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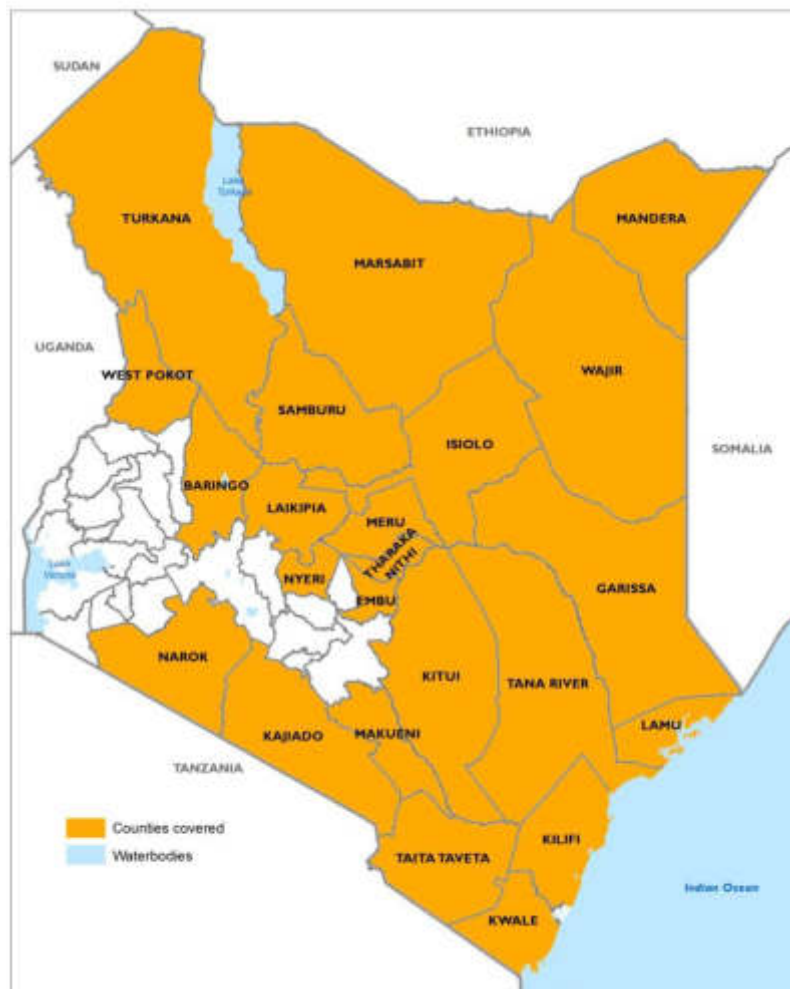
THE 2017 SHORT RAINS SEASON ASSESSMENT REPORT

Kenya Food Security Steering Group (KFSSG)

January 2018

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Acronyms

CBPP	Contagious Bovine Pleuro-pneumonia
CCPP	Contagious Caprine Pleuro-pneumonia
CSG	County Steering Group
CSI	Coping Strategy Index
CSMP	Community School Meals Programme
ECD	Early Childhood Development
ESMP	Expanded School Meals Programme
FMD	Foot and Mouth Disease
FSOM	Food Security Outcome Monitoring
GAM	Global Acute Malnutrition
HGSMP	Home Grown School Meals Programme
IPC	Integrated Phase Classification
KFSSG	Kenya Food Security Steering Group
KNBS	Kenya National Bureau of Statistics
LSD	Lumpy Skin Disease
LTA	Long-Term Average
MAM	Moderate Acute Malnutrition
MUAC	Mid-Upper Arm Circumference
NDMA	National Drought Management Authority
PPR	Peste des Petits Ruminants
RSMP	Regular School Meals Programme
SAM	Severe Acute Malnutrition
SDA	State Department of Agriculture
TLU	Tropical Livestock Unit
ToT	Terms of Trade
URTI	Upper Respiratory Tract Infection
WFP	World Food Programme
WHZ	Weight for Height Z-score

Executive Summary

Introduction
The 2017 Short Rains Assessment was conducted from 5th to 16th February 2018. It was led by the government through the Kenya Food Security Steering Group (KFSSG), in collaboration with the County Steering Groups (CSGs) in the 23 counties covered by the assessment. The KFSSG is a multi-agency body comprising government departments, UN agencies and NGOs with a stake in food and nutrition security. It is chaired by the National Drought Management Authority (NDMA) and co-chaired by the World Food Programme (WFP), and conducts bi-annual food security assessments in collaboration with the CSGs. The CSGs are also multi-sectoral and multi-agency and coordinate food security activities at the county level.

Objectives
The overall objective of the assessment was to analyse and determine the extent and impact of the 2017 short rains season on food and nutrition security, taking into account the cumulative effects of previous seasons and other shocks and hazards. In particular, the assessment explored the impact of the season on food availability, access, and utilization, by looking at the contributing factors and outcomes and the effects on each sector. The assessment also informed interventions that would address the issues arising in each sector, including agriculture, livestock, water, health and nutrition, education, peace and security, and markets and trade.

Methodological Approach
The bi-annual seasonal assessments cover the 23 counties that comprise the arid and semi-arid region of the country. They are generally the most food insecure and exhibit high levels of vulnerability. They cover approximately 80 percent of Kenya's landmass, and for the purposes of the assessments are classified into generalized livelihood zones in five clusters: (i) Pastoral North-West (Turkana, Samburu and Marsabit); (ii) Pastoral North-East (Wajir, Garissa, Isiolo, Tana River and Mandera); (iii) South-East Marginal Agriculture (Kitui, Makueni, the lower parts of Tharaka Nithi, part of Embu, and the northern parts of Meru); (iv) Coastal Marginal Agriculture (Kilifi, Kwale, Taita Taveta and Lamu); and (v) Agro-pastoral (Baringo, Narok, Kajiado, West Pokot, Laikipia and the northern part of Nyeri (Kieni)). The main livelihood activities in these clusters are pastoralism, agro-pastoralism, mixed farming, marginal mixed farming and some irrigated cropping, which form the unit of analysis.

The assessment involved the collection of both primary and secondary data. The principal sources were: (i) data from NDMA sentinel sites, collected monthly using questionnaires; (ii) data gathered from the sectors at county and sub-county level using checklists; (iii) data collected in community interviews and market interviews using focused group discussions and trader interviews; (iv) secondary data from nutrition surveys (SMART surveys), food security outcome monitoring (FSOM), and drought early warning bulletins; and (v) field observations during transect drives.

The Acute Integrated Food Security Phase Classification (IPC) was used for the analysis. The IPC is a standard global tool for classifying the severity of food insecurity and ensures that best practice is being applied. IPC Acute Malnutrition analysis was also undertaken to understand both the food and non-food causes of malnutrition.

Drivers of Food and Nutrition Insecurity

Rainfall performance

The 2017 short rains generally performed better than the 2017 long rains, but they were still poor, particularly in crop-producing areas given the early cessation.

The onset of the season was timely in most parts of the country, with most areas receiving rainfall in October and November. However, the season ended early: below-normal rainfall in December left this month dry and hot. Some off-season rains were received in January in a few areas, including Narok, which helped to sustain pastoral livelihoods but had no impact on crop production.

The spatial distribution was also poor. Figure 1.1 illustrates the anomalies. For example, parts of the south-east marginal cluster and some pastoral grasslands in Tana River and Isiolo received less than 50 percent of normal rainfall. Other parts of the South Rift (including Kajiado), the coastal

Figure 1.1: Short Rains Season (October – December 2017) Rainfall Percent of Normal

strip and eastern pastoral areas (including Garissa) received between 50 and 90 percent of normal rainfall. However, most of the north-west and parts of the north-east received normal to above-normal rainfall.

Summary of key findings

Figure 1.2: Trend of the food insecure population
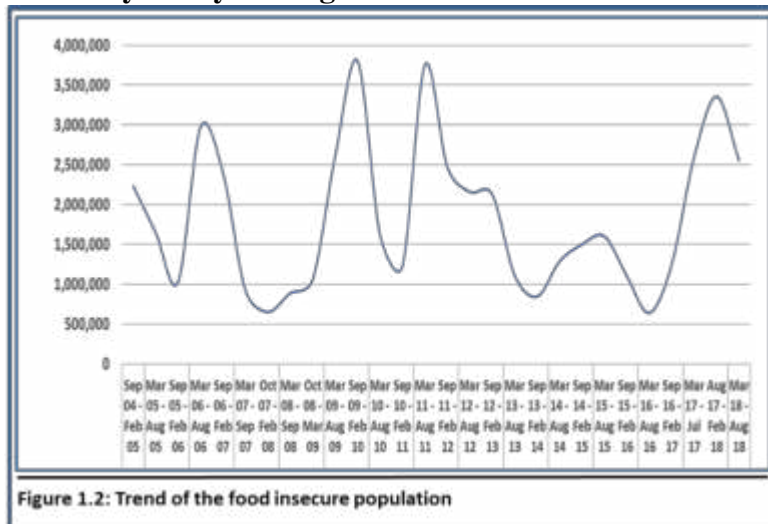
The assessment established that 2.55 million people in arid and semi-arid counties are facing acute food insecurity and need immediate humanitarian assistance. This figure is significantly lower than the 3.4 million identified in August 2017 after the last long rains assessment, and comparable to the 2.6 million identified in February 2017. (Figure 1.2). Of this total, about 1.9 million are classified in Crisis (IPC Phase 3) and a further 450,000 in Emergency (IPC Phase 4). The remaining 200,000 are currently in Stressed (IPC Phase 2), but given their high vulnerability and prevailing food security trends are likely to move to Crisis.

Improvements were recorded in most areas, although in others the food security situation either remained the same or worsened. The counties where food security has worsened are Isiolo, Mandera, Garissa, Tana River and parts of Kajiado.

The assessment found that most pastoral livelihoods were deteriorating, since the short rains did not allow for full regeneration of the rangelands. Hot and dry conditions in December accelerated the depletion of pasture and browse. Areas that recorded a severe vegetation deficit included Kajiado, Mandera, Isiolo, Garissa, Tana River and the northern part of Wajir. Distances to water for livestock increased by about 50 percent across all livelihood zones due to poor recharge of water sources, drying of seasonal rivers, and livestock migration.

Overall, milk production, and consequently household milk consumption, reduced. The deficit in milk production was significant in Kajiado, Isiolo and Tana River, given poor livestock body condition and prolonged out-of-season migration. The same areas also registered a deteriorating nutritional status for children under five, an indication of worsening household access

Figure 1.3: Milk production per household per day

to food. However, the situation was expected to improve with the onset of the long rains in March.
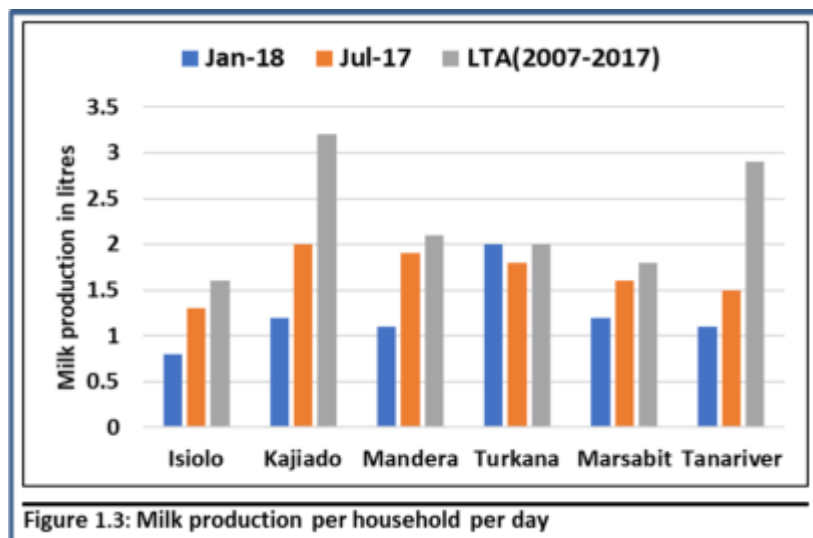
In the cropping zones, significant crop failures were recorded in the marginal agriculture and agro pastoral zones, especially of maize, which is the most cultivated crop. Nationally, crop production is expected to be 15 percent below the five-year long term average (LTA), the main driving factor being the early cessation of the short rains that undermined performance. The
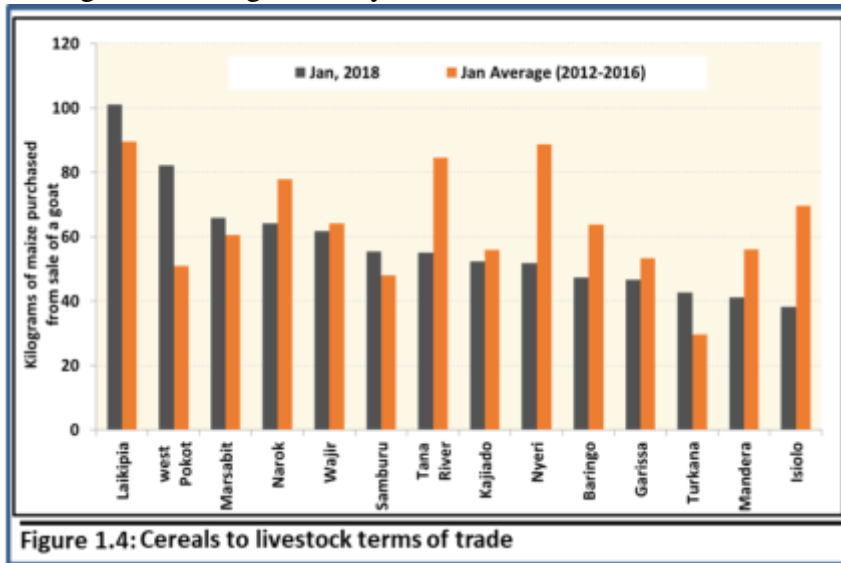
Figure 1.4: Cereals to livestock terms of trade

south-eastern marginal cluster was the most affected, since the short rains are their main cropping season, with maize production as low as 20 percent of the LTA.

Terms of trade between goats and maize remain poor. Only in Laikipia, West Pokot and Marsabit were they above the LTA (Figure 1.4). In other counties, high commodity prices contributed to unfavourable terms of trade.

The food security situation in the south-east and coastal marginal agricultural areas is mixed. The coastal areas, especially Kilifi and Kwale, registered significant improvements following normal to above-normal rainfall which led to relatively stable maize production and above-average cowpea production. In the south-east marginal agricultural areas, the situation remained mostly similar to the previous season as crop production was affected by poor rainfall performance. Household food stocks are about 108 percent above the LTA in coastal areas but only 33 percent of the LTA in the south-east.

Categories of the food insecure population

After the long rains in July 2017, the north-west pastoral areas, as well as Isiolo, parts of Mandera, Wajir and Garissa, West Pokot, and parts of Baringo (Tiaty) were largely classified in Crisis (IPC Phase 3), while the south-east and coastal marginal agricultural areas and the agro-pastoral counties of Kajiado and Narok were mostly in Stressed (IPC Phase 2).
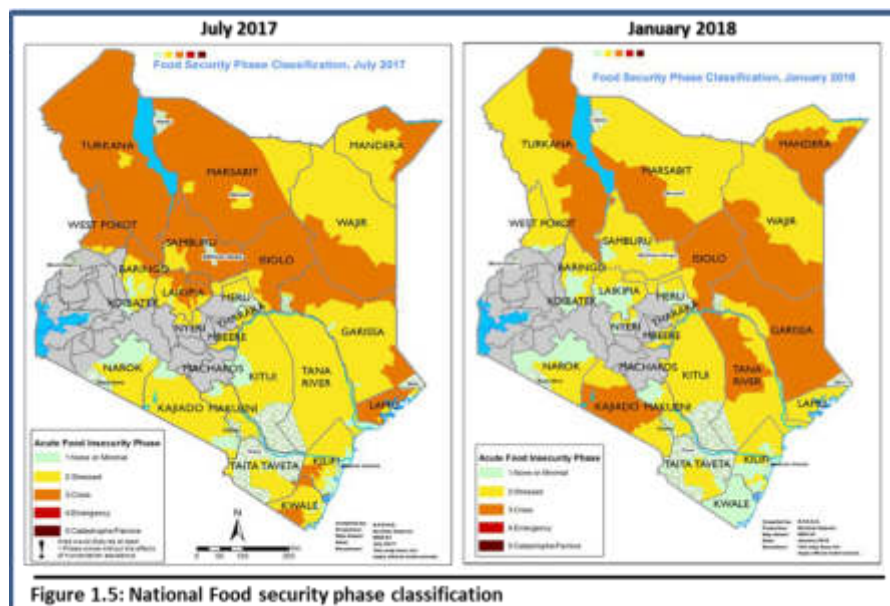
Figure 1.5: National Food security phase classification

By January 2018, considerable improvements were evident across most livelihood zones, although several parts of the north-west and north-east pastoral areas are still in Crisis. Figure 1.5 shows the phase classification in July 2017 after the long rains and January 2018 after the short rains.

Population in Crisis (IPC Phase 3)
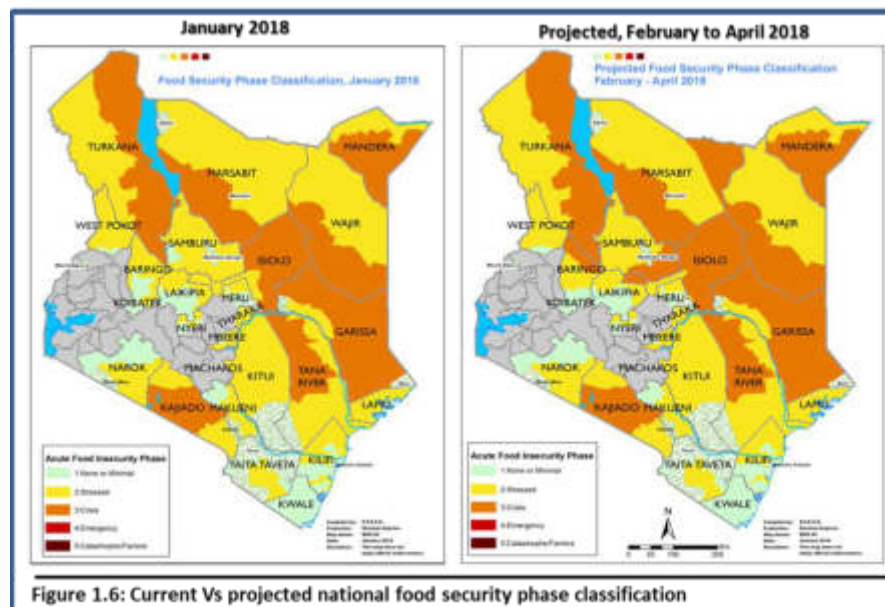
Figure 1.6: Current Vs projected national food security phase classification

The number of people estimated to be in IPC Phase 3 and above is 2.35 million. These people are marginally able to meet their minimum food needs but only by more rapidly depleting their assets and thus undermining their food consumption. More households in Isiolo, Garissa, Tana River, Mandera and Kajiado have moved into the Crisis phase this season compared with the long rains season of 2017. Parts of Turkana, Marsabit and Wajir are similarly in the Crisis phase despite improvements in food security. The situation is likely to remain the same until April 2018, but only if multi-sectoral interventions are sustained and scaled up to mitigate further deterioration and consolidate the gains thus far (Figure 1.6)

More than 20 percent of households in areas classified in Crisis still have poor food consumption and dietary diversity, given reduced household food stocks, low purchasing power and high commodity prices. Poor crop production and deteriorating livestock productivity further constrain consumption, especially of milk. For these households, meals mainly consisted of cereals, vegetables, and infrequent consumption of pulses. Households were employing consumption coping strategies more frequently and had reduced the number of meals to one or two a day. Malnutrition rates in these areas remain high (classified as Critical and Serious) and are expected to deteriorate until April 2018.

Population in Stressed (IPC Phase 2)
Most households in arid and semi-arid areas are classified in Stressed and number approximately 8.1 million people. Of these, about 200,000 people face the likelihood of slipping into Crisis by April 2018, and therefore require continued assistance such as livelihood support and safety net programmes. Most of the agro-pastoral, south-east and coastal marginal agriculture areas are in Stressed, as well as parts of the pastoral areas of Turkana, Marsabit, Mandera, Wajir and Tana River. These areas are likely to remain in the same phase between February and April, with the exception of parts of Marsabit (Moyale), Baringo (Tiaty) and Samburu (East) where more people are expected to move to Crisis.

Households in this category can afford minimally adequate food consumption but are unable to afford essential non-food expenditures without engaging in irreversible coping strategies. The areas in Stressed generally received average to above-average rainfall, although its distribution was poor and uneven and it ended early; however, parts of the south-east and coast

received below-average rainfall. While there have been modest improvements, complete recovery has remained elusive due to the cumulative effects of previous poor seasons. Crop production has been below average due to moisture stress and Fall Army Worm infestation and households are reliant on markets for food. Pasture and browse conditions are stable, leading to fair to good livestock body condition and improved productivity. Terms of trade remain favourable, although constrained by high but stable commodity prices. Most households have borderline and acceptable food consumption and malnutrition levels, especially in the south-east and coast (classified as Acceptable and Alert).

Nutrition IPC Classification[1]

According to the IPC for Acute Malnutrition conducted in February 2018, acute malnutrition remains at Critical levels (Phase 4; GAM WHZ 15.0 - 29.9 percent) in Turkana Central, North, West and South, Tana River, Wajir North, North Horr and Laisamis sub-counties. Isiolo and Kajiado reported a serious nutrition
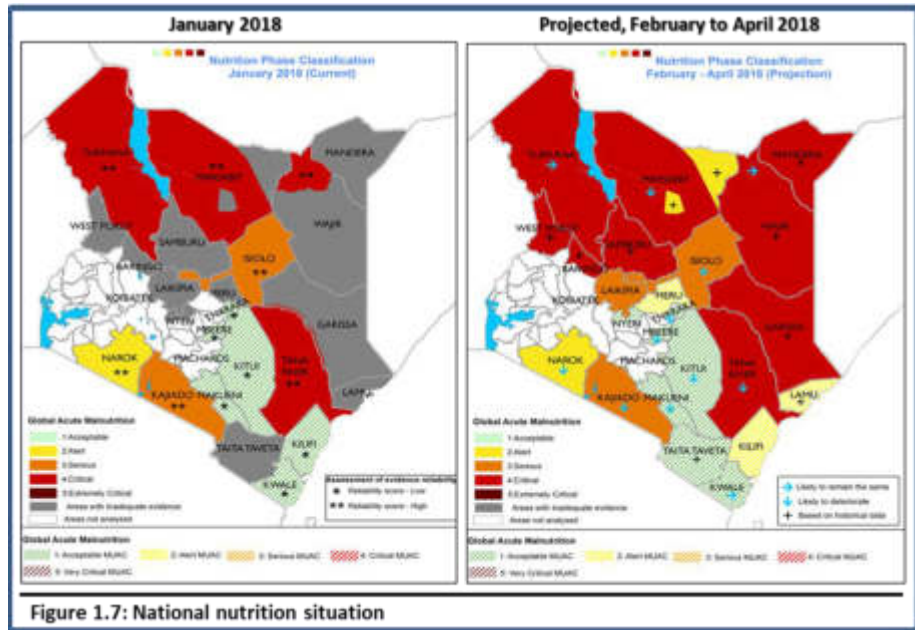
Figure 1.7: National nutrition situation

situation (Phase 3; GAM WHZ 10.0 -14.9 percent). Narok county was classified as Alert (Phase 2; GAM WHZ ≥ 5 to 9.9 percent) while Kilifi, Kwale, Kitui, Makueni, Mbeere and Tharaka were Acceptable (Phase 1; GAM WHZ <5%). The nutrition situation is projected to remain in the same phase in Turkana and Wajir North, but a deterioration is expected in Isiolo, North Horr, Laisamis, Tana River and Kilifi (Figure 1.7), due to the scale down of emergency response interventions during the projection period, including the Blanket Supplementary Feeding Programme (BSFP) and integrated health and nutrition outreach.

Compared with the 2017 LRA, the overall nutrition situation has significantly improved in Turkana South, North & Central and North Horr from Very Critical (Phase 5; GAM WHZ ≥30 percent) to Critical. This is mainly attributed to improved food access indicators, including milk availability in arid counties, large-scale implementation of emergency response interventions, including the BSFP, improved access to health and nutrition services through the scale up of integrated outreach, and key food access interventions, including cash transfers and food assistance. Despite these improvements, interventions need to be sustained in order to avoid levels of acute malnutrition deteriorating, which was observed at the same time in 2012. The total number of children aged 6 to 59 months and pregnant and lactating women requiring treatment for acute malnutrition is shown in table 1 below.

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[1] GAM WHZ: Global Acute Malnutrition by Weight for Height: MUAC- Mid Upper Arm Circumference: MAM- Moderate Acute Malnutrition: SAM- Severe Acute Malnutrition

Estimated number of children and women requiring treatment for Acute Malnutrition

Area	Global Acute Malnutrition (6-59 months)	Severe Acute Malnutrition (6-59 months)	Moderate Acute Malnutrition (6-59 months)	Pregnant and lactating women
ASAL	337,290	54,860	282,430	34,140
Urban	62,530	16,700	45,830	3,020
Total Caseload	399,820	71,560	328,260	37,160

2017-2018 crop production and prospects

Estimates from the State Department of Agriculture (SDA) and FEWS NET are that total maize production for 2017-2018 is 2.82 million metric tonnes (MMT), which is approximately 10 percent below the LTA of 3.13 MMT and a further drop of 10 percent on 2016-2017. The long rains crop was significantly affected by a dry spell in June-July during the critical development stages of the crop, especially in the North Rift. This caused significant losses and necessitated replanting, especially in Uasin Gishu. Infestations of the Fall Armyworm also led to significant destruction of the maize crop and the loss of about 1.09 million 90kg bags, according to the Food and Agriculture Organization. Another factor was the extended period of rainfall in September-October that resulted in pre and post-harvest losses of the maize crop in the high rainfall areas of the North Rift and western Kenya.

In marginal agricultural areas, the area planted for maize was within the average range but production was only 44 percent of the LTA due to Fall Armyworm and severe moisture stress. Kitui experienced total crop failure, while Kilifi, Lamu, Taita Taveta, Mbeere, Makueni, Tharaka and Meru (Meru North) achieved only 13-26 percent of their average production. Where rainfall performance was better, production was higher. For example, Nyeri (Kieni) achieved 71 percent of its LTA, while Kwale achieved 16 percent above its LTA.

Between October and December 2017, 77 percent of exports within the East Africa region, mostly from Uganda and Tanzania, were headed for Kenya, where prices remained high despite seasonal falls following domestic harvests. The SDA is forecasting a national maize deficit of 820,000 MT by May 2018. It is likely that imports from Uganda and Zambia will be relied on to fill the gap in supply and ensure food security at the national level in anticipation of the July long rains harvest.

Food price trends

Maize prices in most markets declined seasonally in the fourth quarter of 2017. In January 2018, prices were generally equal to or below those of the previous year and within their five-year average, except in Nairobi and Kisumu given increased demand and the high cost of cross-border imports (Figure 1.8).
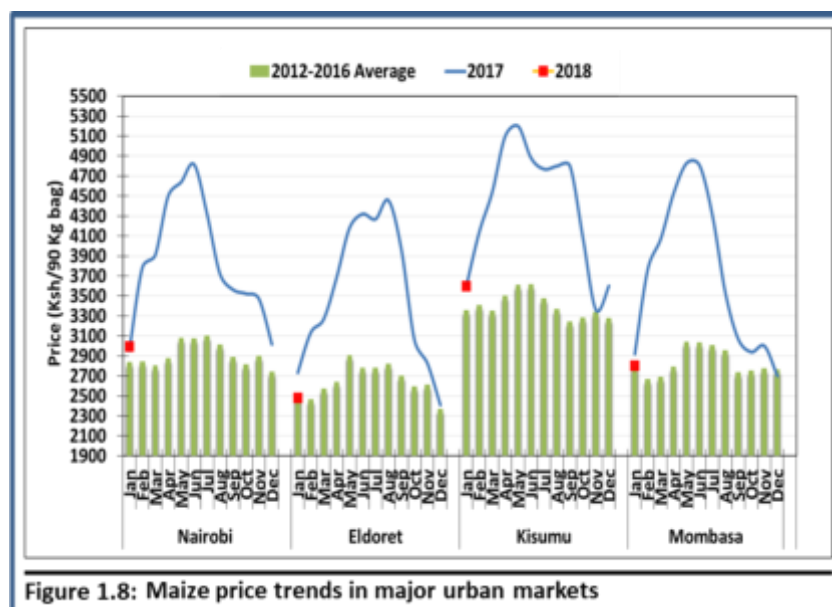
Figure 1.8: Maize price trends in major urban markets

The government's maize subsidy programme stopped at the end of December 2017. Since then, the two-kilogramme packet of maize flour that was previously retailing at Ksh 90 when subsidised is now retailing at Ksh 108 – 115. The depletion of the subsidized maize flour has triggered increased demand for grain maize. When coupled with below- average national production, maize prices are expected to remain above average until June, given low household stocks and likely hoarding by traders in anticipation of shortages. Food access is therefore likely to remain limited, especially for poor households.

Food Security Prognosis (February 2018 – September 2018)

Pastoral areas
From February, food insecurity is anticipated to worsen as livestock productivity declines, reducing dietary diversity and increasing malnutrition, especially in children under five. Livestock migration and poor body condition will lower household purchasing power and food access. More households in parts of Baringo, Marsabit and Samburu are expected to move to Crisis (IPC Phase 3). The onset of the March – May long rains is likely to recharge forage and water resources, boosting livestock productivity and prices and leading to improved household food access, availability and consumption. Significant improvements are expected in Turkana, Baringo, Marsabit and Kajiado, particularly where above-average rains are expected, and also in parts of Tana River, Wajir, Mandera and Garissa, which are expected to move to Stressed (IPC Phase 2). In West Pokot, Baringo, Narok, parts of Samburu, Nyeri, Kitui, Makueni and Laikipia, further improvements are expected with areas improving to Minimal (IPC Phase 1).

Marginal agricultural areas
In February, household food security will stabilise with food stocks from the short rains harvest. However, from late February to mid-March, below-average crop sales given the poor harvests will reduce income and drive food insecurity, as food stocks dwindle and market dependence increases. Households will employ coping strategies and engage in non-agricultural activities to fill income gaps. The onset of the rains in late March will drive some crop production activities, providing some income to households. From mid-April, improved fodder will boost milk production and consumption, stabilizing the nutritional status of children under five. However, improvements will not be pronounced, and most households will remain in Stressed (IPC Phase 2) until the end of April. From May, income and food from on-farm activities and from harvesting short-cycle crops will improve food access and availability. In July, the long rains harvest will provide food and income-earning activities, thus increasing household food consumption and dietary diversity. The use of coping strategies is expected to reduce as the long rains harvest leads to a fall in staple market prices, thereby improving food access. Most households will improve but remain in Stressed (IPC Phase 2), while in areas that receive above-average rains (such as Nyeri, Embu, parts of Kitui and Makueni) they are likely to improve to Minimal (IPC Phase 1).

Factors to monitor include:
- Worsening malnutrition in selected counties (Lamu, Kilifi, Marsabit, Isiolo, Kajiado, Narok, Tana River)
- Performance of the March – May long rains
- Staple food prices
- Impacts of programmes and interventions.

Options for response
The table below contains response options by sector. Immediate interventions to mitigate food insecurity should be complemented by medium to long-term interventions that build the resilience of communities.

SECTOR	INTERVENTION	Cost KSH (M)	Cost USD (M)
Agriculture	Provision of farm inputs, Development of irrigation infrastructure, Capacity building of farmers	1,950	19.5
Livestock	Purchase and distribution of emergency supplementary feeds, Commercial livestock off-take and livestock restocking, Livestock disease surveillance, Pasture establishment and conservation	3, 245	32.4
Water	Water trucking, Water infrastructure maintenance, Drilling and equipping of boreholes, De-silting and expansion of water pans and repair of shallow wells, Desalination of water points to improve water quality	941	9.4
Health	Scale up WASH services in most affected areas, Maintenance of current levels of response such as screening and outreach to sustain the gains made, Enhance nutrition surveillance activities in Kajiado, Tana River, Narok and Kilifi counties, Disease outbreak response, Continued support to effective coordination for response and community engagement	669	6.7
Education	Provision of school feeding for both ECDE and primary school children, Construction/establishment of day secondary schools, Water provision	204	2.0
Food assistance	Build resilience to future shocks through asset creation, safety net programmes and market access programmes; food commodities and cash including associated costs for 2.55 million food insecure people in need of assistance for the next six months (March – August 2018).	13,000	130
Peace and security	Establish and support peace and conflict resolution mechanisms among pastoral and farming communities and form peace committees.	70	0.7
Total		20,079	200

1.0 Introduction

1.1 Assessment Coverage and Objectives

The 2017 food and nutrition security assessment was conducted from 5th to 16th February 2018, following the short rains season of October to December 2017, led by the government of Kenya through the Kenya Food Security Steering Group (KFSSG), in collaboration with the county governments in 23 Arid and Semi-Arid counties which were covered by the assessment, through their respective County Steering Groups (CSGs). KFSSG is a multi-agency body comprising of government departments, UN agencies and non-Governmental organizations all with a stake in food and nutrition security in the country. The KFSSG chaired by the National Drought Management Authority (NDMA) and co-chaired by the World Food Programme conducts bi annual food security assessments in collaboration with the CSGs, which is also a multi-sectoral and multi-agency group that coordinates food security related activities at the county level.

Objectives

The overall objective of the assessment was to analyse and determine the extent and impact of the 2017 short rains season on food and nutrition security, taking into account the cumulative effects of previous seasons and other shocks and hazards. In particular, the assessment explored the impact of the season on food availability, access and utilization by looking at the contributing factors and outcomes, and at how each sector has been affected. The assessment also sought to inform on various recommended interventions to address the arising issues in various sectors including agriculture, livestock, water, health and nutrition, education, peace and security, and markets and trade. The recommended interventions are presented in this report.

1.2 Methodological Approach

The seasonal assessments cover the arid and semi-arid region of the country comprising of 23 counties, which are generally the most food insecure and exhibit high levels of vulnerability, and covers approximately 80 percent of Kenya's landmass. The area covered by these counties is further classified into generalized livelihood zones which comprise of; Pastoral North West Livelihood cluster (Turkana, Samburu and Marsabit counties), Pastoral North East (Wajir, Garissa, Isiolo, Tana River and Mandera Counties), South East Marginal Agriculture Cluster (Kitui, Makueni, lower parts of Tharaka Nithi, and Embu counties and the Northern parts of Meru County). Other clusters include Coastal Marginal Agriculture (Kilifi, Kwale, Taita Taveta and Lamu counties) and Agro Pastoral cluster (Baringo, Narok, Kajiado, West Pokot, Laikipia and northern part of Nyeri county- Kieni). The main livelihood activities across these include pastoralism, agro-pastoralism, mixed farming, marginal mixed farming and some irrigated cropping, which formed the unit of analysis for this assessment.

The assessment included collection of secondary and primary data with varied data sources including; Data from NDMA sentinel sites, which is collected monthly using questionnaires, Data from the various government sectors (Livestock, Water, Agriculture, Education, Health and Nutrition) at the county and sub county level using checklists. Also included was Data collected through community interviews and market interviews through focused group discussions and interviewing of traders respectively, Secondary data from nutrition surveys (SMART Surveys), Food security outcome monitoring (FSOM), Drought Early Warning Bulletins among others and field observations through transect drives. During the analysis, Acute Integrated Food Security Phase Classification (IPC), which is a standard global tool for classifying the severity of food insecurity was used to analyse the severity, causes as well as reach a technical consensus on the food security situation.

2.0 Food and Nutrition Security Analysis by Livelihood Cluster

2.1 The Pastoral North – West Livelihood Cluster

2.1.1 Cluster Background Information
The cluster consists of Turkana, Marsabit and Samburu counties and covers an area of 173,772 square kilometres with a projected population of 1,683,369 persons (KNBS, 2016). It has three main livelihood zones: pastoral all species (69 percent of the population), agro-pastoral (24 percent) and fishing/formal employment/business/petty trade (seven percent) as shown in Figure 2.1.

2.1.2 Current Drivers of Food Insecurity

Figure 2.1: Pastoral Northwest cluster livelihood zones
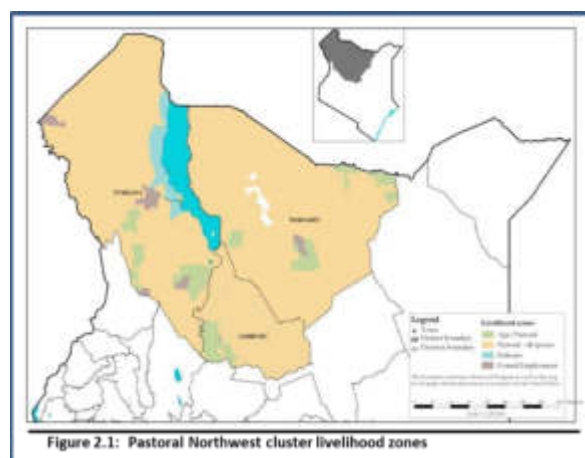
Rainfall Performance
The onset of short rains was timely in the second dekad of October which was normal across the cluster. Most parts of the cluster received 125-200 percent of the normal rainfall while parts of the central region of Turkana and southern areas of Marsabit received 75 - 90 percent of normal rainfall. Parts of Moyale and Samburu East received 90 – 110 percent of normal rainfall. The temporal and spatial distribution was fair and uneven in several parts of the cluster. Cessation was early in the third week of November in Turkana and Marsabit compared to the normal second dekad of December. In Samburu, cessation was also early in first week of December compared to the normal cessation in the third week of December.

Conflict/Insecurity
There were reported cases of resource-based conflicts experienced in several parts of the cluster. The main cases were cross border conflicts between Moyale - Mandera - Ethiopia borders and parts of Turkana West and Uganda. The conflicts have constrained access to markets, pasture and water for livestock keepers. Incidences of insecurity were also noted in Arapal and Olturot along the northern part of Laisamis sub-county. Recurring cases of inter-community conflicts were noted particularly in Samburu north with intensive cattle rustling recently reported in Suiyan leading to loss of livelihood assets, loss of life and injuries to persons. There were internally displaced persons (IDPs) at Watiti in Moyale sub-county reportedly displaced from Mandera due to clashes.

Other Shocks and Hazards
There was infestation of maize crop by Fall Army Worm (FAW) in the irrigation schemes in parts of Katilu and Morulem in Turkana County. Red spider mites and thrips, locust and tsetse fly infestation was also reported in Turkana County. Flash floods occurred in parts of North Horr Sub county, southern Laisamis, central Marsabit and the lowlands of Moyale affecting 742 households. Notifiable livestock diseases such as Lumpy Skin Diseases (LSD) and Foot and Mouth Disease (FMD) were reported in pastoral livelihood zones across the cluster. In addition, cases of endemic diseases such as Contagious Caprine Pleuropneumonia (CCPP) and Contagious Bovine Pleuropneumonia (CBPP) were reported across the cluster.

2.1.3 Current Food Security Situation
The cluster is largely classified in the "Stressed" (IPC Phase 2), while parts of Turkana North (Todonyang and Nadapal) and Turkana East (Kapedo and Lomelo) and Laisamis in Marsabit

are classified in the "Crisis" (IPC phase 3). According to National Drought Management Authority (NDMA) sentinel site data, the proportion of households with a poor food consumption score in the three counties remained stable and slightly increased from 13.27 in January 2017 to 13.56 January 2018. The households with acceptable food consumption improved from 56.8 percent in January 2017 to 60.6 percent in January 2018.

The mean reduced coping strategy index (rCSI) for both Turkana and Marsabit counties was 18.5 in January 2018 compared to 17 (Turkana), 25 (Marsabit) in December 2017. According to the SMART survey conducted in January 2018, the Global Acute Malnutrition (GAM) rates remained critical at 16.2 percent in Turkana county while in Marsabit County (Laisamis and North Horr), GAM rates were 21.2 percent and 21.8 percent respectively. In January 2018, the proportion of children under five years of age at risk of malnutrition, based on mid upper arm circumference (MUAC) of < 135 mm, remained the same across the cluster compared to the long term average except in Turkana County where there was an improvement to 15 percent compared to the long term average of 19.8 percent.

Household stocks are about 85 percent of the LTA due to reduced production in most parts of the cluster as well as low carryover stock from the previous season. Water consumption declined from the normal 10 - 15 litres per person per day to an average of 5-10 litres per person per day in Samburu county and agro-pastoral areas of Marsabit. Water consumption was stable in the agro-pastoral areas of Turkana at 15 litres per person per day. The terms of trade were favourable in all the counties across the cluster and above the long term averages. Households are consuming 1 - 2 meals across the cluster except in the agro-pastoral areas of Samburu, where households are having 2 – 3 meals per day.

2.1.4 Food Security Trends

Indicator	Long rains assessment July 2017 (Previous season)	Short rains assessment Feb. 2018 (Current season)
Food security phase	Crisis (IPC Phase 3), but some pockets such as agro-pastoral in Stressed (IPC Phase 2)	Samburu county and large parts of Turkana and Marsabit county are classified in the "Stressed" phase, parts of Turkana North (Todonyang and Nadapal), and Turkana East (Kapedo and Lomelo), Laisamis and in Marsabit county are in "Crisis" (IPC phase 3)
Maize stocks	Below LTA, with Samburu and Turkana at 9% of LTA and Marsabit at 19% of LTA	Household stocks are 85 % of the LTA
Livestock body condition	Fair to poor	Good to fair
Household water consumption	10-20 litres per person per day in Turkana and Marsabit, and 2-4 litres per person per day in Samburu.	5-10 litres per person per day in Samburu, agro-pastoral areas of Marsabit, pastoral and agro-pastoral areas of Turkana. Agro pastoral areas of Turkana at 15 litres per person per day
Meal frequency	Majority taking 1-2 meals per day, with agro-pastoral areas of Samburu and Marsabit consuming up to 3 meals.	Households are consuming 1 - 2 meals across the cluster except in the agro pastoral areas of Samburu, where households are having 2 – 3 meals per day.
Household milk production	Average 0-2 litres per day	Average at 0.5 and 1.5 litres per household per day in both the pastoral and agro pastoral livelihood zones.
Terms of Trade	Below LTA across the cluster	Above the LTA across the cluster

Indicator	Long rains assessment July 2017 (Previous season)	Short rains assessment Feb. 2018 (Current season)
Coping Strategy Index	15- 26 within the cluster	18 in Turkana and Marsabit while Samburu CSI was 22
Food Consumption Score	Samburu and Marsabit: 40% poor and 24% acceptable Turkana: 26% poor and 50% acceptable	Poor- Remained stable within 13.27 – 13.56% Acceptable-improved from 56.8% to 60.6%
Children at risk of malnutrition	Turkana and Samburu are on a deteriorating trend while Marsabit is improving and above LTA.	Remained the same across the cluster at 19.9 – 20.8 percent compared to 20 – 21.4 percent long term average except in Turkana County where the percentage reduced to 15.0 percent compared to the long term average of 19.8 percent

2.1.5 Impact of Drivers on Food and Nutrition Security

2.1.5.1 Crop Production

Rain fed crop production
The main crops grown in the cluster include maize, sorghum and beans. The area planted under maize and beans was 71 and 75 percent of LTA respectively, while the acreage under sorghum increased by 99 percent above the LTA. The variation was attributed to shifting preferences from maize and beans to sorghum and cowpeas in parts of Turkana County due to campaigns through Agricultural Market Access and Linkage (AMAL) program which provides ready market for those crops through the World Food Programme (WFP). In parts of Marsabit County, reduced maize and beans acreage was as a result of farmers shifting to *khat* production from food crops. The low production of maize and beans was attributed to the dry spell experienced in the cluster during critical stage of germination and flowering in the months of December 2017 and January 2018 that led to water stress. Fall Army Worm (FAW) infestation experienced in Turkana destroyed 82 percent of the maize crop, and flash floods in the agro-pastoral area of Moyale and Saku sub-counties caused by heavy rains in the month of November swept young crops from the farms.

Area planted and production under rain fed agriculture

Crop	Area planted during 2018 short rains season (Ha)	Long Term Average area planted during the short rains seasons (Ha)	2018 short rains season production (90 kg bags) Projected/Actual	Long Term Average production during short rains seasons (bags)
Maize	1586	2220	3068	28200
Sorghum	3675	1850	8820	38540
Beans	732	978	138	4500

Irrigated crop production
Irrigated farming is mainly practiced in schemes, along rivers and in green houses. The main crops grown under irrigation are sorghum, maize and cowpeas. Other crops grown on small scale are kales tomatoes and spinach. The total acreage under irrigated crops increased from 1,604 hectares to 2,958 hectares with 98 percent of the production realized in Turkana County. There was a major increase in the area under sorghum by more than 100 percent compared to the LTA attributed to ready market of the produce.

The area under maize was within LTA while that under cowpeas was 63 percent of the LTA. The production of sorghum is projected to be 100 percent higher than LTA as a result of increased area under production, and use of adequate farm inputs through support of AMAL program. Maize production is projected to be 84 percent above the LTA due to increased water in the irrigation schemes in Turkana county and provision of farm inputs by county government. Both the area and projected production of cowpeas is expected to decline by 41 and 37 percent respectively compared to the long term average due to reduced area under production.

Area planted and production under irrigated agriculture

Crop	Area planted during the 2017 Short rains season (ha)	Short Term Average (3 years) area planted during Short rains season (ha)	2017 Short rains season production (MT) Actual	Short Term Average (3years) production during 2017 Short rains season (MT)
Sorghum	1575	250	12750	2080
Maize	1271	1250	15250	8300
Cowpeas	50	85	160	255

Cereal stocks

The total maize stock in the cluster was 11 percent above the LTA as shown in the table below. The household stock was 90 percent of LTA. Above normal household stocks were reported in Turkana at 72 percent above the long term average mainly attributed to the revival of old irrigation schemes that had broken down. In Marsabit county, household stock was only four percent of the long term average. The maize stocks with traders and millers was above the LTA, however NCPB stock was 59 percent of LTA. The stock held by traders and millers were high due to anticipated increase in maize and maize flour prices.

The rice stock held by households and traders was 46 and 80 percent of the LTA. The low stock of rice available at the cluster compared to the LTA was mainly due to limited access to markets especially due to insecurity threats. Sorghum stocks held by households and traders are above the LTA. The total sorghum stocks are 283 percent above the long term averages. Increase in sorghum stock in Turkana County was attributed to increased sensitization through the AMAL program and a ready market. Land preparation was cost shared by the county and development partners. Households in pastoral areas have been entirely depending on markets for staple food commodities.

Cereals stock in the cluster

Commodity	Farmers	Traders	Millers	NCPB	Food Aid	TOTAL
Maize (90 kg bags)	32,620	24,500	9,400	2,500	0	**69,020**
LTA	36,050	17,500	3,460	4,200	0	**61,210**
Rice (50 kg bags)	900	2,800	0	0	0	**3,700**
LTA	1,950	3,450	0	0	0	**5,400**
Sorghum (90 kg bags)	5,530	6,850	650	0	799	**13,030**
LTA	1,800	1,600	0	0	0	**3,400**

2.1.5.2 Livestock Production

Livestock production contributes about 85 and 45 percent to cash income in the pastoral and agro pastoral livelihood zones respectively. Pasture and browse condition was fair to poor across the cluster compared to good-fair normally. Crop residues available in the agro pastoral livelihood areas were used to supplement livestock feed. Progressive drying of water sources as well as pasture and browse depletion are driving pastoral communities into earlier than normal migration. Access to pastures and browse in the pastoral areas of Turkana County was limited due to insecurity especially in Loteleleit and Teremukus owing to constant attacks from Toposa (South Sudan), Jie and Dodos (Uganda) in Namorukirionok Kraal and prevalence of Tsetse fly infestation in Nakitongo Kraals. In Samburu County (Samburu North) pastures have been exhausted in the wet grazing areas except in the conflict hotspot areas such as Suiyan, Marti and Kawop, albeit with restricted access due to inter community resource-based conflicts.

Forage condition

Livelihood zone	Pasture condition			Browse condition		
	Current	Normally	Projected Duration to last (Months)	Current	Normally	Projected Duration to last (Months)
Pastoral all species	Fair-Poor	Good-Fair	< 1	Fair-Poor	Good -Fair	1
Agro pastoral	Fair-Poor	Good-Fair	1	Fair-Poor	Good-Fair	1-2
Fishing	Fair-Poor	Good-Fair	1	Fair-Poor	Good-Fair	1-2

The livestock body condition was fair-poor for grazers and Good to fair for browsers across the cluster as shown in Table 6. The body condition is likely to deteriorate in the next 1-2 months due to diminishing pasture, on-going migration and increasing distances to water points.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat		Camel	
	Current	Normally	Current	Normally	Current	Normally	Current	Normally
Pastoral all species	Fair-Poor	Good	Fair-Poor	Good	Good - Fair	Good	Good - Fair	Good
Agro pastoral	Good - Fair	Good	Good – Fair	Good	Good - Fair	Good	Good - Fair	Good
Fishing	Good - Fair	Good	Good – Fair	Good	Good - Fair	Good	Good - Fair	Good

Average milk production at household level ranged between 0.5 and 1.5 litres per household per day in both the pastoral and agro-pastoral livelihood zones. Milk availability in the pastoral livelihood zone is majorly from grazers while in the agro pastoral livelihood zones few farmers kept dairy cattle and goats. Camel milk retailed at Ksh 90 - 120 per litre due to high demand for camel milk in Isiolo and Nairobi counties. Cow and goat milk selling prices ranges between Ksh 60 – 70 per litre. Generally, milk prices increased by about 50 percent of LTA as shown in the table below.

Milk production, consumption and prices

Livelihood zone	Milk Production (Litres) /Household		Milk consumption (Litres)/Household		Prices (Ksh)/Litres	
	Current	LTA	Current	LTA	Current	LTA
Pastoral all species	0 - 1	2 - 3	0 - 1	1 - 2	60 - 120	50 - 80
Agro pastoral	0 - 1.5	2 - 5	0 - 1	1.5 - 3	60 - 80	50 - 80
Fishing	0 - 1	2 - 3	0 - 1	1.5	80	40 - 60

The birth rates for all livestock species across the livelihood zones in the cluster declined due to poor water and forage availability. The tropical livestock units for poor income households in the pastoral and agro-pastoral areas ranged between 5 - 7 and 1 - 3 respectively compared with normal of 10 - 14 and 2 - 6 respectively for the season, denoting a 50 percent decline. The current return distance to watering points is 15 - 25 km in the pastoral zone compared to a normal of 10 - 15 km and for agro pastoral, return trekking distances is 5 - 15 km against a normal of 5 - 10 km (Table 8).

Camels were reported to be trekking longer distances (30 - 50 km return distance) since they were grazing further compared to small stocks. Areas of Gatab in Marsabit County registered the highest return trekking distances of up to 30 - 40 km. Watering frequency for cattle, goats and sheep were 3 - 5 days for cattle and small stock, and 8 - 10 days for camels in the pastoral livelihood zones across the cluster.

Water for livestock

Livelihood zone	Return trekking distances (Km)		Expected duration to last (Months)	
	Current	Normal	Current	Normal
Pastoral all species	15 - 25	10 - 15	< 1	1 - 3
Agro pastoral	8 - 12	5 - 8	1 - 2	2 - 4
Fishing	3 - 5	1 - 3	2	1 - 3

Livestock migration has been reported from wet to dry grazing areas which was normal at this time of the year. In Turkana County, livestock were reportedly migrating abnormally from Uganda to Nakitongo' and Nawonots due to conflicts over grazing fields and water. In Marsabit County, in-migration from Wajir, Mandera Counties and parts of Southern Ethiopia to Dabel, Bandan Rero (Moyale Sub County) was reported. Out migration was reported towards Baragoi, Sereolipi (Samburu County,) Kom and Waso in Isiolo county. The current migration patterns are unusual and are expected to continue as livestock search for water and pasture/browse as the dry spell continues.

In Samburu central, cattle were grazing within the enclosures and others have moved to Pura, Ndonyo Sirai and Kirimun plains in Laikipia County. Lumpy Skin Diseases (LSD) was reported in pastoral livelihood zone of Turkana County. Cases of endemic diseases such as Contagious Caprine Pleuro-pneumonia (CCPP), Contagious Bovine Pleuro-pneumonia (CBPP) and worm infestation were also reported across the livelihood zones in the cluster. The County Governments and other partners have continued to support enhanced participatory disease search and active surveillance, routine vaccination and treatment. No unusual livestock deaths were reported across the cluster.

2.1.5.3 Market Performance
The main markets in the cluster includes Lodwar town, Turkwel, Lorugumu, Lokichar Lokichogio, Lokitaung, Kakuma, Moyale, Marsabit, Laisamis, North Horr, Maralal town, Lolkuniani, Lekuru and Tangar. All markets were operational except Mt. Kulal in Marsabit County disrupted due to floods experienced during the short rain season. Livestock supplies

were majorly within the cluster. In January 2018, there was an influx of livestock in most of the markets as a result of parents selling to acquire fees for term one. Ethiopia livestock keepers were reportedly supplying Moyale market in Marsabit County. The traded species of livestock were mainly goats, sheep, cattle and camels, while food commodities included maize, beans, posho, cowpeas and sorghum. The cluster is dependent mostly on outside markets for supply of food commodities mainly from Kitale, Ortum, Busia, Meru and even cross-border markets from Ethiopia and Uganda.

Market Prices
The price of a kilogramme of maize in the month of January 2018 was Ksh. 47 and Ksh. 52 in Samburu and Marsabit counties respectively. However, Turkana County recorded the highest average price of maize at Ksh. 82 per kilogramme. In the pastoral livelihood zones of Turkana and Marsabit, highest prices were reported and ranged between Ksh. 70 to Ksh. 90 owing to high demand for maize, crop failure and long distances to source markets. There was no significant variation in the maize prices compared with the long-term averages in Marsabit County, while Turkana County recorded an increase of six percent and Samburu County reported a six percent decrease. There was an increase in goat prices compared to the long-term averages across the cluster. In Turkana, an average goat size retailed at Ksh. 3,498 compared to the long-term average of Ksh. 2,280 representing 53 percent increase. Samburu and Marsabit counties recorded marginal increases of goat prices at eight and 11 percent respectively compared with the long-term averages. The significant increase in goat prices for Turkana was mainly attributed to good body conditions and increased demand for goat meat especially by workers on the oil exploration fields.

Terms of Trade
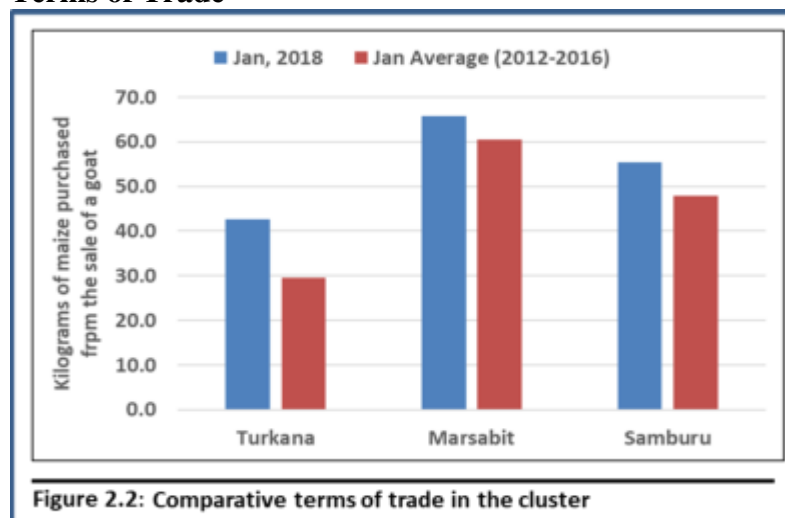
Figure 2.2: Comparative terms of trade in the cluster

The terms of trade were favourable in all the counties across the cluster and above the long-term averages as shown in Figure 2.2. The highest terms of trade were recorded in Marsabit where households could purchase 66 kilogrammes of maize from the sale of one goat, while Turkana recorded the lowest terms of trade at 43 kilogrammes. The favourable terms of trade in the cluster was attributed to increase in goat prices resulting from good body condition while the low terms of trade recorded in Turkana was mainly as a result of very high prices of maize.

2.1.5.4 Water Availability and Access
The current main water sources for domestic use are boreholes, water pans and shallow wells, Lake Turkana, River Turkwel, Kerio and Ewaso Nyiro. Water pans in pastoral livelihood zones of Samburu and Marsabit were recharged approximately to 60-80 percent of their capacity. However, due to high siltation, poor recharge and increased surface temperature, almost 80 percent of all open water sources have dried up in Turkana and the remaining expected to last for two weeks compared to a normal of one month. Water pans in Samburu are expected to last for the next 2-3 months. High intensity of rainfall in Marsabit generated massive surface run

off, soil erosion, destruction of dams and pans as well as flooding in Marsabit Town, Olom-Kalacha, Bori and Dambala-Fachana in Moyale.

Boreholes are experiencing increased pumping hours leading to frequent breakdowns especially in Turkana where about 15 percent of generator sets have broken down. Water points serving high population in Turkana include Lorengkipi and Nakurio in Loima sub-county where there has been high concentration of herders who are migrating to Uganda in search of pasture. There was high concentration of both human and livestock from Wajir and Mandera counties around boreholes and a few water pans in the pastoral areas of Badenrero in Moyale. Non-operational water sources in Turkana, notably in pure pastoral and fishing livelihood zones include Kachoda, Kalapata, Kaaleng, Lorugum and Kaikor and Lowarengak in fishing livelihood zones.

Distance to water sources were within the normal range of 2 - 6 kilometres in Marsabit and agro-pastoral areas of Turkana and Samburu. However, distances have increased from 5 - 10 kilometres in pastoral areas of Samburu and pastoral and fishing zones of Turkana to 8 - 12 kilometres. Parts of Marsabit are also experiencing distances of between 6-10 kilometres.

Waiting time was normal in Samburu at 20 minutes, while in Marsabit it was between 30 - 40 minutes and between 40 - 60 minutes in Turkana. Areas with longer waiting time in Marsabit include Qachacha, Waye Godha, Mudhe and Forole ranging from 1 - 2 hours. The current cost of water (20 litre jerrycan) was the normal Ksh. 5 in Turkana, Marsabit and in the agro-pastoral areas of Samburu. In pastoral areas of Samburu, cost has increased to Ksh. 10 - 20, from the normal of Ksh. 5 - 10 per 20 litres jerrycan. Most households in Marsabit pay a monthly service charge of Ksh. 100 - 200. Vendors in Samburu were selling water between Ksh. 10 - 20 in urban Centres, Wamba and Baragoi. High cost of water was reported in Marsabit (Qashasha, Hurri Hills and Moyale Township) where vendors were selling at Ksh.40-50 per 20 litre jerrican.

Water consumption has declined from the normal 10 - 15 litres per person per day to an average of 5 - 10 litres in Samburu, agro-pastoral areas of Marsabit and pastoral and fisher folk areas of Turkana. Water consumption was stable in the agro-pastoral areas of Turkana at 15 litres per person per day. Water consumption was lowest in Forolle and Hurri Hills in Marsabit at three litres per person per day.

2.1.5.5 Food Consumption
According to NDMA sentinel site data, the proportion of households with poor food consumption in the three counties slightly increased   from 13.27 percent in January 2017 to 13.56 percent in January 2018 implying a slight deterioration in household dietary diversity and meal frequency for this group. The households with acceptable food consumption improved from 56.8 percent in January 2017 to 60.6 percent in January 2018 implying that more households had a better diet compared to the same period in 2017.

Community field interviews showed that households were consuming two to three meals per day in the agro pastoral while one to two meals per day in the pastoral livelihood zones which was normal at this time of the year. Main commodities consumed by most households include *posho*, beans, milk and milk products. Common foods groups consumed mainly are cereals and cereal products. Relief food supplies supported most poor households.

2.1.5.6 Coping Strategies
In Turkana County, the mean coping strategy index was 18 in January 2018 compared to 25 in December 2017 implying that most households were gradually reducing application of

consumption based coping strategies. The mean reduced coping strategy index (rCSI) for Marsabit County was 18.5 in January 2018 up from 17 the previous month. According to the SMART survey, North Horr had a mean coping strategy index of 16.21 down from 18.48 recorded in July last year while Laisamis had a mean coping strategy index of 14.64 down from 17.7 recorded last year. In Samburu, the mean reduced coping strategy index (rCSI) reduced to 22 compared to the same period in 2017. All these changes demonstrate an improvement in food security situation across the cluster.

In November, December and January, rCSI was 13.02, 12.55 and 12.35 respectively indicating a stable trend. Some of the notable consumption based coping strategies employed included: Skipping of meals, reliance on less preferred and less expensive foods, reduction in meal portions and sharing of meals

2.1.5.7 Health and Nutrition

Nutritional status
The nutrition situation across the cluster is critical with global acute malnutrition rates being above 15 percent though improvements were noted. According to SMART survey done in January 2018, the global acute malnutrition rate (WHZ <-2 and or oedema) in Turkana was 16 percent compared to 23 percent reported at the same time last year. The nutrition situation has improved in Turkana and Marsabit as result of a robust emergency response through blanket supplementary feeding Programme (BSFP), general food distribution (GFD), hunger safety net and other cash transfer programmes, water and sanitation (WASH) interventions among others.

Figure 2.3: Proportion of Children at Risk of Malnutrition (MUAC <135mm)
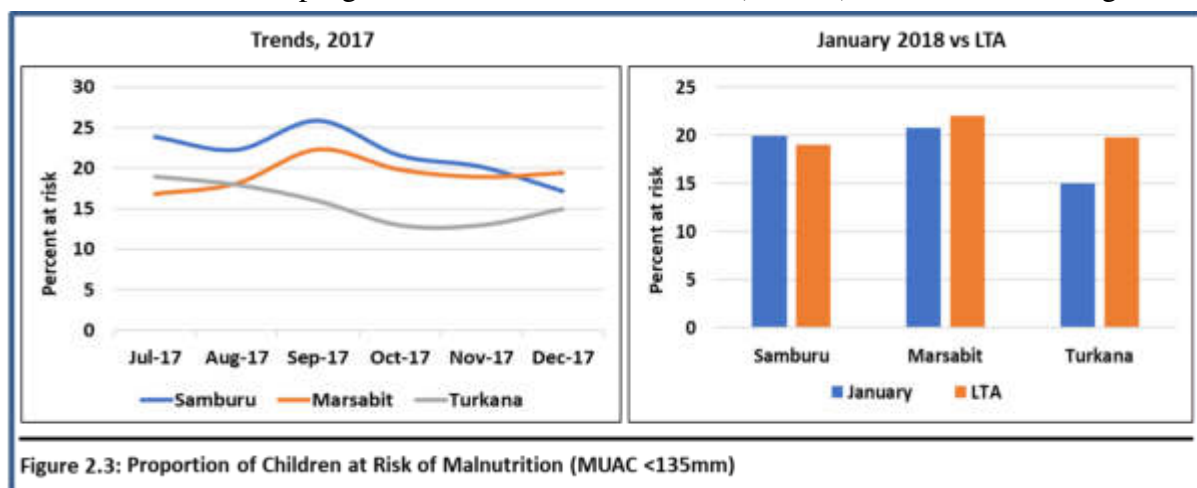
In July to December 2017, the trends for proportion of children under five years of age at risk of malnutrition, based on mid upper arm circumference (MUAC) of < 135 mm were stable across the cluster except for Turkana where they had a downward trend as from October 2017. As at January 2018, the proportion of under fives at risk of malnutrition remained the same across the cluster when compared to the long term average except in Turkana County where the percentage reduced to 15 percent compared to the long term average of 19.8 percent as shown in Figure 2.3. This drop is a proxy indication of improvements in nutrition situation. Households were consuming 1 - 2 meals across the cluster characterized by poor dietary diversity.

Morbidity and mortality
The top five diseases across the cluster remained similar for both the under-fives and the general population and were malaria, upper respiratory tract infections (URTI) and Diarrhoea. Morbidity incidences were on an upward trend in July to December 2017 across the cluster for

both the children under five years and the general population except in Samburu where the trend was stable compared to the same period in 2016. A significant increase was noted in malaria cases in Turkana and Marsabit which was attributed to the above average rains in which stagnant water accelerated mosquito breeding and also low usage on mosquito nets in most households. Under five mortality rates and Crude mortality rate (CMR) were below the emergency threshold across the cluster. There was a Cholera outbreak in Katilu area in Turkana south sub county in which five cases were reported and there were no deaths.

Immunization and Vitamin A supplementation
The proportion of fully immunized children in the cluster between July and December 2017 was below the national target, and highest in Marsabit at 72.9 percent while lowest in Turkana (41.3 percent) and Samburu (46.6 percent). Significant reductions were noted in Turkana and Samburu counties from 82 percent and 67.5 percent respectively when comparing July to December 2017 and the same period in 2016. Vitamin A coverage between July and December 2017 was 36 percent which is 60 percent decline compared to a similar period in 2016 with the coverage being below the national target of 80 percent across the cluster except in Samburu county (80 percent). The decrease in coverage for fully immunized children and Vitamin A supplementation coverage is attributed to prolonged nurses' strike for five months that paralyzed immunization and other health services.

Sanitation and hygiene
Sanitation and hygiene practices were poor across the cluster. Latrine coverage was low at less than 32 percent and hand washing was practiced by a mere 15.1 percent of households. The percentage of households accessing water from protected sources was very low at 16.8 percent in Samburu and 23.9 percent in Turkana. The proportion of households treating water was negligible at less than 10 percent.

2.1.5.8 Education
The cluster registered a general increase in enrolment in ECDE, primary and secondary levels though a decrease in enrolment was noted in Samburu County as a result of migration by household in search of pasture. At the same time, Marsabit reported a decrease in enrolment of about one percent at primary level which was also due to migration. In Turkana county enrolment increased as a result of enrolment drives mounted by the government and other stakeholders as well as provision of meals in schools through the regular school meals program (RSMP).

The increase in secondary school enrolment was attributed to the free day secondary school education and the 100 percent transition rate policy. In Turkana, enrolment in secondary schools improved due to scholarships from different stakeholders and bursaries from the county government. School attendance in the counties was affected by family chores, lack of nearby schools, migration away from school areas and the negative perception of no value for schooling. Home Grown School Meals Programme (HGSMP) and Regular School Meals Programme (RSMP) were the only school feeding programme being implemented in the cluster. RSMP was implemented in Turkana and Marsabit by World Food Program in all the 579 schools with a case load of 160,368 beneficiaries. HGSMP implemented Samburu County with the caseload of 88,707.

2.2 Pastoral North – East Livelihood Cluster

2.2.1 Cluster Background Information
The cluster consists of five counties namely; Mandera, Wajir, Garissa, Isiolo and Tana River. It covers an area of 165,970 square kilometres with a projected population of 1,905,014 people (KNBS, 2016). The cluster has five main livelihood zones: pastoral (57% of the population), agro pastoral (21%), marginal mixed farming (nine percent), irrigated (7%) and informal/formal employment/business/petty trade (6%) as shown in Figure 2.4.
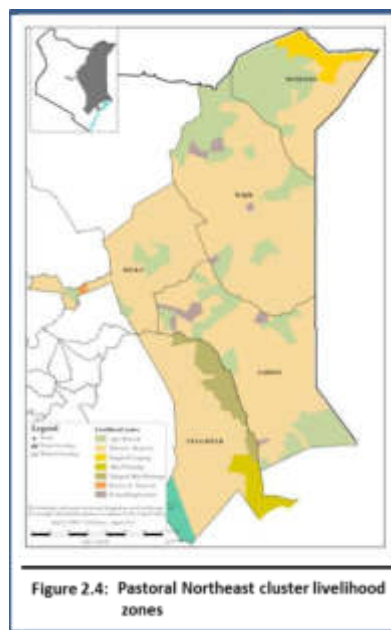
2.2.2 Current Drivers of Food Insecurity

Rainfall Performance
The onset of the short rains was on time in the second dekad of October and first dekad of November across the

Figure 2.4: Pastoral Northeast cluster livelihood zones

cluster with exception of Garissa and Tana River Counties, were the rains delayed by 2 dekads. The amount of rainfall received varied across the cluster with Mandera and the northern part of Wajir receiving 110 to 140 percent of normal while Isiolo, Tana river, Garissa, and southern parts of Wajir received 50-90 percent of normal rainfall. Some pockets in the central parts of Tana river and northern part of Isiolo received 25-50 percent of normal rainfall. The short rains were characterised by poor temporal and uneven spatial rainfall distribution. The rains ceased earlier than normal across the cluster, occurring between second dekad of November and first dekad of December.

Conflict/Insecurity
Resource-based conflicts were reported in all counties, which was mainly as a result of competition over the limited rangeland resources. Terror-related insecurity incidences were reported in part of Mandera, and Garissa Counties. Human-wildlife conflicts were also reported in areas of Wenje and Chara game reserve of Tana River County. Conflict and insecurity has resulted in displacement of people from the conflict areas, limited access to pasture and water and disruption of market operations.

Other Shocks and Hazards
Livestock disease such as foot and mouth disease (FMD) were reported in Fafi ward in Garissa County while suspected cases of sheep and goat pox, CCPP, PPR and CBPP were reported in Wajir Sub County were also reported. Crop pests and diseases such as fall army worms invaded several maize farms in Isiolo and Tana river resulting in crop losses. Floods destroyed crops in the irrigated cropping zone of Mandera and along the Ewaso Nyiro River Isiolo. Outbreak of cholera was also reported Garissa. High food prices are also affecting food availability and access at household level.

2.2.3 Current Food Security Situation
The general food security classification for the cluster is "Crisis" (IPC Phase 3), except some parts of Wajir and Tana River Counties which are classified as 'stressed' (IPC Phase 2) food security outcomes. Deteriorating forage condition and increasing trekking distances is undermining livestock production, which is the main source of household food and income in

the cluster. Household milk production and consumption has declined by over 50 percent across the counties. The livestock-to-cereal terms of trade (TOT) is unfavourable for the pastoral households as it has remained below the long term average due to the weakening livestock prices. The unfavourable TOT is limiting household purchasing power and constraining access to food. Most households in the cluster are entirely dependent on market purchases to access staple foods. Therefore, the high market prices of staple foods are compounding the already strained household food access and consumption.

Food consumption has deteriorated with 29 percent of household in Isiolo having poor food consumption score. In Wajir, Garissa and Tana river, the proportion of household with poor and borderline food consumption is above 35 percent. Moreover, more than 50 percent of households in the cluster are employing crisis and emergency livelihood strategies thus depleting their assets to meet their daily dietary requirement. The frequency and severity of employing consumption-based coping strategies had reduced in Mandera, Wajir and Isiolo counties from 16 in December 2016 to 14.1 during the same time in 2017 implying that most households are currently employing less severe consumption coping strategies. However, in Garissa and Tana River Counties, the reduced coping strategy remain relatively stable at 20, indicating an increase in frequency and severity of consumption coping strategies used by the households. The proportion of children at risk of malnutrition remained stable in Wajir and Tana river with increment noted in Garissa and Isiolo. This could be attributed to the constrained household food access and consumption arising from the declining livestock production and diminishing household purchasing power.

2.2.4 Food Security Trends

Indicator	(Previous) Long Rains Assessment, July 2017	(Current) Short Rains Assessment, Feb 2018
Food security phase	Stressed (IPC phase 2) except parts of Isiolo, Mandera, Wajir and Garissa in Crisis (IPC phase 3)	Stressed (Phase 2) with some parts of Mandera County, Garissa County and Isiolo and few parts in the pastoral and marginal mixed livelihood zones of Tana River which are classified under "Crisis" (IPC Phase 3).
Food stocks	No household food stock except in Mandera where household have 26% of LTA	Household stock is below the LTA across the cluster
Livestock body condition	Fair to Poor	Fair to Poor
Household water consumption	20-30litres per person per day except in Wajir and Isiolo where consumption was 5-10 litres per person per day	15-20 litres per person per day in Wajir, Garissa and Agro-pastoral areas of Isiolo while in Mandera, Pastoral areas of Isiolo and Tana River range from 8-15 per person per day.
Meal frequency	2-3 Meals per day with 1-2 meals per day in Mandera	2-3 Meals per day with 1-2 meals per day in Mandera
HH milk production	1-2 litres in Mandera, Tana River. Wajir-0.5-4 litres, Garissa and Isiolo producing less than 1 litre	Milk production was 0-2 litres across the County
Terms of Trade	Un favourable across the cluster (below average)	Below the long-term average across the cluster
Coping strategy index	13	14.1
Food Consumption Score (Acceptable)	71%	88.9%

Indicator	(Previous) Long Rains Assessment, July 2017	(Current) Short Rains Assessment, Feb 2018
Proportion of Children at risk of Malnutrition	Malnutrition rates are above the LTA except in Wajir where they are below.	The proportion of children at risk of malnutrition with MUAC < 135mm was high in Isiolo and Mandera compared to LTA, however the proportion in Garissa and Tana River remained almost the same

2.2.5 Impacts of drivers on food and nutrition security

2.2.5.1 Crop Production

Rain fed crop production
Crop production contributes to 30-40 percent of household food and cash income across the cluster. The main crops grown include maize, sorghum, cowpeas and green grams. The area under rain fed cropping decreased by 27 percent across the cluster. Production also declined to 28 percent of the long term average. Maize crop was the most affected with production reducing by 78 percent. Total maize crop failure was reported in Isiolo and Wajir Counties. The decline in seasonal production was mainly attributed to moisture stress and crop pests and diseases. Fall army worms invaded maize farms in Tana river causing 70-80 percent crop loss.

Area planted and production under rain fed agriculture

Crop	Area planted during 2016 short rains season (Ha)	Long term average area planted during the short rains season (Ha)	2016 short rains season production	Long term average production during the short rains season
Maize	2000	2766	8080	36991
Sorghum	519	743	2689	6060
Cowpeas	411	590	2973	6889
Green Grams	321	358	1513	4744

Irrigated crop production
The main crops grown under irrigation are maize, rice, bananas and mangoes. Other crops grown under irrigation include green grams, cowpeas and tomatoes. The total area under irrigation decreased from 3574 hectares to 2856 hectares. Area under maize reduced from 1285 hectares to 612 hectares while that of rice reduced from 421 hectares to 105 hectares. There was an increase in the area under bananas from 665 hectares to 875 hectares and mangoes from 558 hectares to 418hectares above LTA. Reduced area under irrigation was due to low water flow at intake level at irrigation schemes and drying up of seasonal rivers. Increase in area under mangoes and bananas was attributed to opening of more land for irrigation. Due to decreased area under irrigation, maize and rice production was about 59 and 91 percent below the LTA respectively.

Cereal stocks
The cluster is predominantly pastoral and communities mostly rely on markets for the supply of maize, except in the agro pastoral livelihood zone. Maize stocks available in the cluster are about 70 percent of LTA. Household stocks are about 85 percent of the LTA due to reduced production in most parts of the cluster and low carryover stock from the previous season. Maize with traders and millers was 82 and 56 percent of LTA respectively. Rice stocks at households and with traders was about 60 and 45 percent of LTA respectively. Sorghum stocks at household at with traders was 66 and 48 percent of LTA. Green grams stock at household was 63 percent of LTA while stock held by traders increased by slightly by nine percent above

LTA. Stocks held by traders and farmers are generally below LTA which is attributed to insecurity threats which interfere with cross border supply and supplies from neighbouring counties of Wajir and Mandera. There is no maize at the NCPB deports and food aid was 29 percent of long term average.

Cereal stock in the cluster (90kg bags)

Commodity		Farmers	Traders	Millers	NCPB	Food Aid	TOTAL
Maize	Current	9,247	8,485	315	0	2,418	**20,465**
	LTA	10,921	10,337	561	0	8,450	**30,269**
Rice	Current	3375	22765	20	0	0	**26,160**
	LTA	5,640	21,660	58	0	0	**27,358**
Sorghum	Current	755	714	845	0	0	**3,619**
	LTA	1,151	1,484	0	0	0	**2,635**
Green grams	Current	240	450	0	0	0	**690**
	LTA	348	412	0	0	0	**760**

2.2.5.2 Livestock Production

The pasture and browse condition was fair to poor in all the livelihood zones across the cluster which is below normal for the season; except in the pastoral livelihood zones across the cluster, which were poor and depleted due to the below normal rainfall performance. Forage and water were accessible across the cluster except in some parts of Garissa and Isiolo where access was limited due to insecurity.

Pasture and browse condition

Livelihood zone	Pasture condition			Browse condition		
	Current	Normally	Projected Duration to last (Months)	Current	Normally	Projected Duration to last (Months)
Pastoral all species	Fair-poor	Good – Fair	< 1	Fair-poor	Good - Fair	< 1
Agro pastoral	Fair-Poor	Good – Fair	< 1	Fair-Poor	Good-Fair	1-2

The livestock body condition was poor for grazers and fair for browsers in all the livelihood zones across the cluster. The trend is likely to continue deteriorating up to the next season as shown in the table below.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat		Camel	
	Current	Normally	Current	Normally	Current	Normally	Current	Normally
Pastoral	Fair-poor	Good-Fair	Fair-poor	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Good
Agro pastoral	Fair-poor	Good-Fair	Fair-poor	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Good

The range of return trekking distance to watering points increased by over 50 percent in the pastoral and agro-pastoral areas across the cluster, which is not normal for the season. The average watering frequency is 1-2 days per week for all livestock in all livelihood zones across the cluster; except Camel whose watering frequency was after 3-6 days per week. Return trekking distances increased in the range of 20-50 percent compared with normal. Deteriorating forage condition and increasing trekking distances is undermining livestock production

Water for livestock

Livelihood zone	Return trekking distances-km		Expected duration to last (Months)		Watering frequency (Days per 7 days)	
	Current	Normal	Current	Normal	Current	Normal
Pastoral	15-20	10-15	1-3	3-4	Once/ days	daily
Agro pastoral	8-15	5-10	1-3	Unlimited	Once/ days	daily

Household milk production per day declined by over 50 percent across all livelihood zones, which is abnormal for the season. Household milk consumption reduced by between 50 and 100 percent of LTA across all zones. Average milk prices per litre increased by over 50 percent of LTA across all livelihood zones as indicated in the table below.

Milk production, consumption and prices

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres) per Household		Prices Ksh per/Litre	
	Current	LTA	Current	LTA	Current	LTA
Pastoral	0-1	1-2	0 -1	2-3	80-100	60-140
Agro pastoral	1-3	3-5	1-2	4-5	50-80	40-60

Tropical Livestock Units (TLUs) for poor income households ranged between 5 and 7 compared with normal 10-25 all livelihood zones across the cluster. The early and massive out-migration was reported in all counties, which is not normal for this time. An estimated 60 to 80 percent of livestock in the cluster have migrated out of their respective counties, with migration being abnormal in magnitude, timing, routes and patterns (detailed information is provided in the respective county reports).

No disease outbreaks were reported but suspected cases of Lumpy Skin Disease (LSD), Sheep and Goat Pox, Contagious Caprine Pleuro-Pneumonia (CCPP) and Contagious Bovine Pleuro-Pneumonia (CBPP) were reported across the cluster. Cases of Rabies in Donkeys and Camels; and Foot and Mouth Disease (FMD) were confirmed in Wajir North and Garissa counties respectively. Current livestock deaths were below alarm livestock mortality thresholds.

2.2.5.3 Market Performance
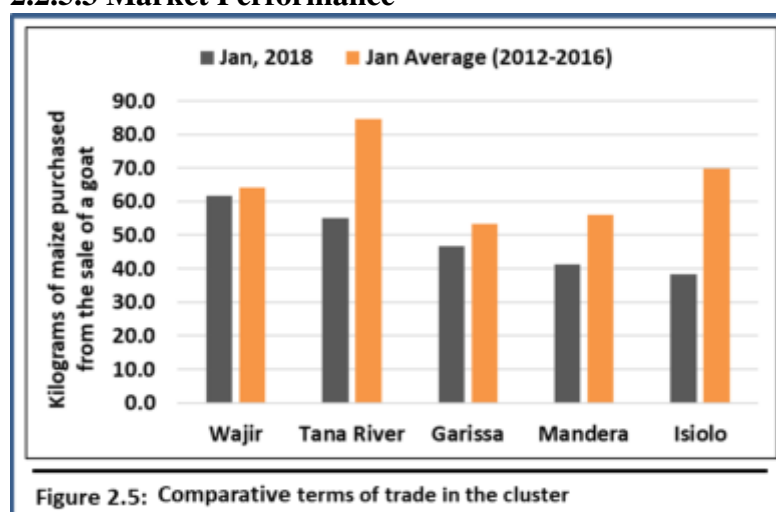
Figure 2.5: Comparative terms of trade in the cluster

Market operation was normal except in parts of Mandera, Wajir and Isiolo counties were some markets are not functional due to insecurity. Maize prices in the cluster remained relatively stable but above the long term average. The high maize prices are as a result of over-reliance on food imports to cover for the shortages occasioned by very low local production. The livestock-to-cereal terms of trade (TOT) is unfavourable for the pastoral households as it has remained below the long term average due to the weakening livestock prices. The unfavourable TOT is limiting household purchasing power and constraining access to food (Figure 2.5).

2.2.5.4 Water Availability and Access

The main sources of water in the cluster are boreholes, water pans and shallow wells. Open water sources were recharged by over 80 percent in the Agro-pastoral areas of Mandera while in the Pastoral areas of Mandera, most water pans didn't impound water due to high siltation and have all dried up. About 40 percent of water pans are holding water in Wajir and Garissa and are expected to last for 1-2 months. Water trucking is taking place across the cluster. Return distance to domestic water sources ranged from 5-10 Km although the pastoral areas of Mandera and Isiolo recorded longer distances of between 10 and 20 km. The waiting time at water sources averaged 20-30 minutes with extremes of up to 60 minutes in Mandera and Sericho in Isiolo and highest in Garissa up to 120 minutes. The cost of water per 20 litre jerican is still normal ranging from Ksh. 2-5 with water vendors selling between Ksh. 20-25 in Wajir and Pastoral areas of Tana River, however there are extremes in Garissa where 20 litre jerican is selling between 20-50 shillings. Water consumption is normal ranging from 15-20 litres per person per day in Wajir, Garissa and Isiolo while Mandera, Pastoral areas of Isiolo and Tana River range from 8-15litres per person per day.

2.2.5.5 Food Consumption

According to the food security outcome monitoring (FSOM) report for December 2017, food consumption improved slightly in Mandera, Tana River and Garissa Counties. In Mandera County, the proportion of households with acceptable food consumption increased from 82 percent in December 2016 to 88.9 percent in December 2017. In Garissa and Tana River Counties, this proportion had increased from 55 to 61.2 percent during the same period indicative of an 11.3 percent increase. The improved food consumption could be attributed to the upscale of safety net programmes during the period which enhanced household access to food.

According to NDMA bulletins from October 2017 through to December 2017, there was a general improvement in food consumption in both Isiolo and Wajir Counties. This was evident in the reduction of the proportion of households who had poor food consumption during this period. However, it deteriorated slightly from December 2017 to January 2018 in both counties as this proportion increased as shown in the tables below.

2.2.5.6 Coping strategies

The frequency and severity of employment of consumption-based coping strategies had reduced in Mandera, Wajir and Isiolo counties from and index (rCSI) of 16 in December 2016 to 14.1 during the same time in 2017. It had however remained relatively the same at 20 during the same period in Garissa and Tana River Counties. Most households are employing less severe consumption coping strategies.

2.2.5.7 Health and Nutrition

Nutritional status

Based on global acute malnutrition (WHZ <-2 and or oedema) rates analysis, there was a slight improvement noted in the nutrition situation in the cluster although it was not significant. In Isiolo county the global acute malnutrition rate reduced to 13.6 percent compared to 18.2

percent reported in January 2017. In Wajir North, the situation remained critical with global acute malnutrition rate of 16 percent. The trend of the proportion of children at risk of malnutrition with MUAC < 135mm from July to December 2017 was downward except for Isiolo County where it was stable. The downward trend of children at risk of malnutrition correlates to the slight improvement in the nutrition situation across the cluster (Figure 2.6). In January 2018, an increase in the percentage of children at risk of malnutrition was noted in Isiolo and Mandera Counties. This could be attributed to the constrained household food access and consumption arising from the declining livestock production and diminishing household purchasing power.
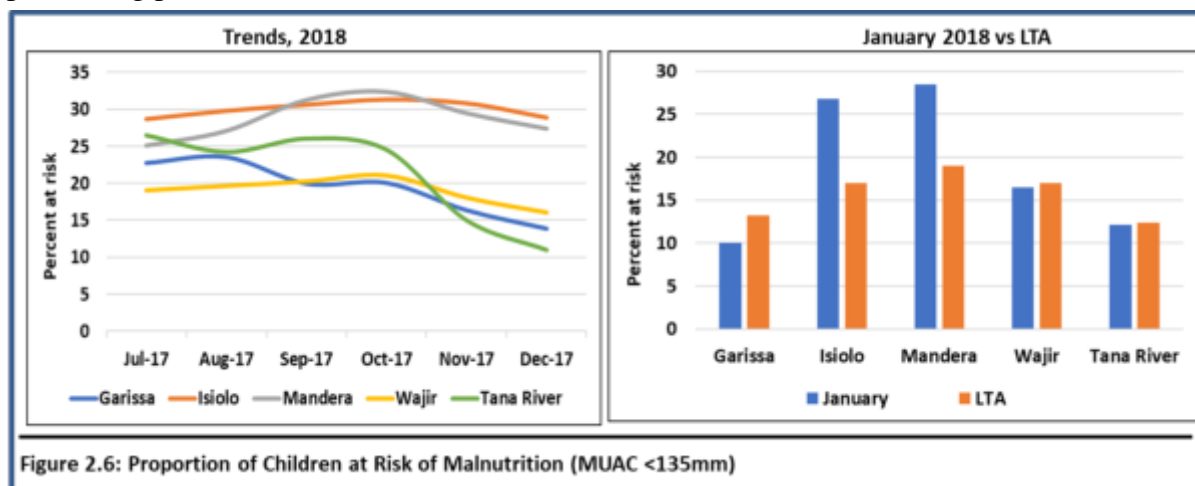
Figure 2.6: Proportion of Children at Risk of Malnutrition (MUAC <135mm)

Morbidity patterns
The most common diseases affecting under-fives and the general population across the cluster were; diarrhoea, upper respiratory infection and malaria/fever. Generally, there was a decline in morbidity across all counties, which was occasioned by the disruption in health care serviced during the 5-months long nurses strike in 2017. Garissa and Tana River further reported cholera outbreak with 105 and 74 cases respectively and Chikungunya was reported in Mandera County.

Immunization and vitamin A supplementation
Routine immunization and vitamin A supplementation coverage was below the national target of 80 percent across the cluster. About 67 percent of children in Isiolo were fully immunized, the highest in the cluster, followed by Garissa (62%), Tana River (61.4%), Wajir (56.4%) and Mandera (22.7%). Vitamin A coverage was below the national target of 80 percent with Garissa County having the lowest coverage at 19 percent and Isiolo the highest in the cluster at 44.4 percent.

Sanitation and hygiene
Latrine coverage was noted to be below the national target of 61 percent with Wajir County having the highest percentage of 53.9 followed by Isiolo with 50 percent and Tana River at 48.4 percent. There were confirmed cases of cholera outbreak in Isiolo and Tana River with the former having 74 confirmed cases. Water treatment is equally low across the cluster with over 50 percent of the population drinking water from open and unprotected sources, thus increasing risk of waterborne diseases. Generally, there is low hand washing practices, the lowest being Wajir (4.1%) and Mandera (20.1%).

2.2.5.8 Education
Enrolment for Early childhood development (ECD) and primary school slightly improved across all counties in the cluster. There was significant increase in secondary school enrolment

with Tana River County recording the highest increase at 64 percent. The improvement in enrolment is as a result of the government enforcing 100 percent transition for both ECD to primary and Primary to secondary school. This is supported by the free primary and free secondary education programmes which has greatly lessened the burden of education on parents by removing tuition fee, which was a major barrier to education. Generally, more boys are enrolled than girls in all levels in the cluster. Gender disparity increases from early learning onwards to secondary level.

Average monthly attendance was above 95 percent for both primary and secondary schools. The general high attendance in primary school was attributed to the presence of school meals programme. The free day-secondary education and subsidized fees for boarding-secondary schools contributed a lot to the high attendance rate. Attendance was observed to peak in the month of November due to increased turn up for the end year examinations. Six primary schools in Wajir County and two in Isiolo County remained closed due to insecurity.

Regular School feeding programme (RSMP) is the only programme currently being implemented in Mandera and Wajir however Garissa County is implementing Home Grown School Meals Programme (HGSMP). Challenges experience in the implementation of the feeding program include lack of water for example schools in Marti, Isiolo County and Tana North in Tana River County.

2.3 The Agro - pastoral Livelihood Cluster

2.3.1 Cluster Background Information
The cluster consists of six counties; Baringo, West Pokot, Laikipia, Kajiado, Narok and Nyeri. It covers an estimated area of 71,471 square kilometres with a projected population of 3,983,079 persons (KNBS Projection, 2016). The cluster has six livelihood zones of which the pastoral livelihood zone accounts for 27 percent of the population while agro-pastoral, mixed farming, marginal mixed farming and formal employment/tourism/trade/business zones accounts for 11, 31, 20 and 10.7 percent respectively (Figure 2.7).

2.3.2 Current Drivers of Food Insecurity

Rainfall Performance
The onset of the short rains season was early in the second

Figure 2.7: Agro pastoral cluster livelihood zones

dekad of October in Nyeri (Kieni) and Laikipia counties. It was normal in Baringo, West Pokot and Narok counties and mixed farming zones of Kajiado County. However, onset was late by three weeks in the agro-pastoral, pastoral and some parts of mixed farming zones in Kajiado, with heavy downpour experienced in the first week of November 2017. Most parts of Laikipia, Narok and Kajiado counties received approximately 50 - 90 percent of normal rainfall. Baringo, West Pokot County and Laikipia East received 125 - 140 percent of their normal cumulative rainfall (Figure 2). Spatial distribution was even while temporal distribution was fair in Baringo and West Pokot Counties. Poor temporal and uneven spatial distribution was experienced in Nyeri, Laikipia, Narok and Kajiado Counties. Cessation of the rains was earlier than normal in most parts of the cluster as it occurred in the third dekad of November instead of the last dekad of December normally.
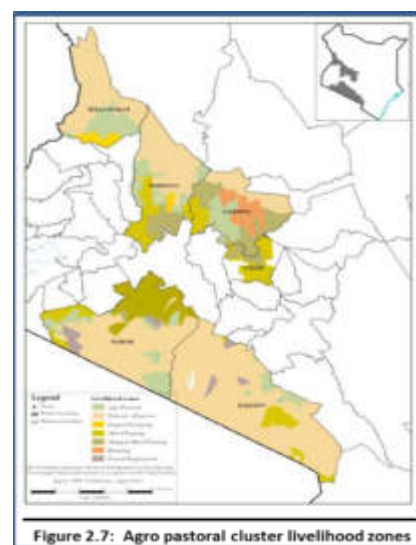
Conflicts/Insecurity

There were insecurity incidences reported along the borders of East Pokot sub-county with Marakwet East, Baringo North and Baringo South sub-counties and also in Kapedo along the border with Turkana County that restricted access to pasture. This also resulted in closure of Chesogon market and schools in Chesegon, Akulo, Amaler, Cheptulel, Amolem and Lotongot locations. Cases of livestock theft from neighbouring counties were also reported from Laikipia County.

Other Shocks and Hazards

Fall Army Worm (FAW) infestation was detected in West Pokot, Baringo and Nyeri (Kieni) counties that led to reduction in maize production levels. Foot and mouth disease (FMD) outbreaks occurred in the mixed farming livelihood zones in Lelan, Siyoi, Kapenguria and Mnagei wards of West Pokot County and in Rongai sub-county in neighbouring Nakuru County while Contagious Bovine Pleural Pneumonia (CBPP), Contagious Caprine Pleural Pneumonia (CCPP) and Peste de Petit Ruminants (PPR) were endemic in pastoral and agro pastoral livelihood zones of Pokot Central, Kiwawa, Kasei and Riwo in Pokot North. Human wildlife conflicts were reported in Kajiado and Laikipia Counties.

2.3.3 Current Food Security Situation

The mixed farming livelihood zones in Baringo, Narok, West Pokot, Laikipia and Nyeri were classified as "Minimal" (IPC Phase 1). Pastoral and agro pastoral livelihood zones in the cluster were classified as "Stressed" (IPC Phase 2). Kajiado was the only county classified as "Crisis" (IPC Phase 3). In January 2018, households with acceptable food consumption were between 40 and 67.6 percent, while households with borderline score ranged from 30 to 40 percent. Households with poor consumption scores were less than 10 percent across the cluster. The mean reduced coping strategy index (rCSI) for Nyeri, Narok, Kajiado, and West Pokot were less than 10 while in Baringo and Laikipia, the rCSI ranged from 15 to 18 in January 2018. Household water consumption in the mixed farming livelihood zones was 10 – 15 per person per day while in the agro pastoral and pastoral livelihood zones consumption was 5 – 10 per person per day. Meal frequency was 1 – 2 times a day in the pastoral and the marginal mixed farming livelihood zones, and 2 – 3 times a day in the mixed farming livelihood zone. The total maize stocks available in the cluster were about 44 percent of LTA. Household maize stocks are about 40 percent of the LTA. The current terms of trade are unfavourable across the cluster ranging between 45 – 88 kgs from a sale of a goat. The terms of trade in Laikipia and West Pokot counties were favourable with 101 and 82.2 kg of maize compared to long terms of 89.5 and 50.9 kgs irespectively. The proportion of children at risk of malnutrition reduced in Laikipia (1.9 percent), Nyeri (Kieni), Narok (8.3 percent) and West Pokot (5.8 percent) but increased in Kajiado (17.6 percent) and Baringo (18.0 percent).

2.3.4 Food Security Trends

Indicator	Long Rains Assessment, July 2017 (Previous season)	Short Rains Assessment, Feb 2018 (Current season)
Food security phase	Stressed in Kajiado, Narok, Kieni and mixed farming and marginal mixed farming in Laikipia. Crisis: pastoral parts of Baringo, West Pokot and Laikipia	**Minimal-**Baringo (Mixed farming & Irrigated), W. Pokot (Mixed farming), Narok (mixed farming) and Laikipia (Mixed farming). **Stressed-** Baringo (Pastoral and Agro-pastoral), W. Pokot (Pastoral & Agro-pastoral), Narok (Pastoral and Agro-pastoral) and Laikipia (Pastoral and Agro-pastoral). **Crisis-** Kajiado
Percent maize stocks at HH level	35 – 70 percent Kieni (Nyeri) - nil stocks	40 percent of LTA

Indicator	Long Rains Assessment, July 2017 (Previous season)	Short Rains Assessment, Feb 2018 (Current season)
Household water consumption	2-25 litres per person per day	**Mixed farming zones** (10-15 per person per day) **Agro Pastoral and Pastoral zones** (5-10 per person per day)
Meal frequency	2-3 except in Baringo (1-2 per day)	**Mixed farming zone**s (Baringo, W. Pokot, Narok & Laikipia) 2-3 meals per day, **Pastoral & Agro-pastoral** (Baringo, W. Pokot, Narok, Laikipia) 1-2 meals per day
Terms of trade	Below LTA for all counties	**Below LTA** (Baringo, Kajiado, Narok and Kieni) **Above LTA** (W. Pokot and Laikipia)
Coping strategy index	18 in Baringo and Laikipia 6 in Kajiado and Narok 1.6 in Kieni	15.74 Baringo, 9.1 W. Pokot 6.93 Kajiado, 4.91 Kieni 3.74 Laikipia, 3.40 Narok
Food consumption score	Poor: 14percent Borderline: 26percent Acceptable: 60percent	Poor: 5.5percent Borderline: 18.2percent Acceptable: 76.4percent
Children at risk of malnutrition	Above the LTA by 19 - 68percent.	**Reduction**-Laikipia (1.9percent), Nyeri-Kieni, Narok (8.3percent) and West Pokot (5.8percent) **Increased-** Kajiado (17.6percent) and Baringo (18.0percent)

2.3.5 Impact of Drivers on Food and Nutrition Security

2.3.5.1 Crop Production

Rain fed crop production

The cluster is mainly dependent on the long rains season for crop production. Crop production contributes 30 percent food and about 40 percent to cash income for households. The main crops grown in the cluster include maize, beans and irish potatoes. The area planted under beans was within long term average (LTA), while that under maize and potatoes was 80 and 92 percent of the LTA. The production for beans, maize and potatoes was 12, 44 and 73 percent of the LTA, attributed to insufficient and early cessation of rainfall, and negative effects of the Fall Army Worm invasion.

Area planted and production under rain fed agriculture

Crop	Area planted during 2017 Short rains season (Ha)	Long term average area planted during the long rains season (Ha)	2017 short rains season production	Long term average production during the long rains season
Maize	64,383	80,427	943,511	2,157,066
Green grams	29,459	30,174	92,876	745,532
Cow peas	13,882	15,156	323,952	443,365

Irrigated crop production

The main crops grown under irrigation are bulb onions, tomato and maize. Other crops grown under irrigation include beans and kales. The total area under irrigation increased from 6,760 hectares to 7,546 hectares. Area under maize increased 512 hectares to about 800 hectares while that of bulb onions increased from 4,000 hectares to 4,450 hectares. There was an increase in the area under tomatoes from 1,200 hectares to 1,470 hectares. The increase was attributed support to farmers such as provision of water pumps and certified seed by the county government and a shift from rain fed to irrigated agriculture.

Cereal stocks

The total maize stocks available in the cluster were about 44 percent of LTA. Maize stocks held by household have dropped to approximately 40 percent of the LTA due to reduced production in parts of the cluster and less carryover stocks from the previous season. Households in the cluster are also holding 64 and 48 percent of sorghum and millet respectively.

Cereal stocks in the cluster (90kg bags)

Commodity	Period	Farmers	Traders	Millers	NCPB	Total
Maize	Current	694,881	331,293	121,549	13,270	1,160,993
	LTA	1,724,835	806,996	37,444	39,000	2,608,275
Rice	Current	0	2335	0	0	2,335
	LTA	0	2465	0	0	2,465
Sorghum	Current	16,504	8,871	121	0	25,496
	LTA	2,544	530	200	0	3,274
Millet	Current	17,080	18,313	68	0	35,461
	LTA	524	644	120	0	1,288

2.3.5.2 Livestock Production

Livestock production contributes about 30, 40, 8 and 70 percent to cash income in the mixed-farming, agro pastoral, irrigated cropping and pastoral livelihood zones respectively. It also contributes 25 percent to household food across the livelihood zones. The pasture and browse situation was fair to poor across the livelihood zones compared to good at this time of the year as shown in Table 4. In the pastoral livelihood zones of the cluster, forage situation was poor and expected to last less than a month as opposed to a normal of 3 months. The situation is projected to deteriorate further into the early weeks of April.

Pasture and browse condition

Livelihood zone	Pasture					Browse				
	Condition		How long to last (Months)		Factors Limiting access	Condition		How long to last (Months)		Factors Limiting access
	Current	Normal	Current	Normal		Current	Normal	Current	Normal	
Mixed Farming	Fair	Good	1-2 (March)	3-4	None	Fair - poor	Good	1-2 (March)	4	None
Irrigated cropping	Fair	Good	1-2 (March)	2-3	None	Fair - poor	Good	1-2 (March)	3	None
Agro-pastoral	Poor	Good - Fair	<1	2-3	None	Fair - poor	Good	1	2	None
Pastoral	Poor	Good - Fair	<1	3	None	Poor	Good	1	2	None

The return trekking distances increased by 50 percent in the pastoral and agro-pastoral areas of the cluster but remained stable in the irrigated cropping and mixed farming livelihood zones. The watering frequencies have also been affected with most livelihood zones watering their livestock once after every two days. Camels in the pastoral livelihoods had the greatest watering intervals of between 4-7 days per week. The situation is expected to deteriorate further into March but is likely to improve in April with the expected MAM rains.

Water for livestock

Livelihood zone	Return trekking distances (Km)		Expected duration to last (Months)		Watering frequency	
	Current	Normal	Current	Normal	Current	Normal
Mixed farming	<3	1-4	2 -3	2-3	Once after two days/Alternate days	Once per day
Irrigated Cropping	<3	2-5	Unlimited	Unlimited	Once after two days	Once per day
Pastoral	5-15	3-5	1-2	3-4	Once after two days/Alternate days	Normal
Agro-pastoral	5-10	3-5	1-3	3-4	Once after two days	Every day

The body condition of cattle ranges from fair to poor across the livelihood zones. However, in the pastoral livelihood zones of Kajiado County, the body condition of cattle was poor to emaciated, while in the mixed farming and irrigated cropping livelihood zones were good to fair. The body condition of the browsers (goats and camels), were good across the livelihood zones. The condition is expected to deteriorate further before and during the early days of the next rains season.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat		Camel	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Mixed Farming	Good to Fair	Good	Good	Good	Good	Good	Good	Good
Irrigated cropping	Good to Fair	Good	Good	Good	Good	Good	Good	Good
Agro pastoral	Poor	Good to Fair	Good to Fair	Good				
Pastoral	Poor	Good	Good	Good	Good	Good	Good	Good

The birth rates were normal in the Mixed Farming and Irrigated Cropping livelihood zones but below normal in the pastoral livelihood zones. Milk production and consumption at household level were below the LTAs in the mixed farming and irrigated cropping by about 50 percent. The pastoral livelihood zones recorded significant drop, which was attributed to the poor pastures condition. Milk prices increased by an average of 20 percent of the long term average across all the livelihood zones as shown in the table below.

Milk production, consumption and prices

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres) per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Mixed farming	2-3	3-8	1	2	60 -70	50
Irrigated cropping	4-6	8-10	1.5	3	60 -70	50
Agro-pastoral	1 -3	2-6	1	2	60 -80	50-60
Pastoral-all species	1	3-4	1	2	60 -80	50-60

Livestock tropical units (TLU) average 2-3 compared to normal of 2-4 across the livelihood zones for the poor households while for medium income households, the average TLUs ranged 2-10compared to normal of 6-15. The TLUs have been on a decreasing trend owing to

successive rain failures coupled with poor regeneration of pastures and browse. Kajiado County registered the highest drop (50 percent) in livestock ownership due in prolonged drought and livestock deaths. However, the TLUs were higher in the pastoral livelihood zones as compared to the other zones due to land tenure systems.

Tropical livestock units

| Livelihood zone	Poor income households		Medium income households	
	Current	Normal	Current	Normal
Mixed farming	2-3	3-4	2-4	4-6
Irrigated Cropping	2-3	3-4	2-4	4-6
Pastoral	3-4	6-10	4-10	6-15
Agro-pastoral	2-3	3-4	3-10	8-12

Out migrations of livestock in the cluster were reported in the pastoral livelihood zones of Kajiado to the neighbouring Chyulu Hills, Makueni, Nakuru and across Tanzania. In West Pokot County, livestock migration to Uganda (Amdat, Karita and Lokales) was Reported.Lakipia County recorded in-migrations from Samburu and Baringo counties especially to Laikipia North. Livestock are grazing in the Mukogodo and Ngare-Ndare Forests and private ranches which have caused conflicts in the county. In Kieni (Nyeri); in-migration of about 400 heads of cattle from Laikipia was also reported. These migrations were early (October-November) compared normal (January-February) and were attributed to the poor cumulative performance of the rains over two seasons. The major diseases reported in Baringo, Kajiado and Narok were CCPP, LSD, PPR, S&G pox and FMD. Cases of rabies in Narok and Baringo counties and Trypanosomiasis in Kajiado and Narok counties were also reported. Black quarter (BQ) incidences were also reported to have occurred in West Pokot County. Other diseases reported include: Newcastle in poultry (Baringo), enteroxeamia and helminthiasis (Narok) and heart and red water (Baringo). Mortality rates were normal across all the livelihood zones.

2.3.5.3 Market Performance
Market operations remained normal across the cluster save for Kinyach market in Baringo County and Chesegon market in West Pokot County recurrent disruptions were reported for attributed to inter-tribal conflicts. The markets were well provisioned with livestock and food commodities. Some of the food commodities available in the market were maize, *posho*, beans, green gram, rice, potatoes, cabbages, kales and tomatoes. Crop produce were obtained locally with huge supplementation supplies from external markets from Meru, Nyandarua, Nakuru, UasinGishu and Trans Nzoia counties. Cattle, goat, sheep and poultry were main livestock species traded in the markets by both households and brokers across the cluster. Notable increase was witnessed in Baringo County markets in December and January which was elicited by the need to raise fees for secondary schools. In Kajiado County, low volumes of livestock reported in the markets due to poor body condition while pastoral markets in the cluster recorded low volumes as livestock migrated to marginal mixed and mixed farming livelihood zones.

The cluster maize price for the month of January ranged from Ksh. 38 per kilogramme in West Pokot to the high of Ksh. 58 per kilogramme in Nyeri. Prices were above average in the cluster except in West Pokot and Kajiado where they were below the five year average. Livestock prices for January 2018 were below the long term average in the cluster except in West Pokot and Laikipia counties where they were above average. Generally, there was a steady increase in goat prices across the cluster from october to December 2017 which was attributed to improved body conditions and high demand for the festive season. Highest price for an average

goat size was reported in Laikipia county at Ksh. 3,737 against the long term average of Ksh. 3,221 while the lowest prices were recorded in Baringo county at Ksh. 2,461 compared to the long term average price of Ksh. 2,743.

Figure 2.8: Cereals to livestock terms of trade
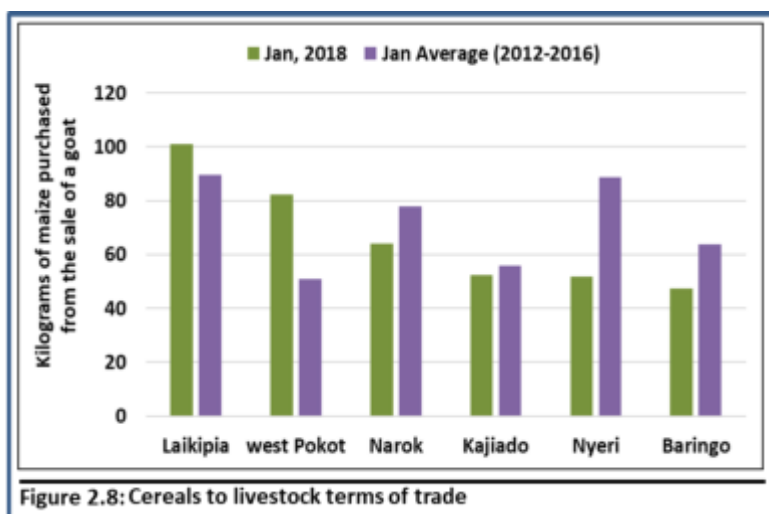
The current terms of trade are unfavourable across the cluster with only Laikipia and West pokot counties have favourable terms of trade. There was an improvement in the terms of trade from July to December 2017 following good livestock prices and relatively stable maize prices.

Comparatively, Laikipia recorded the highest terms of trade where households were able to purchase 101 kilogrammes of maize from the sale of one average sized goat against the long term average 89 klogrammes of maize. On the other hand Baringo county had the least terms of trade at 47 kilogrammes in exchange of an average sized goat as shown in Figure 2.8 above.

2.3.5.4 Water Availability and Access

The current main water sources are water pans, boreholes, rivers springs shallow wells and piped water. The open water sources were recharged to 60-90 percent of their capacities and are currently holding up to 30-60 percent of their normal capacities. However, in Kajiado, most water pans did not recharge due to poor performance of the short rains and high siltation coupled with high evaporation levels thus households are mainly depending on boreholes and piped water.

Return distances to water sources are within normal ranges in Narok, irrigated livelihood zone of Baringo and Mixed farming livelihood zone of West Pokot. Return distances have doubled in Laikipia, Kieni and Kajiado. In pastoral and agropastoral areas of Baringo and West Pokot, distances have slightly increased from 4-5 Km to 6-8 Km and from 2-4 Km to 3-7 Km respectively. Waiting time at source in Baringo, Nyeri, Narok, West Pokot and mixed farming zones of Laikipia is within the seasonal norm of 5-10 minutes. The highest waiting time was observed in Saikeri in Kajiado where households are waiting up to 5 hours as water for both human and livestock is pumped only when fuel is available mainly after every one day.

The cost of a 20 litre jerrican is normal in Baringo, Narok, Kajiado and Laikipia at Ksh. 3-6. However, in Kajiado most rural communities relying on boreholes pay a monthly fee to cater for fuel meant for pumping water from boreholes. In Nyeri (Kieni West) the cost of water increased from Ksh. 5 to Ksh. 10-20 while in Kieni East, cost increased from Ksh. 5 to Ksh. 10. Water consumption in litres per person per day (lpppd) reduced in the pastoral livelihood zone of Baringo, Kajiado and Laikipia to 10-15 litres, while in the mixed and marginal mixed livelihood zones of Kieni it has reduced from 40 litres to 15-20 litres per person per day due to water rationing as a result of reduced river flows. The consumption was normal across all livelihoods of Narok, agro-pastoral and mixed farming zones of West Pokot, Irrigated zone of Baringo and mixed farming zone of Laikipia.

2.3.5.5 Food Consumption
According to NDMA drought early warning system (EWS) information, the proportion of households in the cluster with poor food consumption was 10 percent and below except in Baringo at 11 percent as shown in the table below. Households in this category were consuming mainly cereals and vegetables with infrequent consumption days of pulses and rarely eating any other high energy or protein food groups. In comparison to the month of January 2017 there was an improvement with more households moving into the borderline consumption. Laikipia and Nyeri counties had the least proportion of households with poor food consumption at 2 percent and 3 percent respectively. About 30 – 40 percent of households had borderline food consumption while over 50 percent of households had acceptable consumption. Most households were consuming 1 -2 meals except in Laikipia and Nyeri where it was 2 – 3 meals a day.

Proportion of households in food consumption groups

	Food Consumption Groups		
	Acceptable (%)	Borderline (%)	Poor (%)
West Pokot	53	40	7
Baringo	65	24	11
Kajiado	59	31	10
Laikipia	67	31	2
Nyeri	62	35	3

2.3.5.6 Coping Strategies
The coping strategy index (rCSI) reduced across the cluster in January 2018 compared to the previous month of December 2017 except in West Pokot and Baringo where there was a slight increase and had more people employing consumption coping strategies. The rCSI ranged between 3 and 7 while it was 9 and 16 in West Pokot and Baringo respectively. The consumption strategies commonly employed were reducing the portion and number of meals per day.

Coping strategies index

Period	W/Pokot	Baringo	Kajiado	Narok	Laikipia	Nyeri
Oct 2017	8.31	14.43	7.57	8.23	4.65	6.51
Nov 2017	7.45	13.89	7.67	7.14	4.41	5.72
Dec 2017	8.63	13.13	8.14	4.81	3.59	5.10
Jan 2018	9.05	15.74	6.93	3.4	3.69	4.91

2.3.5.7 Health and Nutrition

Nutritional Status and Dietary Diversity
During the current analysis period SMART surveys were conducted in two agro pastoral cluster counties; Narok and Kajiado. From the survey results, Narok recorded global acute malnutrition (GAM) prevalence by WHZ of 6.8 percent while Kajiado had a GAM rate of 10 percent. Nutrition sentinel site surveillance data from Kieni for January 2018 indicate GAM by MUAC rate of less than five percent indicating an acceptable situation. The level of acute malnutrition is likely to deteriorate in the projected period though the respective phases in the three counties are not expected to change.

However, based on the past GAM prevalence and expected trend of contributory factors in the projection period, level of acute malnutrition is likely to be Critical in West Pokot and Baringo counties and Serious in Laikipia County. Overall deterioration in nutrition situation expected in these counties during the projection period is attributable to reduced food access in the lean period, increased disease incidences especially diarrhoea linked to reduced access to quantity and quality water in dry period which will compromise hygiene in the households. The seasonal trend of acute malnutrition in the agro pastoral cluster based on surveillance data is shown in Figure 2.9 below.

Figure 2.9: Proportion of Children at Risk of Malnutrition (MUAC <135mm)
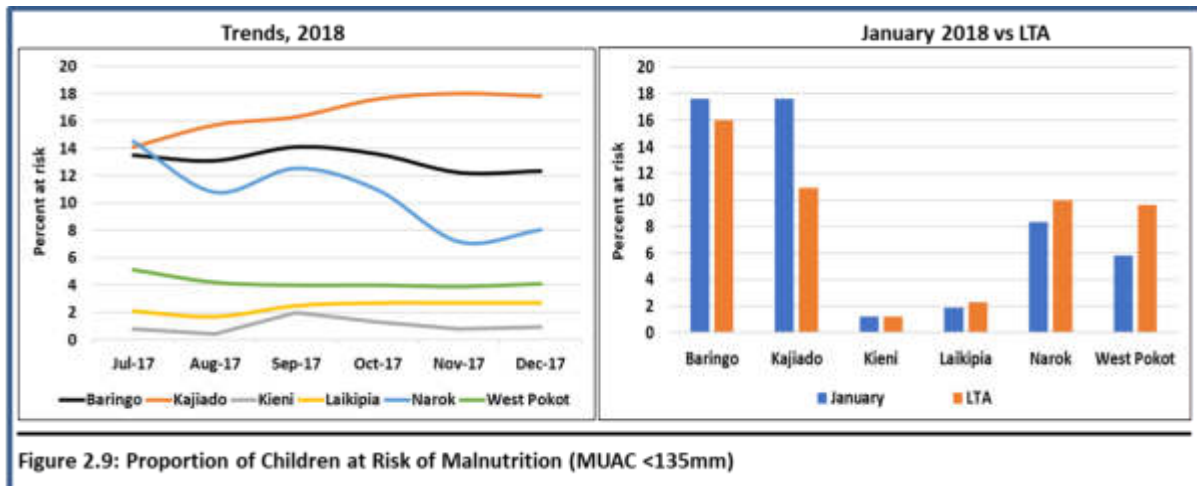
Agro pastoral counties have poor food consumption practices with proportion of children meeting minimum dietary diversity and minimum meal frequency respectively at: 33.2 and 70.6 percent respectively in Baringo and 36.9 and 24.5 percent respectively in West Pokot counties. Dietary diversity was equally poor among women of reproductive age with proportion consuming diets that meets minimum dietary requirement being 22.2 percent in West Pokot, 48.2 percent in Kajiado and 35.3 percent in Narok counties which predispose the population to poor nutrition status.

Morbidity patterns
The most common diseases reported include upper respiratory tract infections (URTI), malaria and diarrhoea across all the counties in this cluster. During the period from July to December 2017, there was an increase in malaria cases attributed to the rains that led to increased breeding of mosquitoes. Diarrhoea cases were seen to increase in December following the dry period as most of the rains ended in November. In July to December, there was a measles outbreak reported in Laikipia, cholera was reported in Kajiado with 82 cases, an increase from the previous year same period. Mortality rates for both children under five years and the general population was below the emergency thresholds across the cluster.

Immunization and Vitamin A supplementation
Routine immunization coverage reported through the DHIS in 2017 was generally below the national target of 80 percent across all counties in the agro pastoral zone except for Narok and Kajiado counties. The coverage was lowest in Baringo County (50 percent). Further, in 2017, routine Vitamin A supplementation coverage for children aged 6-59 months was low across the cluster with counties such as Narok and West Pokot having coverage of 10 percent. The rest of the counties in this cluster still had coverage of less than 50 percent well below the national target of 80 percent. The low coverage of immunization and Vitamin A supplementation was attributed to health workers strike which derailed critical health services for close six months.

Sanitation and hygiene

Water scarcity and use of open and unsafe water sources have led to below optimal hand washing practices, resulting to increased incidences of water borne related diseases like diarrhoea, a key driver of acute malnutrition. Access to safe drinking water in the cluster; ranges from 11.1 percent in West Pokot County to 63.3 percent in Kajiado County. While majority of household in this zone are aware of good hygiene practices, the proportion of households washing hands at four critical times is extremely low ranging from 1.7 percent in Narok, 2.2 percent in West Pokot, 1.9 percent in Laikipia to 15 percent in Kajiado. Recent data further shows that latrine coverage is also very low with 47 percent relieving themselves in the bush in West Pokot, 59 percent in Kajiado, 10 percent in Nyeri North, 27.2 percent in Laikipia, 16 percent in East Pokot and 47.3 percent in Narok. This practice increases the risk of contamination of water sources and cases of water borne diseases. With a marginal proportion of households treating their drinking water by either boiling, pot filters or use of water treatment chemicals, the incidence of waterborne diseases is bound to increase with West Pokot reporting an active cholera outbreak in February 2018.

2.3.5.8 Education

Enrolment in both public Early Childhood development (ECD) and primary schools in Nyeri decreased due to transfers of children to schools outside Kieni Sub County while others were moved to private learning institutions. Otherwise enrolment generally increased at all levels across the cluster. In West Pokot for instance enrolment increased by 25 percent. The ratio of boys to girls was more or less one to one but slightly positively skewed in favour of boys. The average monthly attendance was over 90 percent which was normal. High dropout cases were reported in Nyeri where 14 and 18 percent dropout rate was observed in ECDE and primary schools respectively. In Baringo County the major driver for dropouts were migration, insecurity and non-provision of school meals.

Home Grown School Meal program (HGSM) is being implemented in Nyeri, Laikipia, Baringo and West Pokot Counties. In addition, West Pokot and Baringo Counties have the Regular School Meals Program (RSMP) with Baringo also having the Expanded School Meals Program (ESMP). School feeding programme enhanced participation by reducing the number of drop-outs and as a result, access and retention were also been enhanced across the Counties. Nevertheless, pupils at times missed meals in cases of insecurity particularly in Baringo North and East Pokot in Baringo County, as well as when there is insufficient water to cook food particularly in Pokot Central and Pokot North sub-counties in West Pokot County or there were delays in the disbursement of funds from the National Government and food from the donors.

2.4 The South-eastern Marginal Agricultural Livelihood Cluster

2.4.1 Cluster Background Information

The cluster consists of five counties, namely Tharaka Nithi (Tharaka), Meru (Meru North), Kitui, Makueni and Embu (Mbeere). It has a projected population of 3,448,026 (KNBS, 2016) and covers an estimated 46,255 square kilometres. The two major livelihood zones are mixed farming (26 percent of the population) and marginal mixed farming (65 percent of the population). Rain-fed cropping and formal employment make up the remaining nine percent (Figure 2.10).

2.4.2 Current Drivers of Food Insecurity

Rainfall Performance
The short rains begun in the second dekad of October across the cluster. The onset was timely in Embu, Kitui and Makueni but late by first dekad in Tharaka Nithi and Meru counties. Cumulatively, the rains were mostly below average with most parts of Kitui and Makueni received 50 – 75 percent of normal rainfall. The southern parts of Embu and northern parts of Tharaka Nithi and Meru received 75-90

Figure 2.10: Southeastern marginal agricultural cluster livelihood zones

percent of normal rainfall. Some pockets in central parts of Kitui received 25-50 percent of normal rainfall. Spatial distribution was even in Makueni and Kitui and uneven in Meru, Embu and Tharaka Nithi Counties. The temporal distribution was good in Embu and Meru and uneven in Tharaka Nithi, Makueni and Kitui Counties. The rains ceased earlier than usual in most parts of the cluster, occurring in the second dekad of December. Tharaka Nithi County experience the shortest wet-season with cessation occurring during the third dekad of November.

Conflicts/Insecurity
Influx of livestock from Garissa, Wajir and Isiolo counties into Meru North and Tharaka was increasing pressure on the already diminishing rangeland resources and aggravating conflicts. Resource based conflicts between farmers and pastoralist from Tana River was reported in Mwingi North Sub County of Kitui County. Human-wildlife conflicts were also reported in Buuri, Tigania East and Tigania West sub-counties of Meru County involving elephants from Imenti forest. In Tharaka North, elephants are crossing over to villages neighbouring the Meru National Park in search of water since river Ura, being a major source of water for the wildlife, has dried up due to over-abstraction upstream. The increased tension in these areas was limiting access to pasture for livestock and disrupting farming activities. Loss of livestock due to conflicts between herders was reported in Tharaka North during the months of November 2017 and January 2018.

Other Shocks and Hazards
Higher-than-normal land surface temperatures experienced in all the counties has accelerated depletion of forage and water resources. Fall Army Worm (FAW) infestation was a major threat to the maize crop especially in Embu, Meru and Tharaka Nithi Counties where it has contributed to 20-30 percent of crop losses. High food prices affected access to food, particularly in Meru and Tharaka Nithi Counties.

2.4.3 Cluster Food Security Situation

The current food security classification for the cluster is "Stressed" (IPC Phase 2), except Meru North which is largely experiencing 'None or Minimal' (IPC Phase 1) food security outcomes. Most households are marginally able to meet their minimum food needs except by more rapidly depleting their assets and thus undermining their food consumption. Estimated household maize stocks were 33 percent of the long-term average, and as was expected to decline as farmers continue to dispose their harvests. A significant proportion (22%) of households had poor and borderline food consumption score (FCS) which was indicative of household food deficit arising from the declining food production and diminishing household purchasing power. Average household milk consumption was as low as 0.25-1 liters per day across all Counties, which was not adequate for the households. Majority of the households in the cluster are currently consuming 1-2 meals per day which was not normal at this time. Common foods being consumed are mainly cereals and pulses.

Majority of poor households are entirely dependent on market purchases to meet their minimum food needs. Therefore, the high market prices of staple foods are constraining household food access and consumption. The reduced coping index remain stable at 16 with households engaging in relatively severe consumption coping strategies. Moreover, majority of households (66%) are employing crisis and emergency livelihood strategies thus depleting their assets to meet their daily dietary requirement. Nonetheless, the proportion of children at risk of malnutrition remain low at 6-9 percent in all counties, except Meru North which was 20 percent.

2.4.4 Food Security Trends

Indicator	Long rains assessment July 2017 (Previous season)	Short rains assessment Feb 2018 (Current season)
Food security phase	Stressed (IPC Phase 2) Pockets of Makueni and Kitui Phase	Stressed (IPC Phase 2 Meru is in Phase 1
Household food stocks (90 kg bags)	Household stocks 21-34% of LTA; Kitui 4% of LTA	202,850 bags which is 33% of LTA
Livestock body condition	Good to Fair Meru North fair to poor	Good to fair
Household water consumption	5-30 litres per person per day	15-30 litres per person per day; except part of Kitui and Makueni (8-10 litres per person per day)
Terms of trade	Ranging 52 to 94 kg	
Coping strategy index	Ranged between 8 – 14	rCSI 16
Food consumption score	Poor - 8%, Borderline - 18% and Acceptable – 74%	Poor – 3.6%, Borderline – 18.6% and Acceptable – 77.8%
Children at risk of malnutrition	Ranging between 5% - 9% except Meru North at 25%	Ranging between 6% - 9% except Meru North at 20%

2.4.5 Impact of Drivers on Food and Nutrition Security

2.4.5.1 Crop Production

Rain fed crop production

The cluster depends on the short rains season. The production accounts for about 60 percent of annual crop production. The main crops grown in the cluster include maize, green grams and cow peas. Other important crops are beans, millet, sorghum and Irish potatoes. The area put under maize was within long term average (LTA), that under cowpeas declined by eight percent while that under green grams increased by 41 percent. Maize production was about 40 percent of LTA while that of cowpeas and green grams was 33 and 44 percent of LTA respectively.

Area planted and production under rain fed agriculture

Crop	Area planted during 2017 Short rains season (Ha)	Long term average area planted during the short rains season (Ha)	2017 short rains season production	Long term average production during the short rains season
Maize	218,934	226,354	1,251,013	3,142,566
Green grams	56,700	40,346	164,270	374,590
Cow peas	73,995	80,639	180,423	549,390

Irrigated crop production

Irrigation was mainly carried out in small scale irrigation schemes and green houses. The crops grown under irrigation include tomatoes, water melons, kales and green maize. The area under irrigation increased by about 2,950 hectares from an LTA of 2,335 hectares to the current 615 hectares. Increase in area under irrigation was mainly attributed to support to small irrigation projects and good markets for horticultural produce. Overall production under irrigation increased from the LTA by about 14,000 MT to the current 51,000MT.

Cereal stocks

The total maize stocks available in the cluster were about 34 percent of LTA (Table 3). Millet, and sorghum stocks were 69 and 75 percent respectively compared to the LTA. Household stocks are about 33 percent of the LTA due to reduced production in parts of the cluster and less carryover stock from the previous season. Maize stocks are expected to increase from the month of August from the long rains harvests.

Cereal stocks in the cluster (90kg bags)

Commodity		Farmers	Traders	Millers	NCPB	Total
Maize	Current	162,657	171,105	8,980	150,433	493,175
	LTA	549,829	520,217	5,700	357,500	1,433,246
Rice	Current	1200	0	0	0	1,200
	LTA	1600	0	0	0	1,600
Sorghum	Current	38,980	0	0	0	38,980
	LTA	52,000	0	0	0	52,000
Millet	Current	760	0	0	0	760
	LTA	1,100	0	0	0	1,100

2.4.5.2 Livestock production

The main livestock types bred in this cluster include cattle (both dairy and local), sheep, goats, poultry and donkeys. The pasture and browse situation was good to fair across the livelihood zones except in the marginal mixed (Embu) and agro pastoral (Meru) livelihood zones against a normal of good. The condition was attributed to the poor performance of the short rains of October-December (OND) 2017 across the region. The available pasture and browse was expected to last for 1-2 months compared with the normal 3-4 moths depending on the livelihood zone. Crop residues were used as feed resources across the cluster. The reported in-migrations of livestock in to the cluster are likely to increase pressure on the available pasture and browse and thus trigger conflicts and migrations. Access to pasture and browse was unlimited due to insecurity in some parts in the cluster.

Pasture and browse situation

Livelihood zone	Pasture				Browse			
	Condition		How long to last (Months)		Condition		How long to last (Months)	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Mixed Farming	Good - Fair	Good	1-2	3-4	Good-Fair	Good	2-3	4-5
Marginal Mixed Farming	Fair - poor	Fair-Good	<1	2-3	Fair	Good	1-3	3-5
Mixed Farming Coffee/ Dairy	Good - Fair	Good	1-2	2-3	Fair	Good	1-2	5
Mixed Farming Crops/Livestock	Good - Fair	Good	1-2	3	Good - Fair	Good	1-2	5
Rain -Fed Agriculture	Fair	Good	1-2	2-3	Fair	Good	2-3	4
Agro pastoral	Poor	Fair	1	2	Poor	Good	1	2

Return trekking distances to watering points increased by 40 percent of normal due to poor recharge of open water sources. The watering frequencies declined across the cluster where watering was once after every two days compared to daily per week as shown in the table below. The situation was expected to deteriorate further into March but is likely to improve in April with the expected MAM rains.

Water for livestock

Livelihood zone	Return trekking distances (Km)		Expected duration to last (Months)		Watering frequency	
	Current	Normal	Current	Normal	Current	Normal
Rain fed agriculture	4-10	1-5	1-2	2-3	Once after two days/Alternate days	Once per day
Marginal Mixed farming	5-10	1-5	1-2	2-3	Once after two days	Once per day
Mixed farming	3-5	0-3	1-2	2-3	Once every day	Normal
Agro pastoral	7-10	2-5	<1	2-3	Once after two days	Every day

The livestock body condition of all species across the livelihood zones was good to fair (Table 6). The body condition of cattle in the marginal mixed farming and agro-pastoral livelihood zones was fair to poor owing to below average pasture regeneration in the cluster. The situation is projected to slightly deteriorate by early March and thereafter improve with the long rains of MAM 2018.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat	
	Current	Normally	Current	Normally	Current	Normally
Marginal Mixed zone	Fair	Good	Good	Good	Good	Good
Mixed Farming (livestock/ food crop)	Fair	Good	Good	Good	Good	Good
Mixed Farming (coffee /dairy)	Good-fair	Good	Good	Good	Good	Good

The birth rates were normal across the livelihood zones due to the good to fair forage resources. Household milk production and consumption declined by 40 percent (Table 7) across the livelihood zones as attributed to the declining forage resources. Average milk prices increased by 20 percent of LTA across all the livelihood zones.

Milk availability, consumption and prices

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres) per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Mixed Farming	2-4	3-5	1-2	2	50-60	40-50
Marginal Mixed Farming	1-2	2-3	0.25-1	1-2	60-70	40-50
Mixed Farming Coffee/Dairy	2	4	1	2	60	50
Mixed Crop Livestock	1	2	0.5	1	70	60
Rain Fed Agriculture	2	5	1	2	50-60	40-60
Agro pastoral	2	3	1	2	60	50

Livestock tropical units (TLU) averaged 1-3 compared to normal of 2-5 across the livelihood zones for the poor households while for medium income households, the average TLUs ranged 2-8 compared to normal of 3-15 TLUs. No out-migration of livestock was reported. In migration from Garissa, Tana River and Isiolo counties to Tharaka, Kitui and Meru counties were reported. Livestock have also migrated from Kajiado County to Makueni County. These in-migrations are not normal at this time of the year and have been caused by even poorer performance of the rainfall in those counties thus poor pasture and fodder regeneration. Migrations are expected to cause additional pressure on the pasture and water resources that may result to conflicts. Further migrations are likely to be experienced going into mid-March when the onset of the long rains is expected. However, the pressure is expected to reduce with the MAM rains towards April into the season May-July. Cases of rabies were confirmed in Meru North. Anthrax and Black Quarter (BQ) cases were reported in Endau/Malalani in Kitui County. Endemic diseases such as CCPP, CBPP and Newcastle were also reported across the livelihood zones in Kitui County. Confirmed cases of sheep and goat pox in Meru North, Tharaka North and Tharaka South sub counties were reported. The disease outbreaks were attributed to earlier in-migrations from the neighboring counties. Further convergence of livestock into the cluster will likely to trigger more disease outbreaks. Mortality rate in all species were normal at less not more than two percent across the livelihood zones.

2.4.5.3 Markets

All markets were operational with free access and flow of commodities into and out markets except in Nthawa ward in Embu County where livestock movements were restricted due to suspected occurrence of FMD. The main livestock traded within the cluster include cattle, goat, sheep and poultry while crop food commodities were maize, beans, green gram, millet, cowpeas, sorghum and fruits. Notable increase in volumes traded for cattle and goats was observed in Meru North and Tharaka Nithi counties by both farmers and brokers which was attributed to farmers destocking due to fear of the dry season and lack of livestock feeds.

Figure 2.11: Comparative maize price trends in the cluster

Most of the traded food commodities and livestock were sourced locally. Traders within the cluster imported maize from Uasin Gishu, Trans Nzoia, Nyeri, Kirinyanga, Busia, Loitokitok and even in Tanzania. Traders from Garissa were supplying goats into the cluster markets particularly in Embu County. Unlike in the year 2016, there was a systematic decline in the price of maize

across the cluster from the second half of the year beginning July 2017 (Figure 2.11). However, the prices were still above those recorded for the same period 2016 and the long-term average prices for majority of the counties within the cluster save for Makueni and Meru which did not exhibit any significant variations with the long-term prices. Highest maize price in January 2018 was reported in Tharaka where maize retailed at Ksh. 40 per kilogramme against the long term average of Ksh. 35 while the lowest prices were recorded in Meru North at Ksh. 34 per kilogram

2.4.5.4 Water Access and Availability

The major sources of water in the cluster are rivers, earth dams/pans, boreholes, shallow wells, springs, rock catchments and piped water system, which are the normal ones at this time of the year. Recharge to open water sources ranged between 80 and 100 percent in Mbeere, Tharaka, Meru North and the mixed farming zones of Makueni County. Recharge in the marginal mixed farming zones of Kitui and Makueni counties was 30-40 percent of their capacity. The recharge impacted positively in terms of water availability and access. Water in the open water sources is projected to last for 2-3 months in Tharaka, Meru North and mixed farming zones of Makueni and Mbeere. While in the marginal mixed zones of Mbeere, Kitui and Makueni, it is expected to last for 1-2 months.

Distance to water sources ranged between 3 and 5 kms compared to the normal 1-3 kms in the mixed farming zones of Kitui and Makueni which was normal at this time of the year with an exception of coffee /dairy zones of Makueni and rainfed zones in the cluster that recorded the normal distances of 0.5 to 1.5 kilometres. However, in the mixed farming zones of Mbeere distances increased from the normal less than three to 3-5 kilometres as a result of drying up of the open water sources. In the marginal mixed farming zones, distances increased from the 3-6 kms to 8-10 currently occasioned by drying up of many open water sources as a result of poor designs of most open water sources. The remaining open water sources are having 30-40 percent of their capacities.

Waiting time at the source has increased significantly in the marginal mixed farming zones of Kitui, Makueni and Mbeere from the normal less than half an hour to 1-2 hours. The increase in waiting time is attributed to drying up of most open water sources leading to high concentrations of both livestock and humans at the remaining sources, where watering of livestock takes precedence. There was a slight increase in waiting time for the marginal mixed farming zones of Tharaka and Meru North as well as the mixed farming zones of Meru North from 10-15 minutes normally to 20-30 minutes currently. The rest of the cluster largely experienced the normal waiting time of less than 10 minutes.

The average water consumption per person per day was lowest in the marginal mixed farming zones of Kitui County at 8-10 litres per person per day compared to the normal 10-15 litres. The marginal zones of Mbeere and Tharaka and the mixed farming zone crop/livestock in Makueni, consumption reduced to 10-15 litres compared to the normal 15-20 litres. Consumption was within the normal range of 15-20 litres across the livelihood zones in Meru North but reduced from the normal 40 to 20 litres in the mixed farming zones of Mbeere.

Cost of water remained within the normal range of Ksh.2-5 per 20 litre jerrican across the cluster with the exception of the marginal mixed farming zone of Tharaka and agro pastoral zone of Meru North where it cost Ksh.5-10 compared to the normal 2-5. The increase was attributed to drying up of some open water sources, breakdown of boreholes and pipelines as well as water rationing. Vendors were selling the commodity at Ksh.20-40 depending on distance covered.

2.4.5.5 Food consumption

Food consumption deteriorated slightly in December 2017 compared with a similar period in 2016 as the proportion of households with acceptable food consumption had decreased. In December 2016, 91 percent had acceptable food consumption which decreased by 12.6 percent to 77.8 percent. The implication was that the proportion that had adequate food frequency, nutrient intake and dietary diversity had reduced during the period under review.

2.4.5.6 Coping strategy index (rCSI)

The coping strategy index remained the same since it was recorded at 16.2 in December 2017 compared with 15 in December 2016. Households had not changed the frequency or severity of consumption-based coping strategies during the period under review. Most households were either reducing the number of meal, reducing the portion size or skipping meals.

2.4.5.7 Health and Nutrition

Nutritional status

In January 2018, the percent of children under five at risk of malnutrition based on mid upper arm circumference (MUAC <135mm) data were slightly above long-term average in Embu, but the other four counties were below the long-term average (Figure 6). From July- December 2017, the percentage of children at risk of malnutrition by MUAC was above the long-term average in in Meru North but stable and below the LTA across the cluster. The stability was attributed to health and nutrition intervention which were being undertaken across the cluster such as Baby Friendly Community Initiative interventions (BFCI), Agri-nutrition awareness by community health volunteers (CHVs) and Nutrition Improvement through Cash and Health Education (NICHE)which were undertaken by the Ministry of Health and other partners.
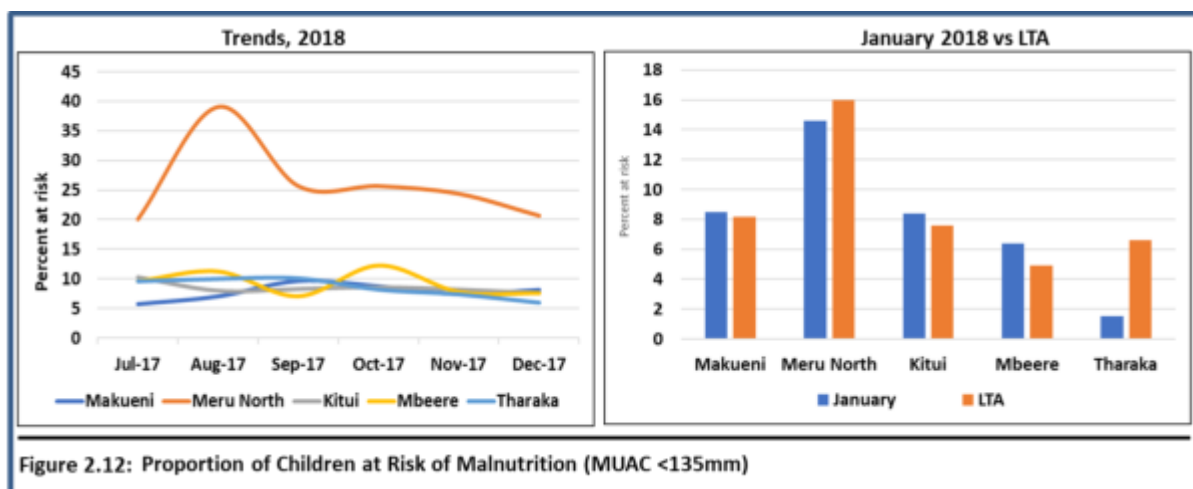
Figure 2.12: Proportion of Children at Risk of Malnutrition (MUAC <135mm)

Morbidity patterns

Morbidity patterns for both under five and general population were relatively similar across the cluster (Figure 5). The top three diseases include upper respiratory tract infections (URTIs), diarrhea, malaria, pneumonia and disease of skin. There was a noted decline which was largely attributed to low reporting rates as a result of the nurses' strike which lasted five months from June to November 2017. Crude mortality and under five years mortality rates were below the threshold of one per 10,000 persons per day and two per 10,000 per day respectively.

Immunization and vitamin A supplementation

The percentage of fully immunized children was below the national target of 80 percent across the cluster with Meru North County having the lowest coverage at 42 percent and Makueni

County having the highest in the cluster at 78 percent. Vitamin A supplementation for children aged 6-59 months was equally low across the cluster and ranged between 50-55 percent. The decline in the immunization coverage and the Vitamin A supplementation was attributed to health workers strike which was experienced across the country for five months.

Sanitation and hygiene
Latrine coverage remains below the national target of 100 percent with Embu County having the lowest coverage at 79 percent and Kitui County having the highest percent at 97 percent. Makueni, Meru and Tharaka Nithi counties had 92, 80.4 and 76 percent respectively. Approximately 72 and 60 percent of the population in Tharaka Nithi and Meru North respectively were reported drinking water from open and unprotected source while Kitui and Makueni counties reported drinking water from protected source.

2.4.5.8 Education
There was generally a slight increase in enrollment at all levels across the cluster except in Kitui County where there was decrease in enrolment of 18, 10 and five percent for ECD, primary and secondary level respectively. The general decrease in enrolment was attributed to drop out as a result of child labour and house chores. Increased enrolment for ECDE in Embu County was attributed to provision of school meals and milk by parents and county government respectively. The ratio of boys to girls was almost one to one though slightly skewed in favour of boys. Learner's participation was generally good across the cluster with attendance ranging between 96 to 99 percent. There was no exceptional drop out registered in the cluster other than the normal chronic issues related to teenage pregnancies/early marriages and child labour. Homegrown School Meals Program (HGSMP) was the main feeding programme in the cluster. However, 110 schools in Embu County were beneficiary of Expanded School Meals Program (ESMP) with a case load of 26,590 in third term 2017. This was being supplemented by provision of school meals and milk by the county government and parents respectively.

2.5 The Coastal Marginal Agricultural Livelihood Cluster

2.5.1 Cluster Background Information
The cluster consists of Kwale, Kilifi, Taita Taveta and Lamu counties and covers an estimated area of 47,861 square kilometers with a projected population of 2,406,491 (KNBS, 2016). It has three major livelihood zones; mixed farming (60% of the population), trade/ business/ formal employment/casual labour (21%) and marginal mixed farming with 11% of the population (Figure 2.13).

2.5.2 Current Drivers of Food Insecurity
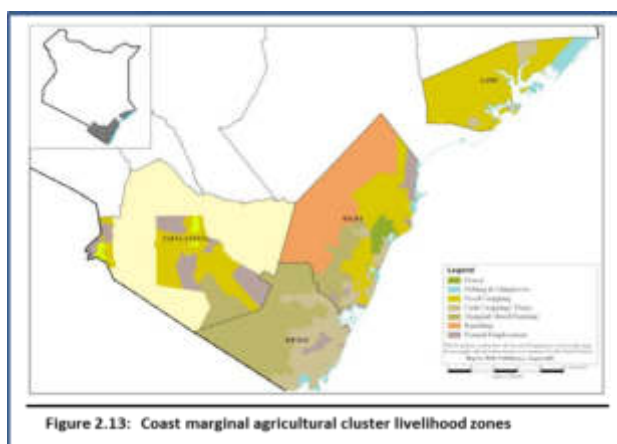
Figure 2.13: Coast marginal agricultural cluster livelihood zones

Rainfall Performance
The 2017 short rains were generally delayed by two dekads (10-day period in a month) across the cluster. Most parts of the cluster received 90-110 percent of the normal rains with a few exceptional areas receiving 50-90 percent of the normal rains. Highest amounts of 140-200 percent of normal rainfall were received in Kwale County in the mixed farming livelihood zone and 110−200 percent of normal rainfall in the Cash Cropping livelihood zone areas in Kilifi County. Notably, most areas in the cluster experienced poor temporal and uneven spatial

rainfall distribution except Kwale whose temporal distribution was good and spatially well distributed. Cessation of the rains was earlier than normal across the cluster, ending in the first dekad of December except in Lamu where cessation was in the second dekad of December compared to the normal third dekad of December.

Conflict/Insecurity
Human wildlife conflict was reported in Taita Taveta County where maize crop destruction by elephants was reported around the farms bordering Tsavo national parks. Incidences of militant activities were reported in Kilifi County with displacements occurring in the border town of Kiunga particularly Ishakani. Learning was disrupted in Basuba wards after attack on teachers by suspected Alshabab Militants in December and some pupils transferred to Mokowe Arid Zone and Kiunga Primary.

Other Shocks and Hazards
Infestation of crops by Fall Army Worm (FAW) and Head Smut Disease was reported in parts of Taita Taveta, Kwale and Kilifi counties. The infestation resulted to reduced maize production for the season.

2.5.3 Current food security situation
The current food security phase classification for the cluster is partly in Minimal (IPC Phase 1) and Stressed (IPC Phase 2). Kilifi, Kwale and the Irrigated/livestock livelihood zone of Taita Taveta County are in Minimal whereas Lamu County, crops/livestock and horticulture/livestock livelihood zones of Taita Taveta County are 'Stressed'. The cluster's maize prices were generally above the LTA and varied trends were noted. Price fluctuations were recorded in Kilifi, Lamu and Kwale whereas in Taita Taveta, prices were stable and generally above LTA and 2016 prices. Terms of trade were favourable across the cluster and above the LTA. The percentage of children at risk of malnutrition as measured by MUAC <135mm rose above the LTA in Kilifi and Lamu and were below LTA in Taita Taveta and Kwale. Pasture and browse condition was fair and good respectively except in Lamu where it was in fair to poor state.

Livestock body condition was fair for cattle and good for shoats except in Lamu where shoats had good to fair body condition. Water consumption reduced for all counties except for Kwale County where it was normal ranging between 15-40 litres per person per day. Milk production and consumption slightly reduced across the cluster except in Kwale which had a slight increase. According to WFP Food Security Outcome Monitoring (FSOM) cluster data compared to previous season, the households with poor food consumption increased by 25.3 percent. The increase is attributed to the current reduced food availability, cumulative effects of failure of both short and long rains in 2016 and insecurity that affected particularly Lamu County that caused displacement and affected the livestock market trade. The Coping Strategy Index for the cluster was 22 in December 2016 compared with 20.5 during the same period in 2017, implying an increased percentage of households adopting either crisis or emergency coping strategies.

2.5.4 Food security trends

Indicator	Long rains assessment, July 2017 (Previous Season)	Short rains assessment, Feb 2017 (Current Season)
Food Insecurity Phase	All in Stressed, except Lamu and parts of Kilifi in Crisis	**Minimal** (Kilifi, Kwale and Irrigated/Livestock zone of Taita Taveta County) and **Stressed** (Lamu County and crops/livestock and horticulture/livestock livelihood zones of Taita Taveta County)

Indicator	Long rains assessment, July 2017 (Previous Season)	Short rains assessment, Feb 2017 (Current Season)
Livestock body condition	Fair to poor for cattle and good to fair for shoats	Fair for cattle and good for shoats except in Lamu (Good to Fair)
Water Consumption (litres per person per day)	15-40 in Taita Taveta and Kwale (normal) 5-16 in the pastoral/fishing zones of Kilifi and Lamu (compared with the normal 15-20)	15-40 in Kwale (normal) 10-20 in Kilifi (Reduced) 10-20 in Taita Taveta (Reduced) 5-15 in Lamu (reduced)
Meal Frequency	1-2 meals per day in Lamu and Kwale 2-3 meals per day in Kilifi and Taita Taveta	2-3 meals per day across the cluster (Most households)
Terms of Trade	ToT between 63 and 86kg and above except in Kwale with 39kg (below)	ToT between 69 and 114kg and above except in Kwale (below)
Coping Strategy index	7-18 Lamu (18), Kwale (16), Kilifi (14) and Taita Taveta (7)	6.8 (Lamu), 10.75 (Kwale), 3 (Kilifi) and 4.56 (Taita Taveta)
Food Consumption score	Poor: 17% Borderline: 42% Acceptable: 41%	Poor: 25.3% Borderline: 34.9% Acceptable: 39.8%
MUAC	Stable in Taita Taveta Deteriorating in Kilifi, Kwale and Lamu	Above in Kilifi and Lamu and Below in Taita Taveta and Kwale

2.5.5 Impact of Drivers on Food and Nutrition Security

2.5.5.1 Crop production

Rain fed crop production
Lamu, Kwale and the coastal areas of Kilifi County relies on the long rains season for crop production, while the interland of Kilifi County and Taita Taveta County depends on the short rain season. Maize, cowpeas and cassava are main crops grown in the cluster. Other important crops such as green grams and cowpeas are also grown.

The area planted under maize was nine percent above the LTA, while the season's projected production is 67 percent of the LTA. The increase in area planted for maize is due subsidized tractor hire services in some counties in the cluster (Kwale and Kilifi). The Season's production is below the LTA due poor season's performance and the invasion of the fall army warm in areas with above normal rainfall such Kwale. Heavy rainfall also destroyed crops in schemes in Kwale County. Area planted with cowpeas was four percent above LTA attributed to subsidized tractor hire services, above normal rainfall in some parts of the cluster. Projected season's production for cowpeas also increased by 15 percent attributed to distribution of certified seeds and other inputs by county government in some counties in the cluster. Area planted with green grams was 90 percent of LTA. This was attributed to late land preparation, farmers also discouraged by high inputs costs. The Season's projected production also was 71 percent of the LTA attributed to pest and disease, fall army worm infestation, wet condition in Kwale affecting pod formation, wildlife destruction and depressed rainfall in some parts of the cluster which resulted into the crop wilting at flowering stage.

Area planted and production under rain fed agriculture

Crop	Area planted during 2017 short rains season (Ha)	Long Term Average area planted during the short rains season (Ha)	2017 Long rains season production (90 kg bags/MT) Projected	Long Term Average production during the short rains season (90kgbags/M)
Maize	46,758	42,708	345,957	514,300
Cowpeas	7,989	7,613	51,913	44,810
Green grams	6,146	6,809	31,634	44,172

Irrigated agriculture

Irrigation in the cluster is mainly carried out in small irrigation schemes along the rivers. The main crops grown under irrigation are bananas and maize. Other crops grown on smaller scale are tomatoes, rice, onions and capsicums. The area under irrigation increased slightly from 3,880 hectares to about 4,000 hectares attributed to development of new irrigation schemes and support from counties with micro irrigation kits. The banana value chain is gaining importance especially in Taita Taveta County through support of several development partners and the introduction of the new banana tissue culture which matures in nine months and has improved quality

Area under maize cultivation during the short rains was 54 percent of the LTA attributed to destruction of irrigation infrastructures in parts of the cluster, late land preparation by the farmers. Area planted with Tomatoes is 45 percent above the LTA attributed to subsidized tractor hire services in parts of the cluster. Area under banana was 10 percent above LTA attributed to increased interest by farmers due to high cash returns and incentives from development stakeholders and the county governments. Projected season's production was 10 percent above LTA due to improved agriculture practices by the farmers such application of manure, pest control and management as well support from development stakeholders.

Area planted and production under irrigated agriculture

Crop	Area planted during 2017 short rains season (Ha)	Long Term Average area planted during the short rains season (Ha)	2017 short rains season production (90 kg bags/MT) Projected	Long Term Average production during the short rains season (90kgbags/M)
Maize	383	703	7660	14060
Tomatoes	271	186	2965	2346
Banana	2200	1989	37400	33813

Cereal stocks

The maize stocks held by households in the cluster was about 108 percent above LTA. This was attributed to spillover effect from the long rain season harvests as farmers did not dispose their harvests due to low prices. Stocks of maize held by traders, millers were 44, 43 percent of the LTA respectively due to reduced harvests attributed to depressed rainfall, pest & disease and fall army infestation. Stocks of rice held by traders are 48 percent above the LTA respectively. Stocks at NCPB stores were five percent of the LTA. Stocks of sorghum held by traders were 18 percent of the LTA. The available stocks at household level can last the cluster between one to two months.

Cereal stocks in the cluster (90kg bags)

Commodity		Farmers	Traders	Millers	NCPB	Food Aid	TOTAL
Maize	Current	339,759	133,688	18364	65918	0	**491,811**
	LTA	162,799	302,766	41,743	5,087	0	507308
Rice	Current	0	162,182	0	0	0	**162182**
	LTA	0	90,000	0		0	90000
Sorghum	Current	20	1,719	0	0		**1739**
	LTA	0	9,500	0		0	9500

2.5.5.2 Livestock Production

The main livestock types are cattle, sheep, goats and poultry. Livestock production contributes 45 percent of income in mixed farming, 20 percent in marginal/mixed farming, and 20 percent in the agro-pastoral livelihood zone.

The pasture and browse condition was good to fair in the mixed farming and marginal mixed livelihood zones but fair to poor and deteriorating in the agro-pastoral livelihood zone (Table 4). Access was limited due to inadequate water, pastoralists/farmers conflicts in some parts of Lamu and Human-wildlife conflicts in Bura/Mwakitau, Ngolia, Marungu (Itinyi) and Challa wards in Taita-Taveta County.

Pasture and browse condition

Livelihood zone	Pasture				Browse			
	Condition		How long to last (Months)		Condition		How long to last (Months)	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Mixed farming/	Good to fair	Good	01-Feb	02-Mar	Good to fair	Good	01-Feb	02-Mar
Marginal/Mixed Farming	Good to fair	Good	01-Feb	02-Mar	Good to fair	Good	01-Feb	02-Mar
Agro pastoral	Fair to poor	Good	01-Feb	02-Mar	Good to fair	Good	1	02-Mar

Livestock body condition was good to fair across all livelihood zones which is normal for the season (Table 5). However, in all livelihood zones of Lamu County and in Jilore and Adu wards in Kilifi County, cattle, sheep and goats had a good to fair body condition attributed to the declining forage conditions and increasing trekking distances in search of water and pastures. Livestock body condition is projected to deteriorate, especially in the agro pastoral zones as the water and forage condition worsens before the onset of the March – May 2018 long rains.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat	
	Current	Normally	Current	Normally	Current	Normally
Mixed farming	Good	Good	Good	Good	Good	Good
Marginal Mixed farming	Good to fair	Good	Good to fair	Good	Good to fair	Good
Agro-pastoral	fair	Good	Good to fair	Good	Good to fair	Good

Livestock average trekking distance to water source from grazing area was normal in most of the Livelihood zones in the cluster except in Lamu where the distances increased from seven km in the month of December 2017 to 14 km in January 2018 compared with LTA of six km (Table 6). Watering frequency was normal in the Mixed and Marginal mixed farming but declined in some of the agro-pastoral areas attributed to declining water levels. Watering frequency in Lamu was four times in a week from a normal of six times a week for all livestock species across the livelihood zones.

Water sources and trekking distances

Livelihood zone	Sources		Return distances (km)		Expected duration to last (months)	
	Current	Normal	Current	Normal	Current	Normal
Mixed Farming (MF)	Water pans Shallow wells Rivers streams	Water pans Shallow wells Rivers streams	2-4	3	3-4	3 -4
Marginal Mixed Farming (MMF)	Water pans Shallow wells Rivers Streams	Water pans Shallow wells Rivers streams	2-5	4-6	2-3	2-3
Agro Pastoral (AP)	Water pans Shallow wells Rivers Streams	Water pans Shallow wells Rivers Streams	2-7	5-8	1-2	3

Milk production, consumption and costs

Milk production slightly decreased in all the livelihood zones however in Kwale, there was a slight increase in milk production in mixed farming and agro pastoral livelihood zones compared to the LTA by 12.5 and 25 percent respectively. Lamu recorded a decline of 45 percent in milk production compared to normal. Household milk consumption ranged 0.5-1 litre across all the livelihood zones compared to normal 2-3 litres. The agro-pastoral zones recorded the lowest milk consumption across the cluster. The reduction in milk consumption is as result of decline in milk production due to the current decline in forage condition across the livelihood zones, reduced herd size following the previous drought and long trekking distances to grazing and water points. The decline in milk production has also led to increase in milk prices which are currently ranging from between Kshs 40–70 in mixed farming and the marginal mixed farming zones compared to normal Kshs. 30-50 and between Kshs. 60–100 in the agro pastoral livelihood zones compared to normal of Kshs. 35-70. Birth rates were low and below normal for all livestock categories. The TLUs declined by 30 percent compared with normal for both poor and middle-income households in all livelihood zones across the cluster. The improvement in Kwale is attributed to the rainfall that was received in parts of the county improving pasture availability and access

Migration and livestock diseases

In-migration of livestock from neighboring Counties of Tana River and Garissa to the agro-pastoral of zones of Witu and mixed farming zone of Basuba in Lamu County were reported. Taita Taveta County experienced few cases of out migration of cattle from the ranching zones of Mwatate to Kwale County. In Kilifi County, especially in ranching and marginal mixed farming zones, livestock migration trends are expected to increase as livestock move in search of water and pasture. In-migration of livestock from Tana River to Kilifi County through Kanagoni was noted. No major livestock disease outbreaks were reported during the period. However, there were isolated cases reported for Foot and Mouth Disease (FMD) in Kwale and Lamu counties. Mild cases of CCPP, PPRCBPP, Lumpy Skin Disease (LSD), Black quarter were reported across the counties but were controlled. Trypanomiasis cases were common along the Arabuko forest and other Kaya forest reserves of Ribe, Kilifi County. No unusual livestock deaths were reported during the period.

2.5.5.3 Market Performance

Markets were accessible and functioning normally except in Taita Taveta whereby maize volumes in the markets drastically reduced occasioned by importation ban from Tanzania since August 2017. In Lamu County, movement of livestock to terminal markets has been hindered by insecurity and resulted to low volumes traded for livestock in the market. Main livestock species traded in the cluster include Cattle, Goats, Sheep while the food commodities traded

included Maize/maize flour, beans, rice green maize, green grams, cowpeas, vegetables and rice. Nonetheless, few traders were getting maize supplies from Mombasa, Taita Taveta and Busia counties.

Figure 2.14: Comparative maize price trends in the cluster
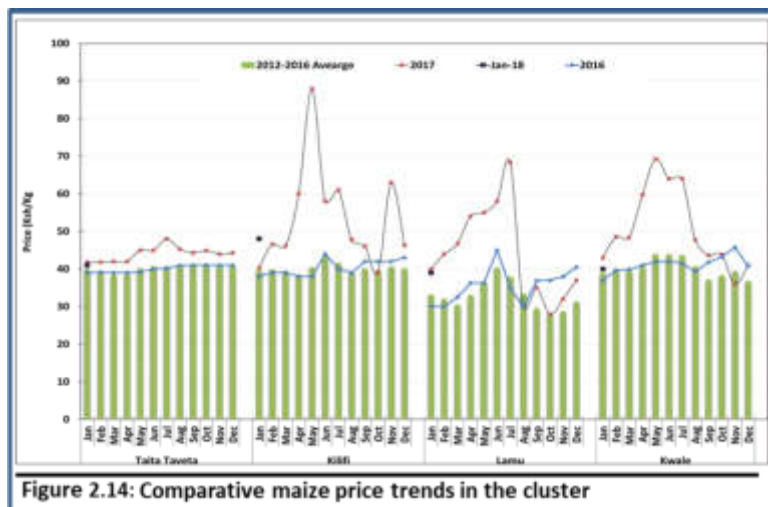
Maize prices in the cluster exhibited varied trends apart from Taita Taveta County where maize prices were generally stable and consistently above the long term and 2016 prices, fluctuations in the prices were noted in Kilifi, Lamu and Kwale counties in the second half of 2017. The trend shows that the prices were generally above the LTA prices. In Lamu County, the trend shows an increase in the prices from the month of October 2017. Kilifi County reported the highest maize price in January 2018 at Ksh.48 per kilogram against the LTA price of Ksh.40 while the lowest price was recorded in Lamu at Ksh. 39 per kilogram as shown in Figure 2.14.

2.5.5.4 Water Availability and Access

The main water sources include boreholes, water pans, shallow wells, Rivers, springs, dam's lakes and djabias. Recharge levels to open water sources was 50-60 of their capacity. All the water pans in Lamu County have dried up which is a normal situation at this time of the year In Kilifi and mixed farming livelihood zone of Kwale, the projected duration is 2-4 months which is normal in all livelihood zones. In the mixed farming crop and livestock zones of Taita Taveta, the remaining water in open sources will last until end of February compared to mid-March normally. Distance to water sources was within the normal range of 1-3 kilometers across the cluster. However, exceptionally longer distances of 7-10 kilometers were recorded in Fishing and Mangrove Harvesting as well as the mixed farming crop and livestock livelihood zones of Lamu and Taita Taveta Counties compared to the normal 1-3 kilometers. The situation was within normal across all livelihood zones in Kilifi and Kwale. However, in the mixed farming (food crop and livestock) zones of Taita Taveta, the distances increased due drying up of most open water sources and inadequate volumes at the water kiosks from the schemes forcing households to travel far.

The most concentrated water points in the cluster were in parts of Taita Taveta County. Waiting time was within the normal range of 10-20 minutes in the cluster except in mixed farming (crops and livestock) livelihood zone of Taita Taveta County where waiting time has increased significantly from the usual 30 minutes to three hours as a result of high concentration coupled with reduced flow volumes at the water sources. Additionally, the waiting time has greatly risen in all livelihood zones of Lamu County from the normal 10-30 minutes to about 1-6 hours attributed to drying up of water pans forcing households to access alternative water sources for human and livestock consumption, which are also far.

Average water consumption per person per day has reduced in areas where distances have increased This is particularly the case for Taita Taveta mixed farming (food crops and livestock), mixed (horticulture and dairy) whose water consumption has reduced from 20 to 10 litres per person day and 30 to 20 litres per person per day respectively. Furthermore, water

consumption is normal in all livelihood zones of Kwale County. Although the water consumption per person per day was low in Lamu County, this situation is normal except for mixed farming food cash and livestock livelihood zones that significantly reduced from a normal of 20 litres person per day to 5 litres per person per day. Only one area of coastal marginal agriculture cluster had normal water consumption ranges, and this is mixed farming (Irrigation and livestock) livelihood zone of Taita Taveta. All livelihood zones of Kilifi had water consumption reduced by 10-20litres from a normal of 30-60 litres per person per day.

2.5.5.5 Food Consumption

According to WFP Food Security Outcome Monitoring about 25.3, 34.9 and 39.8 percent of households have poor, borderline and acceptable food consumption respectively indicating a weakening food security situation compared to May 2017 where percent of households in poor, borderline and acceptable score were 17.3, 42.1 and 40.6 percent respectively. Compared to previous season, the households with poor food consumption increased by 25.3 percent from the previous season. This increase is attributed to cumulative effects of failure of both short and long rains in 2016 from which households were yet to recover and insecurity that affected particularly Lamu county that caused displacement and affected the livestock market trade resulting in reduced incomes and purchasing power, this coupled with reduced food availability has rendered many households with poor food consumption score.

2.5.5.6 Coping Strategy Index

The mean coping strategy score (rCSI) was 22 in December 2016 compared to 20.5 in December 2017. In December 2017, 75.5 percent of households relied on less preferred and/or less expensive food, 67.9 percent borrowed food or relied on help from a friend or relative, 83.9 percent reduced the number of meals eaten per day and 83.1 percent reduced the portion size of meals. About 74.7 percent of households reduced the quantity of food consumed by adults to ensure that children had enough to eat. This has caused 47 ,42.6 and 9.2 percent of the household to adopt crisis, emergency and stressed coping strategies respectively in the cluster. Approximately 1.2 percent household are not adopting coping strategies. This was because of cumulative effects of failure of both short and long rains in 2016 from which households were yet to recover, insecurity and political tension that caused displacement and affected the livestock market trade resulting in reduced incomes and purchasing this coupled with reduced food availability has rendered many household struggling to maintain thus an increased percentage in either crisis or emergency coping strategies.

2.5.5.7 Health and Nutrition

Nutrition Status and Dietary Diversity

The nutrition situation according to Acute Malnutrition IPC in all the cluster counties was acceptable (Phase 1). Kwale and Kilifi were classified using GAM by MUAC from representative surveys (KABP survey, 2018) at 5 and 5.8 percent respectively, while Lamu was classified using GAM by MUAC from Sentinel Sites at 5.3 percent. Taita Taveta County did not have sufficient data for the current IPC classification of Acute Malnutrition, However, based on the previous classifications, triangulation of other indicators and expected trend of contributory factors in the projection period it was classified at Phase 1. The proportion of children with MUAC less than 135 mm increased in January 2018 in Kwale, Kilifi and Lamu Counties at 7.1, 5.8 and 5.3 percent respectively compared to December 2017 at 7.0, 4.6 and 5.0 percent respectively. Figure 2.15 below shows the MUAC trends from July to December 2017 and the January 2018 proportions of children at risk versus the LTA.

Figure 2.15: Proportion of Children at Risk of Malnutrition (MUAC <135mm)
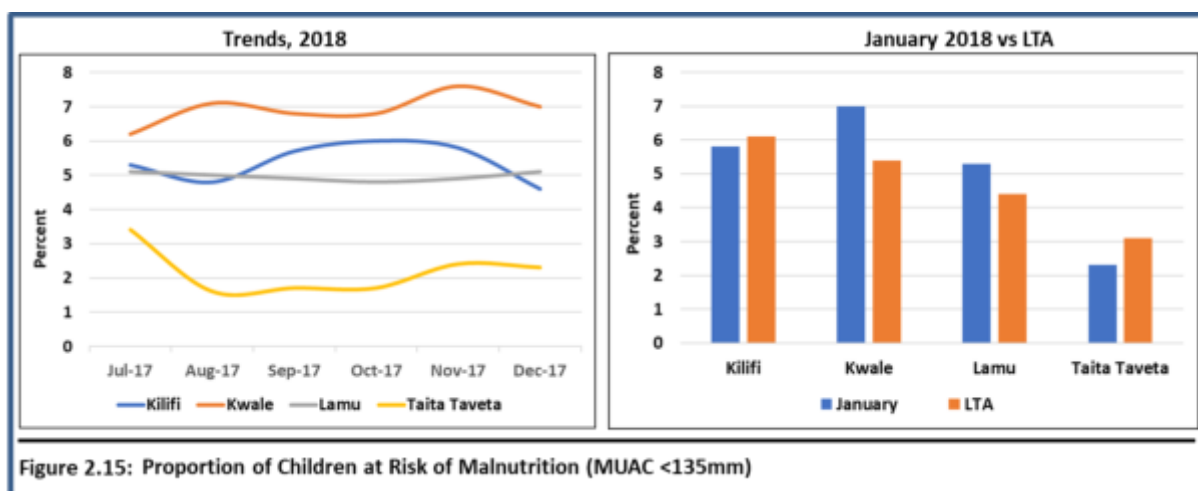
Dietary diversity situation for the region shows that in Kwale, 45.2 percent of women of reproductive age consumed food less than 5 food groups and only 30.5 percent of children aged 6-23 months received a minimum acceptable diet Minimum Acceptable Diet (KABP, 2018). The food consumption score has been on the improving trend as from October 2017 up to January 2018. In Kilifi County Minimum dietary diversity was 35.5 percent, minimum meal frequency was 65 percent, and minimum Acceptable diet was lowest at 25.1 percent and Minimum dietary diversity for women was 26.1 percent. Lamu County had Agro pastoral livelihood zone with highest number of Households with poor dietary diversity at 5.0 and 8.3 percent borderline with mixed farming having poor at two percent and 43 percent borderline for January 2018. Nevertheless, this shows improvement from the previous month compared to households with poor dietary diversity at 8.3 in mixed farming zone for December 2017. In Taita Taveta County the proportion of households with borderline and poor food consumption scores were 31.2 and 3.3 percent respectively.

Morbidity patterns

Malaria, diarrhea and Upper Respiratory Tract Infections (URTIs) were the most common diseases reported in the cluster. There were incidences of increase in URTIs and diarrhea cases in Lamu, diarrhea in Kwale and URTIs in Taita Taveta. Malaria disease is under control in the cluster due to various interventions done earlier on including free net distribution, massive campaigns on household spraying and drainage of the Mosquito bred areas. There were no disease outbreaks reported in the cluster during the assessment period. However, there is need to monitor dengue outbreak and *chikungunya* infestation reported in the neighboring Mombasa County.

Immunization and Vitamin A supplementation

Vitamin A Supplementation for children 6-59 months across the coastal cluster was low compared to the national target of 80 percent with Kwale, Kilifi, Lamu and Taita Taveta Counties recording 32.4, 62.4, 16.4 and 12.1 percent respectively. The Fully Immunized Coverage, which is the proportion of children less than one year who are fully immunized, was also below the national target for all the counties where Kwale, Kilifi, Lamu and Taita Taveta Counties recorded 53, 56.8, 71.5 and 62.1 percent respectively. The low coverages and immunization within the cluster are attributed to the industrial action by health workers which lasted from June to November 2017, poor documentation at the service delivery point, insecurity (in Lamu County) and children not attending the child welfare clinic after measles vaccination at 9 months.

Sanitation and hygiene

The major water sources for domestic use in Kwale County are rivers, dams, boreholes, springs and piped water in kiosks. Most of the households rely on pans and dams with most of these currently at 70 percent replenished and expected to last for 3-4 months. In Kilifi County there was no serious water shortage reported. However, the cost of water was relatively higher than normal in most of the livelihood zones. The average distance to water sources for households during the month of January 2018 was recorded at 4.2km. This is an increase of 40 percent compared to the previous month. In Lamu County the proportion of households that used water from protected sources was at 83 percent. Twenty one percent treated water, while 18.0 percent practiced hand washing at all critical times. Overall, latrine coverage in the County stood at 82.3 percent. For Taita Taveta County, latrine coverage has increased from 91.3 in December 2017 to 92.7 percent in January 2018. However, in areas of Mwaroko, Kachero and Mwakitau, the latrine coverage is low at approximately 40 to 50 percent as recorded during the community interviews.

2.5.5.8 Education

The Kilifi, Kwale and Taita Taveta reported an increase in enrollment for both early learning and primary levels Kilifi county registered the highest variation of 43, 25 and 28 percent increase for early learning, primary and secondary levels respectively. Apart from Kilifi all the other counties in the cluster registered a drop ranging between two to eight percent. There was a decrease in enrollment across all levels in Lamu county attributed to migration of household for search of pasture and insecurity and some Schools were also not operating due to terrorist attacks around Boni and Witu areas. Children were transferred to neighbouring schools for instance Mukowe Arid Zone and Kiunga Primary. There was a one to one gender ratio at levels across the cluster apart from Kwale where 30 percent more boys than girls have enrolled in 2018.

Drop-out rates were relatively normal but notably high in Lamu County where high drop-out rates were observed early year learning and primary level, more girls dropped out of school than boys at the end of term three this was attributed to migration and closure of school's due to insecurity. In general drop outs were attributed to pregnancies and early marriages in the cluster.

Home Grown School Meals Programme is the major feeding programme in all the counties but Taita Taveta and Lamu counties both having additional Regular School Meals Programme and Expanded School Meals Programme respectively. In Wundanyi and Taveta Sub-counties of Taita Taveta County, there was Community School Meal Program to supplement the Home Grown School Meals.

3.0 Food Security Prognosis

3.1 Assumptions

The following are the assumptions made that will determine the food security outcomes in the following six months.

- Based on the Kenya Meteorological Department (KMD) forecasts, The March – May long rains are forecasted to be above normal to normal in the western part of Kenya and normal to below normal in the eastern part of the country.
- Temperature projections by the North American Multi-Model Ensemble (NMME) forecasts indicate, during the dry season through March, there is a 40 – 60 increased likelihood for higher-than-normal land surface temperatures over the southeast and northeastern parts of the country between February and April. The higher-than-normal temperatures are also expected on a more widespread scale across the country from June through August. which is also expected later during June through August.
- According to the State Department of Agriculture(SDA), due to Fall armyworm infestations, poor rainfall distribution and cumulatively below average rainfall amounts, it is estimated that the short rains maize harvest is likely to be 40 – 50 percent below average.
- Based on technical projections, maize prices in the major urban markets from February through June 2018 are expected to remain above the five-year averages arranging from 5 – 15 percent above average with the prices peaking in April and June as household stocks run low before the short cycle and main crop harvests. The prices will however remain below 2017 prices.

3.2 Food Security Prognosis (February 2018 – September 2018)

Pastoral areas

From February, food insecurity is anticipated to increase further as livestock productivity decreases and with it milk and meat production and consumption reducing dietary diversity and worsening malnutrition especially in children under five years of age. Livestock migration to dry season grazing areas is set to continue in search of better forage and water resources. Consequently, household income is poised to reduce from reduced livestock product and livestock sales reducing household purchasing power and food access. More households are expected to move to Crisis (IPC Phase 3) in parts of Baringo, Marsabit and Samburu. From mid-to late March, the onset of the March – May long rains is likely to bring improvements in forage and water resources which will likely be more pronounced in the western parts of the country and more modest in the eastern parts of the country. From mid-April through June driven by the rains, livestock body conditions, milk production and livestock prices are expected to increase improving household food availability and purchasing power. Livestock are expected to return to the wet season grazing areas and improve access to milk for sale and consumption reducing malnutrition. During this period significant improvements in food security are expected especially in areas where above average rains are expected in Turkana, Baringo, Marsabit, Kajiado, Tana River parts of Wajir, Mandera and Garissa which are expected to move to Stressed (IPC Phase 2) while further improvements are expected in West Pokot, Baringo, Narok parts of Samburu, Nyeri, Kitui, Makueni, Laikipia where they are expected to improve to Minimal (IPC Phase 1).

Marginal agricultural areas

In February, food security is likely to remain stable as households continue to consume their short rains harvest. Households will however be short of income as their below average crop

harvests will not allow sales for income and from late February to mid-March food insecurity will begin to deteriorate as the below average household food stocks begin to diminish forcing the households to rely on high priced staple foods from the markets. To obtain needed income, households will employ coping strategies and engage in non-agricultural related activities such as charcoal burning to fill income gaps. The forecasted below-average long rains onset in late March will result in commencement of crop production activities like planting and weeding providing on-farm casual labor opportunities though at below average levels that will provide some income at household level. From mid-April, the forage and water will improve livestock body condition and boost milk production and consumption keeping nutrition among children under five years of age stable. A majority of households will be able to meet their minimum food needs but unable to meet their non-food needs and remain in Stressed (IPC Phase 2) by the end of April.

From May households will obtain some income from on-farm activities like weeding of seasonal crops and also from harvesting of short cycle crops like vegetables which will also improve food availability at household level though at lower than average levels. As the livestock body condition of livestock improves, the increasing milk production will improve the nutrition status of under-fives and the favourable livestock prices will facilitate market purchases of staple foods. In July, the long rains harvest will become available providing income earning activities and improved food consumption and dietary diversity at household level. Due to increased supply of staple foods in the markets, prices are expected to drop momentarily improving food access. Food security is expected to increase slightly with households reducing reliance on coping strategies. A majority of the households will remain in Stressed (IPC Phase 2) but significant improvements are expected in areas that receive above average rains like Nyeri, Embu parts of Kitui and Makueni and are likely to be in the Minimal (IPC Phase 1) phase of food insecurity.

Key factors to monitor over the next six months include;
- Worsening malnutrition in selected counties (Lamu, Kilifi, Marsabit, Isiolo, Kajiado, Narok, Tana River)
- Performance of the March – May long rains
- Staple food prices
- Impacts of programmes and interventions

4.0 Proposed Sectoral Interventions

4.1 Agriculture Sector: Priority Interventions March 2018 – August 2018

There was crop failure in parts of the south eastern and coastal marginal agricultural areas as well as sections of the agro pastoral livelihood cluster. The October to December short rains of 2017, which is the main cropping season especially for the southeast and coast, is projected to perform below average. It will be therefore necessary to provide farm inputs and pest management support especially towards control of Fall Army Worms. The recommendations below are proposed for the sector before the onset of the long rains season.

Intervention	County	Cost (Ksh) (M)
Provision of farm inputs - seeds and tools / pest management/other support to crop production (fuel etc).	Kitui, Makueni, Meru North, Tharaka Nithi, Mandera Wajir Tana River, Kwale, Lamu, Kajiado,	1,200
Capacity building of farmers and post-harvest management	All counties	750
Total Agriculture Sector		**1,950**

4.2 Livestock Sector: Priority Interventions March 2018 – August 2018

Livestock production is the main source of income in the pastoral areas. The temporal and spatial distribution of the short rains was poor and uneven across most parts of the country and the gains made are likely to be short lived as water, grazing resources, livestock body condition and productivity begin to decline earlier than usual. The following proposed interventions will support production and mitigate against extreme conditions during the period from March to August 2018.

Intervention	County	Cost (Ksh) (M)
Purchase and distribution of emergency supplementary feeds and concentrates, molasses and mineral salts	Turkana, Samburu, Marsabit, Isiolo, Wajir, Garissa, Mandera, Tana River, Tharaka Nithi, Embu, Meru North, Kitui, Makueni, Kilifi, Kwale, Taita Taveta, Lamu, Baringo, Kajiado, Laikipia, Narok, Nyeri (Kieni) and West Pokot	870
Commercial livestock offtake / livestock restocking	Turkana, Samburu, Marsabit, Isiolo, Wajir, Garissa, Mandera, Tana River, Tharaka Nithi, Embu, Meru North, Kitui, Makueni, Kilifi, Kwale, Taita Taveta, Lamu, Baringo, Kajiado, Laikipia, Narok, Nyeri (Kieni) and West Pokot	620
Livestock disease surveillance along migratory routes, livestock markets and border points	Turkana, Samburu, Marsabit, Isiolo, Wajir, Garissa, Mandera, Tana River, Tharaka Nithi, Embu, Meru North, Kitui, Makueni, Kilifi, Kwale, Taita Taveta, Lamu, Baringo, Kajiado, Laikipia, Narok, Nyeri (Kieni) and West Pokot	605
Pasture establishment and conservation	Turkana, Samburu, Marsabit, Isiolo, Wajir, Garissa, Mandera, Tana River, Tharaka Nithi, Embu, Meru North, Kitui, Makueni, Kilifi, Kwale, Taita Taveta, Lamu, Baringo, Kajiado, Laikipia, Narok, Nyeri (Kieni) and West Pokot	400
Up scaling livestock insurance coverage	Isiolo, Turkana and Wajir	750
Total Livestock Sector		**3,245**

4.3 Water Sector: Priority Interventions March 2018 – August 2018

The short rains did not adequately recharge the open water sources in areas that received depressed rainfall. In most ASAL regions, total amounts of rains received were below normal and the season ended early, by as much as one month in some areas. As a result, average distances to water points and unit cost of water have increased in several counties. Consequently, there is need to provide clean drinking water to households in affected areas as an immediate measure as well as develop and rehabilitate existing water facilities to enhance water availability and access as a long term goal. The proposed interventions in water sector include the following:

Intervention	County	Cost (Ksh) (M)
Water trucking	Taita Taveta, Turkana, Samburu, Marsabit, Laikipia, Mandera, Garissa, Tana River, Isiolo	30
Routine repair, extension, maintenance and rehabilitation of broken down water points / systems / sources	Kajiado & Narok, Kajiado, Laikipia, Turkana, Tana River, Lamu, Isiolo	111.4
Provision of plastic tanks and other roof catchment and rain water harvesting structures	Baringo, Samburu, Marsabit, Kilifi, Isiolo	100
Purchase of water bowser, servicing and repairs including Motor vehicle tyres provision, fuel subsidy / electricity subsidy	Baringo, Kilifi, Laikipia, Garissa, Isiolo , Mandera	195.4
Capacity building on WASH / water management and catchment protection. Provision of water treatment chemicals	Baringo, Marsabit, Garissa	31
Drilling and equipping of new boreholes and existing borehole	Kajiado, Baringo, Narok, Nyeri, Samburu, West Pokot, Tana River, Lamu, Isiolo,	192.7
De-salination of water points to improve water quality	Isiolo, Tana River, Lamu	40
De-silting and expansion of water pans and repair of shallow wells	West Pokot, Kilifi, Kajiado, Laikipia, Narok, Nyeri, Tana River	240
Total Water Sector		**940.5**

4.4 Health and Nutrition Sector: Priority Interventions March 2018 – August 2018

A slight improvement in nutrition status in a number of counties across the country has been noted. The improvement in the nutrition situation was largely attributed to the ongoing multi-sector interventions, key of which include blanket supplementary feeding programme and integrated WASH and health and nutrition outreaches. However, the situation remains critical in most ASAL counties with considerable deterioration reported particularly in Kajiado County and the North Eastern region. A continuation of these interventions is therefore necessary to sustain gains made and build resilience of systems and communities.

Intervention	County	Cost (Ksh) (M)
Customized integrated health and nutrition outreaches, mass nutrition screening including nutrient supplementation in community and ECD Centres	Wajir, Garissa, Isiolo, Kilifi, Taita Taveta, Tana River, Samburu, Turkana, Marsabit, Tharaka Nithi, Embu (Mbeere), Narok, Laikipia, Baringo, West Pokot, Mandera	211.7
Community sensitization on good hygiene practices and nutrition including Community Led Total Sanitation	Isiolo, Tana River, Garissa, Samburu, Turkana, Kitui, Laikipia	16.4
Scale up Blanket Supplementary Feeding Programme	Baringo,	183
Supply of safe water storage containers and treatment chemicals to communities and health facilities	Wajir, Samburu, Turkana, Laikipia, Isiolo, Garissa, Marsabit, Mandera, West Pokot	9.1

Intervention	County	Cost (Ksh) (M)
Initiate and scale-up Maternal Infant and young Child Nutrition programmes including BFCI & BFHI	Lamu, Marsabit, Kitui, Baringo	15.8
Conduct SMART Survey in high-risk counties	Baringo and Embu (Mbeere)	19.5
Continue with Integrated management of acute malnutrition (IMAM) (Strengthen supply chain of IMAM supplies, Capacity building of new staff on IMAM, Scale-up of IMAM surge, reporting etc.)	Wajir, Samburu, Turkana, Marsabit, Meru North, West Pokot, Baringo	213
Total Health and Nutrition Sector		**668.5**

4.5 Education Sector: Priority Interventions March 2018 – August 2018

The poor performance of the short rains has led to food consumption gaps in a number of households in ASAL counties. Consequently, implementation of school meals programmes has impacted positively on enrolment and school attendance in most of the pastoral, agro pastoral and marginal agricultural counties. Factors affecting access and participation at both Early Childhood Development Education (ECDE) and primary school levels include water availability, migration of households and incidences of conflict and insecurity. The following interventions are therefore proposed for the education sector.

Intervention	County	Cost (Ksh) (M)
School feeding programs HGSMP and ECDE	Lamu, Kitui, Taita Taveta, Makueni, Kilifi and Kwale	70
Construction / establish new day secondary schools	Narok and Samburu	80
Water provision through water trucking and rain water harvesting facilities	Samburu, Isiolo, Tana River, Garissa, Marsabit, Mandera, Wajir	30
Provision of psychosocial support	Baringo, West Pokot, Lamu, Tana River, Garissa, Mandera and Wajir	4
Rehabilitation and reconstruction of learning facilities	Baringo, Lamu, Tana River and Mandera	20
Total Education Sector		**204**

4.6 Peace and Security Sector: Priority Interventions March 2018 – August 2018

Conflicts over resources and insecurity mostly in pastoral areas continue unabated causing loss of lives and livelihoods in affected areas and exacerbating food insecurity. There is need to continue supporting communities in the areas of conflict resolutions and promoting peaceful coexistence

Intervention	County	Cost in Ksh (M)
Peace building initiatives to resolve conflict over resources, enhance conflict resolution mechanisms	Laikipia, Baringo, Samburu, Tana River, Wajir, Isiolo	70
TOTAL		**50**

4.7 Food Assistance Sector: Priority Interventions March 2018 – August 2018

The short rains season ended early in most pastoral agro pastoral and marginal agricultural livelihoods, and were poorly distributed in space and time. Recovery has been less than anticipated and is not sufficient to sustain household food access and consumption through August 2018. Appropriate food assistance and nutrition programs are necessary to support recovery and bridging food consumption gaps, resilience building and to address high malnutrition rates. The following table indicates the populations that will require food assistance from March to August 2018.

County	County population (2016 projected)	Population in need of assistance after the 2017 LRA	March 2018 – August 2018	
			% of population in need of food assistance	Number of people requiring food assistance
Turkana	1,083,653	351,900	20	219,900
Wajir	458,900	151,900	26	121,300
Mandera	711,117	228,200	36	259,400
Garissa	431,950	155,900	46	197,600
Marsabit	315,936	161,500	43	136,600
Samburu	283,780	137,000	32	90,600
Laikipia	505,712	123,100	6	30,300
West Pokot	649,418	153,600	15	97,000
Tana River	303,047	159,700	58	174,800
Isiolo	155,465	98,700	67	104,100
Kajiado	870,721	128,200	12	103,800
Baringo	703,697	128,900	8	54,000
Narok	1,077,719	77,100	0	0
Sub-total, Pastoral	**7,551,115**	**2,055,700**		**1,589,400**
Makueni	959,022	213,400	20	196,300
Kwale	820,199	154,300	0	0
Kilifi	1,399,975	259,800	13	186,700
Kitui	1,097,687	265,800	22	244,400
Taita Taveta	358,173	97,800	23	82,100
Embu (Mbeere)	219,220	83,200	38	83,200
Tharaka-Nithi (Tharaka)	141,061	21,200	5	21.200
Meru (North)	775,982	88,300	8	64,000
Nyeri (Kieni)	175,812	61,500	22	39,100
Lamu	128,144	55,300	38	48,900
Sub-total, Marginal Agricultural	**6,075,275**	**1,300,600**		**965,900**
Total	**13,626,390**	**3,356,300**		**2,555,300**