (Fish Stat, FAO 2011).

Fisheries sector provides a source of employment and livelihood to a substantial number of people. During the year 2015 the sector supported a total of 183,800 people directly as fishers deriving their livelihood from various fishery resources in the country, also the sector supported more than 4 million people directly and indirectly, working as fisher-forks, traders, processors and suppliers.

The Tanzanian fishery is mainly artisanal with very few commercial/industrial vessels of purse seines and long liners owned by Distant Water Fishing Nations (DWFN), which operate under Tanzanian license in our Economic Exclusive Zone (EEZ). The artisanal fishery accounts for almost all the inland and marine water catches and consequently it is currently the most important fishery in the country.

Inland capture fisheries contributed 85% of Tanzania's total fish production, with the principal fishery being that of Lake Victoria. The lake accounted for 237,097.49 MT of the country's total annual fish production in 2015. Other freshwater-bodies of commercial importance include Lakes Tanganyika, Nyasa, the Nyumba ya Mungu and Mtera dams. Marine artisanal fish production was 52,723.22 MT equivalent to 15% of the national production (Fisheries Annual Statistics Report 2015).

Fish production in Tanzania is categorized into capture fisheries and aquaculture production, within this categorization fish production is almost carried out by artisanal (small scale fishers/farmers) from fresh water and marine water. The country has potential for aquaculture production and currently it is promoting aquaculture from small- scale level in all areas with potential for fish farming and sea- weed farming to large-scale farmers. The main objective is to create source of employment, increase income earnings, improve food security and alleviate poverty. Currently the aquaculture production from fresh water is 22,785 ponds from 20,272 farmers, which produced 3,239,989 kilograms of tilapia species fish. In mariculture there are 84 farmers with 117 ponds, which produced 1,342,363.04 kilograms of fish (Fisheries Annual Statistics Report 2015).

1.1.5. Food Availability

Food availability in Tanzania is obtained through own production (crop, livestock and fisheries), purchases and food stocks (public, private and farm retention). Others are trade (import and export) and food aid.

However, in Tanzania the major source of food supply is from local production. On average, local production account for about 95 % of food availability in the country.

The aggregate national food availability in Tanzania has a critical balance between productions and needs. The country's food self-sufficiency measured by the Self Sufficiency Ratio (SSR)[1] over the period of four years from year 2012/2013 to 2015/2016 has been over 100 percent. Although at the national level the country is about food self sufficient in most years, there are variations at the regional, district and household levels. Government is committed to promote the agricultural sector as one of its strategy, to among others ensure sustainable livelihoods security.

1.1.6. Nutrition Situation

According to the 2015-16 TDHS-MIS, 34.4% of children under the age of 5 years are stunted or short for their age, a condition reflecting cumulative effect of chronic malnutrition. About 5% of children are wasted or too thin for their height, which reflects the level of acute malnutrition while, at the other extreme, 4% are overweight or over-nourished and 14% of children are underweight or too thin for their age. However, data trends show that the prevalence of stunting and underweight in the country has been steadily decreasing since 1996. In contrast, the prevalence of wasting has remained almost unchanged between 1999 and 2016.

The prevalence of stunting is relatively high in the Southern Highlands (44.7%) and South West Highlands (43.1%). The regions with high prevalence of stunting are Rukwa (56.3%), Njombe (49.4%), Ruvuma (44.4%) and Geita (40.5%) while the only region having the lowest prevalence (14.6%) in Tanzania mainland is Dar es Salaam. All three nutritional status indicators are highest among children in the lowest wealth quintile and lowest among children in the highest wealth quintile. It is also worth noting that, the most affected areas are the main food crop production regions.

Weight-for-height describes current nutritional status a child has; a child who is below -2 SD from the reference median for weight-for-height is considered too thin for height, or wasted, a condition reflecting acute or recent nutritional deficits. Overall, 5% of children are wasted. The regions having high prevalence of wasting include Manyara (6.4%), Geita (6.2%), Morogoro (6%) and Kigoma (6%). Dar es Salaam and Njombe have the lowest prevalence of wasting: Dar es Salaam (1.2%) and Njombe (1.3%) (TDHS-MIS, 2015-16).

1.2. Objectives

The overall objective of the exercise was to assess the food and nutrition security situation in affected areas in the country. The specific objectives of the assessment were to**:**

i. Determine the impact of food production (crop and livestock) shortfall from the 2015/16 production year,
ii. Assess the nutrition status of children aged 6-59 months,
iii. Determine food availability, accessibility and utilization in the selected areas,
iv. Determine household food consumption and livelihoods change,
v. Assess rainfall performance and other hazards in selected areas and their impact in food and nutrition security,
vi. Delineate populations to livelihood stress, food and nutrition security during the 2016/17 consumption year, and
vii. Propose appropriate short, medium and long-term interventions.

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[1] SSR= (Gross Domestic Production/ Gross Domestic Requirement) x 100

CHAPTER TWO

2. Methodology

The assessment considered a holistic livelihood-based approach incorporating the four pillars of food security (availability, accessibility, utilization and stability); nutritional status, mortality rates and diseases. In addition, weather (particularly rainfall); current and anticipated hazards, livelihood and coping strategies employed by households and communities were assessed.

2.1. Sampling Process

2.1.1. Sampling and Sampling Procedures for Food Shortage Areas

Tanzania Mainland has a total of 26 regions with a total of 169 councils. The assessment was conducted in vulnerable population to food and nutrition security basing on preliminary Crop Production Forecast 2015/2016, rainfall performance and other relevant reports and information according to livelihood perspective. A total of 55 districts from 17 regions were included in this assessment. During the actual assessment–at council level, areas were demarcated into three categories according to a combination of indicators such as livelihood strategies deployed by communities, food (crop and livestock) performance during the 2015/2016-production year as compared to normal. The main trigger is crop monitoring and early warning reports for food security. The reports among others identify food deficit areas and the associated risk factors requiring in-depth analysis. The three considered categories were:

- Category No. 1: Acute villages - 0 to 30% of crop and livestock production
- Category No. 2: Mild villages - 31 to 60% of crop and livestock production
- Category No. 3: Normal villages – 61 to 100% of crop and livestock production

Households in categories 1 and 2 compared to category 3 are considered to have a more likelihood of being vulnerable to food and nutrition insecurity in the event of encountering a hazard that will expose their livelihood strategies to various risks.

The sampling of households considered a non-probability approach due to the assessment nature. The first stage involved identification of Districts to be assessed. The second stage was purposively selection of three villages in each District basing on category of food crop production as reported by the District authorities. In each District, two villages facing acute food deficit and one village with moderate food deficit were selected to participate in the assessment.

The last stage involved purposively selection of households in each of the selected village to participate in the assessment. Households were categorized into four groups basing on their wealth status with the help of village government leaders and key informants. The wealth status groups were: Better off; Middle; Resource weak and Very weak resource household. In each council, three villages were purposively selected of which 2 were acute and one was moderate. The total sample size in each council was 25 households.

2.1.2. Data Collection

Data and information were collected from regional, council, village and household levels by using standard questionnaires and checklist. At each level a separate questionnaire was administered. In-depth interviews were conducted with head of households, village key informants and opinion leaders. Information was gathered with respect to food and nutrition security including livelihood and coping strategies. In addition, anthropometric measurements namely weight, height and Mid Upper Arm Circumference (MUAC) were measured from children aged 6 – 59 months in the selected households.

The wealth ranking categories were pre-defined based on various social-economic livelihood related parameters like acreage under cultivation, livestock holding, type of assets owned and other key income generating activities. From each council, 25 households were interviewed representing different wealth category.

2.2. Data Analysis

2.2.1. Food Security Data Analysis

The data collected were processed and entered in excel software whereby tables and figures with percentages were generated. The information obtained was interpreted using Integrated Food Security Phase Classification (IPC) version 2 worksheets. The IPC tool formed the basis of data aggregation and convergence of evidence. The outcomes were allocated in a respective phase out of five phases based on severity scale namely; (i) Minimal, (ii) Stressed, (iii) Crisis, (iv) Emergency and (v) Humanitarian Famine. The classification facilitated identification of households according to their wealth groups and thus outlines appropriate responses in accordance with the severity classification.

2.2.2. Nutrition Data Analysis

Nutrition and related data that was collected included those of household food consumption, immunization coverage, vitamin A supplementation, deworming and morbidity. Data was entered into ENA for SMART 2011 computer software, checked for quality and analyzed to establish nutritional status of children basing on nutritional status weight for height, height for age, weight for age, MUAC and bilateral pitting oedema. In addition, Microsoft Excel and SPSS version 18 software were used for analysis.

Acute malnutrition (Wasting) was defined using weight-for-height index values or the presence of oedema and classified as shown in Table 1. Main results are reported after analysis using the WHO 2006 Growth Standards.

Table 1: Definitions of acute malnutrition using weight-for-height and/or oedema in children 6–59 months

Categories of acute malnutrition	Z-scores (NCHS Growth Reference 1977 and WHO Growth Standards 2006)	Bilateral oedema
Global acute malnutrition	< -2 z-scores	Yes/No
Moderate acute malnutrition	< -2 z-scores and ≥ -3 z-scores	No
Severe acute malnutrition	> -3 z-scores	Yes
	< -3 z-scores	Yes/No

Stunting, also known as chronic malnutrition is defined using height-for-age index values and is classified as severe or moderate based on the cut-offs (Table 2).

Table 2: Definitions of stunting using height-for-age in children 6–59 months

Categories of stunting	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Stunting	<-2 z-scores
Moderate stunting	<-2 z-score and >=-3 z-score
Severe stunting	<-3 z-scores

Underweight is defined using the weight-for-age index values and was classified as severe or moderate (Table 3).

Table 3: Definitions of underweight using weight-for-age in children 6–59 months

Categories of underweight	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Underweight	<-2 z-scores
Moderate underweight	<-2 z-scores and >=-3 z-scores
Severe underweight	<-3 z-scores

Table 4:Public Health Significance of Nutritional Status Indicators for Underfive Children

Public health significance	Percent of under-five children below -2 z scores		
	Stunting (Low height for age)	*Wasting* (Low weight for height)	*Underweight* (Low weight for age)
Low	< 20	< 5	< 10
Medium	20 – 29	5 – 9	10 – 19
High	30 – 39	10 – 14	20 – 29
Very high	≥ 40	≥ 15	≥ 30

Source: WHO (http//www.who.int/en) (WHO, 1995)

Table 5:   Mid Upper Arm Circumference (MUAC) values is used to define malnutrition according to the following cut-offs in children 6-59 months:

Categories of low MUAC values	(WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Severe wasting	< 115 mm
Moderate wasting	>= 115 mm and < 125 mm
Normal	> = 125 mm

Household Dietary diversity score (HDDS) was computed by calculating the mean score of the total number of individual food groups consumed in each household. The mean scores were then transformed to create household dietary diversity categories. A score of 0 to 3 was considered lowest dietary diversity, 4 to 8 food groups as medium dietary diversity and 9 or above as higher dietary diversity.

Table 5 b: Classification of Dietary Diversity Score

Dietary diversity category	Food groups
Lowest dietary diversity	0-3
Medium	4-8
Highest	≥ 9

Table 6: Cut off points for MUAC classification at community level

Percent of children with MUAC < 12.5	Category	Phase
<5%	Minimal	1
5% - 10%	Stressed	2
10% - 15%	Crisis	3
15%-30%	Emergence	4
>30%	Famine	5

CHAPTER 3

3. Findings

3.1. Seasonal Rainfall Performance During 2015/16 Production Year and *Vuli* 2016/2017

Council authorities reported on performance of rainfall in their respective areas. Forty nine percent described that rainfall performance during 2015/16 was below normal, 42% normal and 9% above normal as illustrated in Figure 1. Apart from below normal performance, the majority (56%) of the areas where the assessment was carried out, reported that the rainfall distribution within the season was bad, as shown in Figure 2. Similarly, spatial coverage of rainfall in most areas (58%) was bad (Figure 3). Rainfall performance for assessed districts is presented in Annex 1.

Observation by Tanzania Meteorological Agency (TMA) indicates that, generally the rainfall performance during 2015/16 cropping season was normal to above normal in *vuli 2015, masika 2016* and *msimu 2015/16* seasons. In some areas, seasonal rains were enhanced by El-Nino conditions that led to extreme climate events such as flooding. However, most parts of the country experienced poor rainfall distribution in both seasons with long dry spells. The performance of *vuli,* 2016 season on the other hand, was below normal across the country with late onset of seasonal rains, prolonged dry spells and early cessation. The observed extreme climate events may have contributed greatly in impeding crop and livestock performance. Findings from the assessment are in agreement with the TMA *masika and vuli* rainfall performance for 2015/16.
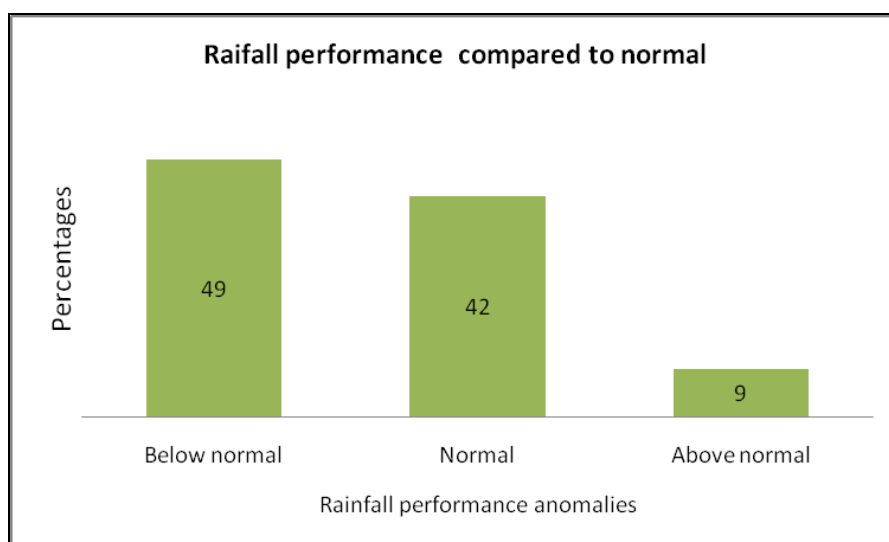
Figure 1: Seasonal rainfall performance compared to normal
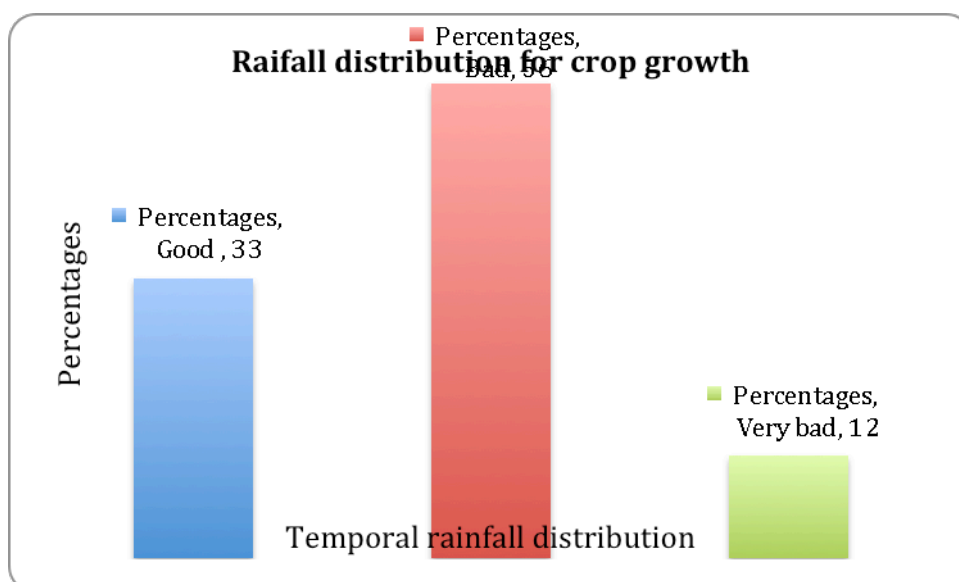
Figure 2: Rainfall distribution within the season (temporal distribution)
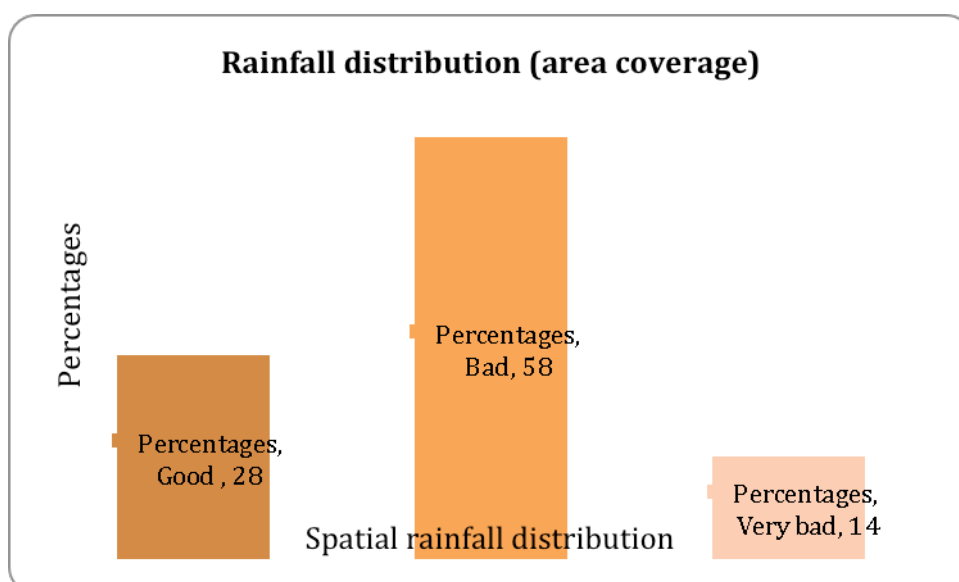
Figure 3: Rainfall distribution in terms of area coverage (spatial distribution)

3.2. Food Availability

3.2.1. Crop Production

Seventy nine percent of households in the assessed areas reported that they had a deficit in food crop production during 2015/2016 season; with only 4% reported to have surplus. There is a significant increase (41%) of food deficit in 2015/2016 as compared to the 2014/2015 -production years. The increase was from 56% in 2014/2015 to 79% in 2015/2016 (Figure 4). The two seasons are still below crop production levels in normal years. This situation has been attributed to factors such as poor rainfall performance during vuli season and unanticipated rainfall onset for msimu season.
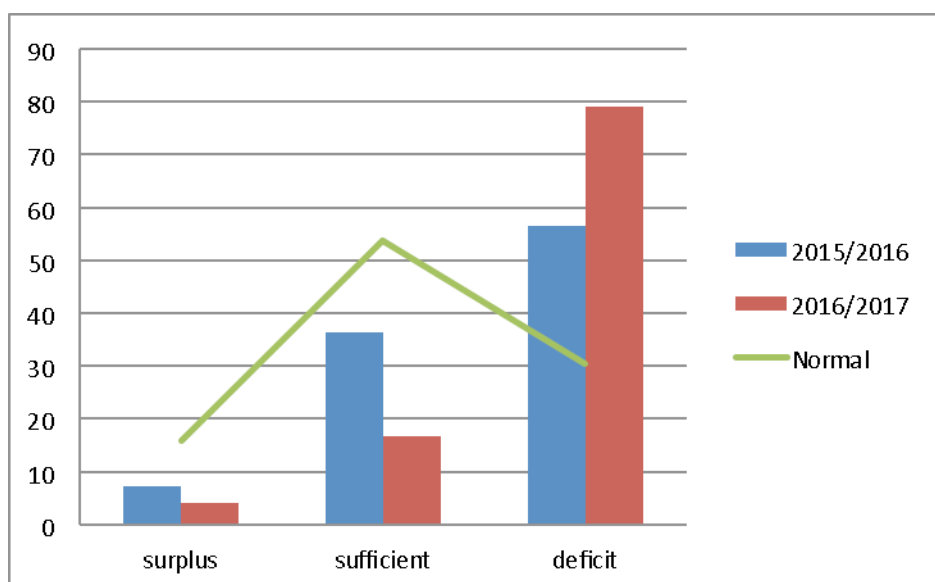
Figure 4: **Average food crop production trend in assessed areas**

Food shortage has been reported to affect some households in the period 2016-2017. There was a gradual increase in food shortage from October 2016 (14%) peaking in January 2017 (22%). The trend is expected to decline from February until May 2017 before next crop harvest. This trend is similar to the same period of previous season (Figure 5).
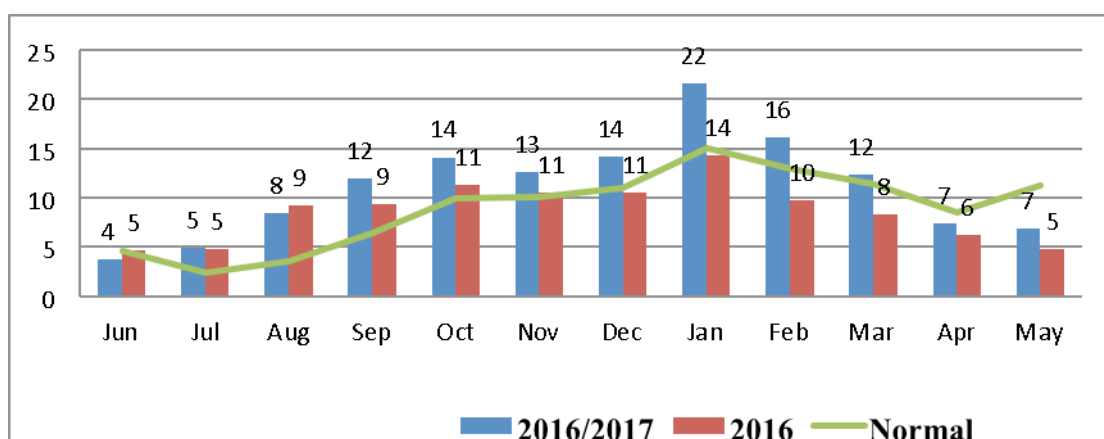
Figure 5: **Months of food shortage for year 2015/2016 and 2016/2017**

3.2.2. Livestock Production

3.2.2.1 Water Availability for Livestock

In general water availability was reported to be bad and worse (42% and 12% respectively) in all the assessed districts. However, 46% of the districts were normal (Figure 6). Water scarcity in the assessed districts could have been as a result of prolonged dry spell, delayed rainfall onset and uneven distribution of rainfall during the 2016/2017 season.
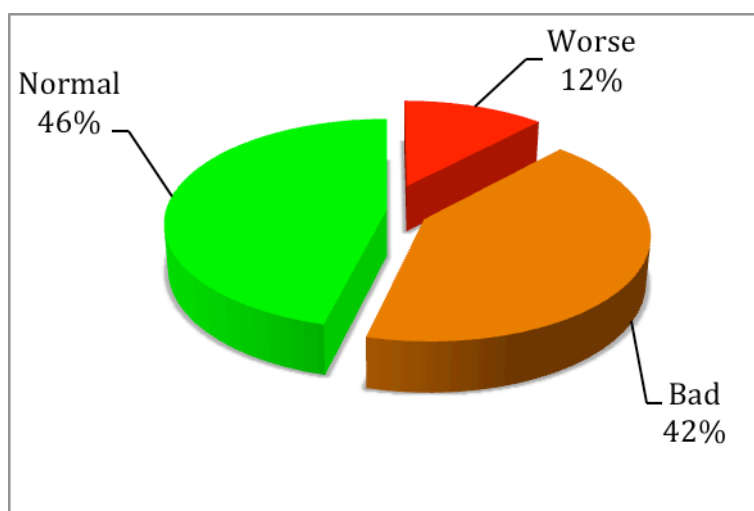
Figure 6: **Water availability for livestock**

3.2.2.2 Pasture

Pasture availability was generally bad (46%) and worse (16%) in all the assessed districts. On the other hand, pasture was reported to be normal in 38% of the districts (Figure 7). Poor pasture condition could have been attributed to prolonged dry spell, delayed rainfall onset and uneven distribution of rainfall during the 2016/2017 season.
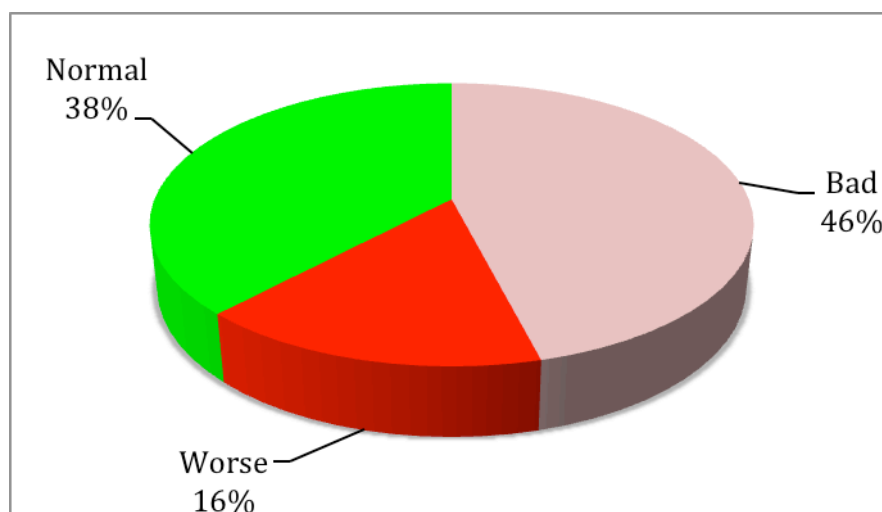
Figure 7:   **Pasture Availability**

3.2.2.3 Livestock Body Condition

Livestock body condition remained fairly good in most of the assessed areas (Figure 8). However, few of the districts such as Busega DC, Korogwe TC and Ngorongoro, had poor livestock body condition.

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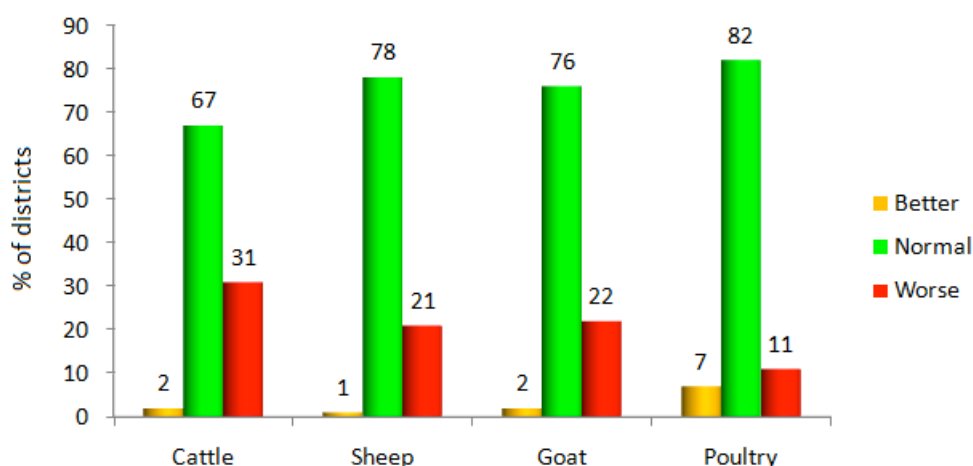
Figure 8: **Livestock Body Condition in the Assessed Districts**

Despite the fact that, water and pasture availability was poor in some of the assessed Districts, the overall livestock body condition remained satisfactory.

Overall, milk availability was less than normal in most of the surveyed district councils; however, normal milk production was indicated in Kongwa, Liwale, Butiama, Kibaha and Korogwe TC. Low milk production was directly linked by inadequate water as well as poor availability of pasture which had been attributed by prolong dry spell, uneven distribution and delay onset of rainfall of 2015/2016 season.

Majority of households interviewed in the surveyed areas reported to own poultry ranging from 5 to 13 chickens per household. Respondents in Arusha DC, Kishapu, Busega, Korogwe DC and Muheza owned 2 – 4 chickens per household. Significant chicken mortality cases were reported in Korogwe TC (237), Babati (198), Kilindi (160), Butiama (151), and Muheza (142). Similarly, fewer cases were reported in Manyoni (5), Handeni (9), Itigi (9), Ludewa (27) and Arusha DC (37). Newcastle disease was the major cause of chicken mortality.

3.2.3. Fish Production

Assessment of food security for the market year 2016/17 was carried out to assess fish production in each council aiming at identifying populations/households that are vulnerable to food insecurity and malnutrition. The analysis indicated that in 2015/2016 production year Muleba is a leading Council in terms of fish production followed by Morogoro MC, and Musoma DC with production of 223,510 MT, 27,092 MT and 14,797 MT, respectively, while the least councils in fish production were Korogwe DC (11.3 MT), Muheza (9.7MT) and Hai (3.2MT). The sources of fish are Ocean, Lakes, Rivers and small percent from aquaculture. Fish availability in the markets in most of the assessed districts was normal, except Mwanga, Muheza, Pangani, Misenyi, Rorya, Biharamulo and Bahi was less than normal.

3.3. Food Accessibility

Inadequate livelihood opportunities in assessed areas contributed to household food and nutrition insecurity. Diversification of income sources, assets, and occupations was realized in most of households interviewed indicating inability to purchase food for their households especially for resource weak category. Deficit of staple foods at households' level was the most pressing food consumption problem among the resource weak. Low production and high prices of food commodities contributed to low purchasing power of resource weak households. Generally, there were limited activities in agricultural, off-farm employment opportunities, and non-farm income generating activities where majority of the people could be employed.

3.3.1. Food Crop Prices

The average price of maize in the surveyed areas increased by 33% (from TShs 600 - 800 per kilogram) in November 2015 compared to the same period in 2016. The nominal price of maize has shown an increasing trend from time to time in 2016 with average of TShs 800 per kilogram in November to TShs 1000 in December.

The highest price of maize (TShs 1400 per kilogram) was recorded in Mkinga District Council between November and December 2016 while the lowest price was TShs 450 per kilogram in Mbulu District Council in the same period.

The nominal average price of maize was high from January to December 2016 for majority of District Councils assessed compared to same period in year 2015. However, the price of food commodities was likely to further increase in February 2017 onwards. Figure 9 represents price trend for maize in Mkinga District Council.
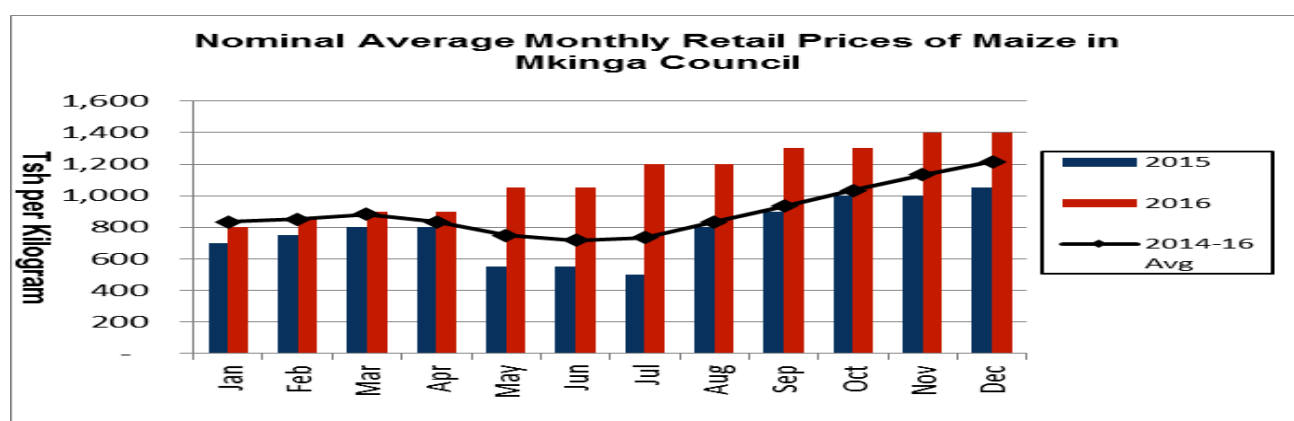
Figure 9: **Nominal average price of maize in Mkinga**

3.3.2. Livestock Prices

Generally, majority of the assessed District Councils show that the price of livestock has been decreasing from October to December 2016. For instance, in December 2016 the nominal goat prices in Kishapu and Arusha district councils decreased by 20% (TShs 60,000-50,000) and 35.7% (TShs 95,000-70,000) as compared to the same period in 2015, respectively. However, some of the districts showed different trend such as Meru district where goat price increased by 40 %. The nominal prices of chicken and goat showed a mixed trend (Figure 10 and 11). The decrease of livestock nominal prices in some districts could be attributed to poor livestock body condition and low purchasing power by low income for most of the households. On other hand if households continue to face unstable income, it is projected that the price of livestock will further decrease.
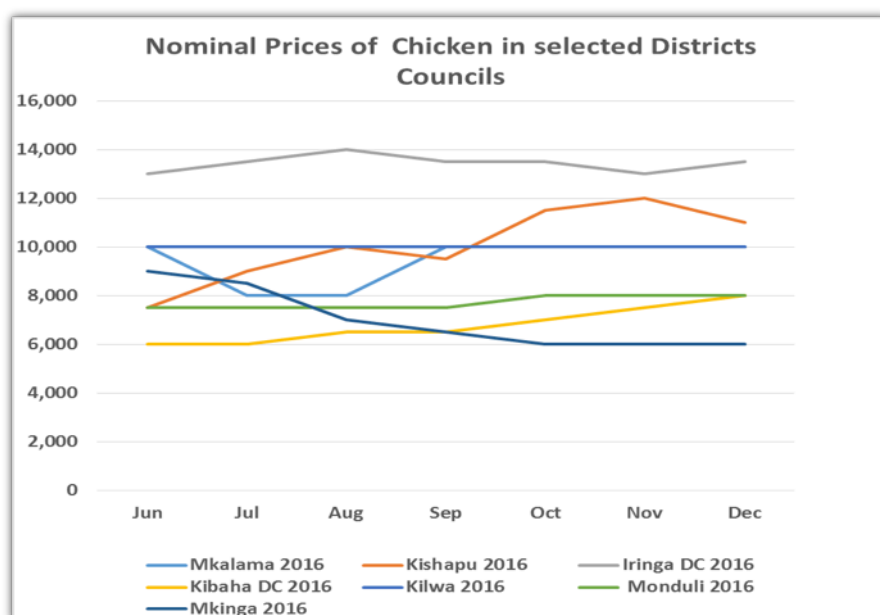
Figure 10:Nominal Price of Chicken in selected District Councils
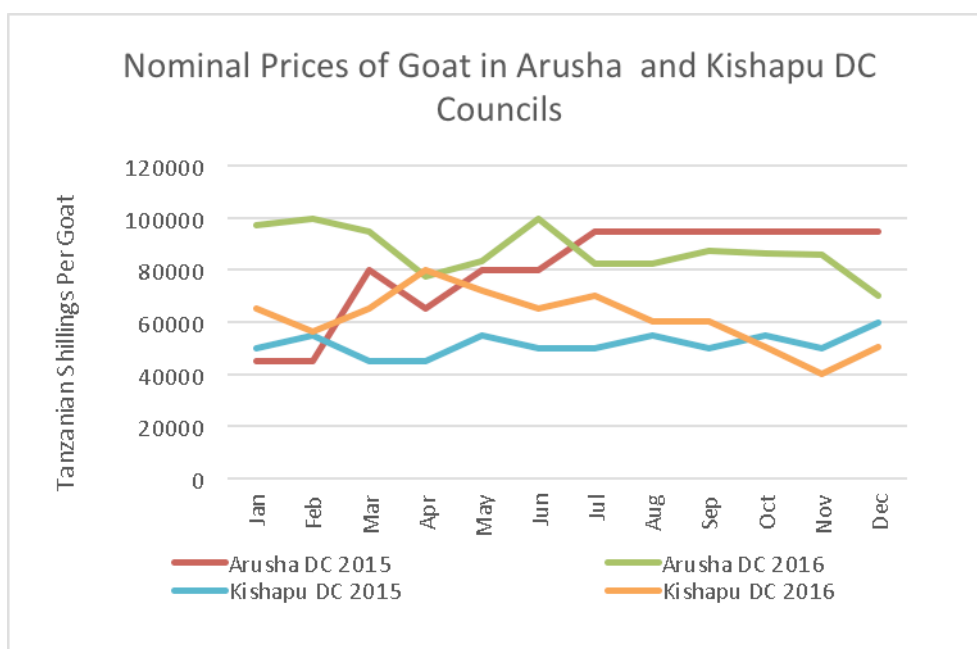
Figure 11: **Nominal Price of Goat in selected District Councils**

3.3.3. Terms of Trade

Food prices were high during the assessment indicating low supply of food from the market. Livestock condition in all surveyed areas was fairly good but deteriorating due to inadequate pasture and water for livestock.

Cattle and sheep at one of the market in Ngorongoro district. These animals are emaciated and their market value is low. **Source: Muchali, January 2017**

Figure 12: Livestock condition (Source: MUCHALI, 2017)

The changes of nominal price for both food crops and livestock lowered the purchasing power of both crop producers and pastoralists hence affected the terms of trade. For instance, in Chamwino District Council, one goat sold in December 2016 purchased 32 kilograms of maize compared to 68 kilograms in December 2015 (Figure13). In Manyoni District Council, one chicken sold in December 2016 purchased only 10 kilogram of maize against 13 kilograms in December 2015 (Fig 14). The terms of trade by selling livestock and buying food were better in 2015 compared to those of 2016.
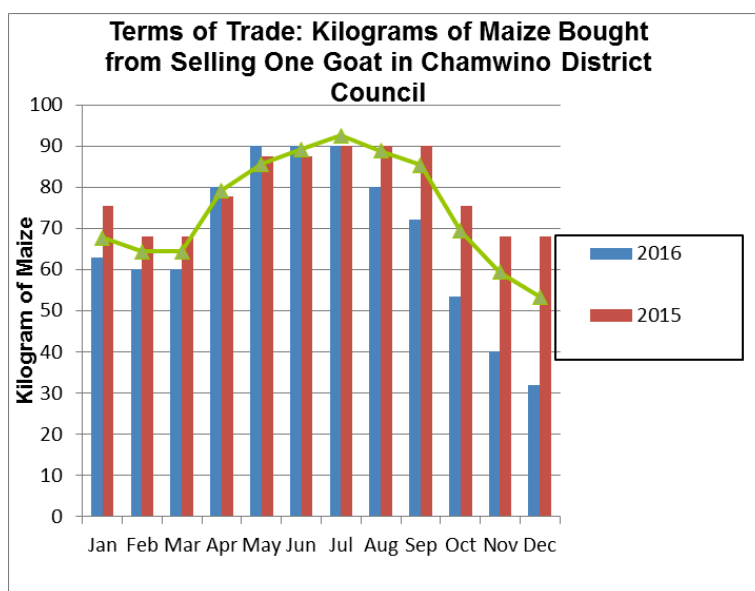
Figure 13:Terms of trade, kilograms of maize bought by selling one goat
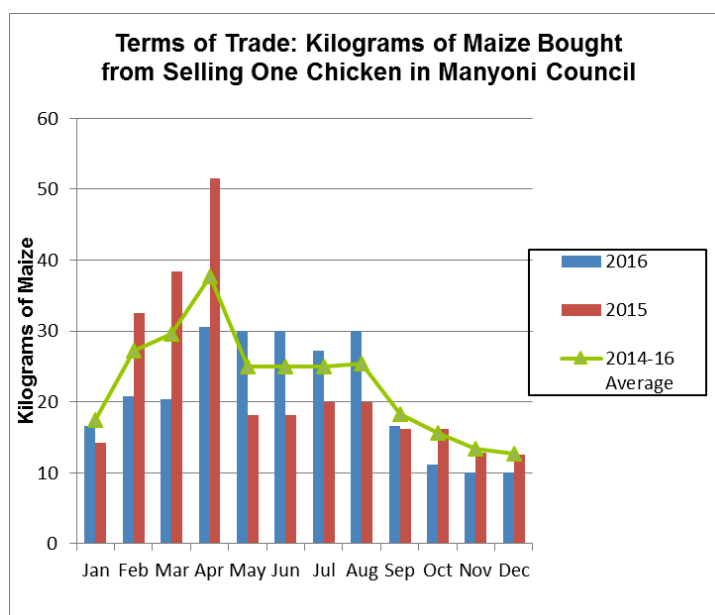
Figure 14: **Terms of trade - kilograms of maize bought by selling one Chicken**

3.3.4. Market Availability and Road Condition

In all 55 Districts surveyed, no erosion of assets reported which would force people to sell assets (often at low prices) in order to buy basic needs (at inflated prices). Market conditions in surveyed councils were functioning at optimum condition, having all kinds of food grown inside and outside the districts. The assessment indicated that, many villages about 70% have nearby markets for both crops and livestock and about 30% of the villages reported access to the market is a limiting factor as markets are found far from the residents i.e. from 1-11 kilometres. However, all the villages have kiosks where people can obtain other household items such as cooking oils, kerosene and sugar (Figure 15).
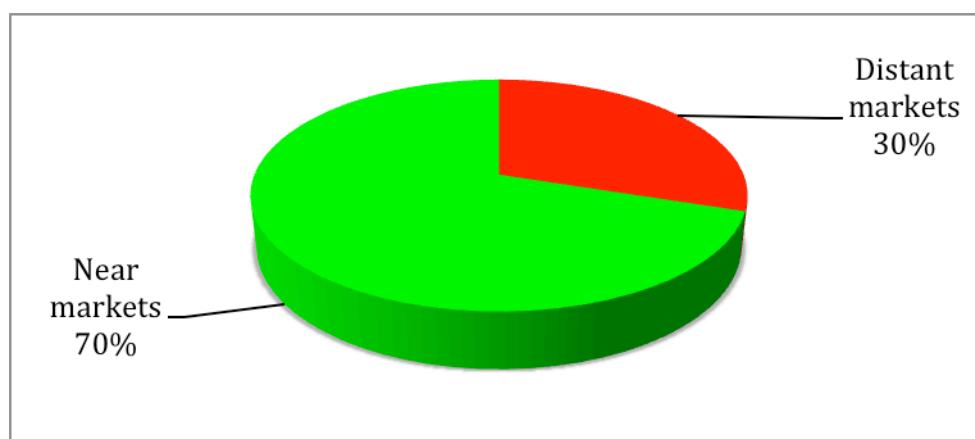
Figure 15: **Availability of the Markers in the surveyed Districts**

Most roads (85%) in the selected and assessed councils were reported to be passable throughout the year except in some areas (15%), where roads are impassable during the rainy season (Figure 16). This indicates that the condition of road networks was not a major limiting factor for food accessibility.
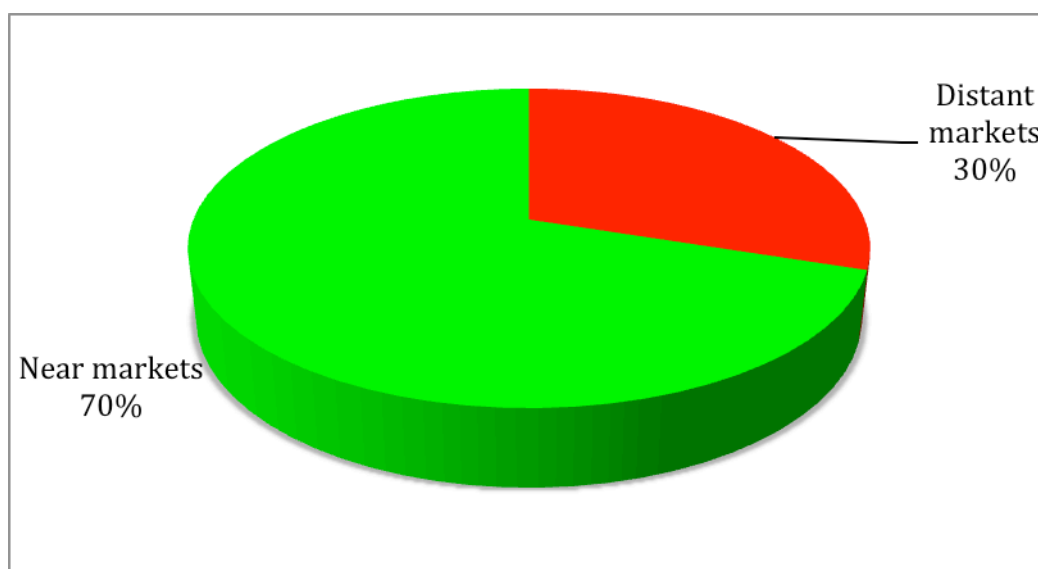
Figure 16:Road condition in the selected assessed Councils

3.3.5. Labour Availability and Purchasing Power

Most households in the assessed areas reported to have few labour opportunities. The assessment showed that the availability of casual labour was scarce (72.3% livestock labour, 54.4% agricultural labour and 54.1% non-agricultural labour ((Figure 17). Inadequate labour opportunities in the assessed Districts could have been due to reduced agricultural activities. Labour scarcity could have affected the purchasing power of most resource weak households.
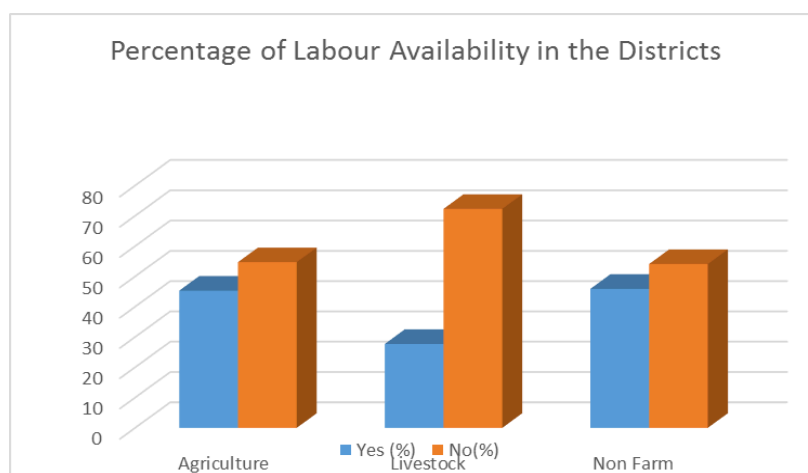
Figure 17: **Labour availability in the District Councils**

3.4.Food Utilization

Results from the assessed areas showed that normally 67% of the assessed household consume three meals, 22.5% consume two meals while only 1.4% consume one meal per day. However, a week preceding the assessment, the proportion of households which consumed three meals per day decreased to 33.2%, while those which consumed two and one meal increased to 48.9% and 13.2% respectively. The situation further deteriorated a day before the assessment whereby the population consumed 3 meals continued to decrease to 30.8%, with notable increase of those which consumed two and one meal to 49.8% and 14.3% respectively. This trend shows that there is a drifting of feeding frequencies from 3 to 2 and 1 meal a day (Figure 18).
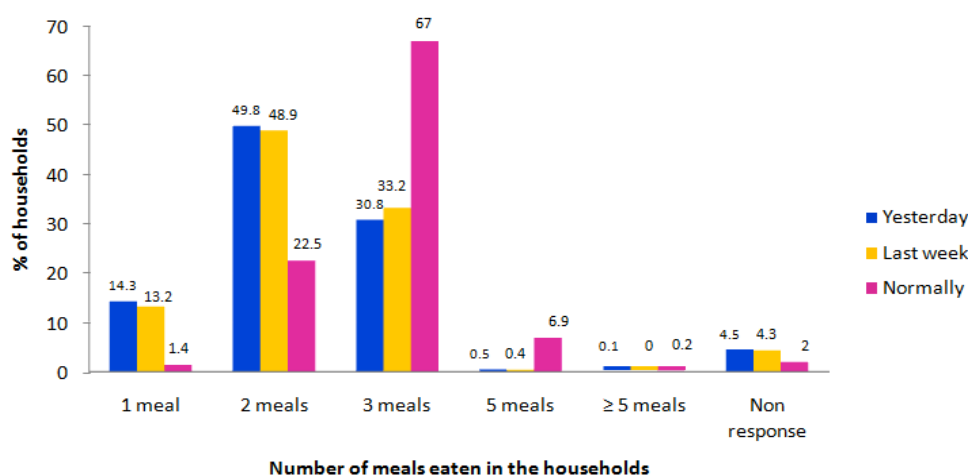
Figure 18: Number of Meals Eaten in the Households

3.4.1. Water and Sanitation

Findings indicate that the main source of water in the assessed areas were from protected sources (52%). However, a significant number of households still get water from unprotected sources (47%) and only 1% harvested rainy water (Figure 19). Although very few households practise rainwater harvesting, it offers alternative source of water that can be further improved. The surveyed households in the respective Districts with the highest proportion of unprotected water sources included Busega, Kongwa and Pangani (100%); Butiama (96%), Kyerwa (92%) and Igunga 84%) – Annex 2. The use of unprotected water is a risk factor that affects food and nutrition security.
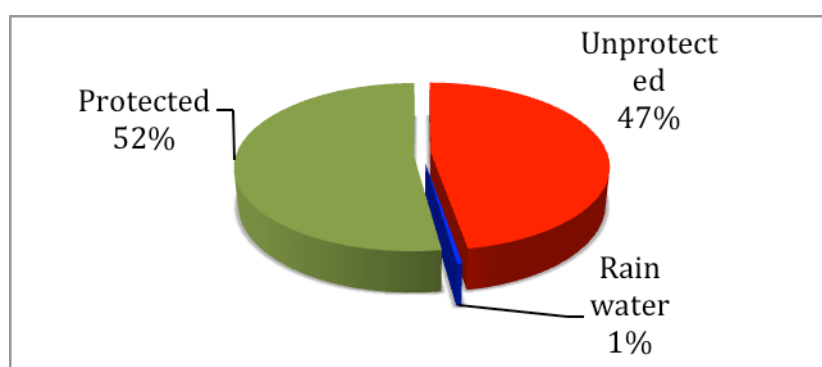
Figure 19: Sources of water in assessed households

The average per capita water consumption of the surveyed households was 14.1 litres per day, which is below the recommended by WHO (15 Litres PPPD) and far below the national recommended threshold (21 Litres PPPD). Households in Kyerwa Districts, Ngorongoro and Kishapu used the least average quantity of water per person per day (PPPD) 8.4, 8.5 and 9.0 litres respectively. Districts with average water consumption PPPD above the WHO thresholds were Mwanga and Mvomero (21 Litres) and Mkalama (19 Litres) - Annex 3. Over the past ten years, Tanzania has been experiencing an increased proportion of individuals with

adequate access to improved water sources; that is 52% in 2005, 54% in 2010 and 61%[2], however the proportion is still low.

3.4.2. Toilet Use

Majority of the household surveyed (88%) had toilets. About 8% of the households responded to have no toilets and 4% used communal toilets (Figure 20).
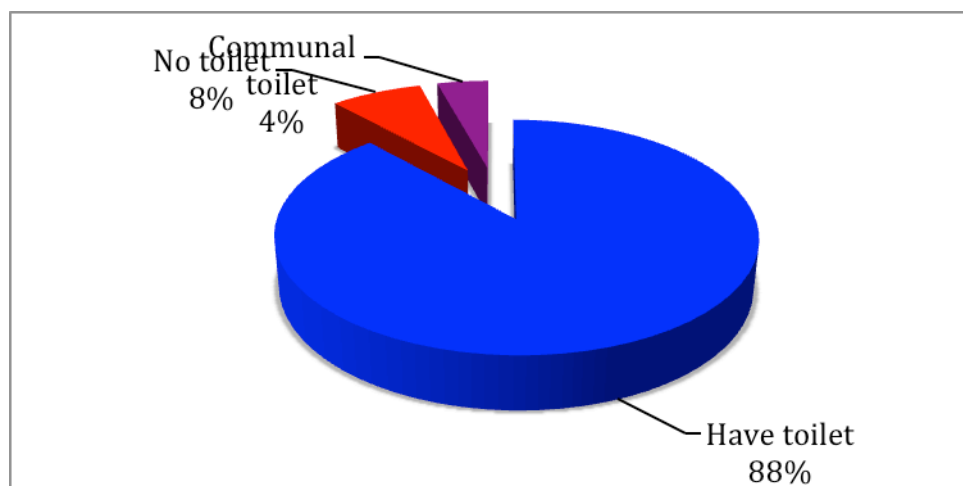
Figure 20: Status of toilet availability in assessed households

3.4.3. Food Storage

Most households early exhausted their harvested food and resorted into consuming two versus three meals during the assessment period. The early exhaustion of harvested food crops could have been attributed to not only poor rainfall performance but also transformation to other uses and inadequate or poor quality of storage structures.

3.5. Hazard and Vulnerability

3.5.1. Livelihood Strategies

In all assessed District Councils, livelihood strategies was an important factor among others to be monitored. The findings indicate that, 78% of assessed households normally used five livelihood assets (physical, social, financial, natural and human). The finding revealed that, on average 52% of resource weak households engaged on agricultural labour. In the pastoralist communities, 26% of the assessed households had average number of sales between 4 to 9 cattle and 2 to 4 goats for the market year 2015/16. In agro-pastoral communities, assessed households had average of sales between 1to 3 cattle and goat; and 1to 4 chicken. In addition, with exception of Morogoro region[3], in all the surveyed district councils it was reported that there was no unusual migration of human and livestock that could have affected their livelihood strategies.

Majority of the assessed areas reported that there was no conflict that could have affect their daily economic activities with exception of Mvomero and Kilindi that reported mild land conflicts in some villages. In general most households have not lost their main livelihood strategies such as agriculture, fishing and livestock

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[2] NBS and ICF Macro, (2016)

[3] In Morogoro region there was unusual in-migration of livestock in search of pastures and water.

keeping. No households reported to have started massive sale of their assets. Resource weak households in Kagera region reported that since the government started to prohibit the use of unpermitted fishnets, their livelihood strategies been altered since most of them are unable to afford permitted fishing gears that require high capital to start business.

3.5.2. Food Commodities Price

The assessment has shown an increase of average price of food commodities in October 2015 through January 2017. It is projected that, the price of food commodities is likely to increase more from February, 2017 should the current condition further deteriorate. This situation is likely to mostly the resource weak households in the assessed areas.

3.5.3. Copping Strategies

Findings showed that, households had adopted different strategies to cope with food shortage. The strategies vary from one area to another and they include working for food (18%), changing meal composition (13%), reducing the number and meal size (12%), begging for food (11%) and selling more livestock (7%) - Figure 21. Generally there were no irreversible coping strategies that were reported by the households during the time of the assessment.
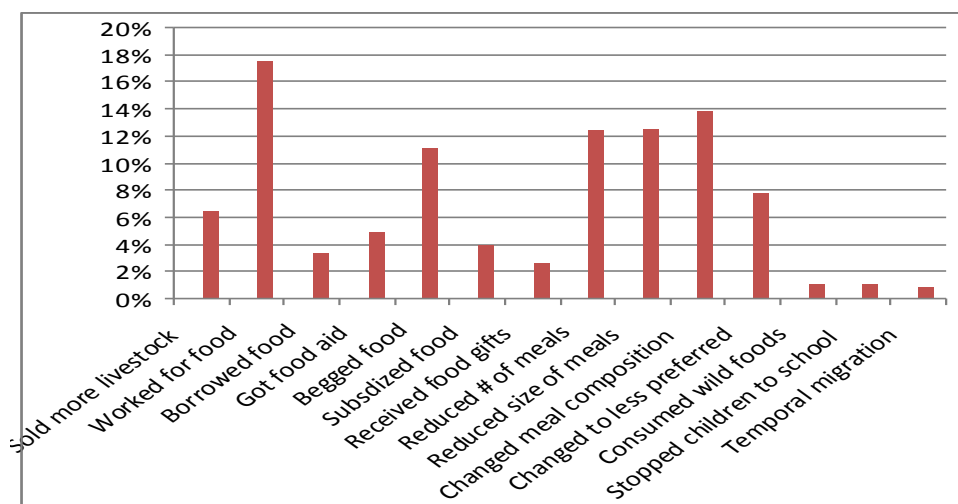
Figure 21: Coping strategies deployed in the surveyed Districts

3.5.4. Human, Livestock and Crop Diseases

Malaria, Upper Respiratory Tract Infection (URTI) and dirrhoea were the most common diseases reported to cause vulnerability in the assessed districts. These diseases affect the labour force within the districts which would have been engaged in livelihood activities.

In the surveyed districts livestock diseases reported were Foot and Mouth disease (FMD), Contagious Bovine Pleuro-Pneumonia (CBPP), Contagious Caprine Pleuro-Pneumonia (CCPP), Anthrax, Swine Fever and New Castle Disease (NCD). Others are Tick borne diseases (East Coast Fever-ECF, Babesiosis, Anaplasimosis and Heart water), Lumpy Skin Disease (LSD) and Trypanosomosis. These diseases were controlled by vaccinations except Swine fever and Tick borne diseases, which were controlled by slaughtering of the affected animals and application of acaricide, respectively. However, most of surveyed Districts had low capacity to maintain dip facilities and vaccination services due to cost implication. If control measures are not

revived, the prevalence of diseases will increase. These diseases have a great impact on food security especially for livestock farmers.

On the other hand, owing to rainfall failure, only annual crops such as cassava were in the farm. Thus crop diseases that were reported include cassava mosaic virus (*Batobato*), cassava mealy bug, cassava brown streak and banana wilt. Pests reported included, *queleaquelea* and rodents.

3.5.5. Water

Water quality and quantity for human consumption are the one of the hazard reported in the surveyed households. Findings indicated that , a significant number of households reported to get water from unprotected sources (47.3%) and only 0.4% harvested rain water. Unprotected source included boherehole, ponds, river and ocean. The surveyed households in the respective Districts with the highest proportion of unprotected water sources included Busega, Kongwa and Pangani (100%); Butiama (96%), Kyerwa (92%) and Igunga 84%).Quantity for human use was reported to be unsufficiency where the minimamu avarage water usage per household in the surveyed households was 5 litres per person per day compared with recommended of 15 litres. Further analysis find that Households members use an average time of 42 minutes to fetch water from these sources. From other litureture it is indicated that the use of unprotected water is a risk factor that affects food and nutrition security. In addition water availability for livestock was reported to be bad and worse (42% and 12% respectively) in all the assessed districts. On the other hand, pasture availability was bad (46%) and worse (16%) in all the assessed districts. Poor pasture condition and water availability could have been attributed to prolonged dry spell, delayed rainfall onset and uneven distribution of rainfall during the 2016/2017 season.

3.5.6. Conflicts

The main conflicts that were reported in many districts included conflicts between livestock keepers and resident farmers. Pastoralist's movement from one area to another to find grazing and water resources have been a problem because large herds of cattle destroy standing crops and other plants. As the results, conflict erupts hence threaten peace and stability between two groups. Peace Instability ends up hindering the crop production and general livelihood changes.

3.5.7. Coverage of vitamin A Supplementation and Deworming

The coverage of vitamin A supplementation (VAS) among children aged 6 – 59 months within six months of the survey was 87%, 46% higher than the national average according to the TDHS 2015/2016. This was due to Vitamin A and Deworming campaign, which was conducted in December 2016 (Figure 22). WHO and SPHERE standards recommends that, Vitamin A coverage should be above 90%.
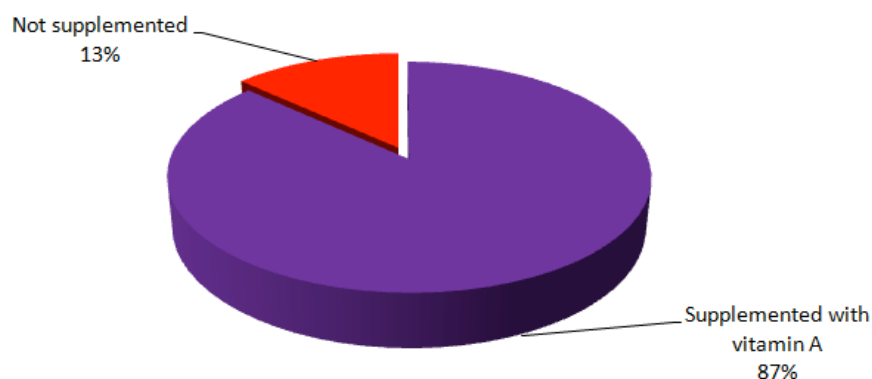
Figure 22: Coverage of vitamin A supplements among assessed children aged 6 – 59 months

The deworming coverage among children aged 6 – 59 months was 81%, which was 43% higher than the national average based on TDHS 2015/2016 report (Figure 23).
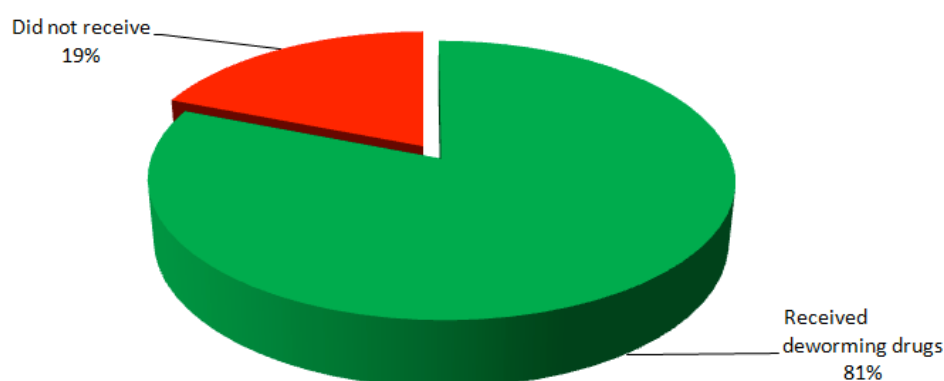
Figure 23: Deworming coverage of children aged 6 – 59 months

3.5.8. Morbidity

About 34.6% of the children of age 6 – 59 months in the surveyed households had fever a month preceding the day of assessment (Figure 24). The TDHS 2015/2016 reports 18% of children 6-59 months had fever. This analysis shows that the prevalence of fever was higher than the national average.
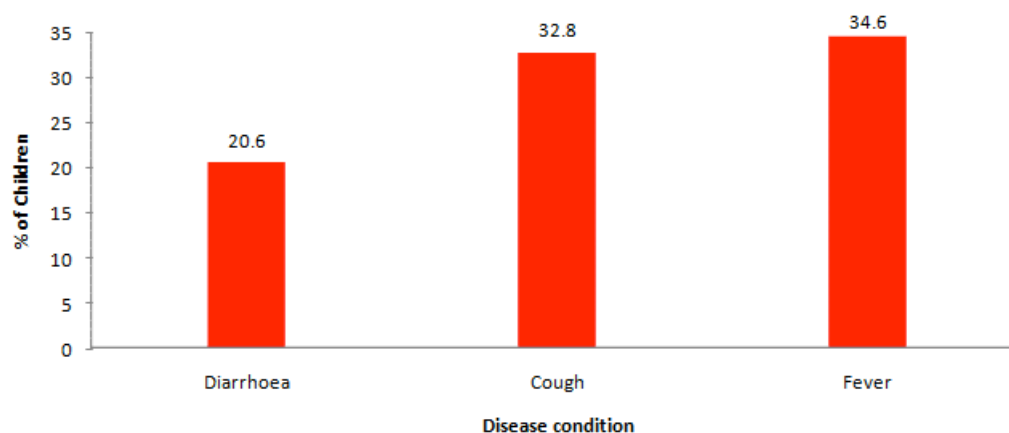
Figure 24: Morbidity prevalence of selected ailments in children aged 6 – 59 months

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In the assessed districts, fever among children aged 6 – 59 months was highest in Longido (92%), Busega and Kwimba had 60%. Cases of diarrhoea were high in Itigi (46.9%), Rorya 42.3% and Busega (40%). Coughing was high in Mvomero (61.5%), Karagwe (58.6%) and Longido 56% (Annex 3).

3.6. Nutrition Security

3.6.1. Nutrition status of Children

Table 7 indicates disaggregation of children in the surveyed areas by sex and age in months. One thousand six hundred and twenty nine (1629) children aged 6-59 months were measured in all 55 surveyed districts. The analysis revealed that the sex ratio of boys and girls was one. This indicates that each sex was equally represented.

Table 7: **Distribution of age and sex of sampled under-five children**

| Age Months	Boys		Girls		Total		Ratio Boy:girl
	no.	%	no.	%	no.	%	
6-17	201	50.4	198	49.6	399	24.5	1.0
18-29	183	46.9	207	53.1	390	23.9	0.9
30-41	201	53.3	176	46.7	377	23.1	1.1
42-53	175	52.2	160	47.8	335	20.6	1.1
54-59	59	46.1	69	53.9	128	7.9	0.9
Total	**819**	**50.3**	**810**	**49.7**	**1629**	**100.0**	**1.0**

3.6.2. Prevalence of Wasting

Acute malnutrition (wasting), is caused by a recent or acute inadequate food intake or illness (or both), and it is a risk factor of mortality in children. A child who is suffering from wasting is considered to be too thin for his or her height (low height adjusted body weight or weight-for-height Z score). Results of the assessment show that, the overall prevalence of wasting which is also known as Global Acute Malnutrition (GAM) was 4.2%. Prevalence of moderate wasting which is also known as Moderate Acute Malnutrition (MAM) was 4.1% and severe wasting also known as Severe Acute Malnutrition (SAM) was 0.1%. According to WHO classification (WHO, 1995) the prevalence of underweight (14.4%) is not a problem of public health concern (Figure 25). The current analysis is a mirror image of the recently released Tanzania Demographic, Health and Malaria Survey of 2015/2016 which have shown that the prevalence of GAM among children aged 0 – 59 months in a was 4.5%.
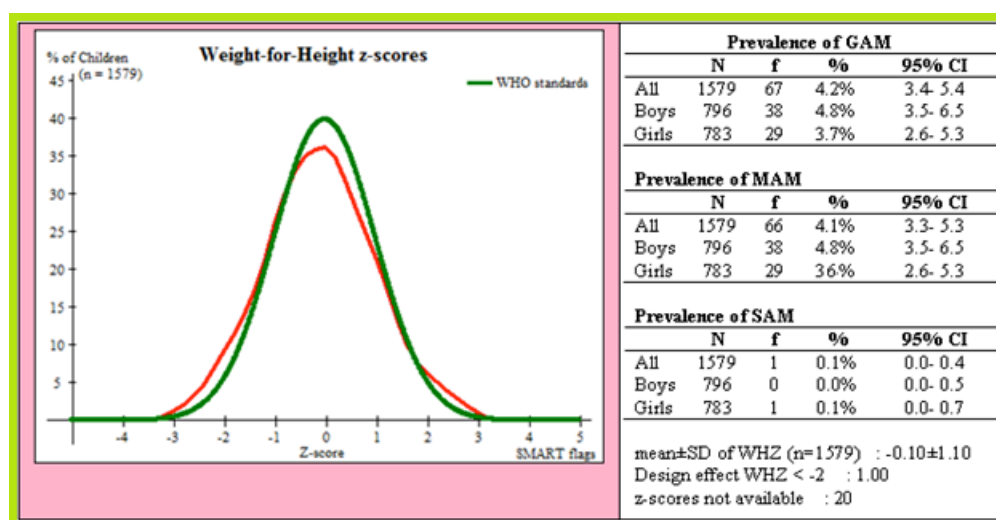
Figure 25: Normal distribution curve of height-adjusted weight of the assessed children

Normal distribution curve of height-adjusted weight (Weight-for-Height Z scores) of the assessed children in 55 districts is almost within the WHO reference population. The curve signifies that basing on height adjusted weight; the overall nutrition status of majority of the assessed children was normal (Figure 25).

The prevalence of GAM, MAM and SAM was relatively higher among boys than girls (Figure 26). This observation matches well with almost all major nutrition surveys that have been conducted in Tanzania. For example TDHS-MIS 2015-16 reported higher prevalence of GAM among boys (5.2%) compared to girls (3.8%). Similarly, other scholars report that boys are more likely to be malnourished than girls giving an indication of gender differential vulnerability to malnutrition (Wamani *et. al.,* 2007).
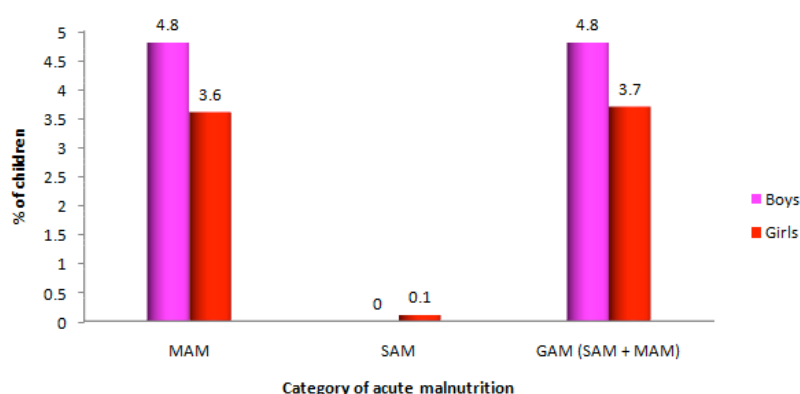
Figure 26: **Prevalence of acute malnutrition by sex**

Five age categories were considered in determining prevalence of malnutrition. Prevalence of GAM was relatively higher among children of aged 42-53 months compared to other age groups (Table 8). This however, calls for action to improve the quality of nutritional care for all children regardless of age group.

Table 8: **Prevalence of acute malnutrition by age group**

Age		SAM		MAM		GAM		Normal	
Months	N	F	%	f	%	f	%	f	%
6-17	379	0	0	20	5.3	20	5.3	359	94.7
18-29	376	0	0	14	3.7	14	3.7	362	96.3

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30-41	368	0	0	8	2.2	8	2.2	360	97.8
42-53	324	1	0.3	20	6.2	21	6.5	303	93.5
54-59	127	0	0	3	2.4	3	2.4	124	97.6
Total	**1574**	**1**	**0.1**	**65**	**4.1**	**66**	**4.2**	**1508**	**95.8**

The overall prevalence of GAM based on MUAC was 2.7% (Figure 27). The prevalence of GAM was relatively higher among girls (3.2%) as compared to boys (2.3%).


Prevalence of GAM			
	N	f	%	95% CI
All	1336	36	2.7%	2.1- 4.2
Boys	673	15	2.2%	1.4- 3.6
Girls	6633	21	3.2%	2.1- 4.8

Prevalence of MAM			
	N	f	%	95% CI
All	1336	31	2.3%	1.6-3.3
Boys	673	14	2.1%	1.2-3.5
Girls	6633	17	2.6%	1.6-4.1

Prevalence of SAM			
	N	f	%	95% CI
All	1336	5	0.4%	0.2-0.9
Boys	673	1	0.1%	0.0-0.8
Girls	6633	4	0.6%	0.2-1.5

% of oedema (n=0)   : 0.0%
mean±SD of MUAC (n=1336) : 149.3±13.0
Design effect MUAC <125mm: 1.00
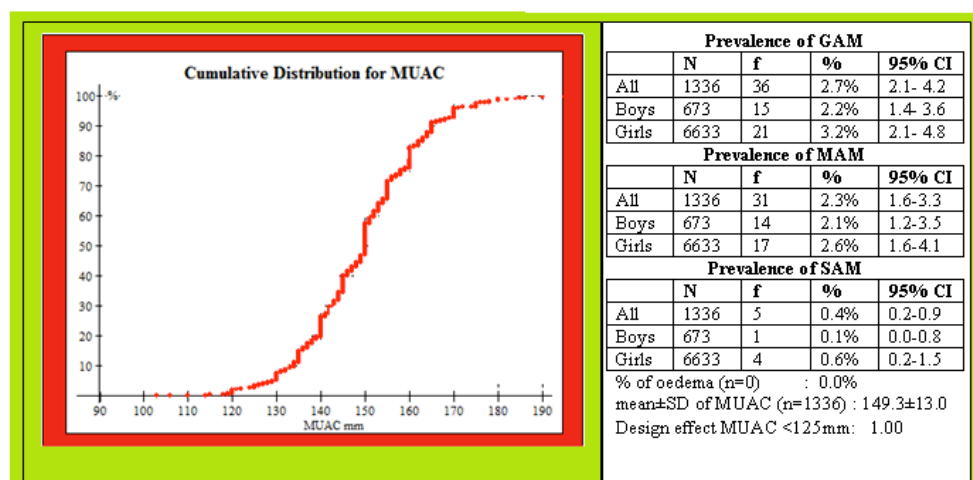
Figure 27: Prevalence of Global acute malnutrition based on MUAC

Further results of district disaggregated data, the prevalence of GAM was categorized as 'low' meaning that basing on WHO criteria, wasting was not a problem of significant health concern. However, in other districts the prevalence of GAM was unacceptably high meaning that wasting was a problem of significant health concern.

Thirty-four districts, out of 55 had GAM prevalence below 5%. Basing on WHO classification wasting was categorized as 'low' (Annex 7). This means that in those Districts, wasting was not a significant problem that warrants any level of public health concern. In these Districts, majority of their households were able to meet essential food and nonfood needs without engaging in unsustainable strategies to access food and income, including any reliance on humanitarian assistance. What is needed in these districts is to design and implement interventions that are geared towards strengthening the household resilience and reducing the risk of food insecurity.

Districts with GAM prevalence of 5% - 9% were Lindi DC, Kilwa, Biharamulo, Mbulu, Arusha DC, Korogwe TC, Morogoro DC, Itigi, Moshi DC, Babati, Kwimba, Chemba DC, Chalinze, Mvomero and Monduli. Basing on WHO classification, in these Districts, wasting was a problem of 'medium' public health concern. The Districts are likely to have significant number of households with minimal adequate food consumption. Interventions needed in these councils should focus on reducing the risk of food insecurity and strengthening livelihoods.

Districts with GAM prevalence of 10% - 14% were Karagwe, Korogwe DC, Bukoba DC and Longido. Basing on WHO classification, in these Districts, wasting was a problem of 'high' public health concern. it is implies that there are many households with serious food consumption gaps and few who were marginally able to meet minimum food needs after selling their livelihood assets. These households are likely to succumb to

serious food consumption gaps in the near future. In these councils urgent actions are required to protect livelihoods and to reduce food consumption gaps and prevent acute malnutrition.

In addition, the two districts namely Ngorongoro and Misenyi recorded prevalence of GAM higher than 15%. Basing on WHO classification, in these Districts, wasting was a problem, which poses a 'very high' public health concern. These districts are likely to have many the assessed households with large or worse food consumption gaps. Also, as the households strive to cope with food consumption gaps, they are likely disposing their livelihood assets at a higher rate, and consequently succumb to even more severe food consumption gaps in the near future. Intervention needed in these areas should focus on strengthening livelihood and management of acute malnutrition because wasting is a known underlying cause of mortality.

3.6.3. Prevalence of Underweight

Underweight is a form of malnutrition among children aged 0 – 59 months, whereby a child with this problem is said to have low weight (low age adjusted weight or weight-for-age Z score) as compared to a normal child of the same age and sex. Underweight could be caused by either acute or chronic inadequate food intake or illness. The overall prevalence of underweight among children aged 6-59 months was 14.4% (Table 9). According to WHO classification the prevalence of underweight (14.4%) is a problem of 'medium' public health concern.

Table 9: Prevalence of underweight by sex

Nutrition problem	All N = 1542		Boys N = 778		Girls N = 764	
	f	%	f	%	f	%
Moderate underweight	180	11.7	102	13.1	78	10.2
Severe underweight	42	2.7	22	2.8	20	2.6
Total underweight	**222**	**14.4**	**124**	**15.9**	**98**	**12.8**

3.6.4. Prevalence of Stunting

Stunting is a form of malnutrition among children aged 0 – 59 months, whereby a child with this problem is said to be too short as compared to well-nourished child of the same age and sex. Stunting (low age adjusted height or height-for-age Z score) is a manifestation of retarded linear growth, which is caused by chronic inadequate food intake or illness or both. Table 10 reveals that the overall prevalence of stunting was 32.9%, which corresponds to the national average (34.4%). However, basing on WHO criteria, the stunting level is a problem of 'high' public health concern. The prevalence of stunting was higher among boys (35.5%) than girls (30.3%). These sex differences in stunting have been explained being due to behavioural patterns employed caregivers. It is believed that, girls are favoured in terms of dietary intakes whereby males are given complementary foods earlier and fed larger quantities of foods which amounts to higher rates of diarrhoea compared to females (TDHS-MIS, 2015-16).

Table 10: Prevalence of stunting by sex

Nutrition problem	All N = 1440		Boys N = 723		Girls N = 717	
	F	%	f	%	f	%
Moderate stunting	288	20	159	22	129	18
Severe stunting	186	12.9	98	13.6	88	12.3
Total stunting	474	32.9	257	35.5	217	30.3

3.7. Food Consumption

Food consumption is a primary outcome measure of food security status, which gives an indication of the level of food security and allows classifying the level of severity. In the assessed households various food groups were consumed a day preceding the survey. It was revealed that cereals were mostly consumed (97%-Figure 28). Roots, tubers and plantains were consumed by 17% of the surveyed households implying that there is over reliance of cereals to meet household food needs. Proportion of assessed households that reported to consume egg and meat was only 5% and 17% respectively, giving an indication that proteins from animal sources were least utilised. Examples of animal sources of proteins that are locally available include chicken meat, eggs, beef, guinea pig and other small ruminants.
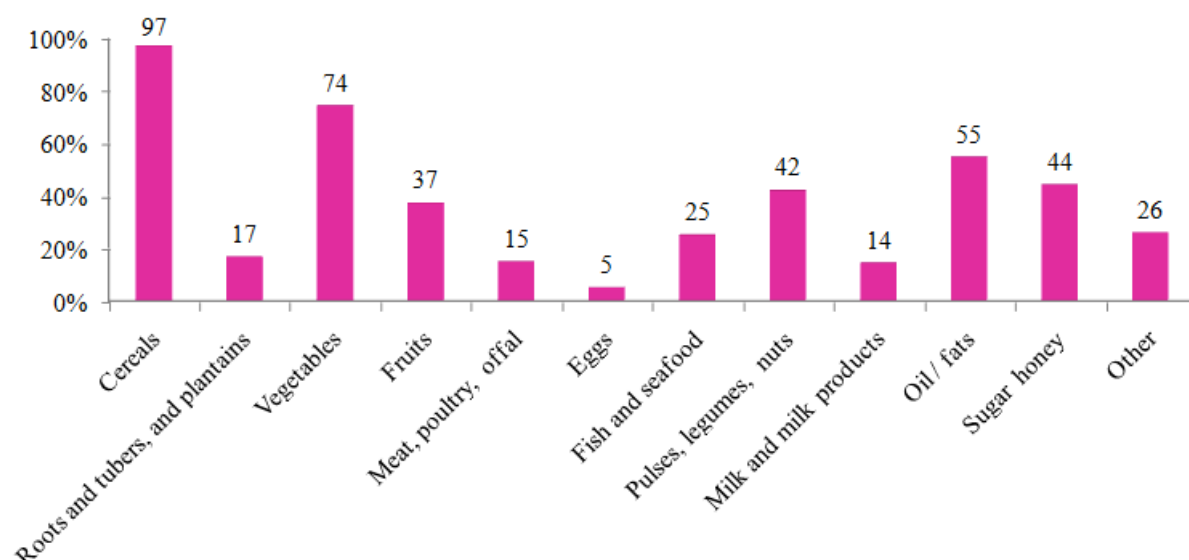

Figure 28: Consumption of various foods by households (n = 1173)

3.7.1. Number of Meals Consumed by Households

On average, 14.3% consumed one meal during the survey period. The current meal frequency increased by 12.9% compared to normal (1.4%- Figure 29). It is widely recommended that individuals should consume at least three meals a day. The current finding is an indication that households were stressed in terms of food consumption during the survey period. National data shows that normally Tanzanians consume more than one meal on regular basis with only 2% consuming one meal per day (NBS and ICF Macro, 2016).
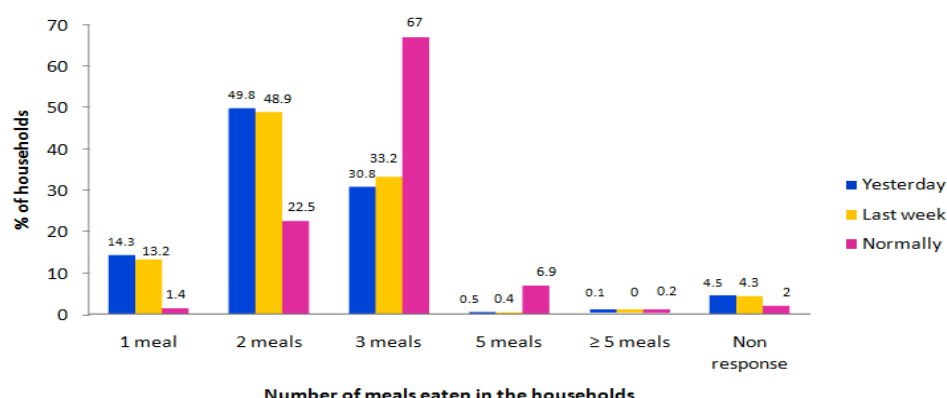

Figure 29: Number of meals consumed by households

3.7.2. Household Dietary Diversity

On average two (2) groups of food were consumed by the surveyed households on the day preceding the survey (Table 11). The mean household dietary diversity scores for the respective regions are as follows:

Table 11: Household dietary diversity

Region	HH (n)	Minimum	Maximum	Mean HDDS	SD
Arusha	70	1	3	2.3	0.7
Dodoma	69	1	3	2.3	0.7
Iringa	73	2	3	2.3	0.5
Kagera	48	1	3	2.2	0.6
Kilimanjaro	77	2	3	2.1	0.4
Lindi	60	2	3	2.3	0.5
Manyara	78	1	3	2.2	0.6
Mara	72	2	3	2.6	0.5
Morogoro	66	1	3	2.1	0.5
Mwanza	67	2	3	2.5	0.5
Njombe	43	1	3	2.2	0.5
Pwani	46	2	3	2.4	0.5
Shinyanga	24	2	3	2.7	0.5
Simiyu	26	2	3	2.5	0.5
Singida	100	2	3	2.4	0.5
Tabora	20	2	3	2.6	0.5
Tanga	225	1	3	2.3	0.5

The box plots show the spread of number of food groups consumed by the households in previous 24 hours preceding the survey (Figure 30). The mid line shows the median number of food groups consumed by households. Generally, the figure shows that some regions had wider box plots meaning that the variation of the number of food groups consumed by households was higher. Other regions had narrow box plots meaning that the degree of homogeneity of the number of food groups consumed by households was higher.
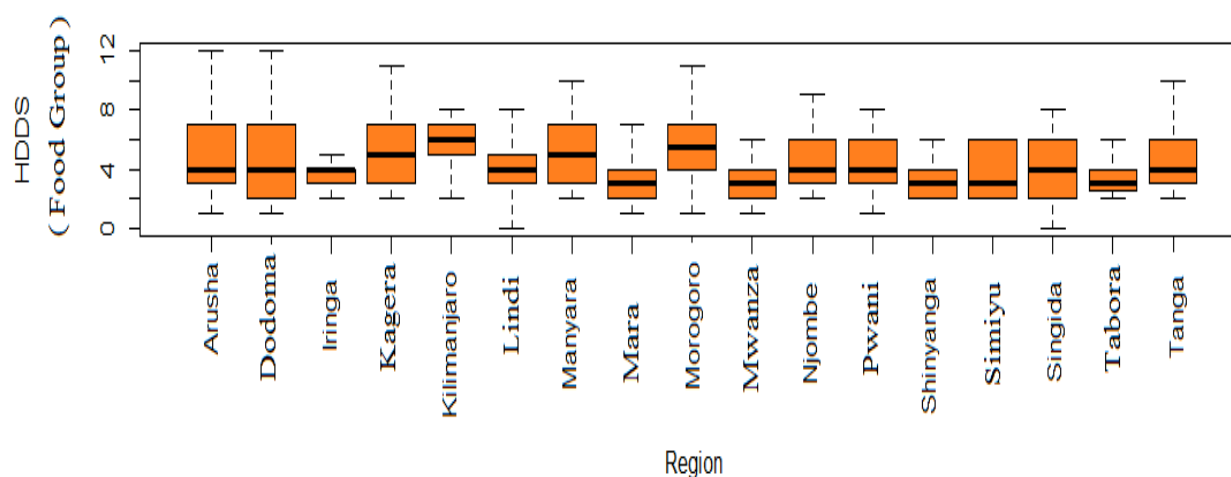

Figure 30: Box plot of HDDS by region

A considerable proportion of the surveyed households consumed lowest diversified diets (41%). In addition, 3.9% consumed highest diversified meals. Consumption of more than three food groups is nutritionally beneficial as it increases the chance for more intakes of nutrients from diverse foods (Table 12).

Table 12: Proportion of assessed households by their Dietary Diversity Score

Dietary diversity category	Food groups	N	%
Lowest dietary diversity	0-3	480	41
Medium	4-8	645	55.1
Highest	≥9	46	3.9
Total		**1171**	**100**

3.7.3. Household Dietary Diversity Categories by Regions

Some regions including Tanga, Tabora, Singida, Shinyanga Pwani and Njombe had the lowest proportion of households that consumed highly diversified diets (Figure 31).
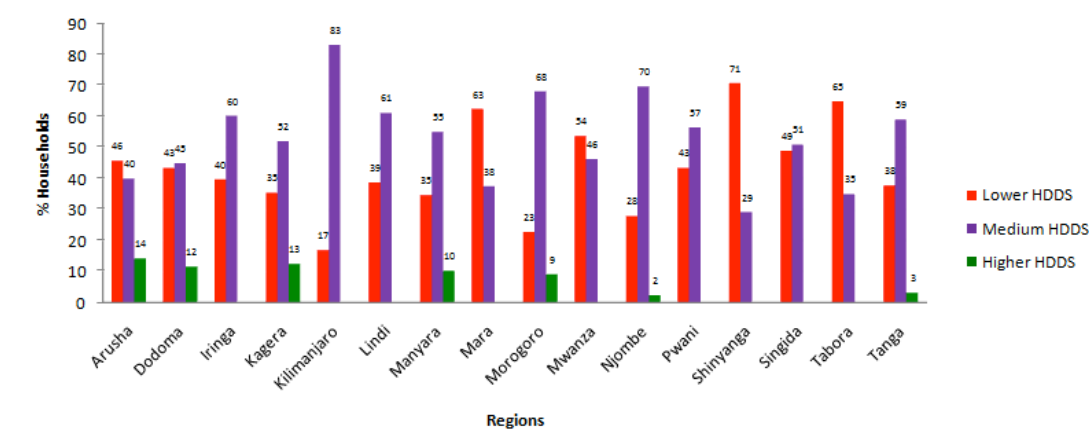
Figure 31:Household dietary diversity categories by regions

CHAPTER FOUR

4. Conclusion and Recommendations

4.1. Conclusion

4.1.1   Rainfall Performance

Generally, the rainfall performance during 2015/16 cropping season was normal to above normal in *vuli 2015, masika 2016* and *msimu 2015/16* seasons. The performance of *vuli,* 2016 season on the other hand, was below normal across the country with late onset of seasonal rains, prolonged dry spells and early cessation. The observed extreme climate events may have contributed greatly in impeding crop and livestock performance.

4.1.1.   Livestock and Crop Diseases

A number of livestock diseases such as Foot and Mouth Disease (FMD), Contagious Bovine Pleuro-Pneumonia (CBPP), Swine Fever, New Castle Disease (NCD) and Tick borne diseases (East Coast Fever-ECF, Babesiosis, Anaplasimosis and Heart water). Some diseases were controlled by vaccinations except Swine fever and Tick borne disease, which were controlled by slaughtering of the affected animals and application of acaricide, respectively. Moreover, some Districts had low capacity to maintain dip facilities and vaccination services.

On the other hand, owing to rainfall failure, some annual crops such as cassava were in the farm. Although there a number of interventions that have been taken at various levels, Crop diseases that were reported include cassava mosaic virus (*Batobato*), cassava mealy bug, and cassava brown streak and banana wilt. Pests reported included, queleaquelea and rodents. The reported livestock and crop diseases have a great impact on food availability and thus food security.

4.1.2.   Food Availability

Food availability in the assessed areas mainly has been considered using crop, livestock and fish production. These were the main attributes of livelihood strategies in the assessed areas. The food production shortage for the respective year was far below the 2014/2015-production season by 41%. The two seasons in assessed

areas, are still far below crop production levels in normal years. These findings are in agreement with the MALF – Preliminary Food Crops Production Forecast Report (2015/2016), which indicated possibility of food production deficit in the selected areas.

Livestock body condition remained stable in the assessed areas despite the deterioration of water and pasture availability. In addition, significant chicken mortality cases were reported in most Districts for instance Korogwe TC, Babati and Butiama. Newcastle disease was the major cause of chicken mortality. Milk production was recorded low in most parts, especially livestock keeping areas like Longido, Ngorongoro and Monduli.

Fish production was recorded to be prominent in some of the assessed Districts like Muleba, Morogoro MC and Musoma. Overall fish availability mainly comes from outside the assessed Districts and was noted to be satisfactory except in very few Districts like Mwanga, Muheza and Pangani.

Overall food availability in the assessed areas, especially for the resource weak households is unsatisfactory.

4.1.3. Food Accessibility

There have been unusual increase of people seeking for casual labour in most of the assessed areas and their basic needs were negotiated. The average nominal price of food commodities has been increasing from October 2015 to 2017 and from February 2017, it will keep on increasing should the current condition persist. Terms of trade were negatively affected by the changes of nominal prices for both crops and livestock. Although most of the assessed Districts had nearby markets, few areas reported access to the market as a limiting factor. Roads were not reported as limiting factor for food accessibility in all seasons.

4.1.2 Food Utilization

Most households early exhausted their harvested food and resorted into consuming two versus three meals during the assessment period. Water accessibility was also reported to be unsatisfactory. It is therefore concluded that utilization is one of the limiting factor to food and nutrition security in the assessed areas.

4.1.4. Food Consumption

Most households in the assessed areas consumed less diversified food than normal. The most consumed food group was cereal but with reduced portion size and feeding frequencies. This food consumption pattern indicates possibility of deteriorating food and nutrition security.

4.1.5. Livelihood Change

With exception of Morogoro region, in all the surveyed areas, there was no unusual migration of human and livestock that could have affected livelihood strategies. Majority of the assessed areas had no conflict that could have affect their daily economic activities with exception of Mvomero and Kilindi that reported mild land conflicts in some villages. Generally, the main livelihood strategies of household were stable, with minimal sale of assets. Only resource weak households in Kagera region reported change of livelihood strategies due to prohibition of unpermitted fishing gears. In addition, many households has started to adopt stress coping to sustain their livelihoods.

4.1.6. Nutrition Status

Basing on the WHO criteria for public health significance of nutritional problem, the overall prevalence of Global Acute Malnutrition (GAM) in the assessed areas was not at the level that alerts a public health concern. However, district disaggregated data show that there are areas where the prevalence of GAM was

unacceptably high (5% or higher), meaning that the problem is of significant public health concern. The prevalence of GAM in 15 districts was ranging from 5 to 10% implying a medium level of public health concern. Other 4 districts had GAM prevalence of 10% – 15%, implying a high level of public concern; whereas the remaining 2 districts (Ngorongoro and Misenyi) had GAM prevalence of 15% or higher implying a very high concern.

4.1.7. Diseases

The assessment revealed that, coverage of vitamin A supplementation and deworming among children aged 6 – 59 months was fairly good. Findings have shown that some Districts still have most households without toilet facilities. Furthermore, most households use water from unprotected sources with consumption of less than 15 litres per person per day. This is associated with high prevalence of cough, diarrhoea and fever cases among the assessed children aged 6 – 59 months old in some districts.

4.1.8. Overall Phase Classification

Through convergence of evidence using the Integrated Food Security Phase Classification (IPC) tool, results show that, a total of 1,186,028 people - 4% of the total population (28,958,169) in 17 surveyed regions - has been identified with various levels of food and nutrition security problems. The population in question was found in 53 out of 55 assessed districts of which 0.43% of the total population (118,603) were in 'Crisis – IPC Phase 3 (having high rate of assets loss with food consumption gaps) and 1,067,425 people (3.85%) were in 'Stressed – IPC Phase 2 (with minimum rate of assets loss but can afford to access food with available resources) Figure 32.

A total population of 13,143,602 (45%) were in 'Minimal food and nutrition problems' – IPC Phase 1 (able to meet essential food and non food requirements) - Annex 9. Recommended priority response objectives for each IPC Phase is shown in Annex 8.
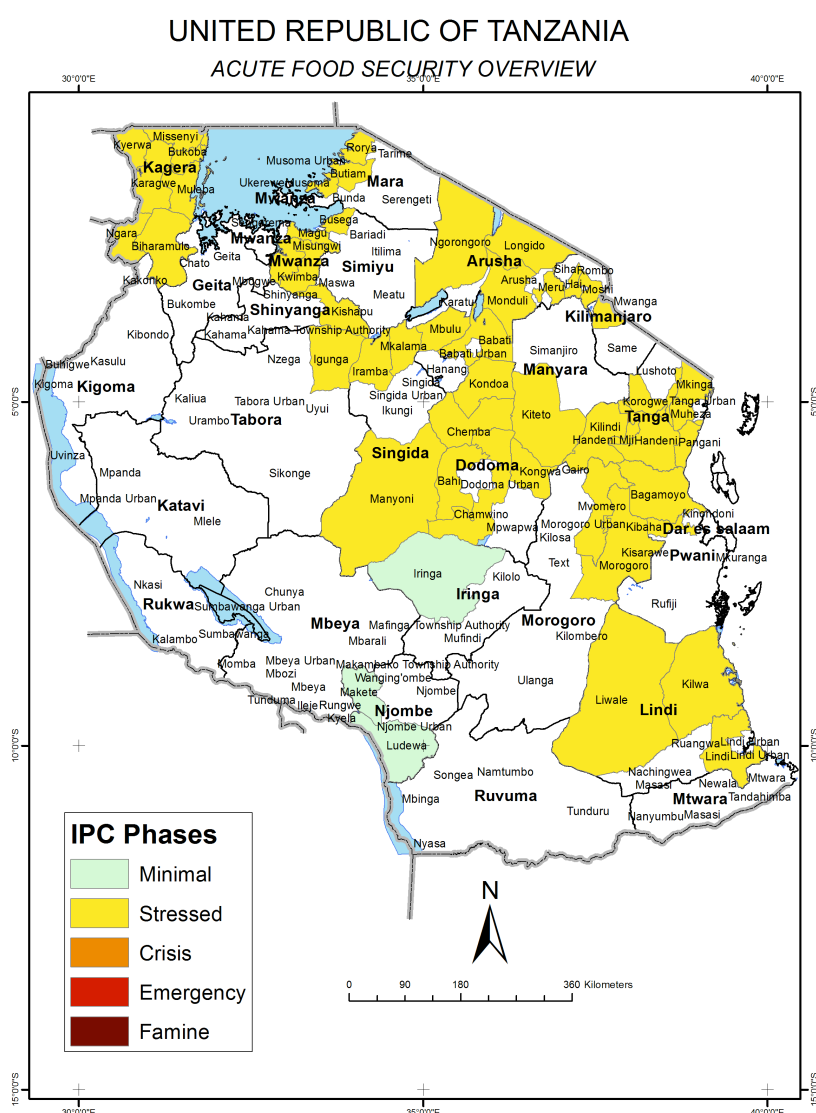
Figure 32: Map Showing Current Acute Food and Nutrition Security Situation – February – March 2017

4.2. Recommendations

Whereas agricultural production substantially contributes in reduction of food and nutritional insecurity, but sustainable food and nutrition security has to be realized through comprehensive food and nutrition security in a livelihood perspective. Therefore, this report recommends the following:

4.2.1. Immediate Interventions

- It is recommended that food accessibility in 53 Districts be availed in the market to cutter for population with high rates of food consumption gaps.
- It is recommended that **197,671** Households in **IPC Phase 2** and **3** should be provided with **1,969** MT of various seeds in maize equivalent (Annex 10).
- It is recommended that the Government should sensitize private traders to ensure supply of food is enhanced from surplus to food shortage areas.
- Stabilization of market prices for main staples in areas with food shortage is highly recommended.
- Timely distribution of seed and planting materials that suits respective agro-ecological zones is highly recommended.
- Close monitoring of food and nutrition security in areas whose situation is likely to continue deteriorating is recommended.
- It is recommended that regular sensitization of communities on water purification, hygiene and sanitation.
- It is recommended that effective interventions to manage acute malnutrition in areas with high and very high prevalence of GAM.

4.2.2. Medium to Long Term Interventions

It is recommended that:

- Food storage structures be strengthened and developed at various administrative levels (National, Regional, District, Village and Household).
- Promotion of value addition techniques, proper storage of food crops and consumption of diversified diets at household level be enhanced.
- Dissemination of meteorological information at all levels be strengthened.
- Sensitization of livestock keepers to destock their livestock while still in good condition be sensitised.
- Conflict resolution measures be imposed to enhance sustainable food and nutrition security.
- Advocating for adoption of environmental smart and biodiversity conservation measures for mitigating negative effects of climate change and variability be promoted.
- Construct and rehabilitation of irrigation scheme infrastructures be enhanced.
- Rainfall and ground water harvesting technologies be strengthened.
- Promotion of aquaculture farming be improved.

REFERENCES

MALF (2015/16) Preliminary Food Production Report 2015/16, Ministry of Agriculture Livestock and Fisheries: Draft

MoHCDGE (2016). Tanzania Mainland], Ministry of Health (MoH) [Zanzibar], National Bureau of Statistics (NBS), Office of the Chief Government Statistician (OCGS) and ICF. 2016. Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS) 2015-16. Dar es Salaam, Tanzania, and Rockville, Maryland, USA:MoHCDGEC, MoH, NBS, OCGS, and ICF.

MUCHALI Report (2017). Comprehensive Food Security and Nutrition Assessment Report MUCHALI.

NPS (2009) Livestock and livelihoods in rural Tanzania A descriptive analysis: National Panel Survey

TDHS-MSI (2015/16). Ministry of Health, Community Development, Gender, Elderly and Children (MoHDGEC) [Tanzania Mailand], Ministry of Health (MoH) [Zanzibar], National Bereau of Statistics (NBS), Office of the Government Statistitician (OCGS), and ICF International 2016. Tanzania Demoghraphic and h\ealth Survey and Malaria Indicator survey (TDHS-MIS) 2015-16. Dar-es-salaam, Tanzania and Rockville, Maryland, USA.

TMA (2016). Tanzania Meteorological Agency Report

URT (2015). Tanzania Climate Smart Agriculture Program 2015-2025.

URT (2016 a). Rapid Agriculture Need Assessment in Response to the El-Nino Effect.

WHO (1995). Physical Status: the Use and Interpretation of Anthropometry. Geneva: World Health Organization.

WHO (2006). Multicentre Growth Reference Study Group. 2006. WHO child growth Standards: Length/height for age, weight for age, weight for length, weight for height and body mass index for age. Methods and development. Geneva, Switzerland: World Health Organization.

Annex: 1: **Regions and Districts involved in Assesment**

S/No	Region	Districts
1.	Arusha	Meru DC, Monduli DC, Arusha DC, Ngorongoro DC and Longido DC
2.	Dodoma	Chemba DC, Kondoa DC, Bahi DC, Chamwino DC and Kongwa DC
3.	Pwani	Kibaha DC and Chalinze DC
4.	Shinyanga	Kishapu DC
5.	Manyara	Babati DC, Kiteto DC and Mbulu DC
6.	Kilimanjaro	Moshi DC, Mwanga DC and Hai DC
7.	Lindi	Kilwa DC, Lindi DC and Liwale DC
8.	Kagera	Kyerwa DC, Karagwe DC, Bukoba DC, Misenyi DC, Biharamulo DC, Muleba DC, Ngara DC and Bukoba MC
9.	Iringa	Iringa DC
10.	Njombe	Makete DC and Ludewa DC
11.	Mara	Musoma DC, Rorya DC and Butiama DC
12.	Morogoro	Morogoro DC, Morogoro MC and Mvomero DC
13.	Mwanza	Magu DC Misungwi DC and Kwimba DC
14.	Simiyu	Busega DC
15.	Singida	Iramba DC, Mkalama DC, Itigi DC and Manyoni DC
16.	Tabora	Igunga DC
17.	Tanga	Pangani DC, Muheza DC, Kilindi DC, Korogwe DC, Korogwe TC, Handeni TC, Handeni DG and Mkinga DC

Annex: 2: Rainfall performance and distribution for each of the surveyed districts

District	Rainfall performance compared to normal (amount)			Rainfall distribution for crop growth (temporal)			Rainfall distribution(area coverage/spatial)		
Ngorongoro DC		Normal		Good			Good		
Arusha DC			Above normal			Very bad			Very bad
Kondoa DC			Above normal	Good			Good		
Chemba DC			Above normal		bad			Bad	
Kongwa DC	Below normal				bad			Bad	
Muheza DC	Below normal				bad			Bad	
Kilindi DC	Below normal				bad			Bad	
Handeni	Below normal					Very bad		Bad	
Korogwe DC		Normal			bad			Bad	
Hai DC	Below normal				bad				Very bad
Moshi DC	Below normal				bad				Very bad
Mwanga DC	Below normal				bad			Bad	
Kilwa DC	Below normal				bad			Bad	
Lindi DC			Above normal	Good			Good		
NewalaDC	Below normal				bad			Bad	
Babati DC		Normal		Good			Good		
Kiteto DC		Normal		Good			Good		
Mbulu DC		Normal		Good			Good		
Butiama DC	Below normal					Very bad		Bad	

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District									
Musoma DC		Normal		Good				Bad	
Rorya DC	Below normal				bad		Good		
Mvomero DC	Below normal				bad			Bad	
Magu DC	Below normal				bad			Bad	
Misungwi DC	Below normal					Very bad			Very bad
Kwimba DC		Normal			bad			Bad	
Ludewa DC		Normal		Good				Bad	
Makete DC		Normal		Good				Bad	
Chalinze DC		Normal				Very bad			Very bad
Kibaha DC	Below normal				bad			Bad	
Kishapu DC		Normal		Good				Bad	
Busega DC	Below normal				bad			Bad	
Manyoni DC	Below normal				bad			Bad	
Igunga DC		Normal		Good			Good		
Ngara DC		Normal		Good			Good		
Bukoba MC		Normal		Good			Good		
Biharamuro DC	Below normal				bad			Bad	
Muleba		Normal			bad			Bad	
Misenyi DC		Normal		Good			Good		
Bukoba DC	Below normal				bad			Bad	
Morogoro MC	Below normal				bad				Very bad
Morogoro DC		Normal			bad			Bad	
Longido									
Pangani									
Mkinga									
Kyerwa									
Chamwino									
Bahi									
Korogwe TC		Normal			bad			Bad	
Mkarama									
Iramba									
Itigi									
Monduli									
Liwale	Below normal				bad		Good		
Iringa									
Karagwe									

Annex: 3: **Prevalence of incidence of some diseases among children 6-59 months in the week preceding the survey**

District	Cough	Diarrhoea	Fever
Kishapu	12.0	16.0	8.0
Makete	6.3	4.2	12.5
Iringa DC	24.0	8.0	16.0
Muheza	12.9	3.2	16.1
Musoma DC	34.6	23.1	19.2
Handeni	20.7	3.4	20.7
Ngorongoro	12.5	12.5	20.8
Kongwa	17.9	7.1	21.4

Chalinze	18.5	3.7	22.2
Ludewa	12.5	2.1	22.9
Chemba	12.0	16.0	24.0
Bahi	20.0	28.0	24.0
Hai	26.9	7.7	26.9
Rorya	26.9	42.3	26.9
Mvomero	61.5	15.4	30.8
Mkinga	45.2	16.7	31.0
Kyerwa	44.7	18.4	31.6
Manyoni	30.0	18.0	32.0
Kiteto	28.0	24.0	32.0
Morogoro MC	10.7	17.9	32.1
Arusha DC	31.4	14.3	34.3
Korogwe	36.2	22.4	34.5
Chamwino	46.2	11.5	34.6
Pangani	32.3	12.9	35.5
Mbulu DC	35.9	28.2	35.9
Itigi	42.9	46.9	36.7
Kibaha	45.8	20.8	37.5
Igunga	43.8	25.0	37.5
Lindi DC	39.3	25.0	39.3
Iramba	28.0	36.0	40.0
Babati DC	36.7	36.7	40.0
Misungwi	31.0	11.9	40.5
Mwanga DC	23.7	21.1	42.1
Kilwa	28.6	28.6	42.9
Kilindi	37.9	20.7	44.8
Karagwe	58.6	34.5	44.8
Liwale	34.6	23.1	46.2
Butiama	40.0	34.0	48.0
Mkalama	55.6	37.0	48.1
Magu	41.2	23.5	49.0
Morogoro DC	28.0	12.0	52.0
Kwimba	36.7	36.7	60.0
Busega	100.0	40.0	60.0
Longido	56.0	40.0	92.0

Annex: 4:**Source of household water in the assessed districts**

District	Protected	Rain water	Unprotected
Arusha DC	92	0	8
Babati DC	48	0	52
Bahi	100	0	0
Busega	0	0	100
Butiama	4	0	96

Chalinze	80	0	20
Chamwino	84	0	16
Chemba	44	0	56
Hai	84	0	16
Handeni	32	0	68
Igunga	16	0	84
Iramba	29	0	71
Iringa DC	85.7	0	14.3
Itigi	16	0	84
Karagwe	36	0	64
Kibaha	62.5	0	37.5
Kilindi	40	0	60
Kilwa	68	0	32
Kishapu	24	0	76
Kiteto	36	0	64
Kongwa	0	0	100
Korogwe	80	0	20
Kwimba	84	0	16
Kyerwa	8	0	92
Lindi DC	16.7	12.5	70.8
Liwale	52	0	48
Longido	24	4	72
Ludewa	28	0	72
Magu	80	0	20
Makete	80	0	20
Manyoni	56	0	44
Mbulu DC	60	0	40
Misungwi	66.7	0	33.3
Mkalama	60	0	40
Mkinga	32	0	68
Morogoro DC	96	0	4
Morogoro MC	77.8	3.7	18.5
Moshi DC	61.5	0	38.5
Muheza	64	0	36
Musoma DC	47.9	0	52.1
Mvomero	60	0	40
Mwanga DC	100	0	0
Ngorongoro	16	0	84
Pangani	0	0	100
Rorya	100	0	0

Annex: 5:**Mean Per Capita Water Consumption Per Day**

District	N	Minimum	Maximum	Mean
Arusha DC	21	4.	22.2	12.2

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Babati DC	24	3.7	24	14.
Bahi	12	2.5	33.3	15.6
Biharamulo	21	5	20	13.1
Busega	22	5.7	25	13.4
Butiama DC	23	4	30	13.9
Chalinze	24	3	33.3	15.7
Chamwino	24	7.7	33.3	16.9
Chemba	38	4.4	26.7	12.7
Hai	25	2.5	25	12.5
Handeni DC	66	2.5	33.3	15.3
Handeni TC	50	6.1	33.3	15.6
Igunga	22	3.3	24	10.8
Iramba	21	2.8	34.2	17.2
Iringa DC	11	6.6	16.6	11.7
Itigi	25	5.7	22.8	11.9
Karagwe	24	4	20	9.9
Kibaha DC	24	5	25	14.4
Kilindi	25	3.3	25	12.7
Kilwa	24	4	26.6	12.6
Kishapu	22	4	18.1	9.1
Kiteto	25	2.8	25	14.4
Kongwa	48	6	33.3	17.1
Korogwe DC	21	8.8	30	15.6
Kwimba	24	4	20	11.8
Kyerwa	25	2.8	20	8.3
Lindi DC	26	3.3	26.6	11.7
Liwale	23	7.5	24	14.8
Longido	21	4.2	20	11.1
Ludewa	25	6.6	26.7	15.6
Magu	22	4.1	25	12.9
Makete	21	6.6	25	15.9
Manyoni	25	4.4	33.3	14.9
Mbulu DC	24	4	33.3	11.9
Misungwi	23	4.6	22.8	13.9
Mkalama	22	12	34.2	19.8
Morogoro DC	24	4.4	26.6	14.6
Morogoro TC	24	5	33.3	16.5
Moshi DC	18	6.6	33.3	17.6
Muheza	25	3.3	20.	13.2
Muleba	16	4.4	17.8	10
Musoma DC	25	7.2	35	17.9
Mvomero	23	10	33.3	21.1
Mwanga DC	22	10	33.3	21.3
Ngorongoro	19	1.8	20	8.4

	25	3.6	25	11.1
Pangani	25	3.6	25	11.1
Rorya	25	7.2	35.	17.9
Total	**1169**	**5.0**	**26.90**	**14.1**

Annex 6: Availability of toilet facilities in the assessed households by district

District	Communal toilet	Have toilet	No toilet
Arusha DC	24	64	12
Babati DC	8	88	4
Busega	0	100	0
Butiama	4	84	12
Chalinze	52	44	4
Chamwino	0	96	4
Chemba	0	100	0
Hai	8	88	4
Handeni	0	88	12
Igunga	0	100	0
Iramba	0	92	8
Iringa DC	4.2	95.8	
Itigi	0	90.5	9.5
Karagwe	4	88	8
Kibaha	0	92	8
Kilindi	8	92	0
Kilwa	8	76	16
Kishapu	8	72	20
Kiteto	12	88	0
Kongwa	0	56	44
Korogwe	4	96	0
Kwimba	4	96	0
Kyerwa	4	88	8
Lindi DC	4	96	0
Liwale	0	41.7	
Longido	0	100	0
Ludewa	0	100	0
Magu	4	96	0
Makete	0	96	4
Manyoni	0	100	0
Mbulu DC	0	96	4
Misungwi	4.2	80	15.8
Mkalama	0	91.7	8.3
Mkinga	0	100	0
Morogoro DC	0	84	16
Morogoro MC	0	96	4
Moshi DC	8	92	0
Muheza	0	69.2	30.8

Musoma DC	0	100	0
Mvomero	0	100	0
Mwanga DC	4.3	95.7	0
Ngorongoro	8.3	88	3.7
Pangani	0	41.7	58.3
Rorya	0	100	0

Annex: 7 Prevalence of Global Acute Malnutrition in the Assessed Households by Councils

District	Moderate wasting	Severe wasting	GAM	WHO Public Health Significance
Butiama	0	0	0	
Iringa	0	0	0	
Kibaha	0	0	0	
Kilindi	0	0	0	
Muleba	0	0	0	
Mwanga DC	0	0	0	
Magu	2	0	2	
Makete	2	0	2	
Ludewa	2.1	0	2.1	LOW
Mkinga	2.3	0	2.3	
Pangani	2.3	0	2.3	
Handeni DC	0	0	0	
Kiteto	0	0	0	
Mkalama	0	0	0	
Morogoro M	0	0	0	
Muheza	0	0	0	
Rorya	0	0	0	
Bukoba MC	2.9	0	2.9	
Handeni TC	3.4	0	3.4	
Ngara	3.4	0	3.4	
Musoma DC	3.7	0	3.7	
Hai		4	4	
Iramba	4	0	4	
Meru	4.2	0	4.2	
Kyerwa	2.6	0	2.6	
Misungwi	2.6	0	2.6	
Busega	3.1	0	3.1	
Igunga	3.1	0	3.1	
Kongwa	3.3	0	3.3	
Handeni DC	3.4	0	3.4	
Liwale	3.7	0	3.7	

Kondoa DC	4	0	4
Bahi	4	0	4
Kishapu	4.2	0	4.2
Lindi DC	5	0	5
Kilwa	5	0	5
Biharamulo	5.3	0	5.3
Mbulu	5.4	0	5.4
Arusha DC	6.1	0	6.1 MEDIUM
Korogwe TC	6.7	0	6.7
Morogoro D	8	0	8
Itigi	6.1	0	6.1
Moshi DC	6.1	0	6.1
Babati	6.5	0	6.5
Kwimba	7.1	0	7.1
Chemba DC	7.1	0	7.1
Chalinze	7.7	0	7.7
Mvomero	7.7	0	7.7
Monduli	6.1	3	9.1
Karagwe	6.7	3.3	10
Korogwe DC	11.1	0	11.1 HIGH
Bukoba DC	7.1	3.6	10.7
Longido	12	0	12
Manyoni	10.2	2	12.2
Ngorongoro	17.9	0	17.9 VERY HIGH
Misenyi	15.2	3	18.2

Annex: 8. IPC Acute Food Insecurity Reference for Area Classification and Priority Response

	Phase 1 Minimal	Phase 2 Stressed	Phase 3 Crisis	Phase 4 Emergency	Phase 5 Famine
Phase Name and Description	*More than four in five households (HHs) are able to meet essential food and non-food needs without engaging in atypical, unsustainable strategies to access food and income, including any reliance on humanitarian assistance*	*Even with any humanitarian assistance at least one in five HHs in the area have the following or worse:* *Minimally adequate food consumption but are unable to afford some essential non food expenditures without engaging in irreversible coping strategies.*	*Even with any humanitarian assistance at least one in five HHs in the area have the following or worse:* *Food consumption gaps with high or above usual acute malnutrition* ***OR*** *Are marginally able to meet minimum food needs only with accelerated depletion of livelihood assets that will lead to food consumption gaps.*	*Even with any humanitarian assistance at least one in five HHs in the area have the following or worse:* *Large food consumption gaps resulting in very high acute malnutrition and excess mortality* ***OR*** *Extreme loss of livelihood assets that will lead to food consumption gaps in the short term.*	*Even with any humanitarian assistance at least one in five HHs in the area have an extreme lack of food and other basic needs where starvation, death, and destitution are evident.* *(Evidence for all three criteria of food consumption, wasting, and CDR is required to classify Famine.)*
			Urgent Action Required to: ➡		
Priority Response Objectives	Action required to Build Resilience and for Disaster Risk Reduction	Action required for Disaster Risk Reduction and to Protect Livelihoods	Protect livelihoods, reduce food consumption gaps, and reduce acute malnutrition	Save lives and livelihoods	Prevent widespread mortality and total collapse of livelihoods